

For Lobke

For being my muppet!

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Being Progressive Is Just A Phase

Dividing the Functional Hierarchy

door

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When I initially began my PhD program in January 2010, I started out with the aim of trying to solve one seemingly simple problem, which can be found in the sentence below.

(1) There was a lot of fuss being made about nothing.

Essentially the issue I was trying to account for was why the intermediate subject, *a lot of fuss*, could be found to the left of the auxiliary verb *being*? That is, why does the subject end up preceding auxiliary verbs inflected for progressive aspect?

In all honesty I naively believed this to be a fairly simple, self-contained problem that could be solved in a fortnight. Who knows, perhaps it could have been, were it not for a certain colleague of mine who decided to chip in with a helpful suggestion. If I remember correctly, her exact words were “What if progressive aspect were a phase?”

Apparently it’s rather uncommon for a PhD student to submit a thesis four years down the line which essentially retains the same analysis that they started out with, but for me, this seems to be the case. That one phrase “What if progressive aspect were a phase?” proved to be the catalyst for four years of research that quickly spiralled into a web of implications, contradictions, and further issues, but which eventually, in my mind at least, converged onto one overriding conclusion - that that colleague of mine might have been right. Though I leave this for the reader to ultimately decide.

Ironically, after a four year detour of trying to convince everyone that progressive aspect is indeed a phase, it was only in the dying months of the doctoral program that my arguments came full circle and I was finally able to venture a fully fleshed-out explanation as to why that bloody subject in (1) was surfacing to the left of progressive aspect.

This thesis is the result of that four-year detour. The work contained herein is ultimately my own, along with any errors, contradictions, and theoretical and empirical problems that one might find with the work. But the core idea of the analysis I cannot take credit for. That goes to my colleague, who dealt me both a curse and a blessing with that suggestion of hers.

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Over the course of my research I have had the pleasure of meeting a great many linguists who have either helped me in my research, or just generally proven to be all-round great people to know. Therefore, I would like to thank a number of people for generally making the field of linguistics a better place and for making the last four years such a positive experience, whether that be through active discussion of research, either in person or via email; inspiring me with their own work; painstakingly reviewing my articles and providing such detailed yet encouraging feedback; being a general friendly soul; or a combination of the above. Those linguists I wish to extend my gratitude towards are, in no particular order, the following: David Adger, Roberta D'Alessandro, Michelle Sheehan, Howard Lasnik, Kyle Johnson, Jason Merchant, Jim McCloskey, Guglielmo Cinque, Enoch Aboh, Aniko Lipták, Marc van Oostendorp, Robert Cirillo, Craig Sailor, George Walkden, Bill Haddican, Jonathon Keane, Barbara Mariatoma, Ryan Bochnak, George Starling, Irene Franco, Alastair Appleton, Rick Nouwen, Caroline Heycock, Ian Roberts, Marcel den Dikken, Zeljko Boskovic, Gary Thoms, Susi Wurmbrand, Aquiles Neto Tescari, Johan Rooryck, Lisa Cheng, Emiel van Miltenburg, Erik Schoorlemmer, and several anonymous reviewers. My apologies to anyone I may have accidentally missed out.

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Ghent, 29th September, 2013

List of Abbreviations

1, 2, 3	1 st , 2 nd , 3 rd person
φ	Phi
ACC	Accusative Case
BE	British English
BP	Brazilian Portuguese
BelfE	Belfast English
DAT	Dative Case
ECP	Empty Category Principle
EP	European Portuguese
EPP	Extended Projection Principle
FIN	Finite
FQ	Floating Quantifier
GEN	Genitive Case
HAB	Habitual
HMC	Head Movement Constraint
<i>i</i>	Interpretable
Inf	Infinitive/Infinitival
LF	Logical Form
MCE	Modal Complement Ellipsis
Mod	Modal
NEG	Negation
NOM	Nominative Case
NPI	Negative Polarity Item
PASS	Passive
PERF	Perfect Aspect
PF	Phonological Form
PH	Phase Head
PIC	Phase Impenetrability Condition
PL	Plural

PRES	Present
PROG	Progressive Aspect
PRT	Particle
Q	Question Feature
RRC	Reduced Relative Clause
SAF	Stranded Affix Filter
SAI	Subject Auxiliary Inversion
SG	Singular
t	Trace
T/Agr	Tense/Agreement
TEC	Transitive Existential Construction
TOP	Topic
<i>u</i>	Uninterpretable
UEC	Unaccusative Existential Construction
VPE	VP Ellipsis
VPF	VP Fronting
WYSIWYG	What You See Is What You Get

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1

Overview

1.1 Introduction

It has long been assumed in generative grammar that structural hierarchies, especially that of the main clausal spine, can be divided into a number of discrete domains. Various terms and theories have been used to describe and explain these domains, such as units, Cycles, constituents, layers, zones, fields, chunks, Barriers, Phases, and Extended Projection lines, with Phase theory being perhaps the most commonly accepted view within Minimalism.

Under the Minimalist Program's (Chomsky 1995) traditional minimal view of the clausal hierarchy, that is $CP > TP > vP > VP$, there are generally taken to be three distinct domains, namely CP, TP and vP, although Phase theory reduces these to just two: CP and vP. Essentially the question that this thesis addresses is where the boundary of such domains lies in light of more enriched structures, in particular that of the traditional vP domain. The presence of markers for modality and aspect within the world's languages, such as auxiliaries, inflections and particles, make clear the need for a more elaborate structure to exist universally between TP and vP. Where, in this case, does the boundary for the traditional extended vP domain lie?

This thesis claims that when the range of modal and aspectual projections of English are considered, the empirical evidence points towards a conclusion in which progressive aspect, together with voice and the lexical verb, constitutes a discrete domain of structure to the exclusion of perfect aspect which, together with modality, TP and (possibly) CP, comprises a separate, higher domain of structure. In other words, the boundary of the traditional vP domain in English is in fact located between progressive and perfect aspect.

Evidence for this aspectual divide arises from the fact that progressive aspect is unique amongst aspectual forms in sharing a number of properties with voice and

the lexical verb across a range of phenomena including ellipsis, fronting, idioms and existential constructions. The next aspectual form above this, perfect aspect, does not share in such properties and appears to pattern more with modals and TP across the aforementioned phenomena, suggesting for a structural divide between the two aspects. Much of the evidence discussed involves the peculiar behaviour that passive and copular auxiliaries exhibit when inflected for progressive aspect, i.e., *being*, in comparison to when they are inflected for perfect or infinitival morphology, i.e., *be* and *been*. This is evident in ellipsis, fronting and existential constructions in particular. It is shown, moreover, that progressive aspect in general exhibits certain peculiar properties which tie it to the traditional vP domain, even when one abstracts away from the behaviour of auxiliary verbs. This is illustrated once again in ellipsis and fronting constructions, as well as with idioms and selectional requirements.

This aspectual divide between progressive and perfect aspect I define in terms of Phases. Specifically I claim that the progressive aspectual layer is part of the traditional clause-internal Phase along with voice and the lexical verb, whilst perfect aspect is contained within the higher, clausal Phase along with modals, TP and CP. This claim requires the identity of the clause-internal Phase to be re-assessed.

I propose that vP does not uniformly act as the clause-internal Phase as standardly assumed, and that the highest phrase of the progressive aspectual layer, vP_{prog}, instead demarcates this Phase when progressive aspect is present in the derivation. In the absence of progressive aspect, however, I claim vP projects the clause-internal Phase. This variable Phase boundary calls for an approach to Phase theory in which the size of a Phase is context dependent. I formalise this with the Variable Phase approach in which Phases are no longer dependent upon Merger of a particular Phase Head. Instead, I propose that Phases are wholly determined by their Sub-Numerations and that the last item to be Merged from the Sub-Numeration projects the Phase, irrespective of what that item is.

By taking progressive aspect to be contained within the same Sub-Numeration as voice and the lexical verb, this denies vP of its exclusivity as the clause-internal Phase and allows the progressive layer to project the Phase when present, assuming as standard that progressive aspect is Merged after vP. This approach generally sits in line with the move towards a dynamic understanding of Phases, as per Bobaljik & Wurmbrand (2005), Wurmbrand (2012b, *to appear* b) and Bošković (*to appear* a,b).

Furthermore, I claim perfect aspect to be contained within the second Sub-Numeration of the clause, along with modals, T° and C°, thereby explaining why perfect aspect never delineates the clause-internal Phase.

Cross-linguistically it is shown that a Variable Phase approach is needed to capture the identity of the clause-internal Phase correctly across languages, but that

the aspectual divide I have identified for English is not a universal property of languages. Rather, the size of the clause-internal Phase, if not for Phases in general, appears to be a matter of cross-linguistic variation.

1.2 Structure

This thesis is structured as follows: chapter 2 outlines the general theoretical framework that will be assumed for this thesis, with a particular focus on Phase theory in the latter half of the chapter. Since Phases are at the heart of this thesis, it is necessary to first lay out the core concepts behind this framework. Moreover, because the theory itself exists in various different permutations that have been proposed over the last decade or so, it is imperative that I explicate which assumptions of the framework will be adopted over the course of the dissertation and which not.

Chapter 3 essentially outlines the further background assumptions that will be adopted for this thesis. As the dissertation primarily concerns itself with the identity of the clause-internal Phase in light of more enriched structures, I detail here what the elaborate functional hierarchy spanning between TP and VP consists of. Furthermore, since much of the argumentation for the identity of the clause-internal Phase in later chapters is dependent upon the behaviour of non-finite auxiliaries in English, I discuss in detail the distribution of verbs in English and explore what consequences this has for theories of verb movement and inflection. Ultimately I adopt a hybrid approach to verbal inflection for English in which auxiliary verbs, whether finite or non-finite, uniformly raise in the overt syntax for inflectional feature checking whilst lexical verbs remain in situ and receive inflections via affixation under linear adjacency.

Chapters 4 and 5 provide the bulk of the empirical evidence and argumentation which leads us to the claim that progressive aspect delineates the clause-internal Phase when present in the derivation. Discussion of the data can essentially be divided into two. In chapter 4 I explore in depth the behaviour of auxiliaries in VP ellipsis, VP fronting phenomena and existential constructions in English and show how the data, when considered carefully, indicates that progressive aspect, but not perfect aspect, can project the clause-internal Phase in English. Chapter 5 abstracts away from auxiliaries and illustrates how progressive aspect in general shares properties with voice and the lexical verb to the exclusion of perfect aspect and higher functional forms, again indicating that progressive aspect constitutes part of

the clause-internal Phase in English. The empirical data covered in this chapter includes idiomatic constructions, selectional restrictions and, once again, VP ellipsis and VP fronting.

Chapter 6 returns to discussion of existential constructions in English. Existential constructions are frequently exploited throughout this thesis for various argumentations, but they are shown to be considerably complex constructions in their own right which warrant a separate chapter of their own where an in depth analysis of these sentences can be given. I show how the assumptions made already in this thesis regarding the nature of verbal inflection and the size of the clause-internal Phase can in fact fully explain two of the most curious properties of existential constructions in English: their aspectual restrictions and the distribution of the associate. This therefore provides further independent evidence for the technical claims and assumptions made throughout this thesis, in particular the proposal regarding the size of the clause-internal Phase. The analysis for the existential constructions themselves is also shown to potentially have far-reaching cross-linguistic consequences.

Chapter 7 presents a formal theory for how a variable Phase boundary can be made possible in which progressive aspect projects the clause-internal Phase when present, and vP otherwise. This chapter also explores any theoretical issues which might arise from the discussion presented in this thesis, and explores the cross-linguistic implications of my research. When the diagnostics that were used for English to identify the clause-internal Phase are applied cross-linguistically, it is shown that the structural divide between progressive and perfect aspect may not be just a language specific property of English. However, I am also forced to concede that it is not a universal property either, and that the size of the clause-internal Phase may be a source of cross-linguistic variation.

Finally, chapter 8 concludes.

2

Theoretical Background

2.1 Introduction

In this thesis the aspectual divide that I will argue to exist between progressive and perfect aspect will be defined in terms of Phase theory. That is, progressive aspect, along with the voice layer and the lexical verb, constitutes the clause-internal Phase, whilst perfect aspect constitutes part of the higher clausal Phase along with modals, TP and CP. In this chapter I explain the theoretical background assumptions that will be crucial to this thesis, with a particular focus on describing the essential mechanics of Phase theory and outlining which fundamentals of the framework will be adopted. In addition, this thesis appeals to a number of more general principles of Minimalism beyond the specifics of Phase theory, which will also be laid out in this chapter.¹

This chapter is essentially divided into two parts. The first part, section 2.2, outlines the Minimalist concepts of Numerations, Spell Out and overt and covert feature checking as originally proposed in Chomsky (1995), prior to the introduction of Phase theory. Phase theory itself is then outlined in section 2.3. Finally, section 2.4 summarises and concludes this chapter.

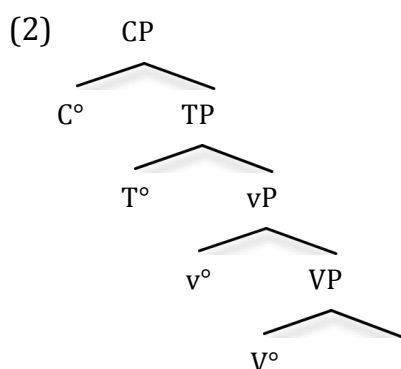
¹ This chapter is principally concerned with explaining the formal background of Minimalism and Phase theory that this thesis adopts. Therefore, discussion of the empirical data will be kept to a minimum and largely consigned to footnotes in this chapter so as to avoid too much disruption to discussion of the core theoretical concepts that underpin this dissertation. See chapters 3 onwards for more in-depth empirical debate.

2.2 Numerations, Spell Out and feature checking

One of the core assumptions of the Minimalist enterprise (Chomsky 1995) is the notion that syntactic derivations are built up from Numerations. A Numeration is an ordered set of lexical and functional items that have been selected from the lexicon to be used in the syntactic workspace. If one considers the minimal structural hierarchy of a clause: CP>TP>vP>VP, and putting aside arguments, the Numeration for such a derivation would be composed as follows:

(1) [C T v V]

The syntax procedurally Merges these items one at a time into the workspace so that a derivational hierarchy is formed:

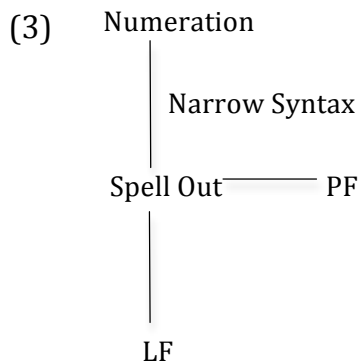


Once the Numeration has been exhausted, i.e. there is nothing left to Merge, the derivation is then shipped off for the purposes of pronunciation and interpretation.

This shipping off from the syntax is essentially known as Spell Out (Chomsky 1995). At Spell Out the syntactic hierarchy is sent independently along two different derivational paths. One path interfaces with the semantic component so that the syntactic hierarchy can be interpreted. This interface is known as Logical Form (LF). The other path interfaces with the phonological/morphological component for the purposes of pronouncing the syntactic hierarchy that has been established. This interface is known as Phonological Form (PF).

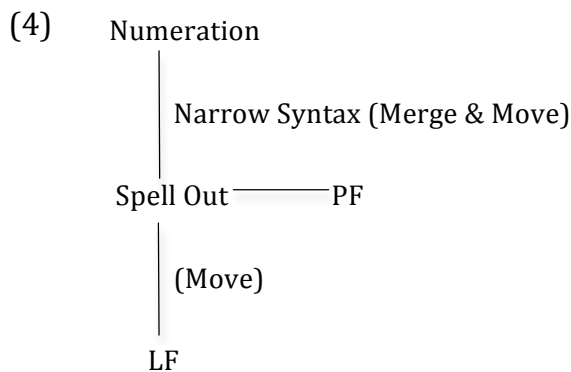
So far this conception of the derivation of the clause gives us the following components: the Numeration, where the lexical and functional items are first selected; the narrow syntax, which successive cyclically Merges the relevant items into a syntactic hierarchy which is then pronounced and interpreted at Spell Out by

PF and LF respectively. This gives rise to the following model (taken from Hornstein, Nuñez & Grohmann 2005):²



The LF branch is home to the more semantic-based operations such as computation of scope, whilst the PF branch plays host to various morpho-syntactic operations, as well as principles of linearisation (as will be discussed shortly). Operations taking place along either the PF or LF derivational branches are invisible to the other. For instance, an operation which might occur along the LF branch will be noticed by the LF interface, but not by the PF interface.

Regarding the location of the operation Move, Chomsky (1995) considers this to apply within the narrow syntax, and also at LF following Spell Out, but not along the PF branch.



² In the diagram in (3) I have not placed PF and LF on equal levels as with the more traditional T/Y-models for the reason that, as will be stated shortly, traditional movement operations do not apply along the PF branch, but they do along the LF branch. In this sense, the LF branch could be considered an extension of the narrow syntax, albeit into the covert component, whilst the PF branch could not be.

Justification for locating Move along the LF branch of the syntax but not the PF branch comes from the fact that the phonological component is traditionally assumed in the literature to not be sensitive to syntactic hierarchical dependencies, rather to the linear order of items.³ Therefore, it is claimed that linear order is imposed along the PF branch and hierarchical relationships dispensed with. In the absence of any such hierarchical order along the PF arm, operations such as Move, which operate within the context of hierarchical dependencies, are rendered obsolete. In contrast, the semantic component is taken to be sensitive to hierarchical dependencies,⁴ therefore the syntactic hierarchy is assumed to be maintained along the LF branch, where the operation Move may therefore still apply.

³ This is evidenced by the fact that lexical verbs in English do not raise in the syntax for inflections (as will be discussed in more detail in chapter 3), but appear fully inflected in their base positions. Chomsky (1957), Marantz (1988), Halle & Marantz (1993), Bobaljik (1994), Lasnik (1995c) and Baker (2003) have proposed in this case that the inflection of the lexical verb is sensitive, not to hierarchical dependencies, but to the linear order of items. That is, English lexical verbs receive inflections at PF when the lexical verb and the relevant inflectional affix are string adjacent to one another, despite there being no structural, hierarchical relationship established between the two:

(i) Jeremy TENSE *like* Sushi.

Under these conditions, the affix is able to attach to the lexical verb.

(ii) Jeremy TENSE + *like* Sushi = Jeremy likes Sushi.

When linear adjacency is disrupted via an intervening element, however, attachment of the affix to the lexical verb is blocked:

(iii) Jeremy TENSE Neg *like* Sushi = *Jeremy likes not Sushi/*Jeremy not likes Sushi.

Instead the dummy auxiliary verb *do* must be inserted to support finite inflections:

(iv) Jeremy does not like Sushi.

This shows therefore that PF is generally sensitive to linear order and not to syntactic hierarchies. The process of affixation under PF linear adjacency will be further discussed in chapter 6 of this thesis.

⁴ The sensitivity of LF to the syntactic hierarchy can be illustrated with A' reconstruction effects (see Chomsky 1977, Ledeaux 1988, Fox 1998, among others):

(i) [Which pictures of himself_i] does John_i like?

The moved *wh*-phrase in the sentence above contains the anaphore *himself*, which, under binding Condition A, must be locally c-commanded by its coreferent antecedent *John*. However, the surface order of the elements does not reflect this: *himself* precedes *John*. In order for *himself* to be appropriately c-commanded by its antecedent, the *wh*-phrase must be reinterpreted at LF in its base position as the complement of the verb *like*, crucially below the antecedent. This shows that binding conditions, which are sensitive to structural c-command relations, are operative at LF. Therefore, by extension, the syntactic hierarchy must be maintained at LF.

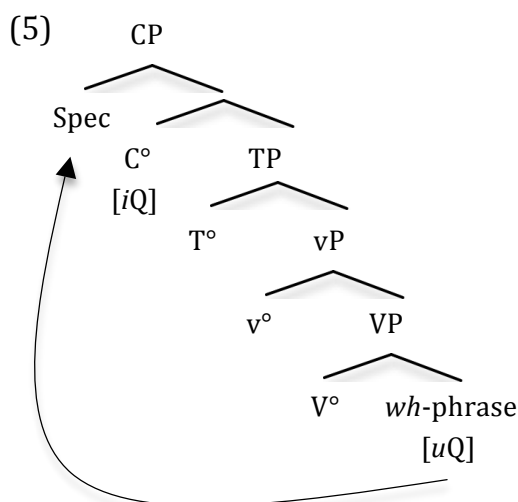
Moving on, Chomsky (1995) differentiates between those movement operations that occur before and after Spell Out using the notion of feature strength. Essentially, under the original formulation of Minimalism, there are two types of features that require checking within the syntax. There are those features which are a concern for the LF interface and so must be checked/licensed before LF, and there are those which are additionally a concern for the PF interface and so must also be licensed before PF. Those features which are only checked prior to LF are termed “weak” features, and those which must be additionally checked prior to PF are termed “strong” features. If a weak feature is not checked prior to LF, it cannot be interpreted at the LF interface, resulting in a derivational crash. Similarly, if a strong feature is also not checked prior to PF, its morphological form is not licensed for pronunciation at the PF interface, once again resulting in a derivational crash.

I deal with strong features in more detail first. As stated, these features must be checked before arrival at both PF and LF. If features are checked as a result of the operations Move and Agree, which themselves are only operable on syntactic hierarchies, then strong features cannot actually be checked along the PF branch where the syntactic hierarchy has been dispensed with. Moreover, strong features cannot be checked along the LF branch either as operations occurring on this branch are invisible to PF. This means that any strong features checked along the LF branch, whilst converging at LF, would remain unchecked at PF. Therefore, the only place where strong features can be checked in time so as to converge correctly at both PF and LF is within the narrow syntax prior to Spell Out. Crucially, if an item raises in the narrow syntax before Spell Out in order to check a strong feature, its displacement from its base position to a higher position in the syntactic hierarchy will manifest itself in the pronounced linear order of the sentence, hence such movement can be directly observed. In this sense, movement in order to check strong features can be considered to be overt.

With respect to weak features, these features can in principle be checked either in the narrow syntax prior to Spell Out, or along the LF branch following Spell Out, since they only require checking before LF and not PF. Either way, such weak features would be checked in time to converge at LF. However, Chomsky (1995) actually rules out movement for the purposes of checking weak features prior to Spell Out using the principle of Procrastinate. Procrastinate essentially states that a syntactic item which must Move in order to undergo feature checking must delay Move as long as possible. Therefore, in accordance with Procrastinate, an item which must Move to check a weak feature would wait until after Spell Out before undergoing such movement, when this operation would be situated on the LF branch. If movement to check a weak feature instead took place prior to Spell Out, this would be deemed needlessly too soon by the principle of Procrastinate, and so is

ruled out.⁵ Hence, Procrastinate forces weak feature checking to take place on the LF branch. Crucially, if movement for weak feature checking takes place on the LF branch, then the necessary displacement of the relevant syntactic item involved will not manifest itself in the pronounced linear order of the sentence, since such movement only has an effect at LF and not at PF. Therefore, movement for weak feature checking cannot be directly observed and so may be considered to be covert: an interpretative effect is obtained, though the movement that provides such an interpretation is concealed.

The strong/weak feature distinction can be directly observed when one considers differences in A'-movement in English and French. In a *wh*-question, *wh*-phrases are traditionally taken to be Merged with an unchecked [*uQ*] feature which must be checked against C's interpretable [*iQ*] counterpart, forcing the *wh*-phrase to raise to Spec-CP:



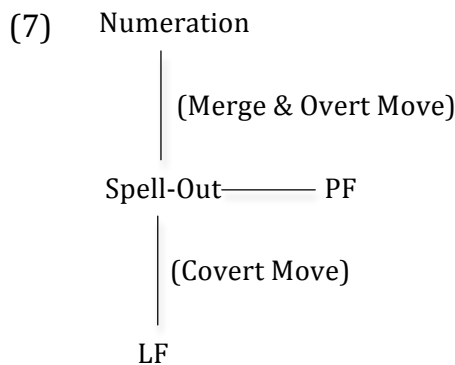
The difference between French and English in this regard is that the checking of the *wh*-phrase's feature against C° is overtly manifested in English, with the *wh*-phrase undergoing displacement to Spec-CP. In French, on the other hand, such checking of the *wh*-item against C° is not overtly realised and the *wh*-phrase remains in situ, but a *wh*-question reading is nevertheless obtained:

⁵ Note that Procrastinate is unable to delay movement for strong feature checking until after Spell Out as there would then be no opportunity for convergence at PF.

- (6) a. What can I buy t_{wh} in this shop?
 b. Tu achète-s quoi dans ce magasin?
 You buy.2SG what in this shop
 ‘What do you buy in this shop?’

This difference between English and French is often attributed to the strength of the [uQ] feature on the *wh*-phrase. In English this feature is strong, whereas in French the same feature is weak. This implies that whilst both languages must have this feature checked before arrival at LF, English additionally requires this feature to be checked before PF as well. Therefore, the [uQ] feature in English must be checked in the syntax prior to Spell Out, giving rise to overt raising of the *wh*-phrase, whilst the same feature in French is checked along the LF branch following Spell Out, giving rise to only covert raising of the *wh*-phrase.

Moving on, the diagram below essentially summarises the system I have so far discussed.



For the purpose of this thesis I will adopt these principle Minimalist assumptions.⁶

⁶ The strong/weak feature distinction was dispensed with, however, under more recent developments in Minimalism (Chomsky 2000) as it was argued that this notion was too stipulative. The subsequent replacement was the Generalised Extended Projection Principle, i.e. the Generalised EPP feature.

The EPP feature was originally proposed on T° as a feature which bore the requirement to be checked locally by a nominal element. This essentially forced subject raising to Spec-TP. Upon dismissal of the strong/weak feature distinction, the EPP feature was then generalised to all categories which underwent overt movement. Under this development it is taken that all features are essentially weak, and so therefore may be checked covertly along the LF branch. The only feature which operates otherwise is the Generalised EPP feature which is parasitic

Regarding the composition of the features, Chomsky (2000, 2001) assumes two specifications for each feature: features are valued or unvalued, and either interpretable or uninterpretable. Chomsky (2000, 2001) furthermore assumes that interpretable features are always valued, and uninterpretable features are always unvalued. In other words, uninterpretable but valued features or interpretable but unvalued features are impossible:

- (8) a. [*i*F:V] b. [*u*F:_] c. *[**i*F:_] d. *[**u*F:V]

Pesetsky & Torrego (2001) and Bošković (2011a) contest this opinion, however, claiming that there is no one-to-one correspondence of feature interpretability and feature values. That is, an interpretable feature can just as easily be unvalued as it is valued, and an uninterpretable feature can just as easily be valued as it is unvalued. Therefore, all four permutations of feature specifications are possible:

- (9) a. [*i*F:V] b. [*u*F:_] c. [*i*F:_] d. [*u*F:V]

For the purpose of this thesis I assume Pesetsky & Torrego's (2001) and Bošković's (2011a) claims to be essentially correct.

If a feature is uninterpretable it must be checked by an interpretable counterpart feature, and if a feature is unvalued it must receive a value from a fully valued feature of the same category. If a feature goes unchecked or unvalued, a derivational crash will ensue, and depending on whether the feature is strong or weak will determine whether the crash is at PF or LF. Obviously use of the term 'interpretable/uninterpretable' may be somewhat misleading as it mainly conjures

upon many of the other features, but which must be checked prior to Spell Out and can only be checked locally, therefore giving rise to overt movement.

However, the Generalised EPP feature has often been considered to be a greater stipulation than the notion of strong and weak features (see, for instance, Epstein & Seely 1999, 2006; Martin 1999; Boeckx 2000, Grohmann, Drury & Castillo 2000; Bošković 2002a, 2007), and hence may be more of a step back than a step forward for the theoretical framework. In light of this I reject the Generalised EPP feature and return to the notion of strong and weak features. The only EPP feature I will assume is the traditional EPP located on T° which demands that its specifier be filled by the clausal subject. This will be necessary when discussing existential constructions in chapter 6.

up associations with LF rather than PF, implying that all uninterpretable features are weak. This is not the case: uninterpretable features can also be strong.

This concludes our discussion of the Minimalist notions of Numerations, Spell Out and feature checking prior to the introduction of Phase theory. To sum up, I assume the following:

- Syntactic derivations are built from Numerations
- When a syntactic structure is Spelled Out, it is sent to PF and LF for pronunciation and interpretation, respectively.
- Strong features are a concern for both PF and LF and so must be checked overtly prior to Spell Out.
- Weak features are a concern for LF and are checked covertly following Spell Out.
- Features can be interpretable/uninterpretable, valued/unvalued and strong/weak.

In the following section I move on to discussion of Phase theory itself.

2.3 Phase theory

It has long been observed that certain domains appear to exist in natural language which exhibit syntactic, phonological and semantic independence from the rest of the structure surrounding them.⁷ An ongoing issue for syntacticians has been how these domains should best be captured within a syntactic framework. Various proposals have been made to explain the autonomy associated with these domains, such as the Cycle, Chomsky's (1986) Barriers model or Grimshaw's (2000, 2005) theory of Extended Projections. One of the most established current theories,

⁷ The traditional vP domain in English is often taken to be one such autonomous domain (the precise identity of which will be carefully explored over the course of this thesis). Evidenced discussed in this thesis which point to this fact involve ellipsis, fronting, idioms and existential constructions. As these phenomena will be studied at length in the chapters that follow, I refrain from any discussion of them here. See chapters 4, 5 and 6 in particular for detailed empirical analysis.

Additional evidence to this effect, but not discussed in this thesis, involve reconstruction effects, parasitic gaps and quantifier raising in antecedent-contained deletion contexts, and the nuclear stress rule (cf. Fox 1998; Nissenbaum 1998; Legate 2003; among others).

however, is that introduced as part of the Minimalist Program (Chomsky 1995), namely Phase theory (Chomsky 2000, 2001).

To capture the observed independence of certain structural domains, it is generally assumed that the syntactic derivation is built up in a series of discrete chunks of structure rather than forming the entire derivation in one go. In the earlier literature these chunks of structure were referred to as the Cycle, and the derivation of a sentence proceeded cyclically. Within Minimalism, every separate Cycle is termed a Phase. Each Phase, once complete, is sent off independently to the phonological and semantic components for pronunciation and interpretation, thereby establishing the apparent independence of these cyclic domains.

Since its initial inception, Phase theory has undergone many different permutations in the last ten to fifteen years, from Chomsky's (2000, 2001) initial claims of cyclic Spell Out, to Feature Inheritance (Chomsky 2005), cyclic linearisation (Fox & Pesetsky 2003, 2004), Phase extension (Den Dikken 2007), and Phase sliding (Gallego 2010), to name but a few.

In what follows I discuss the core concepts of Phases that are crucial to this thesis and explain which particular instantiation of the theory I will adopt. This part of the chapter is ordered as follows: Section 2.3.1 explores the notion of Sub-Numerations and how Phases are determined by these lexical sub-arrays. In section 2.3.2 I discuss phasal Spell Out and in section 2.3.3 I introduce the notion of the Phase Impenetrability Condition and the phasal escape hatch. Section 2.3.4 sums up the preceding discussion, whilst section 2.3.5 discusses one of the fundamental issues facing Phase theory at present, namely that there is no established claim as to the identity of the Phase, in particular that of the clause-internal Phase, in light of more elaborate structures. This is a further elaboration of the initial research question laid out in chapter 1.

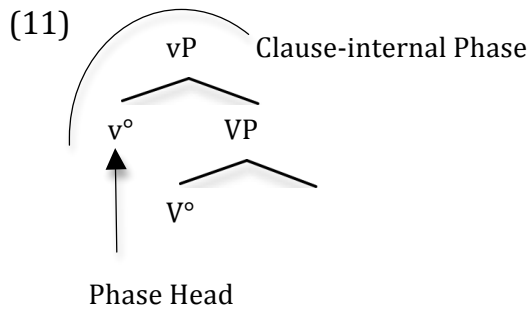
2.3.1 Sub-Numerations

Chomsky (2000) proposes that rather than the Numeration being comprised of one single set of items, it should instead be composed of smaller sets of items known as Sub-Numerations. Taking the main clausal spine as an example, Chomsky claims the requisite Numeration appears as follows:

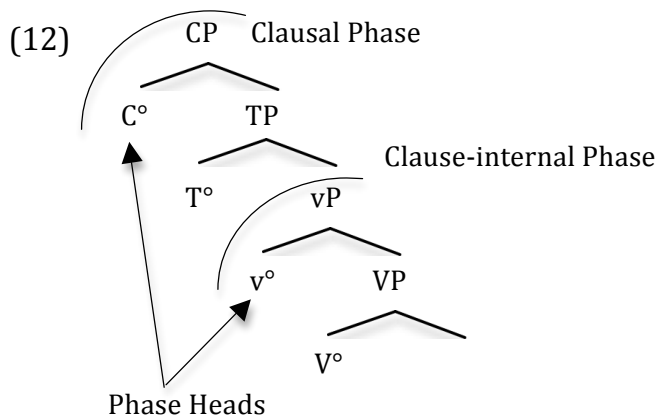
(10) [[C T] [v V]]

These Sub-Numerations are what constitute Phases. Chomsky (2000, 2001) claims that items from the first Sub-Numeration are Merged into the workspace until the

point that v° is Merged. Under Chomsky's system v° is given the special property of being the Phase Head. Merger of the v° Phase Head into the workspace tells the syntactic derivation that the Sub-Numeration is exhausted and therefore that the first Phase of the clause is complete. Therefore, the phrase that v° projects, vP , is deemed to demarcate the phasal boundary. This Phase is termed the clause-internal Phase.



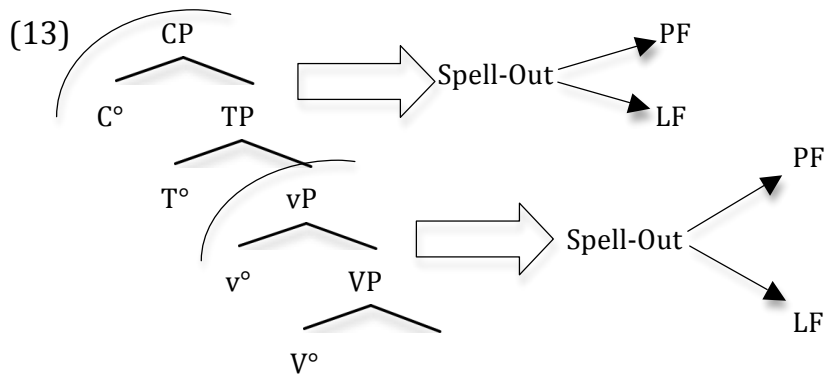
Similarly, when the second Sub-Numeration is Merged, C° is considered to act as the Phase Head of that Sub-Numeration. This implies that Merger of this item informs the syntactic component that the second Sub-Numeration is exhausted and so the second Phase is complete. The phrase that C° then projects, CP, demarcates the boundary of the higher Phase. This Phase we will term the clausal Phase.



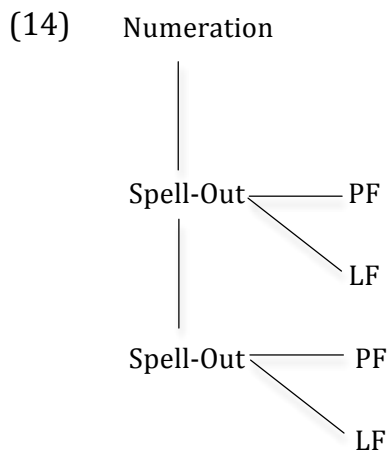
Having introduced the concept of Sub-Numerations and determined Phases in terms of these lexical sub-arrays, I move, in the next section, onto the concept of phasal Spell Out, which occurs cyclically under Phase theory.

2.3.2 Phasal Spell Out

Phases are, at some point in the course of the derivation, independently exported from the syntax and sent to PF and LF for pronunciation and interpretation respectively.⁸

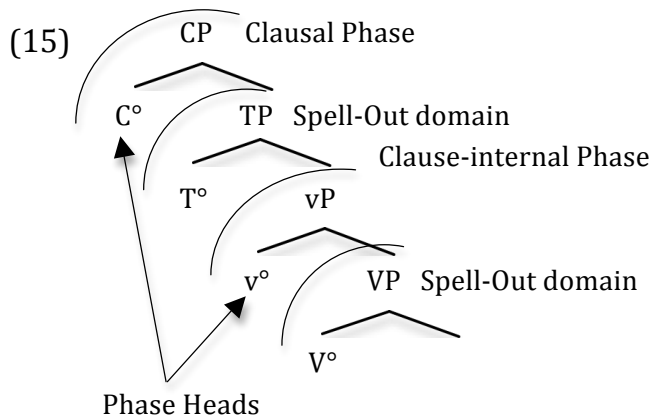


Given these assumptions, the model of Spell Out illustrated in (7) should actually be reconsidered so as to reflect this process of cyclic Spell Out:



⁸ Chomsky (2000) justifies this cyclic phasal Spell Out by claiming it is needed to reduce the computational load on the syntax. That is, if a Phase has been shipped off for pronunciation and interpretation, its syntax is frozen and hence need no longer be considered by the syntactic component, thereby reducing the amount of structure that needs to be stored in working memory.

However, Phases are not shipped off in their entirety. Rather, only the complement of the Phase Head, which is termed the Spell-Out domain or phasal complement, is actually sent to Spell Out, whilst the Phase Head and the phrase it projects remain behind in the syntax and are Spelled Out later on as part of the Spell-Out domain of the higher Phase.



Regarding the timing of Spell Out, Chomsky (2000) claims that the Spell-Out domain is shipped off from the syntax the moment that the Phase Head of that Phase is Merged. For instance, the complement of the clause-internal Phase, VP, is sent to Spell Out as soon as v° is Merged. Similarly, TP, and also the vP projection of the clause-internal Phase, since it was not shipped off as part of the first instance of Spell Out, are shipped off as soon as C° is Merged.

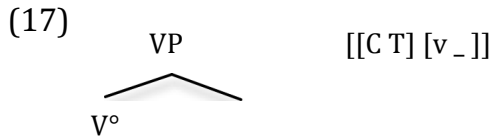
Below I illustrate a basic clausal derivation following the assumptions made so far.

- (i) The relevant lexical and functional items necessary for the derivation are selected from the lexicon by the Numeration and subsequently arranged into sub-arrays:

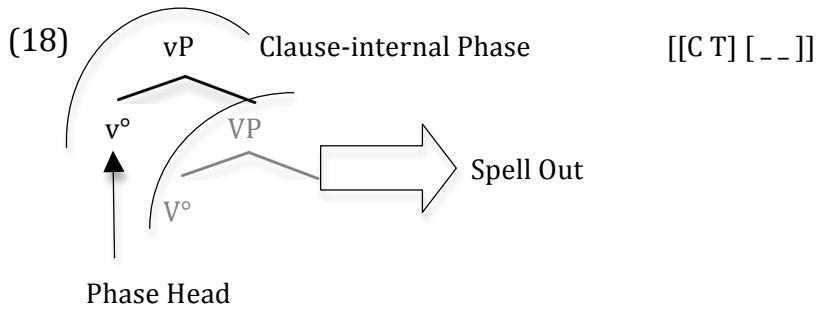
(16) [[C T] [v V]]

- (ii) V° is Merged from the first Sub-Numeration into the syntactic workspace:⁹

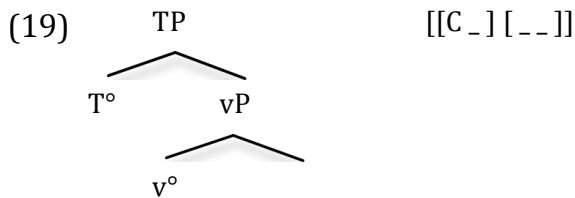
⁹ Chomsky (2000) actually claims that items are not plucked from the Sub-Numeration per se; rather they are copied onto the syntactic workspace and so still exist within the Numeration itself. Chomsky then assumes Move to actually be an instance of Merging the same item into a different position within the syntactic hierarchy, i.e., ReMerge. This process differs from how it has been presented in the diagram in (17), though for the purposes of this thesis I consider this difference a formality that needlessly complicates the story. Therefore I will put this matter aside.



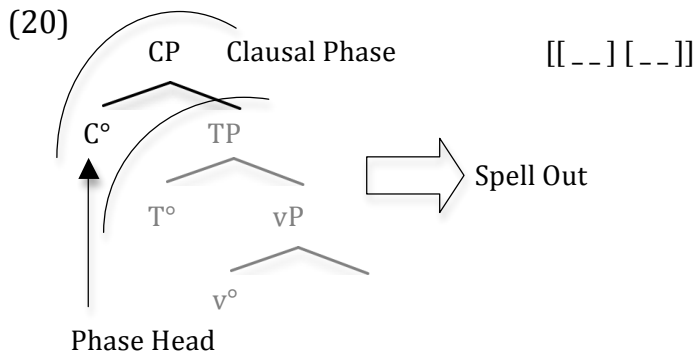
(iii) v° , the clause-internal Phase Head is Merged, therefore exhausting the first Sub-Numeration and completing the clause-internal Phase. The complement of v° , VP, i.e. the Spell-Out domain, is subsequently shipped off from the syntax for pronunciation and interpretation. vP , however, remains behind in the syntactic derivation.



(iv) With the first Phase now complete, the second Sub-Numeration can begin merging items into the workspace, first merging T° .



(v) Finally, when the C° Phase Head is Merged, the clausal Phase is complete. The complement of C° , that is, the Spell-Out domain involving TP and vP , is then shipped off for pronunciation and interpretation.



This concludes discussion of cyclic phasal Spell Out. In the following section I discuss a consequence of this system, namely the Phase Impenetrability Condition and the need for the phasal escape hatch.

2.3.3 The Phase Impenetrability Condition and escape hatches

A side effect of the system established so far is that any material contained inside the completed Spell-Out domain would be unavailable for further syntactic computations. That is, if an item has been shipped off, along with the rest of the Spell-Out domain, to PF and LF, then it is no longer visible to the syntactic component and so cannot enter into any further syntactic operations with elements outside of the Phase. This derives the opacity and apparent syntactic, phonological and semantic independence that certain domains of structure exhibit and which Phase theory set out to capture.

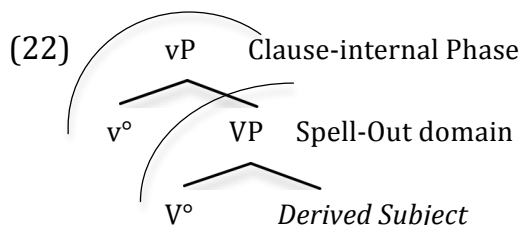
Consequently, any item Merged within the Spell-Out domain of a lower Phase that must undergo operations within a higher Phase requires some kind of escape hatch to move to so that it is able to escape Spell Out of the lower Phase and remain visible to the syntax. This would therefore allow such items to undergo syntactic operations within the higher Phase.

Since the Phase Head and the phrase it projects avoid Spell Out of the lower Phase, this provides such an escape hatch: any item which must undergo further operations within a higher Phase must proceed first via either the Phase Head or its specifier, which we will term the Phase Edge.¹⁰ Once in these positions, the relevant syntactic items escape Spell Out and remain visible to the syntactic component. This can be formalised with the Phase Impenetrability Condition (Chomsky 2000) (PIC₁) which is stated as follows:

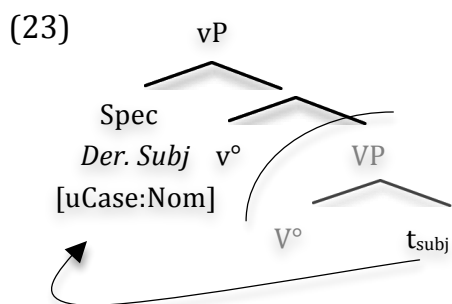
- (21) In Phase α with head H, the domain of H is not accessible to operations outside α ; only H and its edge are accessible to such operations.

¹⁰ Movement to the Phase Edge is generally taken to be overt. This actually provides further justification for why overt movement should take place prior to Spell Out as it gives the moving element an opportunity to raise to the Phase Edge and escape Spell Out. If overt movement followed Spell Out and took place on the PF branch, the relevant item would only be able to move within the Spell-Out domain itself. It would be too late to overtly raise to the Phase Edge and actually escape Spell Out.

To illustrate how this proposal works, consider the derived subject of a passivised construction. A derived subject is essentially a thematic direct object which is Merged as an internal argument, but through lack of an overt Agentive subject, ends up raising to occupy the canonical subject position. In other words, derived subjects are non-Agentive subjects which are, crucially, initially Merged in object position, as complement of V° . This is within the Spell-Out domain of the clause-internal Phase.

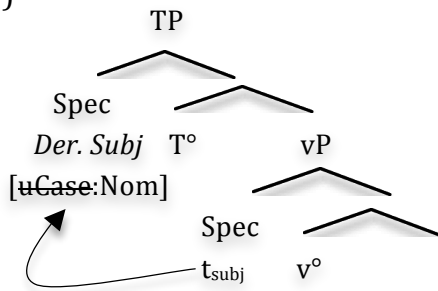


The problem here is that derived subjects, akin to Agentive subjects, are often taken to be Merged with a (strong) uninterpretable Nominative Case feature which must be checked by T° in the higher Phase. If the derived subject remains as complement of V° it will be shipped off with the Spell-Out domain of the clause-internal Phase and so will be unable to have its Case feature checked, resulting in a derivational crash. Therefore, in order to escape Spell Out, the derived subject must raise to the edge of the clause-internal Phase, Spec-vP:



In this position the derived subject avoids Spell Out of the clause-internal Phase. The clausal Phase is then constructed, which involves Merger of T° into the workspace. Upon Merger of T° the derived subject is able to raise to T° where it has its Case feature checked:

(24)



This illustrates the concept of the PIC₁ and the need for a Phase Edge.

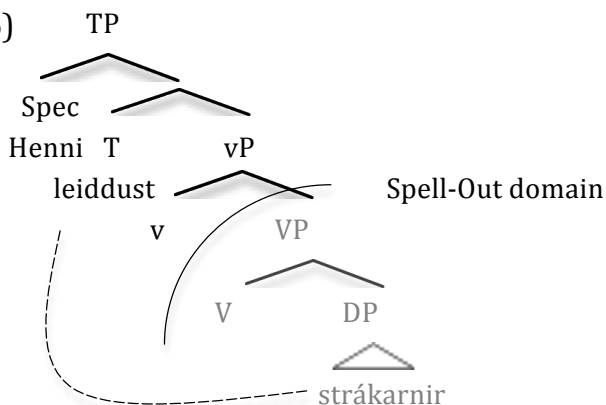
However, a problem for the PIC₁ is that it has been observed by Taraldsen (1995) and Sigurdsson (1996) for Icelandic that agreement can take place in quirky subject constructions between the finite verb and the nominative object:

(25) Henni leiddust strákarnir.
 Her_{DAT} bored_{3pl} the boys_{NOM,pl}
 'She found the boys boring'

(Sigurdsson 1996:(3))

Recall that under the PIC₁, the Spell-Out domain of the clause-internal Phase is only visible to v°. It is not visible to any probes within the clausal Phase. This means that Agree should not be able to take place between a probe in the clausal Phase, and an item in the clause-internal Spell-Out domain. However, in the Icelandic example above, the finite verb in T° is able to Agree with the nominative object which remains in-situ as the complement of V°. This is a clear case of agreement crossing the vP Phase boundary and probing deep into its Spell-Out domain, a direct violation of the PIC₁:

(26)



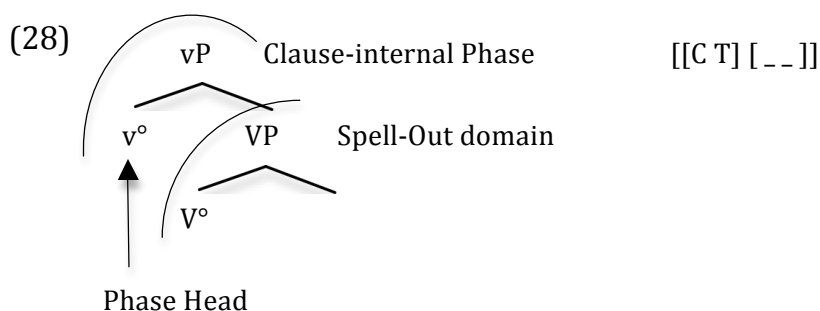
To solve this issue and allow T° to probe inside the clause-internal Spell Out domain, Chomsky (2001) adjusts the timing of Spell Out from that established under the PIC_1 . He claims a domain is Spelled Out, not upon Merger of the Phase Head immediately above it, but upon Merger of the Phase Head above that. For instance, the VP Spell-Out domain is only Spelled Out upon Merger of the C° Phase Head. This can be formalised with the revised version of the Phase Impenetrability Condition (PIC_2 , Chomsky 2001) as follows:

- (27) Given structure $[_{ZP} Z [_{XP} [_{HP} \alpha [H YP]]]]$, with H and Z the heads of Phases – The domain of H is not accessible to operations at ZP; only H and its edge α are accessible to such operations.

The result of this is that the Spell-Out domain of the clause internal Phase remains part of the syntax at the point at which T° is Merged. Therefore T° is able to probe inside the clause-internal Spell-Out domain and agree with the object as in Icelandic, so long as C° has not yet been Merged. Upon Merger of C° the clause-internal Spell-Out domain is shipped off from the syntax and frozen for the purposes of further syntactic computations.¹¹

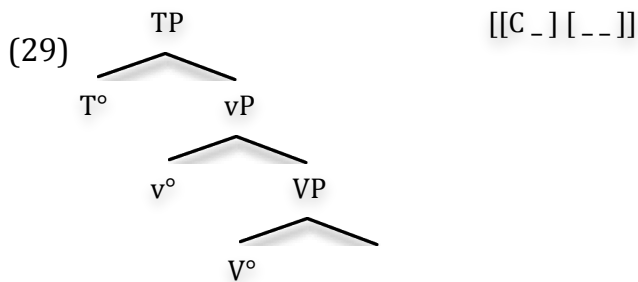
I illustrate here, using a basic clausal derivation, precisely how the PIC_2 operates:

- (i) V° and v° are procedurally Merged into the workspace. Merger of the v° Phase Head completes the Phase but Spell Out of the phasal complement does not yet occur:

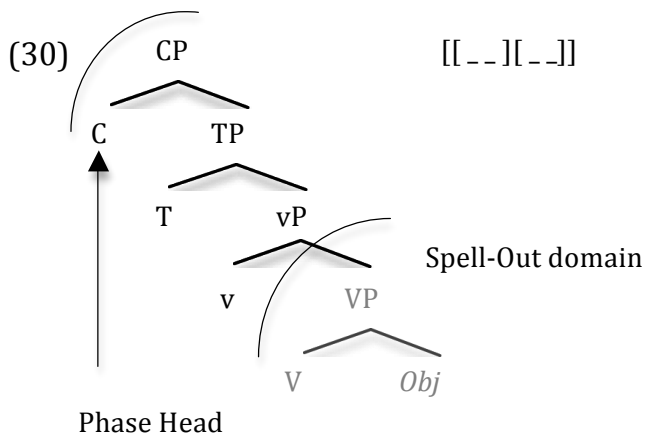


¹¹ As has been pointed out by Bošković (2007), Stjepanovic & Takahashi (2001), McGinnis (2004), Nevins (2004), Legate (2005) and Lee (2003), however, various languages sometimes permit agreement across multiple Phase boundaries. This is a direct violation of even the PIC_2 and begs the question of whether Agree is constrained by Phase boundaries at all. Bobaljik & Wurmbrand (2005) have in fact claimed that whilst Move is constrained by Phases, Agree is not.

- (ii) Items from the second Sub-Numeration begin merging into the derivation, with T° first. Because the clause-internal Spell-Out domain remains part of the syntax, it is visible to T° :



- (iii) Finally, Merger of the C° Phase Head completes the clausal Phase and triggers Spell Out of the clause-internal Spell-Out domain. VP is therefore frozen for any further syntactic computations.¹²



¹² A more recent development in Phase theory is the feature inheritance model proposed in Chomsky (2005). Under this approach it was assumed that only Phase Heads could be Merged bearing features which could then be passed down (inherited) to non-Phase Heads below it. The most typical example of this is T° , a non-Phase Head, inheriting its unchecked phi-features from C° . However, the fundamental problem with this approach, as pointed out by Richards (2007) is that it essentially returns us to the PIC_1 and the empirical inadequacy that that condition entails.

Consider, with the PIC_2 it was made possible for T° to probe inside the clause-internal Spell-Out domain by delaying Spell Out of this domain until Merger of C° . Therefore, T° could Agree with the object in-situ, as in Icelandic, so long as Agree took place between these two items before Merger of C° . Under feature inheritance, however, T° inherits its $[u\phi]$ features, necessary for T° to probe into the clause-internal Spell-Out domain, from C° . Therefore, T° does not receive such features until C° is Merged, which instantly triggers Spell Out of the clause-internal Spell-Out domain, rendering such a domain opaque to T° . Therefore, it is no longer possible for T° to probe the object in-situ, as in Icelandic.

Due to this disadvantage I will not assume the feature inheritance model and instead adopt the PIC_2 as formulated in Chomsky (2001).

2.3.4 Summing Up

This concludes the basic background of Phase theory that this chapter has largely set out to explain. In sum, I will assume in this thesis that Phases are essentially determined by their Sub-Numerations, and that phasal domains are independently sent to Spell Out, adopting the cyclic Spell Out model in (14). I also assume the PIC₂ to essentially be correct, though I acknowledge, as discussed in footnote 11 that there are empirical shortcomings even with this approach.

However, I will also take issue with certain aspects of the theory as it currently stands. First and foremost, over the course of this dissertation I will challenge the claim that C° and v° are the only elements that may act as Phase Heads within the clausal spine, and argue that the clause-internal Phase, when considered in light of more elaborate structures, can be somewhat larger than just vP (see the following section). In chapter 4 I also take issue with the claim that only phasal complements can be sent to Spell Out and argue that full phasal Spell Out is also a possibility.

In the following section I discuss an important theoretical problem for Phase theory which will act as the background research question for this thesis.

2.3.5 Theoretical issue: phases and enriched structures

The identity of phasal boundaries has mostly been considered in light of minimal CP-TP-vP-VP structures, as typified by the discussion throughout this chapter.¹³ But what happens if we look at Phases in light of more articulated structures? Consider, for instance, the sentence below:

(31) Betsy must have been being paid to keep quiet about the crime.

Tenny 1987, Kayne 1993, Cinque 1999, 2004, Iatridou, Anagnostopoulou & Izvorski 2001, Bjorkman 2011 and Bošković *to appear* a (among others), claim that in sentences such as this, a more detailed structure intervenes between TP and vP involving a number of aspectual projections (see the following chapter where I make clear exactly what I take this more elaborate structure to be). Phases are rarely explored in the context of these more enriched hierarchies, and on the few occasions

¹³ See, however, Rizzi (2005) and Kidwai (2010) for considerations of Phase theory in terms of a cartographical framework.

that they have been considered, a number of contrasting views have arisen as to where the clause-internal Phase boundary lies.

The most standard assumption is that the entire range of aspectual projections are simply part of the clausal Phase (Chomsky 2000, 2001) and have no actual effect on the identity of the clause-internal Phase at all. This implies that Phases are rigid, in that the identity of each Phase cannot be influenced by the syntactic environment. As Bošković (*to appear a*) has pointed out, however, Phases were partly introduced as a replacement to the Barriers framework, which sought to provide a formal account for why various domains of syntax were autonomous from the surrounding syntactic environment. The advantage of the Barriers framework is that it was context sensitive. That is, these independent domains of structure could vary in size and, depending on the syntactic context, did not necessarily always have to be rendered opaque to the surrounding syntax. In light of this, the inflexibility of Phase theory that Chomsky (2000, 2001) advocates poses a distinct disadvantage to the current framework. Indeed, there has been a growing body of literature which argues, both theoretically and empirically, that Phases should be sensitive to the syntactic environment (Bobaljik & Wurmbrand 2005; Bošković 2005, *to appear a,b*; den Dikken 2007; Despic 2011; Gallego & Uriagereka 2007a,b; M. Takahashi 2010, 2011; Wurmbrand 2012b, *to appear b*).¹⁴ Given this, it may be wrong to assume, especially without any detailed empirical study, that the auxiliary or aspectual phrases arranged between VP and TP would have no effect upon the identity of the clause-internal Phase.

Alternatively, several authors assume that the entire range of aspectual projections may constitute separate clause internal Phases (Butler 2004; Henry & Cottell 2007; Deal 2009) or, pushing this idea to the extreme, that every single phrase which projects into the syntactic workspace constitutes a separate Phase (see Bošković 2002, Boeckx 2003, 2007, Boeckx & Grohmann 2007, Epstein & Seely 2002, Fox & Lasnik 2003, Lahne 2008, Manzini 1994 and Müller 2010, 2011 for relevant discussion). This is termed the “every phrase is a Phase” approach. The problem with this proposal in particular, however, is that Phase theory, like the Cycle and the Barriers framework before it, was introduced to explain the existence of certain independent domains of structure. If every phrase acts as a separate Phase, then no projections are special, and we lose the tool that allows us to distinguish independent structural domains.

¹⁴ See, for instance, the Phase extension and Phase sliding approaches of Den Dikken (2007) and Gallego (2010), respectively.

An alternative proposal is that of the dynamic Phase approach, as proposed by Wurmbrand (2012b, *to appear b*) and Bošković (*to appear a,b*). These authors claim that the size of Phases in general can vary depending on what functional projections are present in the underlying derivation. Regarding the size of the clause-internal Phase, the above-mentioned authors claim this can extend beyond vP to include the aspectual phrases when they project. Specifically, they assume that both progressive and perfect aspect may constitute part of the one clause-internal Phase when they are present, therefore extending the upper boundary of the clause-internal Phase so as to include these aspectual layers. This proposal will be discussed in more detail in chapter 4.

Essentially, then there are three competing viewpoints: enriched structures have no effect on the identity of the Phase whatsoever and the phasal boundary remains as originally postulated; enriched structures introduce additional Phase boundaries; or enriched structures can extend the size of the Phase. In short, no consensus has been reached as to what effect, if any, a more elaborate hierarchical structure has on the identity of the Phase.

This thesis attempts to address this problem, in particular with relation to the identity of the clause-internal Phase. That is, in this dissertation I aim to explore the issue of where the clause-internal Phase boundary lies in light of more complex structures. The approach taken will be that the clause-internal Phase boundary, which under standard minimalist assumptions is vP, may extend as far as the progressive aspectual layer when such projections are present in the structure. Perfect aspect, on the other hand, is always contained within the higher clausal Phase, along with modals, TP and CP. This proposal will be formalised by claiming that the last Merged item from a Sub-Numeration acts as the Phase, whatever that last Merged item may be. By taking progressive aspect to be contained within the same Sub-Numeration as the lexical verb, but not perfect aspect, this allows for a variable Phase boundary in which progressive aspect, when present in the derivation, acts as the clause internal Phase instead of vP. This proposal will be motivated empirically by the peculiar properties that the English progressive aspect exhibits in relation to VP ellipsis, fronting phenomena, existential constructions and idioms. The formal approach to Phases offered in this thesis will be termed the “Variable Phase” approach, which is presented in chapter 7. In general, this approach should be considered to sit in line with the dynamic approach to Phases, although I differ from the advocates of this approach by claiming that progressive aspect, but not perfect aspect, constitutes part of the clause-internal Phase.

2.4 Summary

To summarise this chapter, I assume the following theoretical background:

- Phases are comprised of Sub-Numerations.
- Phasal complements/Spell-Out domains are independently shipped off and sent to PF and LF for pronunciation and interpretation.
- Spell Out occurs upon Merger of the higher Phase Head, in accordance with PIC₂.
- If an item still has features to check, it raises to the Phase Head or Phase Edge to escape Spell Out.
- Features can be interpretable/uninterpretable, valued/unvalued and strong/weak.
- Strong features are a concern for both PF and LF and so must be checked overtly prior to Spell Out.
- Weak features are a concern for LF and are checked covertly following Spell Out along the LF branch.

The aspects of Phase theory I take issue with are the following:

- the claim that C° and v° are the only elements that may act as Phase Heads within the clause. Instead I argue that the clause-internal Phase, when considered in light of more elaborate structure, can be somewhat larger than just vP.
- the claim that only phasal complements can be sent to Spell Out: I argue that full phasal Spell Out is also a possibility.

In the following chapter I put aside Phase theory in order to explain the background assumptions regarding the structure of the middle field in English and the behaviour of non-finite auxiliaries, which will be crucial for the empirical analysis presented in chapter 4 onwards.

3

Auxiliary Raising and the Structure of the Middle Field

3.1 Introduction

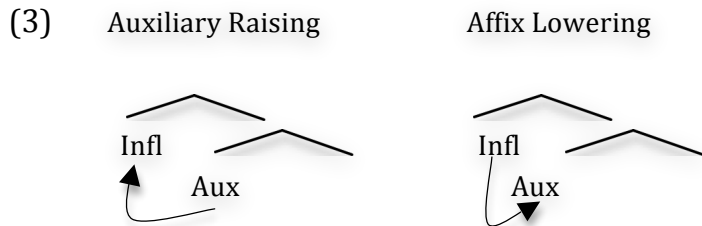
In this chapter I abstract away from Phase theory and outline a number of additional background assumptions that underpin the majority of this thesis. As stated in the previous two chapters, the main hypothesis of the thesis is that, assuming an articulated middle field with functional projections which encode aspect, there is a structural divide between progressive and perfect aspect in English. That is, the progressive aspectual layer together with all those projections below it constitutes a discrete unit of syntactic structure, which I will define as a Phase, to the exclusion of perfect aspect and all projections above that. As will be demonstrated, much of the evidence for this divide stems from the behaviour of non-finite auxiliaries in English, which itself is determined by the positions that such auxiliaries occupy within the functional hierarchy of the middle field. The goals of this chapter therefore are twofold. First, to establish a basic functional hierarchy of the middle field in English on which the discussion will be based, that is, to establish the range of functional projections between TP and VP which are required to account for the distribution of aspectual auxiliaries in English. The second aim is to provide an account for the syntactic distribution of English auxiliary verbs which the analyses presented in the following chapters can build off. Due to the rich debate in the generative literature on the syntax of auxiliaries, (Akmajian & Wasow 1975, Emonds 1978, Akmajian, Steele & Wasow 1979, Pollock 1989, Chomsky 1993, Lasnik 1995c, Roberts 1998, Bjorkman 2011, Rouveret 2012), this latter issue will consume the majority of the discussion in this chapter. In the following sub-section I expand on the issue of auxiliary distribution that this chapter will largely be concerned with.

3.1.1 Auxiliary verbs

It is largely accepted that finite lexical verbs in English are unable to raise to T° for inflection and instead have finite inflections somehow lowered onto them. Finite auxiliary verbs, however, do raise to T° for inflection (Emonds 1978; Pollock 1989; Kayne 1993). This is evidenced in Pollock (1989) by two basic facts: (i) finite auxiliaries precede the marker of sentential negation *not*, which is considered to be Merged directly below T°, whereas lexical verbs do not (see (1)), and (ii), finite auxiliaries undergo Subject Auxiliary Inversion (SAI), which is considered to involve T° to C° movement, whereas lexical verbs do not (see (2)). When only a lexical verb is present in such contexts, dummy *do* must be inserted into T° to support finite inflections in place of the lexical verb:

- (1)
- a. Cinderella might not go to the ball.
 - a'. * Cinderella not might go to the ball.
 - b. Cinderella has not gone to the ball.
 - b'. * Cinderella not has gone to the ball.
 - c. Cinderella is not going to the ball.
 - c'. * Cinderella not is going to the ball.
 - d. Cinderella was not taken to the ball.
 - d'. * Cinderella not was taken to the ball.
 - e. Cinderella is not a pumpkin.
 - e'. * Cinderella not is a pumpkin.
 - f. * Cinderella went not to the ball.
 - f'. Cinderella didn't go to the ball.
- (2)
- a. Where will Cinderella go?
 - a'. * Where Cinderella will go?
 - b. Where has Cinderella gone?
 - b'. * Where Cinderella has gone?
 - c. Where is Cinderella going?
 - c'. * Where Cinderella is going?
 - d. Where was Cinderella taken?
 - d'. * Where Cinderella was taken?
 - e. Why is Cinderella so sad?
 - e'. * Why Cinderella is so sad?
 - f. * Where went Cinderella?
 - f'. Where did Cinderella go?

If finiteness is in some way the trigger for auxiliary movement to T° (and beyond), the question arises: what happens with non-finite auxiliaries, i.e. *have*, *be*, *been* and *being*? Do these also raise to a functional head to combine with their aspectual inflections in a way similar to their finite forms, or, assuming each auxiliary has its own independent Merge position, do they remain in these base positions and have their inflections somehow lowered onto them, similar to the lexical verb? These two options are schematically presented below:



It is this debate of whether we have affix lowering or auxiliary raising which this chapter will largely focus on.¹

The two analyses make starkly different predictions regarding the positions in which auxiliaries surface, as detailed in section 3.3 below. It is shown in section 3.4 that those predictions made by the auxiliary raising approach are confirmed by the empirical data, whereas those made by the affix lowering analyses are not. Specifically, we will see that there is a distributional difference observed across ellipsis, fronting and existential constructions within Standard English in which the auxiliaries *be* and *been* behave differently from *being*. These facts are easily captured by an auxiliary raising analysis, but not by affix lowering accounts. In light of this evidence, I develop an auxiliary raising analysis in which movement is motivated via Agree, but which differs from the more standard Probe-Goal implementations (Chomsky 2000, 2001) in that the movement of the auxiliary is driven by a featural deficiency on the moving element itself, along the lines of Bošković (2007).²

¹ Affix lowering and auxiliary raising are not, however, the only two analyses available. See Sag, Wasow & Bender (2003), for instance, for an HPSG analysis. See also Schütze's (2003) and Cowper's (2010) auxiliary insertion theory, which I discuss in section 3.7.5.

² A few provisos are in order. First observe that the focus of this chapter is on how non-finite auxiliaries behave in the inflectional system of English. The issue of the distribution of the lexical verb and how to derive that will take less prominence, and will be reserved until section 3.7.2. The aim furthermore is only to discuss the distribution of auxiliaries, and not the reason for the presence of such verbal items in natural language. A number of works cited, in particular

The remainder of this chapter is organised as follows: section 3.2 outlines my assumptions concerning the structure of the aspectual hierarchy in English. Section 3.3 discusses the two fundamental approaches to the English auxiliary inflectional system, namely the affix lowering account (Chomsky 1957; Marantz 1988; Baker 1991; Halle & Marantz 1993; Bobaljik 1994; Adger 2003; Bruening 2010; Bjorkman 2011; Wurmbrand *to appear* a) and the auxiliary raising account (Emonds 1978; Pollock 1989; Chomsky 1993; Kayne 1993; Lasnik 1995c; Iatridou, Anagnostopoulou & Izvorski 2001; Bošković *to appear* a). Section 3.4 then presents the major empirical disadvantages that arise for the lowering analyses, namely the distributional distinction between *be* and *been* on the one hand, and *being* on the other. This distinction is discussed further in section 3.5 which explores the various analyses that have been suggested in the literature, both from an affix lowering and an auxiliary raising perspective, to account for the data. I conclude that empirically, an account according to which all auxiliaries uniformly raise for inflectional purposes is best suited for explaining the data. In light of this, an Agree-based auxiliary raising account is developed in section 3.6, in which the movement of the auxiliary is motivated by a featural deficiency on the auxiliary itself. Before concluding in section 3.8, section 3.7 discusses a number of further issues, namely alternative accounts for the English auxiliary inflectional system, how the lexical verb behaves under the proposed analysis and why no apparent distributional distinction exists between *be* and *been*.

3.2 The articulated structure of the middle field

It has been observed by a number of authors (among others, Akmajian & Wasow 1975, Tenny 1987, Cinque 1999) that the auxiliary and inflectional system universally exhibits a rigid ordering of Modal > Perfect > Progressive > Passive > Lexical Verb. This ordering is illustrated for English in (4):

- (4) Cinderella could have been being hassled by her stepsisters.

Bjorkman (2011), go some way towards explaining the purpose of auxiliaries in natural language, and I refer the interested reader to her work.

Any divergence from this hierarchy results in ungrammaticality:

- (5) a. * Cinderella could be having been hassled by her stepsisters.
b. * Cinderella has could be being hassled by her stepsisters.
c. * Cinderella is could have been hassled by her stepsisters.

The Minimalist Program (Chomsky 1995) typically assumes the following basic hierarchy for the clause:

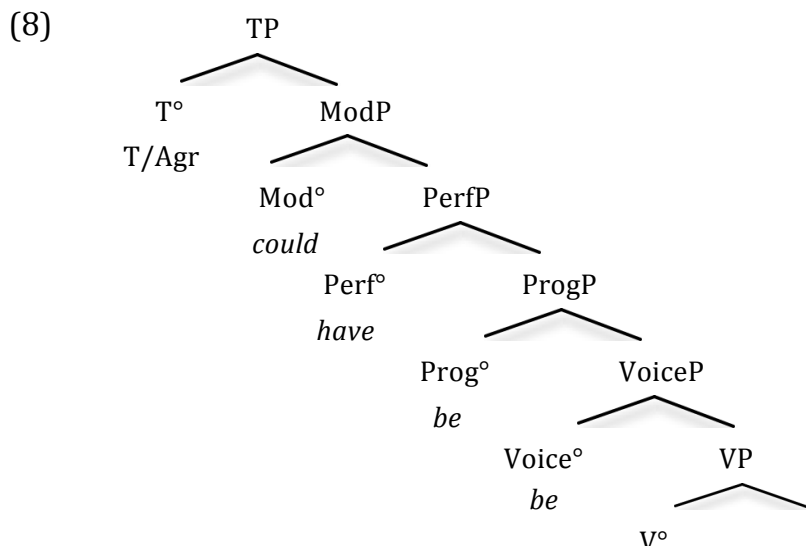
- (6) CP>TP>vP>VP

However, given the data such as (4), and assuming that auxiliary verbs, like lexical verbs, head their own phrases, this structure is untenable and a number of additional projections must be posited between TP and VP to host these items. Based on the work of Tenny (1987), Cinque (1999) and Bjorkman (2011), we are led to postulating that at least the following basic hierarchical structure is needed for the English auxiliary system:³

- (7) TP>ModP>PerfP>ProgP>VoiceP>VP

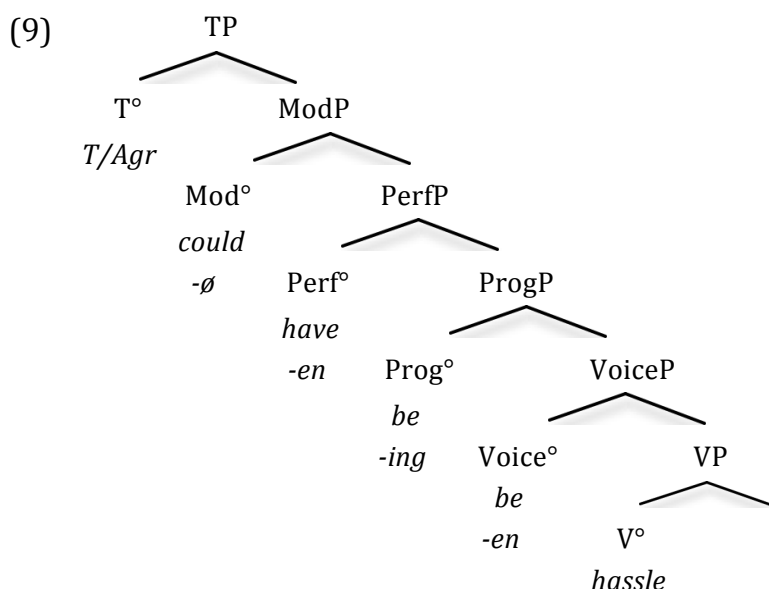
The lexical verb is Merged in V° , passive *be* in $Voice^{\circ}$, progressive *be* in $Prog^{\circ}$, perfect *have* in $Perf^{\circ}$, modals in Mod° and Tense/Agreement inflections in T° . Given that passive *be* and copula *be* are in complimentary distribution, I take copula *be* to be Merged in $Voice^{\circ}$ as well (Baker 1997; Eide & Åfarli 1997; Bowers 2002), though this is not crucial for the purposes of this thesis. I furthermore assume that the relevant aspectual or modal interpretations of the clause are encoded into the heads of these phrases: so, for instance, the presence of $Perf^{\circ}$ encodes perfectivity.

³ Similar arguments can be made in favour of replacing the original VP by an articulated VP (see Ramchand 2008) and in favour of replacing CP by an articulated left periphery (see Rizzi 1997).



For the sake of simplicity, I refer to the projections between TP and VP as ‘aspectual’ projections, even though ModP, the projection associated with modal auxiliaries, is not typically considered an aspectual projection.

Obviously, the auxiliaries are themselves also associated with inflectional morphemes: modals introduce null $-\emptyset$ infinitival inflections, perfect *have* introduces the *-en* inflection, progressive *be* the *-ing* inflection and passive *be* the *-en* inflection. For the time being I assume these aspectual affixes are also Merged into the heads of the aspectual projections with which they are associated. This is illustrated in (9):



This is a fairly rudimentary hierarchy, and, depending on the stance one takes, there can be more or less structure posited between TP and VP. Cinque (1999), for instance, assumes a highly elaborated functional hierarchy to exist which consistently projects in the underlying derivation, whereas Bošković (*to appear* a)

assumes a hierarchy only slightly more enriched than the one above, but in which the modal and aspectual projections are only present if expressed by the clause. The representation in (9) is revised in later sections,^{4,5} though for now this diagram will suffice to summarize the basic structural hierarchy that this chapter will be concerned with.

Before going any further, it is worth motivating the presence of one particular phrase, namely, ModP. Whilst most of the other projections postulated here are assumed in the relevant literature (Tenny 1987; Cinque 1999; Bjorkman 2011), there has been some debate as to whether ModP actually exists, or whether modals are instead inserted directly into T°. This is due to the fact that certain modals, which are themselves scope-taking items, are unable to scope below negation, as Roberts (1998) notes for deontic *must*. In the sentence below, for instance, there is but one possible interpretation, namely that in which the modal outscopes the negative element:

- (10) You mustn't do that
- You are obliged not to do that. (Mod > Neg)
 - # You are not obliged to do that. (Neg > Mod)
- (Roberts 1998:(7))

Linearly, the modal precedes the negation marker *not*. Assuming that TP is headed by the modal, and that this immediately dominates NegP, which hosts negation (Pollock 1989), the relevant scopal reading, Mod > Neg, can easily be read off of the overt structure.

- (11) [TP *must* [NegP *not* ...

However, on the assumption that the modal is initially Merged in ModP, below NegP, and that it moves to T°, above NegP, we would predict that the option should be available of privileging the modal at LF from its base position, crucially below the negative element.

⁴ In section 3.6, when discussing the auxiliary raising analysis in detail, I revise the hierarchy in (9) so as to include vP shells, in the heads of which auxiliaries are base generated rather than in the aspectual projections themselves.

⁵ In section 3.7.4 I explicitly adopt What You See Is What You Get.

(12) [TP *must* [NegP *not* [ModP t_{must} ...

As (10) shows, however, such inverse scope relations are unavailable to *must*. If the modal cannot be interpreted below the negative element, this suggests that such modals were never Merged below NegP in the first place and *must* instead have been directly Merged into T°.

Of course, this may be true for a narrow set of modals such as deontic *must*, but as Roberts (1998) observes, this isn't the case for most other modals. Modal verbs such as *may* and *can* are indeed able to scope below negation. Consider, for instance, the two sentences below. With each sentence, two possible interpretations are available, one in which negation outscopes the modal, and one in which the modal outscopes negation.

- (13) a. Cinderella could not have gone to the ball.
- It is possible that Cinderella is not at the ball. (Mod > Neg)
- It is not possible that Cinderella is at the ball. (Neg > Mod)
- b. Cinderella may not go to the ball.
- Cinderella does not have to go to the ball. (Mod > Neg)
- Cinderella is not allowed to go to the ball. (Neg > Mod)

In order for the modals in (13)a and (13)b, which again surface in T° above negation, to be able to scope either above or below the negative element, the option must be available of privileging the modal at LF from either its surface position, or from a lower copy that is below the negative element. The only way in which it is possible for such a lower copy to exist is if these modals were originally Merged below negation in the first place, and subsequently raised above it. Therefore it seems reasonable to posit a ModP below TP and NegP in which the majority of modals may be initially Merged. Obviously certain modal verbs such as deontic *must* need not be Merged in this projection, but it appears to be a required Merge position for many other modals.

Having established a hierarchy from which to work, section 3.3 presents an outline of the two fundamental analyses that have been proposed for the English auxiliary inflectional system.

3.3 Analyses of the auxiliary inflectional system

Observe in the sentence in (4) (repeated below as (14)) that the aspectual inflections that auxiliaries introduce are in fact dissociated from such auxiliaries and instead surface on the verb they immediately dominate. For instance, the perfect morpheme *-en*, which originates in the head Perf with the corresponding auxiliary *have*, does not actually inflect *have* itself but instead ends up on the auxiliary immediately below it. If the entire aspectual hierarchy is realised as in (14), for instance, the perfect inflection would surface on the progressive auxiliary *be*.

(14) Cinderella could have *been* being hassled by her stepsisters.

There are essentially two ways in which the morphemes resident in one head can be thought to combine with a verb in a lower head: either the morpheme lowers onto the lower head, so for instance, perfect *-en* lowers onto progressive *be*, or alternatively, the auxiliary that will host the relevant morpheme is raised: so, for instance, progressive *be* moves to *-en*. The former can be summarized as ‘affix lowering’ and the latter as ‘verb raising’ or ‘head raising’.

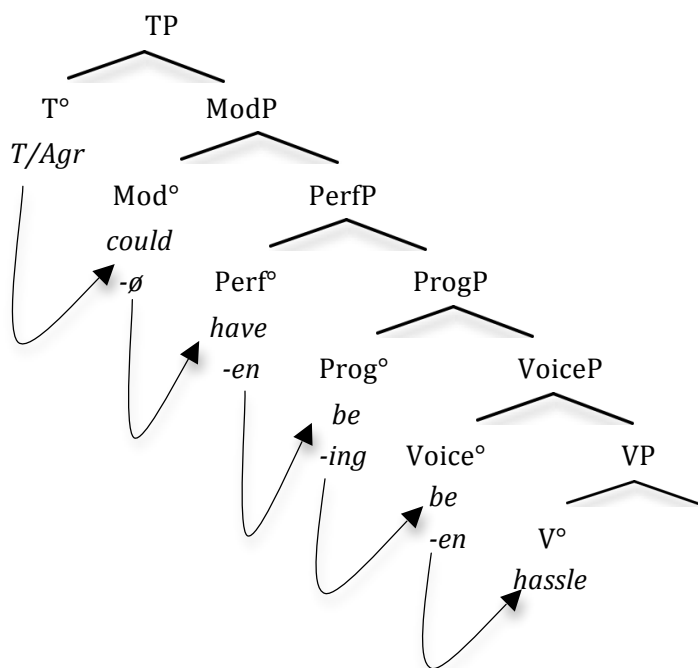
In the following two sections I explain these two different analyses.

3.3.1 Affix Lowering

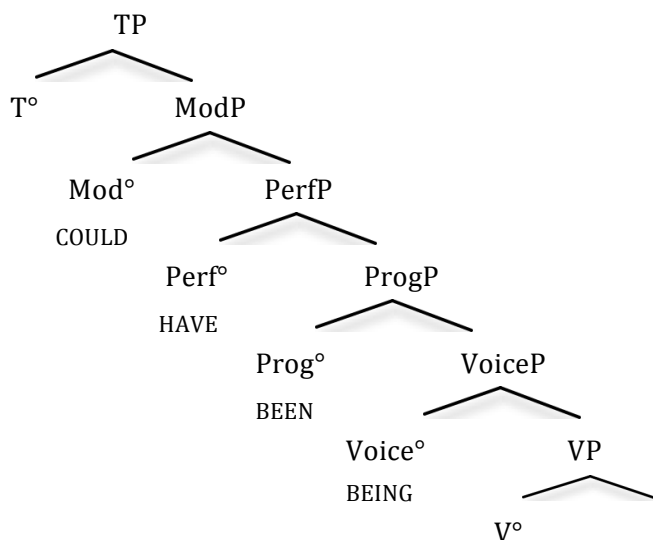
In Chomsky’s (1957) original formalisation of the English verbal inflectional system, he conjectured that aspectual inflections surface one position lower than the heads in which they are initially Merged, attaching to the following auxiliary or lexical verb. This led to the proposal that verbal inflections are lowered onto the verbs. This mechanism came to be known as Affix Hopping. The diagram in (15) represents the Affix Hopping process itself, whilst the diagram in (16) represents the result of this process.⁶

⁶ Chomsky’s (1957) original version of Affix Hopping actually took place over a linear structure. Updated versions of this proposal, such as Akmajian & Wasow (1975), transferred Affix Hopping to hierarchical structures as in (15).

(15)



(16)



However, with the development of a more principled theory of syntactic operations, under which construction specific transformations such as ‘affix hopping’ were replaced by operations governed by more general principles of grammar, the movement derivation illustrated in (15) became untenable. The development of trace theory in particular (Chomsky 1973, 1981) led to the postulation of the Empty Category Principle (ECP) (Chomsky 1981, 1986; Rizzi 1990) according to which traces of moved elements must be c-commanded by the moved element itself. The phenomenon described above as Affix Hopping, i.e. the movement of the inflection as illustrated in (15), is no longer conceived of as a construction specific transformation but is seen as an instantiation of head-movement, and is governed by the same principles that regulate phrasal movement. All things being equal, if the movement of

the inflection in (15) creates a trace or a copy, i.e. an empty category, then this too is subject to the condition that it be c-commanded by the moved element. The c-command condition is not fulfilled in (15) in which in fact it would be the trace of the moved morpheme that c-commands the moved morpheme itself. All things being equal, the result of Affix Hopping is a clear violation of the ECP.

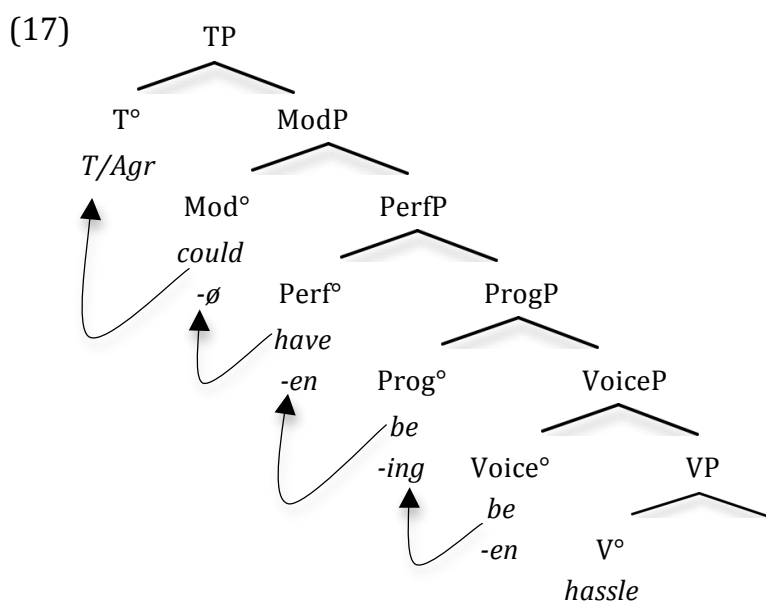
Due to this conceptual flaw, the Affix Hopping approach has been replaced by more theoretically appealing methods such as the Reverse Agree approach (Adger 2003; Bjorkman 2011; Wurmbrand *to appear a*), selection theory (Baker 1991; Bruening 2010) or PF Merger under adjacency (Marantz 1988; Halle & Marantz 1993; Bobaljik 1994; Embick & Noyer 2001). These accounts achieve the same effect as Chomsky's (1957) Affix Hopping model, but without recourse to actual downward head movement, therefore no ECP violation results. For ease of exposition I do not go into the detail of these analyses and instead refer the interested reader to the above references. What is crucial for the purposes of this chapter, is that all of the above mentioned approaches allow verbs and auxiliaries to receive inflections in their base positions, giving rise to the representation shown in (16) in which verbs and auxiliaries themselves do not move.

An issue for all affix lowering accounts, whatever the precise implementation, concerns the fact that, as already illustrated in (1) and (2), auxiliaries must raise to occupy T° when finite (Emonds 1978; Pollock 1989). If all auxiliaries receive inflections in their base positions, as the affix lowering accounts claim, then how can the finite forms of the auxiliaries eventually surface in T° ? To answer this question, advocates of the affix lowering approaches posit that after receiving inflections from T° , the finite auxiliary undergoes head movement to T° . The major problem is that this raising is at first sight unmotivated because the finite auxiliary has already received finite inflections from T° through affix lowering. The authors therefore postulate that some extra requirement forces the inflected auxiliary to move to T° . This may take the form of some verbal equivalent of an EPP feature on T° (Nunes & Zocca 2005, 2009; Bjorkman 2011; Wurmbrand 2011). The original EPP feature on T° was responsible for forcing the subject nominal to move to the TP specifier. This was often thought of in terms of a nominal feature on T° . To force the auxiliary also to move to T° , it might be envisaged that there is also an EPP requirement on T° that forces movement to its head. Possibly this could be stated in terms of an unchecked V feature which must be checked by the finite auxiliary. However, this requirement that T° needs to be filled by a verbal element is a pure stipulation. Furthermore, the proposal also runs into problems when one considers the non-raising of the finite lexical verb in English, in which case this inherent requirement that T° be filled by the finite element seems to disappear.

Given that even affix lowering accounts must assume raising at least for finite auxiliaries, then auxiliary raising as a general strategy is worth investigating. In the following sub-section, I discuss such a strategy.

3.3.2 Auxiliary raising

Auxiliary raising, as an alternative to affix lowering was proposed by Emonds (1978), Pollock (1989), Chomsky (1993), Kayne (1993), Lasnik (1995c), Iatridou, Anagnostopoulou & Izvorski (2001) and Bošković (*to appear a*). Under these proposals, and continuing to assume the hierarchy in (9), auxiliaries raise from their base positions to higher inflectional heads to host the inflections present there. This implies the reverse of Chomsky's original hypothesis, namely that verbal inflections in fact remain in their Merge positions, and that the auxiliaries surface one position higher than the heads in which they were initially Merged:⁷



The advantage of the auxiliary raising approach over the affix lowering account is that it is able to treat all auxiliaries uniformly, whether finite or non-finite. That is, raising for reasons of inflection under this approach is an inherent property of all auxiliaries in English. Under the affix lowering model, only finite auxiliaries are able

⁷ Certain instantiations of the auxiliary raising approach motivate verb raising in terms of abstract feature checking (Chomsky 1993; Lasnik 1995c), which I will discuss and ultimately adopt in section 3.6.

to raise. Therefore, the raising of finite-auxiliaries into T° has to be put down to an inherent property of T° itself, and not of the auxiliary.

A problem for the auxiliary raising approach, however, is that it is unclear how the lexical verb should be treated under this model. The lexical verb in English is generally taken to remain in its base position (or only undergo very short head movement to v° /Voice $^{\circ}$) (Baker 1988; Pollock 1989), even though it can be fully inflected. This fact is difficult to capture if one were to assume that all verbs raise for inflectional purposes. To account for the position of the lexical verb, proponents of the auxiliary raising approaches have proposed a number of solutions, such as covert raising (Chomsky 1993) or merger under adjacency (Lasnik 1995c, Baker 2003), but inevitably these require additional machinery. The affix lowering models however, do not run into this particular problem, since the lexical verb is treated uniformly with non-finite auxiliaries: the lexical verb and non-finite auxiliaries remain in situ, receiving inflections in their base positions.

To summarise, the (theoretical) advantages and disadvantages facing the affix lowering and auxiliary raising accounts are the following:

(18) Affix lowering:

- Advantages:
 - Lexical verbs and non-finite auxiliaries are treated uniformly.
- Disadvantages:
 - Must posit additional head movement for finite auxiliaries and explain why such head movement is unavailable for finite-lexical verbs.

(19) Auxiliary raising:

- Advantages:
 - All auxiliary verbs are treated uniformly.
- Disadvantages:
 - Must posit additional machinery for non-raising of lexical verbs.

Ultimately, these two approaches offer opposing answers to the research question that this chapter addresses: what happens with non-finite auxiliaries? Do they raise to receive aspectual inflections akin to their finite forms, or do they remain in their base positions and have these inflections somehow lowered onto them, similar to the lexical verb? Auxiliary raising answers in favour of the former, whilst affix lowering answers in favour of the latter. It seems, however, that whichever approach one

takes, additional stipulations are required. In the case of affix lowering, one must posit extra machinery to explain why the finite auxiliary raises to T° and also why the finite lexical verb does not. In the case of auxiliary raising, one must posit extra machinery to account for the non-raising of the lexical verb.

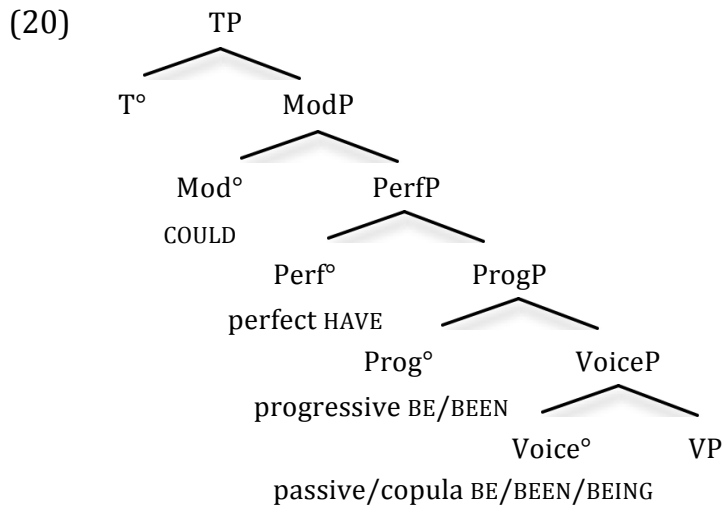
In sum, at this point neither model appears to emerge as theoretically superior to the other. Therefore, in the next section, I return to the empirical domain in order to tease apart which approach is better suited for modelling the English auxiliary inflectional system.

3.4 The empirical domain

In this section I show that, for the purposes of the English auxiliary inflectional system at least, the affix lowering accounts are inadequate when it comes to capturing all the empirical data, whilst the auxiliary raising accounts are more suited to explain the facts.

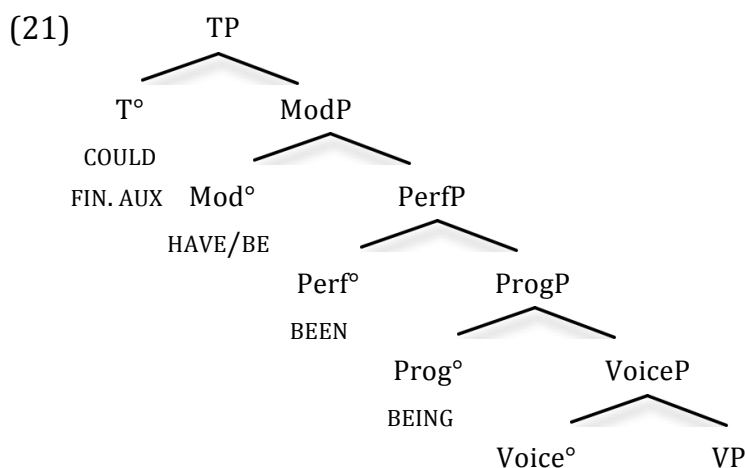
Closer scrutiny of the affix lowering and auxiliary raising approaches shows that these analyses make drastically opposing predictions with respect to the distribution of auxiliaries in English. Under the affix lowering approach, non-finite auxiliaries do not raise: rather, they remain in situ and receive inflections from higher aspectual projections. This means that non-finite auxiliaries are predicted to surface in their base positions, irrespective of the inflectional form they take. Therefore, auxiliary distribution is expected to be determined wholly by auxiliary type, i.e., whether the auxiliary is a passive, copular, progressive etc., and not by the inflectional form it takes. This is illustrated by the surface positions of the auxiliaries in the following tree diagram, which depicts the structure of the middle field after affix lowering has taken place:⁸

⁸ Apart from the modal auxiliary, I put aside the distribution of finite auxiliaries since they are immaterial for the point being made. Ultimately all finite auxiliaries would surface in T° .



In other words, the finite modal is predicted to receive its inflections in Mod° (prior to head movement to T° to satisfy the verbal EPP feature), the non-finite perfect auxiliary *have* is always predicted to surface in Perf°, the progressive auxiliary, whether realised as *be* or *been*, is always predicted to surface in Prog°, and the passive or copular auxiliary, whether realised as *be*, *been* or *being*, is always predicted to surface in Voice°.

Under the auxiliary raising approach on the other hand, according to which auxiliaries raise to higher positions for inflectional purposes, the opposite distribution is predicted. That is, auxiliary distribution should be influenced by morphological form. This is illustrated by the surface positions of the auxiliaries in the following tree diagram, which depicts the structure of the middle field after auxiliary raising has taken place:



In other words, modals and all finite auxiliaries raise to T°, whilst Mod° is potentially filled either by the infinitival form of the perfect auxiliary *have*, or the infinitival form of *be*, whether progressive, passive or copula in origin. All instances of *been*,

irrespective of whether it is progressive, passive or copula in origin, raise to Perf^o, and all instances of *being*, whether passive or copula in origin, raise to Prog^o.

As will be demonstrated in the following sub-sections, the predictions made by the affix lowering approach are not borne out empirically. A range of data concerning the distribution of auxiliaries in English suggests that auxiliary distribution is influenced by the morphological form of the auxiliary, as predicted by the auxiliary raising approach and contra the affix lowering accounts. This is demonstrated in sections 3.4.1 to 3.4.6 on the basis of evidence from existential constructions, VP ellipsis, tag-questions, VP fronting, pseudo-clefts and predicate inversion, respectively. Section 3.4.7 takes stock of this data and critically discusses the evidence offered by Bjorkman (2011) in favour of the affix lowering analysis.

3.4.1 Existential constructions

Existential constructions are typically characterised by a semantically contentless expletive, *there*, occupying the canonical subject position, whilst the logical subject, hereby referred to as the associate, occupies a lower position in the clause:

(22) There was a gang of smurfs dancing in the garden last night.

Regarding English passive existential constructions, Milsark (1974) has noted that the passive auxiliary must follow the associate when inflected for progressive morphology, i.e. *being*, but must precede the associate when inflected for perfect or infinitival morphology, i.e., *been/be*:⁹

⁹ It has been argued by Jenkins (1972), Williams (1984), McNally (1997) and Law (1999) that the material following the associate in existential constructions of the type depicted in (23)-(25) in fact constitutes a reduced relative clause (RRC) which modifies the DP associate:

(i) [_{TP} There was [_{DP} a gang of smurfs [_{RRC} being arrested for anti-social behaviour]]].

If this were the case, the observations made in (23)-(25) would actually show us nothing about the distribution of *being* in a matrix clause. Whilst an RRC-analysis is indeed available to existential constructions, Milsark (1974), Lasnik (1995b), Chomsky (2001), Huddleston & Pullum (2002), Caponigro & Schütze (2003), Rezac (2006) and Deal (2009) have shown, with numerous diagnostics, that these constructions can be equally derived from a full clause. Therefore the distribution of the auxiliaries observed in these sentences remains valid for the point being made. As existential constructions will frequently be referred to and exploited throughout the course of this thesis I will make a point of discussing the evidence put forward by the above-mentioned authors in chapter 6. To enter into such debate here would detract too

- (23)
- a. There were many smurfs **being** arrested for anti-social behaviour.
 - b. * There were **being** many smurfs arrested for anti-social behaviour.
 - c. There will **be** many smurfs arrested for anti-social behaviour.
 - d. * There will many smurfs **be** arrested for anti-social behaviour.
 - e. There have **been** many smurfs arrested for anti-social behaviour.
 - f. * There have many smurfs **been** arrested for anti-social behaviour.

Similarly, the copular auxiliary obligatorily follows the associate when realised as *being*, but precedes it when realised as *be* or *been*:

- (24)
- a. There was a gang of smurfs **being** rather loud and obnoxious.
 - b. * There was **being** a gang of smurfs rather loud and obnoxious.
 - c. There will **be** a gang of smurfs in the garden tonight.
 - d. * There will a gang of smurfs **be** in the garden tonight.
 - e. There has **been** a lot of commotion in the street today.
 - f. * There has a lot of commotion **been** in the street today.

Since inflections always appear on the following auxiliary, the progressive auxiliary itself does not surface in the progressive form *being*. However, when realised as *be* or *been*, this auxiliary patterns with the passive and copular auxiliaries of the same morphological form by preceding the associate:

- (25)
- a. There will **be** a gang smurfs dancing in the garden tonight.
 - b. * There will a gang of smurfs **be** dancing in the garden tonight.
 - c. There has **been** a gang of smurfs dancing in our garden all night.
 - d. * There has a gang of smurfs **been** dancing in our garden all night.

Essentially the data demonstrates that the auxiliaries *be* and *been* uniformly surface in positions beyond the associate, whilst *being* does not. Therefore we can claim in this instance that the distribution of the auxiliary in relation to the associate is sensitive to the inflectional form it takes.

greatly from the focus of this chapter. Also see chapter 4 where I discuss existential constructions in the context of ellipsis.

As the following five sub-sections illustrate, the same pattern emerges in a number of other contexts: the positioning of auxiliaries is systematically influenced by the morphological form.

3.4.2 VP ellipsis

Ellipsis is the non-pronunciation of certain domains of syntactic structure. English VP ellipsis (VPE) typically involves non-pronunciation of the domain containing the lexical verb and its internal arguments:

(26) Apollo punched Rocky, and Mr. T did [~~punch Rocky~~] too.

Akmajian & Wasow (1975), Sag (1976) and Akmajian, Steele & Wasow (1979) have observed that under VPE, the auxiliary *being*, whether passive or copula in origin, is obligatorily elided, whilst *be* and *been*, whether progressive, passive or copula, can escape ellipsis:¹⁰

(27) a. Cinderella was being made to eat Spinach, but Popeye wasn't.
b. * Cinderella was being made to eat Spinach, but Popeye wasn't **being**.
c. Cinderella will be made to eat Spinach, but Popeye won't **be**.
d. Cinderella has been made to eat Spinach, but Popeye hasn't **been**.

(28) a. Popeye was being obnoxious, and Olive was, too.
b. * Popeye was being obnoxious, and Olive was **being**, too.
c. Popeye can be rather obnoxious, and Olive can **be**, too.
d. Popeye has been rather obnoxious, and Olive has **been**, too.

(29) a. Cinderella will be dying to meet you, and Popeye will **be**, too.
b. Cinderella has been dying to meet you, and Popeye has **been**, too.

¹⁰ Whilst *being* is obligatorily elided, *be* and *been*, whether progressive, passive or copular in origin, can in fact be optionally elided. See chapter 4 for a full discussion of this phenomenon.

This once again suggests a distributional distinction between *be* and *been* on the one hand, and *being* on the other. That is *be* and *been* occupy positions outside of the ellipsis site, whilst *being* does not.

3.4.3 Tag-questions

Tag-questions are interrogative clauses that are tagged onto the end of a declarative, usually as a means of seeking affirmation from the listener.

(30) Popeye was eating his spinach heartily, wasn't he?

The omission of the lexical verb and its internal arguments in these clauses has been analysed by Huddleston (1970) and Sailor (2009), among others, as involving VP ellipsis. In light of this, Akmajian & Wasow (1975), Bošković (2004) and Sailor (2009) have noted that American English tag-questions show a distinction parallel to the one observed in VPE: *being*, whether passive or copula in origin, is obligatorily elided, whilst *be* and *been*, whether progressive, passive or copula in origin, can escape ellipsis:^{11,12}

(31) a. Cinderella was being made to eat spinach, wasn't she?
b. * Cinderella was being made to eat spinach, wasn't she **being**?
c. Cinderella will be made to eat spinach, won't she **be**?
d. Cinderella has been made to eat spinach, hasn't she **been**?

(32) a. Popeye was being obnoxious, wasn't he?
b. * Popeye was being obnoxious, wasn't he **being**?
c. Popeye can be really obnoxious at times, can't he **be**?
d. Popeye has been really obnoxious, hasn't he **been**?

¹¹ British English and some reported dialects of American English behave rather differently in that all but the finite auxiliary is obligatorily elided.

¹² Once again, *be* and *been*, whether progressive, passive or copular, have the property of being optionally elided. The analysis for optional deletion under VPE presented in chapter 4 can also be extended to account for the optional ellipsis in tag-questions.

- (33) a. Cinderella will be eating spinach in tomorrow's spinach-eating competition, won't she **be**?
b. Cinderella has been eating spinach, hasn't she **been**?

3.4.4 VP fronting

VP fronting (VPF) involves preposing of the domain containing the lexical verb and its internal arguments to the left periphery of the clause:

- (34) If Fry says that Bender is coming to dinner, then [coming to dinner]_i he is t_i.

Akmajian & Wasow (1975), Zagona (1982) and Johnson (2001) have all noted that the auxiliary *being*, whether passive or copula, is obligatorily fronted under VPF. Conversely, Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979) and Roberts (1998) observe that *be* and *been* can never be fronted, irrespective of whether they are progressive, passive or copular in origin:

- (35) If Sebastian says he was being cooked alive, then...
a. [**being** cooked alive]_i he was t_i.
b. * [cooked alive]_i he was **being** t_i.

- (36) If Sebastian says he is going to be cooked alive, then...
a. [cooked alive]_i he will **be** t_i.
b. * [**be** cooked alive]_i he will t_i.

- (37) They said Sebastian was to be cooked alive, and so...
a. [cooked alive]_i he has **been** t_i.
b. * [**been** cooked alive]_i he has t_i.

- (38) If Jasmine says that Aladdin was being obnoxious, then...
a. [**being** obnoxious]_i he was t_i.
b. * [obnoxious]_i he was **being** t_i.

(39) I told the children to be very good, and...

- a. [very good]_i they have **been** t_i.
- b. * [**been** very good]_i they have t_i.

(Roberts 1998:117)

(40) John said he was going to be obnoxious, and...

- a. [obnoxious]_i he will **be** t_i.
- b. * [**be** obnoxious]_i he will t_i.

(Roberts 1998:117)

(41) They swore that John had been taking heroine, and...

- a. [taking heroine]_i he had **been** t_i.
- b. * [**been** taking heroine]_i he had t_i.

(Akmajian, Steele & Wasow 1979:23)

(42) If Scrooge McDuck says he'll be working late, then...

- a. [working late]_i he will **be** t_i.
- b. * [**be** working late]_i he will t_i.

This data illustrates therefore that the auxiliaries *be* and *been* surface in positions beyond the constituent that is fronted, whilst *being* surfaces within the preposed constituent.

3.4.5 Pseudo-clefts

A parallel case to VPF is that of specificational pseudo-clefting, which has been argued to involve fronting of the verbal domain by Blom & Daalder (1977), Declerck (1988), Den Dikken (1995), Heggie (1988), Heycock (1994), Higgins (1979), Moro (1997) and Verheugd (1990) (cited in Den Dikken 2006):

(43) A. Aladdin should be punished for his actions.

B. No, [praised for his actions]_i is what Aladdin should be t_i.

Sailor (2012) observes that such instances of fronting seem to target the same material as VPF. Relevantly for the present discussion, the form *being*, regardless of

whether it is passive or copular in origin, must be fronted with the lexical verb when pseudo-clefting occurs, whilst the forms *be* and *been*, whether passive or copular, cannot be:¹³

- (44) Aladdin should be being criticised.
a. No, [**being** praised]_i is what Aladdin should be *t_i*.
b. * No, [praised]_i is what Aladdin should be **being** *t_i*.
- (45) Aladdin should have been praised.
a. No, [criticised]_i is what Aladdin should have **been** *t_i*.
b. * No, [**been** criticised]_i is what Aladdin should have *t_i*.
- (46) Aladdin should be praised.
a. No, [criticised]_i is what Aladdin should **be** *t_i*.
b. * No, [**be** criticised]_i is what Aladdin should *t_i*.
- (47) Aladdin should be being more helpful.
a. No, [**being** less helpful]_i is what Aladdin should be *t_i*.
b. * No, [less helpful]_i is what Aladdin should be **being** *t_i*.
- (48) Aladdin should have been more helpful.
a. No, [less helpful]_i is what Aladdin should have **been** *t_i*.
b. * No, [**been** less helpful]_i is what Aladdin should have *t_i*.
- (49) Aladdin should be more helpful.
a. No, [less helpful]_i is what Aladdin should **be** *t_i*.
b. * No, [**be** less helpful]_i is what Aladdin should *t_i*.

¹³ Progressive lexical verbs seem not to be compatible with such pseudo-clefting constructions without use of some instance of British English *do*, making it less clear as to whether fronting is involved in such instances:

(i) Popeye should be sleeping. No, [fighting] is what Popeye should be *(**doing**).

3.4.6 Predicate inversion

Hooper & Thompson (1973), Emonds (1976), Heycock & Kroch (1999) and Haegeman (2008) have analysed predicate inversion contexts as also involving fronting of the verbal predicate:

- (50) [Speaking at today's lunch]_i will be our local congressman t_i.
(Emonds 1976:(38))

In such cases we observe that, once again, the form *being*, whether passive or copular, is obligatorily fronted, whilst the forms *be* and *been* cannot be, again irrespective of whether they are progressive, passive or copular in origin:

- (51) a. [Also **being** examined for body parts] is the tonnes of rubble being removed from the site.
(*Guardian*, 14.9.1, p4, col 6., from Haegeman (2008))
b. * [Also examined for body parts] is **being** the tonnes of rubble being removed from the site.
c. [Also examined for body parts] has **been** the tonnes of rubble being removed from the site.
d. * [Also **been** examined for body parts] has the tonnes of rubble being removed from the site.
e. [Also examined for body parts] will **be** the tonnes of rubble being removed from the site.
f. * [Also **be** examined for body parts] will the tonnes of rubble being removed from the site.
- (52) a. [Also **being** loud and obnoxious today] is my old friend Bugs Bunny.
b. * [Also loud and obnoxious today] is **being** my old friend Bugs Bunny.
c. [Also with us in the studio today] will **be** my old friend Bugs Bunny.
d. * [Also **be** with us in the studio today] will my old friend Bugs Bunny.
e. [Also with us in the studio today] has **been** my old friend Bugs Bunny.
f. * [Also **been** with us in the studio today] has my old friend Bugs Bunny.
- (53) a. [Also appearing on today's show] will **be** our local congressman.
b. * [Also **be** appearing on today's show] will our local congressman.
c. [Also appearing on today's show] has **been** our local congressman.
d. * [Also **been** appearing on today's show] has our local congressman.

3.4.7 Taking Stock

To summarise the data, all occurrences of the form *being*, regardless of whether they instantiate the passive auxiliary or the copular, pattern together, whilst all occurrences of *be* and *been*, irrespective of whether they instantiate the progressive, passive or copular auxiliary, pattern together. More specifically, all occurrences of *being* are obligatorily elided under ellipsis phenomena, obligatorily fronted under fronting phenomena and must follow associates in existential constructions. All occurrences of *be* and *been*, on the other hand, can escape ellipsis phenomena, are obligatorily stranded by fronting phenomena and must precede associates. These properties are summarised below:

Table 1: Auxiliary behaviour based on morphological form

Empirical Phenomenon	<i>Be/Been</i>	<i>Being</i>
Existentials	Precedes associate	Follows associate
VPE	Stranded	Elided
Tag-Questions	Stranded	Elided
VPF	Stranded	Fronted
Pseudo-Clefting	Stranded	Fronted
Predicate Inversion	Stranded	Fronted

These facts have been largely observed since the 1970s across various publications, though here they are collected together to highlight the systematic difference in behaviour between *be* and *been* on the one hand, and *being* on the other. Furthermore, these facts appear to have been largely ignored or forgotten by the more recent advocates of the affix lowering approaches, that is, selection theory (Baker 1991; Bruening 2010), the merger under adjacency analyses (Marantz 1988; Halle & Marantz 1993; Bobaljik 1994) and the Reverse Agree approach (Adger 2003; Bjorkman 2011; Wurmbrand *to appear a*).¹⁴ Indeed, if auxiliaries are inflected in their base positions as the affix lowering models claim, and do not undergo movement, we would expect that the type of the auxiliary would wholly determine its patterning: the progressive auxiliary would be predicted to behave differently from the passive and the copular. Without additional stipulations, the behaviour of

¹⁴ Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979), and Sailor (2012) provide an analysis of these facts under an affix lowering hypothesis, which will be discussed in section 3.5.1.

each auxiliary would not at all be expected to depend on the morphological form it takes. Therefore, the facts presented above are problematic for the affix lowering models.

If auxiliaries raise for inflectional purposes, on the other hand, as in the auxiliary raising accounts, we expect the morphological form that the auxiliary takes to influence its distribution: instances of *be*, irrespective of whether it is a progressive, passive or copular auxiliary in origin, would be expected to pattern differently from instances of *been*. Similarly, instances of *been* would pattern differently from instances of *being*. Whilst the data above does not demonstrate any real cases in which *be* patterns differently from *been* (a point which I return to in section 3.7.3), the data quite clearly demonstrates that *being* behaves apart from *be* and *been*, irrespective of the type of the auxiliaries. This suggests that the morphological form of the auxiliary influences its distribution. These facts conform with the predictions of the auxiliary raising models.

To the best of my knowledge, the only empirical evidence presented in support of the affix lowering analysis it seems, are two sets of data offered in Bjorkman (2011). The first set involves the distribution of auxiliaries with respect to the sentence-level adverb *fortunately*:

- (54) a. The cake has (fortunately) been (*fortunately) eaten.
b. The cake will (fortunately) be (*fortunately) eaten.
c. The cake seemed to (fortunately) be (*fortunately) eaten.
(Bjorkman 2011:(62))

- (55) a. The children have (fortunately) been (?fortunately) eating the cake.
b. The children will (fortunately) be (?fortunately) eating the cake.
c. The children seemed to (fortunately) be (?fortunately) eating the cake.
(Bjorkman 2011:(63))

(54) serves to show that the adverb *fortunately* cannot follow the passive auxiliary, irrespective of the inflectional form it takes, whereas (55) demonstrates that the same adverb can potentially follow the progressive auxiliary, irrespective of its inflectional form. Bjorkman (2011) uses these judgements to claim that progressive auxiliaries always surface in a higher position than passive auxiliaries. That is, progressive auxiliaries surface in Prog^o, whilst passive auxiliaries surface in Voice^o. Assuming that the adverb *fortunately* is left adjoined to VoiceP, this would explain the distribution shown in (54) and (55). Bjorkman's (2011) data suggests therefore that auxiliary distribution is wholly determined by auxiliary type and not at all by inflectional form, counter to the preceding arguments.

The data are not unproblematic however. First, with respect to Bjorkman's own material, it is worth noting that when the adverb *fortunately* follows the progressive auxiliary, the result is still degraded, as Bjorkman notes. This makes the contrast between the passive auxiliary and the progressive auxiliary less clear-cut, and likely open to a degree of speaker variation. A number of informants (the present author included), for instance, do not share the judgments given in Bjorkman (2011): these speakers reject all instances of *fortunately* following *be* or *been*, whether progressive or passive.

In addition, a Google search reveals examples in which the passive auxiliary does precede *fortunately*:¹⁵

- (56) a. The exact words have been fortunately lost in the mist of memory.
b. A great deal of this history has been fortunately preserved and catalogued at The Kellor House Museum

Therefore the evidence in (54) and (55) cannot be said to be a conclusive argument in favour of the affix lowering approaches.

The second set of data advanced by Bjorkman (2011) in (57) essentially presents the same kind of argument as the data in (54) and (55):

- (57) a. The cakes have (all) been (*all) eaten.
b. Then children have (all) been (?all) eating the cake.
(Bjorkman 2011:(64))

Floating quantifiers (FQs) can apparently float to the right of the progressive auxiliary, but not the passive auxiliary, despite the fact that both auxiliaries carry the same inflections. This once again suggests that the passive and progressive auxiliaries occupy different positions. However, this data is once again far from clear cut, since it has also been reported in the literature that FQs can freely float to the right of any instance of *be* or *been*, whilst they are restricted from floating to the right

¹⁵ The sentences provided in (56)a and b have been respectively sourced from the following locations:

<http://www.telegraph.co.uk/culture/books/bookreviews/9727511/The-Outsider-A-History-of-the-Goalkeeper-by-Jonathan-Wilson-review.html>

<http://www.keillorhousemuseum.com/geneology.htm>

of *being* (Sportiche 1988; McCawley 1998; Bošković 2004, *to appear a*; Haegeman 2008; Cirillo 2009):

- (58) a. The students are all **being** arrested by the police.
b. * The students are **being** all arrested by the police.
c. The students have **been** all arrested by the police.
d. The students will **be** all arrested by the police.

((58)b and c from Bošković *to appear a*:25)

- (59) a. They are all **being** noisy
b. * They are **being** all noisy.
c. They have **been** all rather noisy.
d. They can **be** all rather noisy.

((59)a and b from Bošković (2004:686))

- (60) a. The students could **be** all failing the exam.
b. The students have **been** all running in the marathon.

((60)a from Bošković (2004:694))

There is admittedly a degree of variation concerning the ability of *all* to float after *be* and *been*, with many speakers only permitting quantifier float to the left of such auxiliaries, though this variation is generalised across all instances of *be/been* and is not specific to one auxiliary type. Irrespective, the data shows that the distribution of FQs is not sensitive to whether the auxiliary is progressive, passive or copular, and, if anything, is affected more by its morphological form. Therefore, the data in (57) once again cannot be said to be a conclusive argument in favour of the affix lowering approaches.

I therefore reject Bjorkman's (2011) claim that auxiliary distribution is exclusively determined by auxiliary type, and instead believe that the *be/been* vs. *being* distinction detailed in sections 3.4.1 to 3.4.6 provides much stronger evidence that auxiliary distribution is influenced by morphological form. This poses a significant challenge to the affix lowering analyses and suggests that, unless the affix lowering account is suitably enriched to capture this distinction, the distribution of English auxiliaries is better captured under an auxiliary raising analysis.

I point out that the facts in 3.4.1-3.4.6 have indeed been analysed from the perspective of an upgraded affix lowering approach by Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979), and more recently by Sailor (2012). In the

following section I discuss this analysis and explain the problems with it. I also discuss exactly how proponents of the auxiliary raising approach have to date analysed the distinction between *be/been* and *being*, and outline the problems with this account also before presenting an alternative analysis.

3.5 The *be/been* vs. *being* distinction

I first explain how ‘upgraded’ affix lowering analyses have tried to account for the distributional distinction between *being* on the one hand and *be/been* on the other, and will outline the theoretical problems with this proposal. I will then discuss how the auxiliary raising approach has to date explained the pattern, and once again provide an overview of the theoretical drawbacks with this approach.

As we will see, the unifying factor of the two accounts is that both essentially claim that passive/copula *be* and *been*, through various means, raise out of their base position, whilst *being* does not. In section 3.5.3 I show this unifying assumption to be empirically flawed by presenting evidence to suggest that *being*, like all other auxiliaries, raises for inflection. Based on this, I present an alternative analysis for the data discussed in section 3.4. This alternative analysis argues for a structural division in the functional hierarchy in which progressive aspect and those projections below it constitute a single unit of structure to the exclusion of higher projections. As previously stated, this proposal is the central hypothesis of the dissertation and is a point that will be elaborated upon and discussed in greater detail over the course of the following chapters.

3.5.1 Explaining the distinction under affix lowering

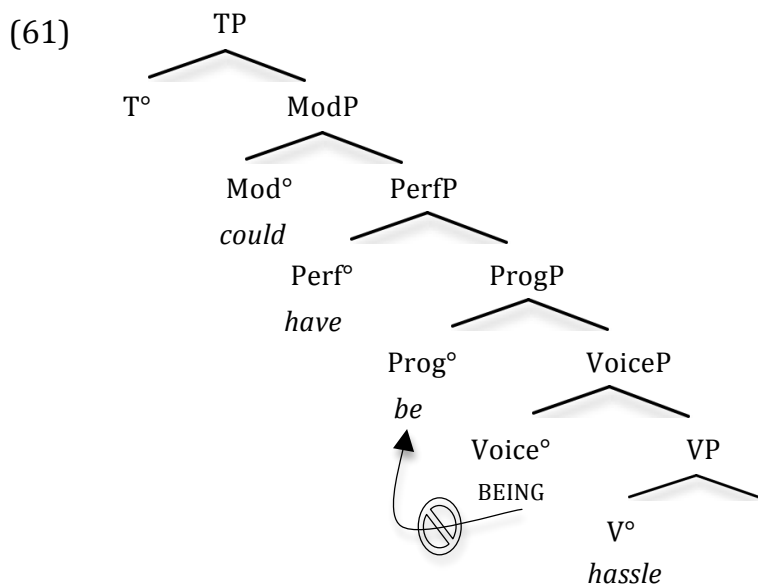
Adopting the affix lowering approach, Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979) and Sailor (2012) assume auxiliaries receive inflections in their base positions. This implies that passive auxiliaries receive inflections in Voice^o, whilst progressive auxiliaries receive inflections in Prog^o.¹⁶ These authors also assume that

¹⁶ Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979) and Sailor (2012) actually differ with regards to the labelling of projections and the exact manner in which affix lowering takes place. These facts aside however, the crucial basis of the analyses remains the same.

the entire range of aspectual projections consistently project in the underlying derivation, even when not overtly realised. Most importantly, the head corresponding to the base position of the progressive auxiliary (Prog° in our hierarchy) projects even in the absence of the progressive auxiliary.

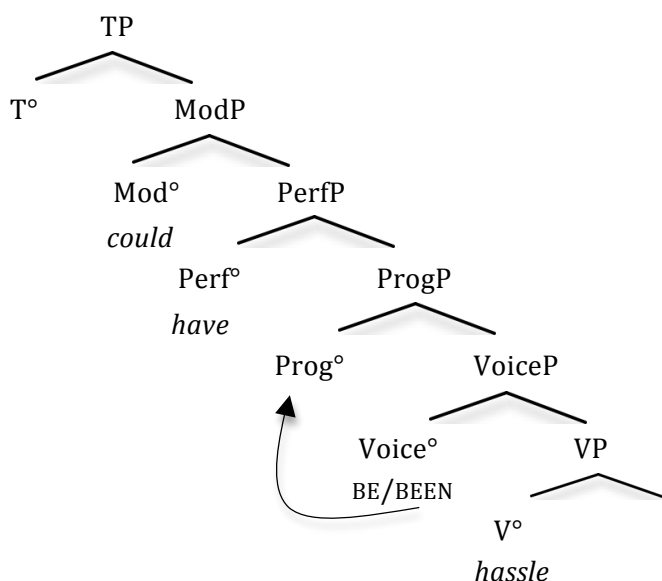
In order to capture the distinction between *be/been* and *being*, the authors then claim that the passive auxiliary, once inflected, undergoes raising to Prog° if this position is empty. Let us consider exactly what this implies for the distribution of auxiliaries.

If both progressive and passive auxiliaries are present in the derivation, Prog° will obviously be filled by the progressive auxiliary (or a trace of the progressive auxiliary if it is finite). The passive auxiliary, in Voice°, would subsequently be inflected as *being* rather than *be* or *been*. In this instance, the passive auxiliary is unable to raise out of Voice° to Prog° because Prog° is already filled, resulting in a Locality violation if *being* were to raise. Therefore *being* remains and surfaces in Voice°:



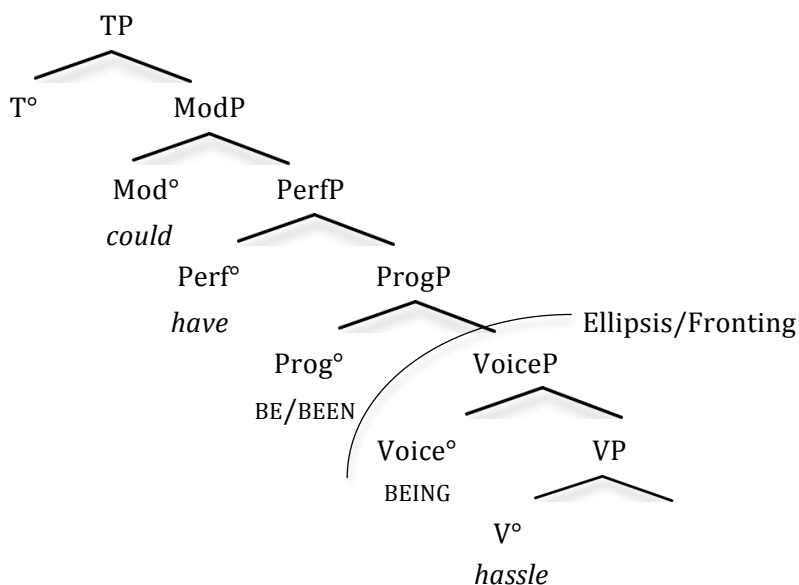
In the absence of the progressive auxiliary, however, the passive auxiliary, if non-finite, would be inflected as *be* or *been* in its base position of Voice°. From here the passive auxiliary raises to Prog° as this position is empty. It then surfaces in this higher position:

(62)



Therefore, it is possible to create a distributional distinction between *be* and *been* on the one hand, and *being* on the other, under an affix lowering approach. In order to then explain why *being* is obligatorily targeted under ellipsis and fronting phenomena, the above-mentioned authors claim that these phenomena uniformly target VoiceP.¹⁷ If *being* surfaces in Voice°, whilst *be* and *been* surface in Prog°, this would explain the different patterns of behaviour that these auxiliaries exhibit:

(63)



¹⁷ Note, once again, that the advocates of this approach differ with regards to how the relevant phrases are labelled. VoiceP in this instance could also be understood as Chomsky's (1995) and Kratzer's (1996) vP.

One advantage to this approach is that it has independently been argued by Zagana (1982), Johnson (2001, 2004), Merchant (2001), Aelbrecht (2010) and Baltin (2012) that VPE and VPF uniformly privilege the VoiceP/vP projection anyway.¹⁸ Therefore, Akmajian & Wasow (1975), Iwakura (1977), Akmajian, Steele & Wasow (1979) and Sailor (2012) are able to explain why *being* is so noticeably affected by these constructions whilst conforming with prior analyses.

The fundamental problem with this approach, however, is that the raising of *be* and *been* is a pure stipulation. At most, the authors are able to allow for the raising of *be* and *been* by virtue of Prog^o being empty, but they are unable to motivate such movement. The auxiliaries *be* and *been* have already received their inflections in their base position under this approach, so there is no reason for them to move, particularly to Prog^o, which appears to bear no syntactic relation to the passive instances of *be* and *been*. Moreover, why would the infinitival instance of *be* not move to Perf^o, which would also be an available position for the auxiliary in the absence of perfect aspect? These issues remain a mystery for the affix lowering analyses.

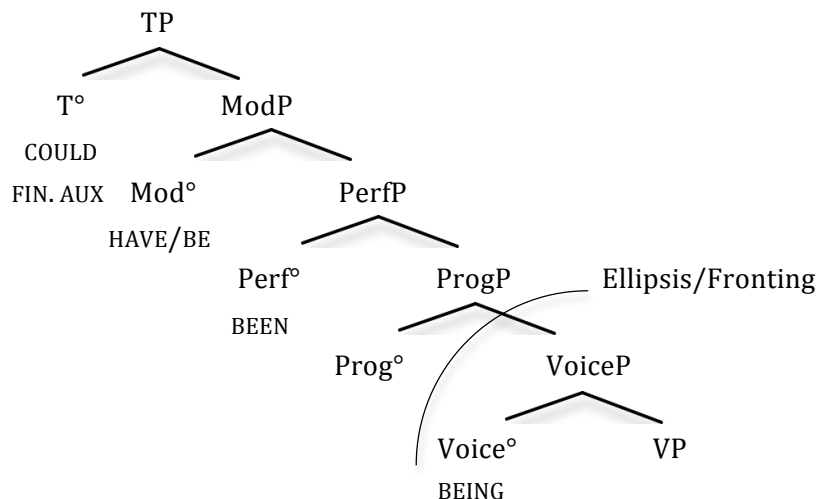
In the following sub-section I discuss how the *be/been* vs. *being* distinction has to date been analysed by the auxiliary raising approaches.

3.5.2 Explaining the distinction under auxiliary raising

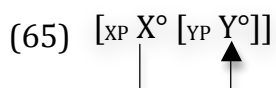
In order to explain the *be/been* vs. *being* distinction, various proponents of the auxiliary raising analysis (in its various guises), namely Lobeck (1987), Bošković (2004, *to appear* a) and Thoms (2011) have proposed that whilst all other auxiliaries raise for inflections, *being* is inflected in its base position of Voice^o/v^o (depending on one's exact analysis), where it remains. The advantage to this, similar to the affix lowering approach, is that, as previously mentioned, VPE and VPF-type phenomena have been standardly assumed to target the vP/VoiceP layer. Therefore, having *being* remain in its base position of Voice^o/v^o allows one to explain why it is affected by these phenomena whilst, once again, remaining consistent with prior analyses.

¹⁸ However, many of the aforementioned authors only consider VPE and VPF in the context of minimal CP>TP>vP>VP structures anyway. It is currently unclear whether their proposals can be maintained when translated to more elaborate structures.

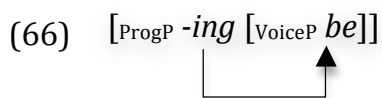
(64)



The problem with the ‘non-raising of *being*’ account is that there is no principled reason why *being* should not raise like other auxiliaries. Bošković (2004, *to appear a*) claims it is because there are no intervening projections between Prog°, the locus of progressive inflections, and Voice°, where the passive auxiliary is Merged. Therefore, the two elements satisfy the conditions for Lowering under structural adjacency (Embick & Noyer 2001), which assumes two items to be structurally adjacent if one heads the other’s complement, and permits downward head movement only in such environments.



If VoiceP is the complement of ProgP, then the two are structurally adjacent. This implies that the progressive inflection in Prog° can be lowered onto the passive auxiliary in Voice°. As a result, *being* need not raise out of Voice° for inflections.



However, Bošković (*to appear a*) explicitly assumes that projections are only present in the underlying derivation if overtly realised. Therefore, in the absence of progressive aspect, but in the presence of perfect aspect, ProgP would be absent and Perf° would be structurally adjacent to Voice°. Therefore, the conditions for Lowering are once again met. Hence, perfect inflections would also be predicted to lower onto the passive auxiliary. The result is that *been* would similarly not raise out of Voice°, therefore losing any distributional difference between *been* and *being*.

(67) [PerfP *-en* [VoiceP *be*]]


In fact, all inflections are actually implied to be structurally adjacent to the auxiliaries to which they attach, predicting uniform Lowering of all affixes rather than raising of auxiliaries. This actually leaves Bošković's account without any means of accounting for the distributional distinction between *be* and *been* on the one hand, and *being* on the other.

Since there is no principled reason why *being* does not raise like other auxiliaries, the 'non-raising of *being*' account amounts to a stipulation. This therefore calls into question whether such an account is the correct representation for the English auxiliary inflectional system.

Essentially the two accounts discussed so far are unified in claiming that *being*, unlike *be* and *been*, is unable to raise out of its base position for one reason or another. In order to fully endorse such accounts it would be desirable that this specification is given a principled theoretical underpinning. Instead of trying to do this, however, I will challenge the empirical claim made by these accounts: using the distribution of the form *being* with respect to a specific set of adverbs, I will show that *being* also raises for inflectional purposes. This will obviously entail that we have to dispel the two analyses that rely on the immobility of the form *being* and assume an analysis in which all auxiliaries uniformly raise for inflection.

3.5.3 Does *being* remain in situ?

Bošković (2004, *to appear a*), Thoms (2011) and Sailor (2012) cite evidence from English existential constructions and FQs in defence of the notion that *being* does not raise out of its base position. If correct, this evidence would constitute an argument in favour of either of the two approaches outlined in sections 3.5.1 and 3.5.2.

As already illustrated in (23), (24), (58) and (59) (repeated here as (68), (69), (70) and (71)), FQs, and associates of existential constructions, must obligatorily precede *being*:

- (68) a. There were many smurfs **being** arrested for anti-social behaviour.
 b. * There were **being** many smurfs arrested for anti-social behaviour.
- (69) a. There was a gang of smurfs **being** rather loud and obnoxious.
 b. * There was **being** a gang of smurfs rather loud and obnoxious.

- (70) a. The students are all **being** arrested by the police.
b. * The students are **being** all arrested by the police.
- (71) a. They are all **being** noisy
b. * They are **being** all noisy.

Under Sportiche's (1988) and Shlonsky's (1991) analyses, FQs are adjoined to subjects in their base positions and can be stranded in any position the subject occupies, including that of its base position. Similarly, in the existential constructions, associates are believed to act as the logical subjects of the sentence but are prevented from raising out of their base positions by Merger of the expletive *there* into the canonical subject position. All things being equal, the accounts sketched above imply that FQs and associates potentially signal the base positions of subjects. If subjects are Merged in Spec-vP/VoiceP (Zagona 1982; Kitagawa 1986; Speas 1986; Contreras 1987; Kuroda 1988; Koopman & Sportiche 1991), and if *being* remains in v°/Voice° (Bošković 2004, *to appear* a; Thoms 2011; Sailor 2012), then we have an instant explanation for why FQs and associates must precede *being*: they are Merged above *being* and *being* never raises over them. However, this argument is only potentially relevant for the copular instances of *being* illustrated in (69) and (71). In (68) and (70), the subject is actually the derived subject of a passive verb, meaning it must have originated as the complement of V°. If FQs and associates truly represented the base positions of subjects, we would expect these elements to appear post-verbally, contrary to fact. Indeed, this point has widely been acknowledged in the literature (see Sportiche 1988, Bobaljik 2001, Bošković 2004 and Cirillo 2009):

- (72) a. * There were being **arrested** many smurfs for anti-social behaviour.
b. * The smurfs were being **expelled** all from school.

Therefore, if FQs and associates of passive constructions are not found in their base, post-verbal positions, it is not entirely clear what position they occupy when appearing to the left of *being*. It is just as likely that they are occupying Spec-ProgP or Spec-vP_{prog} as it is that they are occupying Spec-vP/VoiceP. This furthermore implies that we can also not be entirely certain whether FQs and associates in the copular

constructions in (69) and (71) are occupying their base positions either. Hence these data cannot conclusively show that *being* remains in $v^{\circ}/\text{Voice}^{\circ}$.¹⁹

There is, however, evidence that *being* actually uniformly raises to Prog° for inflectional purposes. In order to illustrate this, I turn to the distribution of *being* with regards to adverbs. Demonstrating the distribution of verbs and other functional items in relation to adverbs is often rather tricky. Whilst Cinque's (1999, 2004) functional and adverb hierarchies generally exhibit a fairly rigid ordering independently, the two hierarchies exhibit significant flexibility when considered alongside one another, as has been noted by both Bobaljik (1999) and Cinque (1999, 2004). The situation is not helped by the fact that, as shown by Cinque (1999), many adverbs have multiple positions of Merger, and can also appear in various other positions with subtly different interpretations.

Despite this, there are certain adverbs which appear to have a very narrow distribution and which can be used to illustrate the surface position of *being*. In particular there are several classes of adverbs which Cinque (1999, 2004) identifies as being exclusively Merged somewhere between the locus of progressive inflections, Prog° , and the base position of the passive/copula auxiliary, $v^{\circ}/\text{Voice}^{\circ}$. The adverbs in question are the generic adverbs, such as *characteristically*,²⁰ singular completive adverbs such as *completely*, manner adverbs such as *loudly*,²¹ and Voice adverbs such as *well* (which Cinque claims to be Merged in $\text{Spec-}v\text{P}/\text{VoiceP}$, just above $v^{\circ}/\text{Voice}^{\circ}$). Interestingly, all instances of *being* must obligatorily precede these adverbs:²²

- (73) a. Jim Carey was (*characteristically) **being** (characteristically) annoying last night.
b. The Yankees were (*completely) **being** (completely) annihilated by the Red Sox.
c. John is (*completely) **being** (completely) disrespectful today.

¹⁹ For empirical arguments that FQs and associates are universally not in their base positions, see McCloskey (1997).

²⁰ In Cinque (1999), generic adverbs are actually Merged in the specifier of ProgP . Since then however, Cinque (p.c.) has claimed that such adverbs should be separate from progressive aspect and should be Merged somewhere below ProgP .

²¹ Many manner adverbs can occur elsewhere in the clausal hierarchy with a non-manner reading. Ernst (2001) however, has identified certain adverbs, such as *loudly*, which are exclusively manner adverbs and so can only occur in a very low position in the clause.

²² Quite often these adverbs are only compatible with either a passive or copular construction, but not both.

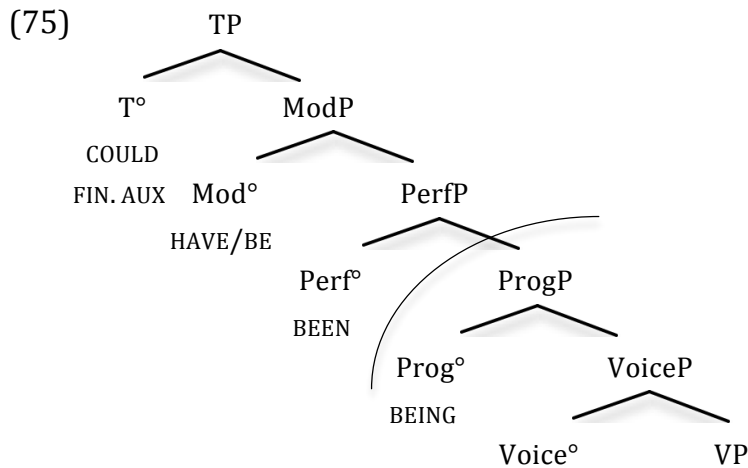
- d. The Yankees were (*loudly) **being** (loudly) booed by Red Sox fans
- e. The children were (*well) **being** (well) looked after.

This contrasts quite nicely with those adverbs which Cinque (1999, 2004) claims to be Merged directly above ProgP, namely proximative adverbs such as *soon*, retrospective adverbs such as *just* and continuative adverbs such as *still*, all of which *being* must obligatorily follow:

- (74)
- a. Bill was (soon) **being** (*soon) tried for his crimes.
 - b. Bill was (soon) **being** (*soon) rude to his guests.
 - c. The defendant was (just) **being** (*just) sentenced by the judge when the surprise witness showed up.
 - d. Jim Carey was (just) **being** (*just) annoying again when his ex-wife turned up and gave him a reason to calm down.
 - e. Despite the WWF's best efforts, rhinos are (still) **being** (*still) hunted for their tusks.
 - f. Dennis is (still) **being** (*still) rude to everyone he meets.

This is suggestive evidence that *being* does indeed uniformly raise to Prog^o for reasons of inflection and does not remain in its base position of v^o/Voice^o, contrary to the analyses discussed in sections 3.5.1 and 3.5.2. Data such as this therefore provides support for an auxiliary raising approach in which all auxiliaries in English, including *being*, uniformly raise for reasons of inflection.

Of course, if this is the case, one must ask the question of why *being* should be consistently targeted by ellipsis and fronting phenomena, and why it is the only auxiliary to follow the associate in an existential construction. As was the case for the '*being* in base position' analyses discussed above, we need to set *being* apart from the other auxiliaries. In order to achieve this I propose that the articulated structure outlined so far is not to be seen as one homogeneous functional domain, but rather that the functional domain that spans TP and VP contains two distinct zones. In particular I propose that in English the progressive aspectual layer and all projections below it constitute a discrete unit of syntactic structure that is separate from the higher layer composed of tense, modals and higher aspectual forms such as perfect aspect. This unit of structure is uniquely privileged by ellipsis and fronting phenomena, and to the edge of which the associate raises in existential constructions:



This comprises the backbone of the analysis that is presented throughout this dissertation. An in depth analysis of this divide is reserved for later chapters where I will argue at length for its existence and formalise such a division in terms of Phase theory. A thorough discussion of this segregation is therefore beyond the scope of the current chapter, which is mainly concerned with establishing that non-finite auxiliaries raise in English for reasons of inflection.

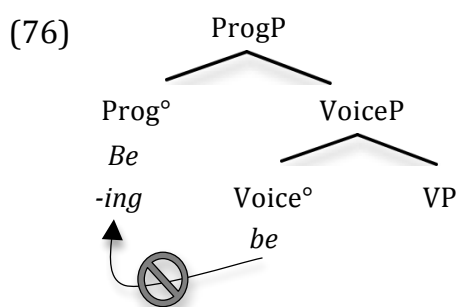
Sections 3.4 and 3.5 have justified the need for an approach to auxiliary inflection in which all auxiliary verbs in English, whether finite or non-finite, uniformly raise for inflectional purposes. However, if the auxiliary raising analysis is to be adopted, a few refinements must be made to the system. In the following section, I outline the theoretical problems with the current auxiliary raising analysis that motivate the need for further adjustments, before presenting a more up-to-date version of this approach.

3.6 Auxiliary raising revisited

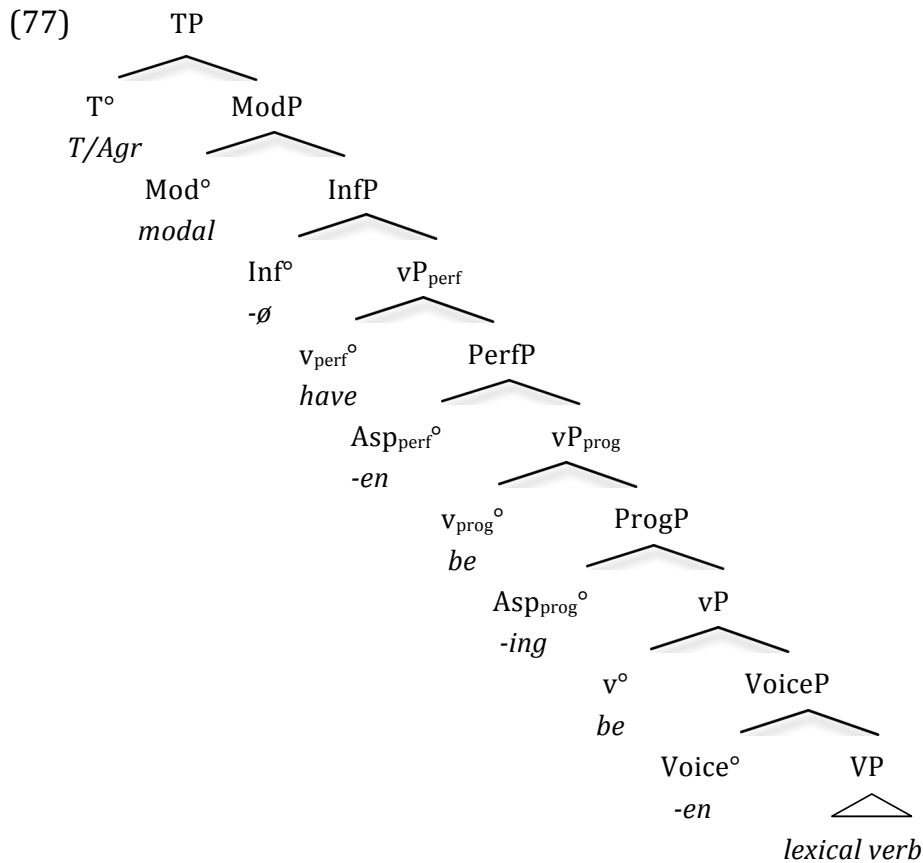
In this section I discuss the auxiliary raising approach in further detail. Section 3.6.1 presents an outstanding problem with regards to locality violations that arises under the analysis developed so far, and in section 3.6.2 I explore an approach to auxiliary raising that is featural rather than morphological.

3.6.1 Locality Violations

The auxiliary raising approach that has been advocated so far in this chapter actually runs foul of the Locality Condition (Chomsky 1986; Baker 1988; Rizzi 1990), which bans raising into positions that are already filled or occupied by a trace. The process of auxiliary raising initially illustrated in (17), and partially replicated in (76) quite clearly exhibits movement of a non-finite auxiliary into a head position which independently hosts another auxiliary, a direct violation of the Locality Condition:



In order to ensure that each auxiliary has a space to move to, and therefore avoid Locality violations, we must postulate a more articulated structure which has independent positions for auxiliaries and inflections. When one considers that English auxiliaries belong to the category of verbs and share most morphological properties with verbs, it seems plausible that auxiliaries should be Merged in their own vP shells. Therefore, I posit a vP shell on top of every aspectual projection, in the head of which the auxiliary selecting that particular aspectual form is base generated. The heads of the aspectual projections themselves host the relevant aspectual inflections, and also provide an available landing site for lower auxiliaries to raise into. This provides us with the following hierarchical structure, with the italicised auxiliaries representing the positions of first Merge:



To be precise, tense and agreement inflections are Merged in T° as standardly assumed, modals are Merged in Mod° , whilst the infinitival inflections that are introduced by modals are situated directly below this in a projection labelled Inf° . ModP and InfP together comprise the modal layer.²³ The perfect auxiliary *have* is Merged below this in the vP shell v_{perf}° , and the perfect *-en* inflection it selects is the head of its complement PerfP . These two projections constitute the perfect aspectual layer. The progressive auxiliary is Merged in v_{prog}° , and the progressive *-ing* inflection introduced by the auxiliary is situated directly below this in Prog° . Together, vP_{prog} and ProgP make up the progressive aspectual layer. The passive and copular auxiliaries are then Merged in v° proper, and the passive inflection heads its complement, VoiceP .²⁴ Together these two projections comprise the Voice layer. Furthermore, I continue to assume that the lexical verb is Merged in V° .

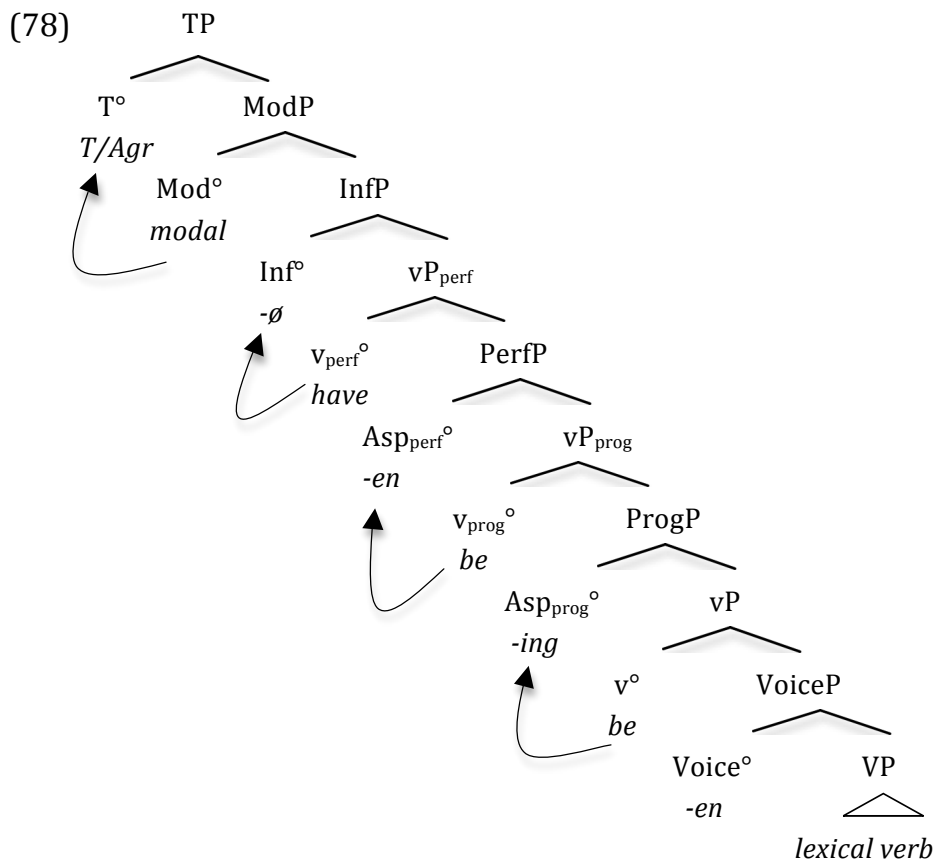
²³ I assume that deontic modals such as *must*, however, are Merged directly into T° and that ModP is absent in such derivations. InfP , however, continues to project in these circumstances.

²⁴ I have described the derivation top down but I assume, as standard, that derivations proceed bottom up.

Regarding interpretation, I presume that the active/passive status of the clause, and the progressive and perfect aspectual interpretations, are encoded on the lower heads of the Voice, progressive and perfect aspectual layers respectively. That is, active/passive is encoded on Voice[°], progressive aspect on Prog[°], and perfect aspect on Perf[°]. Curiously the modal layer contradicts this general rule in that modality is encoded on the modal itself in Mod[°], the highest head of this layer. This contrast between the modal layer and the layers below it is an interesting dichotomy that I am unfortunately unable to solve at present.

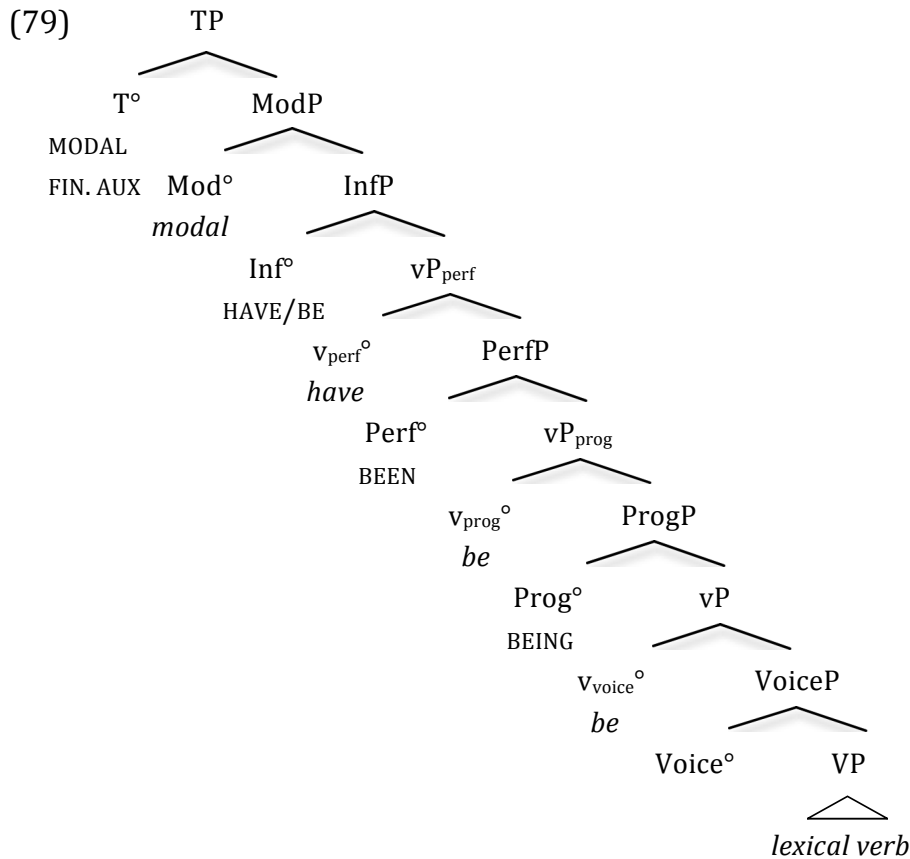
Labelling aside, the representation in (77) is essentially the same structural hierarchy that Kayne (1993), Iatridou, Anagnostopoulou & Izvorski (2001), Deal (2009) and Bošković (*to appear a*) arrive at.

Observe that when head movement of the auxiliaries applies within this hierarchy, no Locality violations ensue:²⁵



²⁵ One might argue that Locality violations persist on account of the heads that the auxiliaries raise into being already occupied by inflectional affixes. In the following section, however, I assume auxiliary inflection to actually be featural rather than affixal. This therefore removes such issues.

If the structure is maximally activated then this gives rise to the following distribution of auxiliaries in English (the italicised forms represent the base positions of the auxiliaries, and the capitalised forms are their positions at Spell Out):



This makes clear the need for vP shells under an auxiliary raising approach, and therefore the hierarchical structure posited above.²⁶

This necessity of postulating vP shells is of course a disadvantage to the auxiliary raising analysis since the vP shells in which the auxiliaries are base generated are semantically unmotivated. Ideally such vP shells should be eliminated, though I am currently unaware of any obvious means of doing so.²⁷

²⁶ Having further elaborated the structure of the middle field with vP shells, I will argue throughout this thesis that the aspectual divide between progressive and perfect aspect lies specifically between vP_{prog} and PerfP. This will be made clear in the following chapter.

²⁷ Note of course that no such Locality violations arise under the affix lowering approaches, since non-finite auxiliaries do not raise. Therefore vP shells are generally not needed under the affix lowering approach and each auxiliary can instead be Merged directly into the relevant aspectual head. This is a distinct advantage for the affix lowering analyses over the auxiliary raising

This concludes discussion of locality violations. In the following sub-section I explore an approach in which auxiliary raising is featurally rather than morphologically motivated.

3.6.2 Auxiliary raising through feature checking

3.6.2.1 Feature-driven movement

As outlined in section 3.3.2, under the auxiliary raising account auxiliaries are assumed to raise out of their base positions to higher functional heads in order to combine with the relevant inflectional affix. A conceptual problem that this approach faces, however, is that Lechner (2006), Matushansky (2006), Iatridou & Zeijlstra (2012), Roberts (2010) and Hartman (2011) have all noted that verbal head movement can have a semantic impact. This has in fact been illustrated already with the sentences in (13) in which head movement of the modals *could* and *may* from Mod° to T° allows these modals to take scope over negation.²⁸ This would imply therefore that head movement, and verb movement in particular, can have an effect at LF as well as PF and must therefore take place within the narrow syntax itself. If this is correct, then the head movement of non-finite auxiliaries depicted in (78) sits at odds with current Minimalist assumptions. That is, movement in the narrow syntax is only motivated by feature checking requirements, whereas the movement depicted above is motivated by a purely morphological requirement for stranded affixes to have a host. If the movement represented in (78) actually takes place within the narrow syntax, as the above-mentioned authors claim, then one must conclude that such movement should be featurally rather than morphologically motivated.

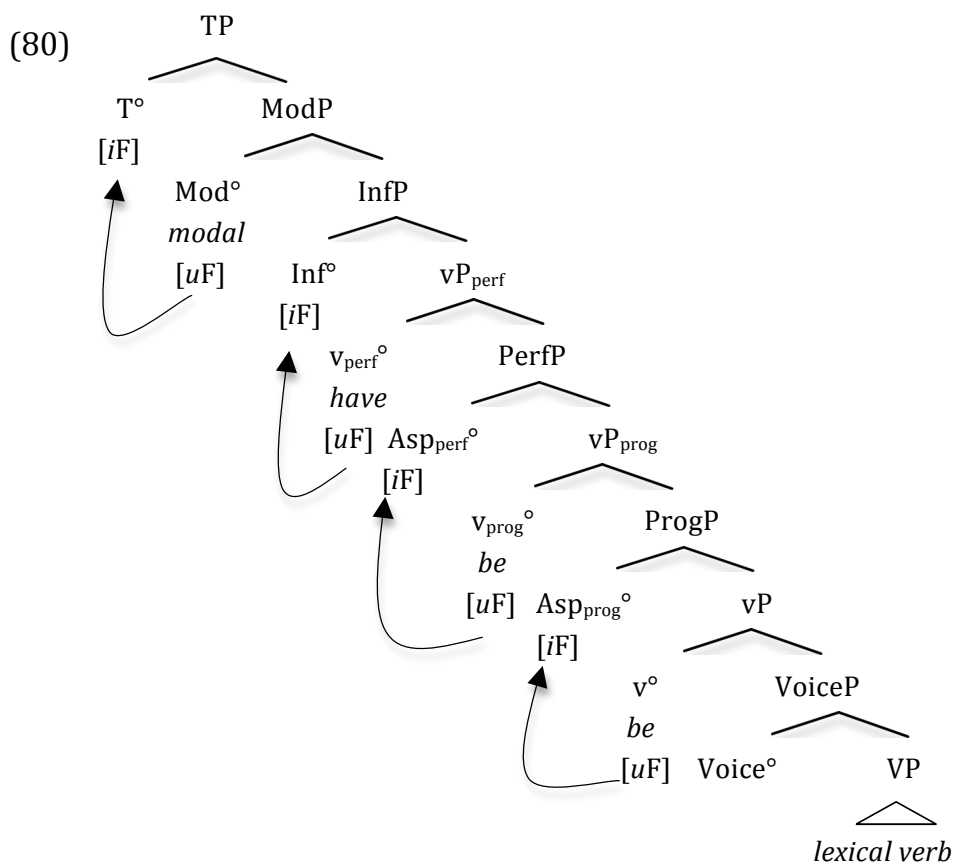
One particular instantiation of the auxiliary raising account inadvertently solves this issue. Chomsky (1993) and Lasnik (1995c) claim that auxiliaries raise in English in order to check inflectional features with higher functional heads.²⁹ Specifically,

approach. Due to the empirical shortcomings of the affix lowering analyses, however, such an analysis will not be adopted in this thesis.

²⁸ See Lechner (2006), Matushansky (2006), Iatridou & Zeijlstra (2012), Roberts (2010) and Hartman (2011) for in depth empirical discussion on the existence of LF effects in head movement.

²⁹ Chomsky (1993) and Lasnik (1995c) in fact assume such feature checking to be a concern only for PF, but since we now know head movement to have a semantic as well as morphological

these authors propose that all auxiliaries in English enter the derivation bearing uninterpretable inflectional features, whilst inflectional heads in TP or aspectual phrases bear matching interpretable inflectional features. The uninterpretable inflectional feature on the auxiliary has to be checked in the course of the derivation as it would otherwise crash at the interfaces. This causes the auxiliary to raise to T° or the relevant aspectual head bearing the corresponding interpretable feature in order to have its own uninterpretable feature checked. This is illustrated in the diagram in (80). For the time being I abstract away from the precise specifications of these features, since this is a detail that neither Chomsky (1993) nor Lasnik (1995c) enter into.



impact, I will assume such feature checking also has an effect at LF. This is made clear in section 3.6.2.5 where I discuss the strength of these inflectional features.

3.6.2.2 Agree

Chomsky's and Lasnik's approach to the auxiliary inflectional system, however, was made redundant with the introduction of Agree (Chomsky 2000, 2001), which can be formalised as follows:

(81) Agree³⁰

Agree is a relationship between two features such that an uninterpretable feature [*u*F] is checked by a feature [*i*F] of the same type iff:

- a. A head α containing [*u*F] c-commands a head β containing [*i*F].
- b. There is no head γ containing a matching feature [*i*F], such that γ c-commands β and α c-commands γ .

Essentially, Chomsky's (2000, 2001) version of Agree requires the c-commanding element (the Probe) to bear an unchecked feature which is licensed by a fully specified feature (the Goal) within its c-command domain.³¹

(82) Agree (Chomsky 2000, 2001):

PROBE > GOAL
[*u*F] [*i*F]

Checking by Agree does not in itself trigger movement, however. Instead Chomsky (2000, 2001) assumes that when Agree is accompanied by movement, it is triggered

³⁰ The original version of Agree was actually stated in terms of valued and unvalued features, though it can be equally stated in terms of interpretable and uninterpretable features. I appeal here to (un)interpretable features rather than (un)valued features so as to maintain coherency between Agree, which introduced feature valuation, and Chomsky's (1993) and Lasnik's (1995c) proposals, which were made prior to feature valuation. As stated in the previous chapter, I furthermore follow the likes of Pesetsky & Torrego (2007) and Bošković (2011a) in assuming that interpretable features do not necessarily have to be valued, and uninterpretable features do not necessarily have to be unvalued.

³¹ I use the terms checked and licensed interchangeably here since there is often much discrepancy as to what feature checking exactly entails, a technicality that I leave aside for this thesis.

by a specific feature on the Probe which is parasitic on the Agree operation, namely the generalised EPP feature (see footnote 6 of chapter 2 for additional discussion).

(83) Featural configuration for movement:

PROBE > GOAL
[*u*F] [*i*F]
[EPP]

This Probe-Goal relationship, however, is featurally the opposite of what Chomsky (1993) and Lasnik (1995c) initially proposed. In their system, it was the higher c-commanding elements (T° or Aspect°) that bore fully interpretable features, and the structurally lower c-commanded elements (the auxiliaries) which bore uninterpretable features:

(84) Chomsky (1993), Lasnik (1995c):

PROBE (T°, Aspect°) > GOAL (auxiliaries)
[*i*F] [*u*F]

This featural composition is at odds with the current understanding of movement in narrow syntax. In the following sub-section I offer a means of solving this issue.

3.6.2.3 Foot driven movement

In what follows I will elaborate an auxiliary raising approach to the English auxiliary inflectional system which maintains the feature checking approach proposed by Chomsky (1993) and Lasnik (1995c), but which is also compatible with the most standard assumptions on Agree.

I assume Chomsky's and Lasnik's featural architecture posited in (84) to be essentially correct: T° and the aspectual heads are fully featurally specified, and auxiliaries are featurally deficient (i.e. uninterpretable). I also assume the Probe-Goal model of Agree in (81) and (82) to be essentially correct: uninterpretable features on the Probe must c-command interpretable features on the Goal. The question therefore is, how are auxiliaries able to raise to have their inflectional features

checked or valued under these apparent paradoxical assumptions? To answer this question I adopt a version of Bošković's (2007) theory of foot-driven movement.³²

Bošković's implementation is to some extent an update of the earlier Minimalist versions of Agree-driven movement (Chomsky 1993, 1995; see also Platzack 1996, van Craenenbroeck 2006 and Preminger 2008). Crucially, it allows one to perform movement operations that are motivated by uninterpretable features being located on the moving element itself, but whilst also maintaining the Probe-Goal agreement relation under the original formulation of Agree.

Concretely, Bošković's proposal works as follows: an item X is Merged into the derivation bearing an uninterpretable feature which must be checked in order to prevent the derivation from crashing. This motivates X to probe downwards into its c-command domain to locate a relevant item Y bearing a matching interpretable feature which can check the feature on X through Agree. Suppose, however, that no such element Y sits in the c-command domain of X. The derivation is now in danger of crashing since X cannot have its feature checked. There is therefore but one option available to X to prevent the derivation from crashing: Move. That is, upon construction of the following phrase, and having not yet found any relevant target for Agree, X moves up to the next available position and once again probes into its c-command domain, which now is a little larger than last time (one entire phrase larger to be precise). If X still fails to find a relevant target for Agree, then it continues to raise and probe with the construction of each successive phrase until the relevant item Y finally sits within its c-command domain. Y then checks X's feature through Agree, and now, with its feature satisfied, X has no need to raise any further and so is Spelled Out in this position.

In this sense, movement is not dependent upon the moving element being probed by a higher item and is instead always driven by the moving element's need to check its own feature. This approach to movement provides us with three advantages: first, successive cyclic movement comes for free as the moving element always raises into the next immediately available position before probing once again into its c-command domain. Second, it removes the look-ahead problem that arose with movement of items to the Phase Edge in order to enter into Agree operations with items in the higher Phase, as the moving element no longer needs to wait for construction of a certain element in a higher Phase before it begins moving. And finally, such an approach can also do away with stipulating EPP features for most

³² The term 'foot-driven movement' refers to a movement operation which is driven by a featural deficiency of an item at the foot of an agreement chain rather than at the head of the chain. It bears no relation to the prosodic meaning of 'foot'.

movement operations (see Bošković 2007 for the precise details), something which was argued in the previous chapter to be an undesirable development of the Minimalist Program.³³

3.6.2.4 Foot driven movement and the English auxiliaries

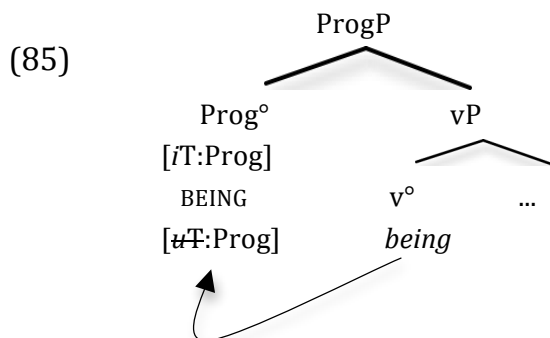
Originally, Bošković's (2007) theory was developed for A and A' movement. Here, however, I show how it can be applied to head movement in the English auxiliary inflectional system.

As previously stated, I assume auxiliaries are base generated in the heads of vP shells located above the aspectual projections they select. Also, to be more precise about the specifications of the auxiliaries' inflectional features posited in Chomsky (1993) and Lasnik (1995c), I assume that each auxiliary enters the derivation bearing an uninterpretable inflectional feature [*u*T] that is already valued for a certain tense or aspect and which must be checked against a matching interpretable inflectional feature on a higher T° or aspectual head. In accordance with Agree, the uninterpretable feature on the auxiliary is only able to probe downwards into its c-command domain in search of a matching feature. Failing to find such a feature, the inflectional feature on the auxiliary remains unchecked, meaning the derivation is in danger of crashing. In order to prevent a derivational crash the auxiliary raises into the next head up and probes once again into its c-command domain. It continues to raise and probe until the relevant matching interpretable inflectional feature sits within its c-command domain. This checks the auxiliary's inflectional feature, since the necessary conditions for Agree have been established. Without any further motivation to move, the auxiliary is then Spelled Out in this position in accordance with its feature specifications.

I illustrate this mechanism with concrete examples. Consider the passive auxiliary *being*, Merged in v°. By virtue of its morphology, *being* enters the derivation bearing an uninterpretable inflectional feature valued for progressive aspect: [*u*T:Prog], which must ultimately be licensed by an interpretable inflectional feature with a matching value: [*i*T:Prog]. I reasonably assume that this feature can only be found on Prog° itself. In order to check its uninterpretable feature, the auxiliary probes inside its c-command domain in search of the relevant matching feature. Given the hierarchy we proposed, there is no matching target in the c-command domain. The auxiliary therefore raises to the next available position, the head of the next phrase up, and probes once again. The next phrase up is ProgP, which is of course Merged

³³ I maintain the traditional EPP on T° which motivates subject raising to Spec-TP, however, as this will be required for discussion of existential constructions in chapter 6.

with the matching interpretable feature: [*i*T:Prog] in its head. With the auxiliary having raised to Prog^o, Prog^o's own interpretable feature now sits within the c-command domain of the auxiliary, satisfying the conditions for Agree.³⁴ ProgP's [*i*T:Prog] is therefore able to check the auxiliary's uninterpretable [*u*T:Prog] feature. The auxiliary, with its feature satisfied, has no further need to raise and so remains in Prog^o, where, due to its value, it is Spelled Out as *being*. This is illustrated in the tree below. The italicised form represents the base position of the auxiliary, and the capitalised form represents the position in which it is Spelled Out.

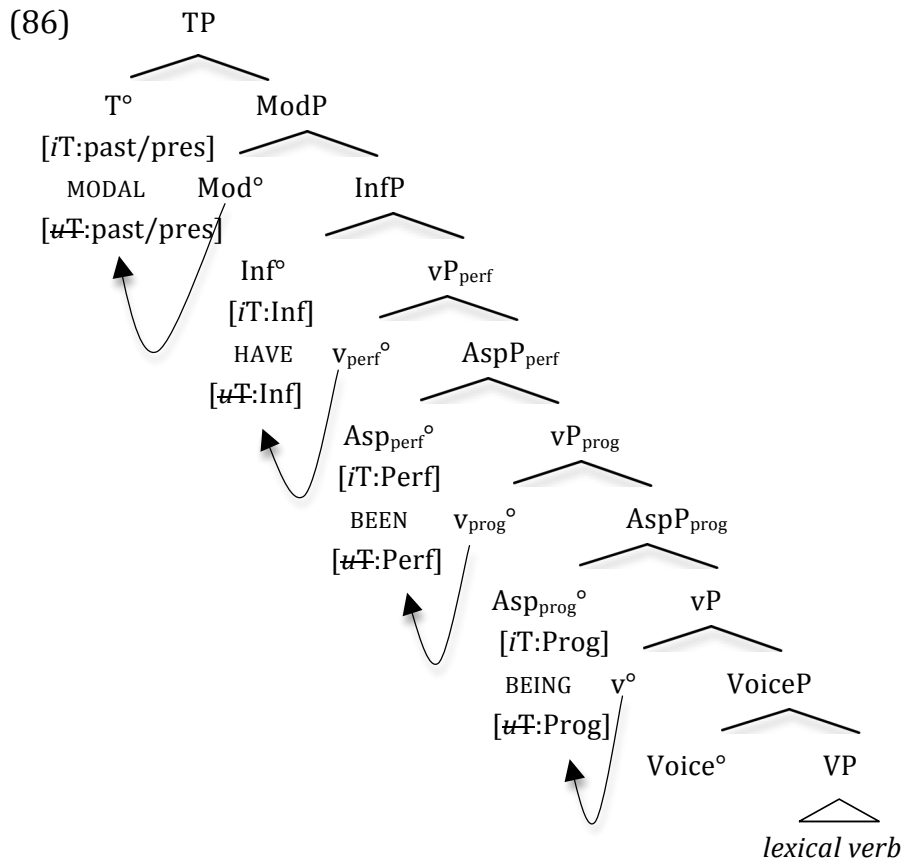


I assume that, by virtue of its form (and by virtue of it possibly being first-Merged in the same position as the passive auxiliary), copular *being* undergoes a similar process.

In the case of the form *been*, whether passive, progressive or copular, this auxiliary is Merged bearing an uninterpretable [*u*T:Perf] feature, which must ultimately be checked against [*i*T:Perf] in the head of PerfP. The progressive instance of *been* is Merged in the head of vP_{prog}, and the passive and copular instances are Merged in the head of vP. In all cases, this auxiliary raises to Perf^o, so that PerfP's matching interpretable feature sits within the auxiliary's c-command domain, thereby checking the auxiliary's inflectional feature through Agree and causing it to be Spelled Out in this position as *been*.

The case of non-finite *be* is similar, except that it is Merged bearing an uninterpretable infinitival [*u*T:Inf] feature which must raise and check against the matching [*i*T:Inf] feature in Inf^o. Non-finite *have*, Merged in v_{perf}^o, bears the same feature and must also be checked in Inf^o. Finally, modals (Merged in Mod^o) and finite auxiliaries are Merged bearing a finite [*u*T:past/pres] feature which must be checked in T^o against T's own [*i*T:past/pres] feature.

³⁴ I assume that if the relevant matching interpretable feature occupies the same head as the auxiliary, this is also within the auxiliary's c-command domain, and so is able to check the auxiliary's feature in this position.



As the diagram above demonstrates, in the system of auxiliary raising I have elaborated, the distribution of auxiliaries is influenced by their inflectional forms and not solely by their type. That is, *being*, *been*, *be* and *have*, and modals and finite auxiliaries, all come to occupy specific inflectional positions in the clause. Such a system should enable us to capture more easily the distributional differences between *being* on the one hand, and *be/been* on the other, as detailed and discussed in sections 3.4 and 3.5. Moreover, the raising of the auxiliaries is motivated through feature checking so as to conform with other forms of Move in narrow syntax. Despite adopting a featural configuration which is the reverse of the standard Probe>Goal relationship, the system I propose nevertheless remains consistent with standard assumptions regarding Agree (Chomsky 2000, 2001).³⁵ This is achieved by appealing to Bošković's (2007) notion of foot-driven movement in which movement is driven by a featural deficiency on the moving item itself.³⁶

³⁵ As previously noted, by claiming auxiliary inflection is featural rather than affixal, there is no issue of Locality violations arising when the auxiliary raises into the relevant inflectional head, since the inflectional head does not actually host a physical morpheme.

³⁶ If one wishes to claim, as per Dechaine (1995), Schütze (2003), Cowper (2010) and Bjorkman (2011) that auxiliaries are inserted post-syntactically for morphological reasons, then it is

3.6.2.5 Feature strength

Finally, as mentioned at the beginning of this sub-section, numerous authors have claimed that verbal head movement can carry both phonological and semantic import, and that this was the primary motivation for locating head movement within the narrow syntax and motivating such movement with features rather than pure morphological requirements. If verb movement indeed has both semantic and morphological effects, this would imply that the auxiliaries' inflectional features, which motivate their movement, are a concern for both the LF and PF interfaces. Therefore, regarding the strength of these features, I conclude that they must be strong. In other words, inflectional features must be checked before arrival at both PF and LF, thereby licensing the morphological form of the auxiliary for the phonological component (cf. Chomsky 1993, 1995 and Lasnik 1995c) and rendering it interpretable for the semantic component. Because the inflectional feature is strong, the raising of the auxiliary and subsequent feature checking must take place in the narrow syntax prior to Spell Out in order to correctly converge at both interfaces. Therefore, the raising and checking of auxiliaries is, as I have already shown it to be, manifested overtly. These assumptions will be crucial in chapter 4 when discussing optional auxiliary ellipsis.

This concludes discussion of auxiliary raising through feature checking. In the following section I discuss five further issues that should be addressed as further background assumptions before bringing the chapter to a close.

3.7 Further Issues

I first discuss the reliance of the system I have proposed on uninterpretable rather than unvalued features. Section 3.7.2 explores how the lexical verb behaves under the system I have proposed, and in section 3.7.3 I deal with the question of why there is no apparent distributional distinction between *be* and *been*. Section 3.7.4 returns to the hierarchy posited in (86) and discusses the extent to which it can vary in size depending on what items project, in other words, What You See Is What You Get.

possible to argue, as per Roberts (1998), that the auxiliary raising detailed in this section may in fact be movement of pure abstract features, and that auxiliaries are only inserted afterwards at PF.

Finally, I explore an alternative to the raising approach, namely the direct insertion approach of Schütze (2003) and Cowper (2010), but discard this analysis on the grounds of a number of conceptual flaws with the model.

3.7.1 Uninterpretable rather than unvalued

An issue which requires discussion for the approach just advocated is the claim that auxiliaries enter the derivation readily valued but uninterpretable, rather than being unvalued from the start. This is required in order to prevent higher auxiliaries from receiving inflections from lower down in the hierarchy.

Consider what would happen if an auxiliary bore purely unvalued features under Bošković's approach: the auxiliary would be able to probe within its c-command domain and be valued by the first feature it comes across whose value is fully specified, wrongly predicting that auxiliaries receive their inflections from the next aspectual head down rather than the next aspectual head up. Having auxiliaries with already valued but uninterpretable features ensures they can only be checked by a matching inflectional feature situated higher, rather than lower, in the clausal hierarchy. For instance, suppose that the progressive auxiliary *been* enters the derivation with its uninterpretable inflectional feature already valued for perfect morphology: [*u*T:Perf]. The only fully specified feature the auxiliary can be checked against in this instance is the [*i*T:Perf] feature located above it in the head of PerfP. This correctly predicts that the auxiliary will only be able to receive its inflection from a higher aspectual head rather than a lower one. However, if the same auxiliary were to enter the derivation unvalued: [*i*T:_], it would then be possible for such an auxiliary to be valued by the progressive [*i*T:Prog] or passive [*i*T:Pass] features below it, contrary to fact. This makes clear the need for already valued but uninterpretable features in this system.

However, the employment of uninterpretable features is less than ideal since, as Adger (2003:135) notes, feature checking forces us to generate ill-formed structures with non-matching features and then rule them out because of the presence of unchecked features, until we finally arrive at the one well-formed structure in which all features match and so no uninterpretable features exist by the end of the derivation. In this respect, a feature valuation approach (such as the Reverse Agree instantiation of affix lowering) poses a distinct advantage, as with feature valuation we simply never generate the ill-formed structures in the first place. This reduces the number of possible derivations that we need to consider when we generate a sentence.

In favour of feature checking, however, Lasnik (1995c) and Wurmbrand (2011, 2012a) have shown, using evidence from VPE, that there is good reason to believe

auxiliaries in English enter the derivation bearing already valued but uninterpretable inflectional features. I briefly review this evidence here.

There is usually assumed to be a strict identity condition on ellipsis in that the constituent that is elided must be identical in form to its antecedent in order for it to be fully recoverable.³⁷ Yet Quirk et al (1972), Sag (1976), Warner (1986), Lasnik (1995c) and Rouveret (2012), among others, have all noted that aspectual mismatches are permitted between the antecedent of an ellipsis clause and the ellipsis clause itself, when the lexical verb is bearing the aspectual inflection: for instance, in (87)a the tensed lexical verb *ate* antecedes the ellipsis of infinitival *eat*, and in (87)c, the infinitival form of the verb *eat* antecedes ellipsis of the participle form *eaten*.

- (87) a. Ted **ate** a bunny burger, and soon Robin will [~~eat~~...], too.
b. First Ted **ate** a bunny burger, and now Robin has [~~eaten~~...].
c. Ted will **eat** a bunny burger because Robin has [~~eaten~~...].
d. Ted has **eaten** a bunny burger, and now Robin might [~~eat~~...].

On the other hand, when auxiliary verbs are elided no such inflectional mismatches are permitted. The elided auxiliary must be formally identical to its antecedent:

- (88) a. Ted has already been eaten by a gorilla, and now Robin might *(**be**) [~~eaten by~~...].
b. Ted will be eaten by a gorilla, and Robin will (**be**) [~~eaten by~~...] too.
c. Ted was definitely eaten by a gorilla, and I think Robin has *(**been**) [~~eaten by~~...], too.
d. Ted has been eaten by a gorilla, and Robin has (**been**) [~~eaten by~~...] too.

Lasnik (1995c) argues that this contrast between (87) and (88) supports his approach that auxiliaries enter the derivation already inflected for their tense or aspectual morphology, whereas lexical verbs enter the derivation bare and only

³⁷ There is, however, much debate as to how strict the identity condition is, since sloppy identity readings of the type below, for instance, are possible in English VPE:

- (i) My sister saw herself in the mirror, and my brother did too.
= My brother saw her/himself.

It seems therefore that strict identity is not necessarily always so strict. This is an idea that will be revisited in chapter 5 when considering certain mismatch data in English VPE.

receive inflections later on at PF. Consequently, the lexical verb in the ellipsis sites in (87) will be identical to the lexical verb in the antecedent clause at some point during the derivation, irrespective of its actual surface form, and so is fully recoverable. I illustrate this with the underlying form of the sentence in (87)b:

(89) First Ted T_{ense} **eat** a bunny burger, and now Robin has *-en* [~~eat...~~]

For auxiliaries, which enter the derivation already inflected, this scenario is not available: if the elided auxiliary is inflectionally distinct from its antecedent, they were never identical to one another in the first place, and therefore the elided auxiliary cannot be recovered, leading to a violation of the strict identity condition. I illustrate this with the underlying form of the sentence in (88)c:

(90) * Ted **was** eaten by a gorilla and I think Robin has [~~been eaten...~~] too.

This therefore captures the distinction between auxiliaries and lexical verbs.

Wurmbrand (2011, 2012a) has proposed an update of Lasnik's argument: she claims that auxiliaries, rather than being already inflected, enter the derivation bearing already valued, but uninterpretable inflectional features, whereas lexical verbs bear unvalued inflectional features. If one assumes that the strict identity condition on ellipsis is primarily concerned with recovering the featural composition of the ellipsis site, then this again correctly explains the facts: if the elided auxiliary is inflectionally different from its antecedent, the feature values of the two auxiliaries will never match in the underlying derivation; hence the elided auxiliary cannot be recovered. I illustrate this once again with the underlying form of the sentence in (88)c:

(91) * Ted **be**[uT :**past**] eaten by a gorilla and Robin has [~~be~~[uT :**perf**] eaten...] too.

If the elided lexical verb is inflectionally different from its antecedent, on the other hand, no such violation of strict identity occurs since the inflectional features of both lexical verbs were equally unvalued in the underlying derivation; therefore the lexical verb can always be recovered. I illustrate this again with the underlying form of the sentence in (87)b:

(92) First Ted **eat**[uT :_] a bunny burger, and now Robin has [~~eat~~[uT :_]...]]

This suggests, as claimed earlier, that auxiliaries do indeed enter the derivation bearing already valued, but uninterpretable inflectional features rather than purely unvalued features. This seems to give some justification to the foot-driven movement account argued for in this chapter which is dependent upon the presence of uninterpretable but already valued inflectional features on auxiliaries.

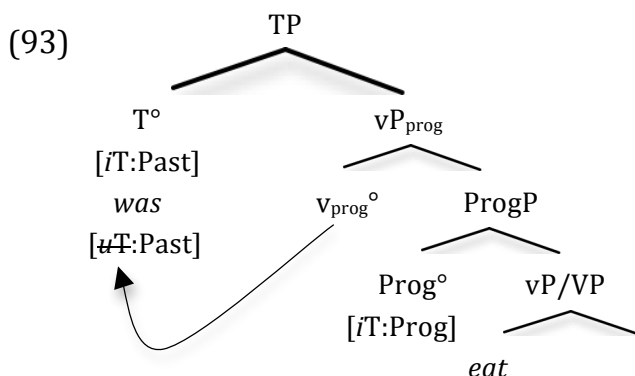
I next discuss how the lexical verb behaves under the approach I have advocated.

3.7.2 The lexical verb

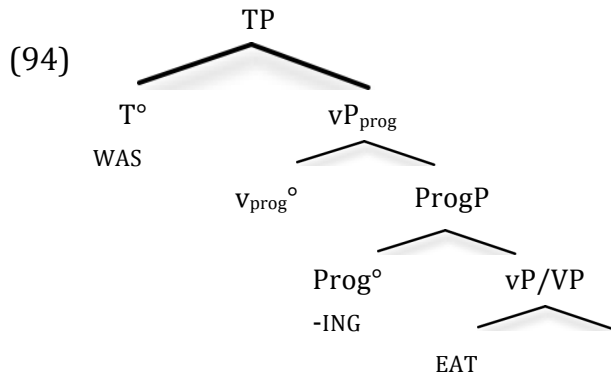
So far, this chapter has almost exclusively focused on the behaviour of auxiliaries, in particular that of non-finite auxiliaries. A point I have stayed away from for the most part is the behaviour of the lexical verb, which I turn to now. As is well known, the lexical verb does not raise beyond v°/V° in English (Emonds 1978; Pollock 1989), despite the fact that it can be fully inflected. Therefore, the question arises how this can be captured under the analysis I have proposed. Here I adopt a hybrid approach to verbal inflection, as per Lasnik (1995c).

Recall that under the analysis I proposed, auxiliaries check their uninterpretable inflectional features via Agree with their interpretable counterparts on higher aspectual heads. This causes auxiliaries to overtly raise to ensure that the relevant matching features are located within their c-command domain.

In order to then explain the distribution of the lexical verb, I propose to follow Lasnik's (1995c) hybrid approach. Under this approach, the lexical verb in English, unlike auxiliary verbs, enters the derivation bare and crucially without any kind of inflectional feature. Therefore it does not undergo raising. This means that an inflectional head in the clausal hierarchy, whether T° or an Aspect° , will never be filled by a verbal element and so is subsequently Spelled Out as a pure inflectional affix. The lexical verb and inflectional affix are then merged together through affixation at PF when the syntactic hierarchy has been dispensed with and the two items are found to be linearly adjacent. I illustrate this in the example below with progressive aspect and the lexical verb *eat*, as in 'X was eating':



In this derivation, the finite auxiliary *was* raises from v_{prog}° to T° to check its inflectional feature. The lexical verb in v°/V° however, does not raise to Prog° for feature checking since the verb has no inflectional features to check. The inflectional head Prog° , being unfilled by any verbal element, is subsequently Spelled Out in accordance with the pure specifications of its own interpretable feature. In this case, the unfilled head of Prog° is Spelled Out as *-ing*:



Because of the Stranded Affix Filter (cf. (95)) (SAF; Lasnik 1995c, 1999a), the derivation is in danger of crashing:

- (95) A morphological realised affix must be a syntactic dependent of a morphologically realised category at surface structure

That is, the progressive *-ing* affix is in danger of violating the SAF since it currently has no host. This problem is solved at PF when the syntactic hierarchy has been dispensed with and a strict linear order has been imposed. At this point the lexical verb and the *-ing* affix are found to be string adjacent to one another:

- (96) Pinocchio was *-ING* EAT

Due to to this linear adjacency, the progressive *-ing* inflection is able to adjoin to the lexical verb under a process known as affixation, *à la* Marantz (1988), Bobaljik (1994), Lasnik (1995c) and Baker (2003), thereby satisfying the SAF:

- (97) Pinocchio was *-ING* + EAT = Pinocchio was eating.

This I claim to be the manner in which lexical verbs are inflected in English.³⁸ This assumption will be further explicated in chapter 6, where it will become crucial for my analysis of aspectual restrictions on existential constructions in English.

By now it seems clear that English auxiliary verbs, whether finite or non-finite, behave differently from the lexical verb in that the former demonstrate properties of raising in various contexts, whilst the latter exhibits no properties of raising whatsoever. However one wishes to analyse auxiliary verbs, accounting for the lexical verb under the same system will always give rise to extra stipulations. Whilst the formalisation mentioned in this section may be able to explain the facts, the question still remains of why this distinction between lexical verbs and auxiliaries should exist in the first place. This is obviously a long-standing issue and one which is not about to be solved in this thesis.

The next issue to be explored is why no distributional distinction between *be* and *been* is apparent in the data.

3.7.3 *Be vs. been*

Admittedly, a problem for the auxiliary raising account is the fact that no distributional distinction can be observed between *be* and *been*. If auxiliary distribution is influenced by morphological form, as the auxiliary raising account predicts, then one might expect a three-way distinction to be observed. That is, rather than there just being a distributional distinction between *be/been* on the one hand, and *being* on the other, there should also be a distinction between *be* and *been*

³⁸ There are two alternative approaches to the one just advocated. One is to claim, as per Chomsky (1993), that lexical verbs bear weak inflectional features and so raise covertly. However, under this approach it is difficult to see how the distinction made between auxiliaries and lexical verbs in section 3.7.1 could be maintained. See also Baker (2003) for arguments against covert head raising.

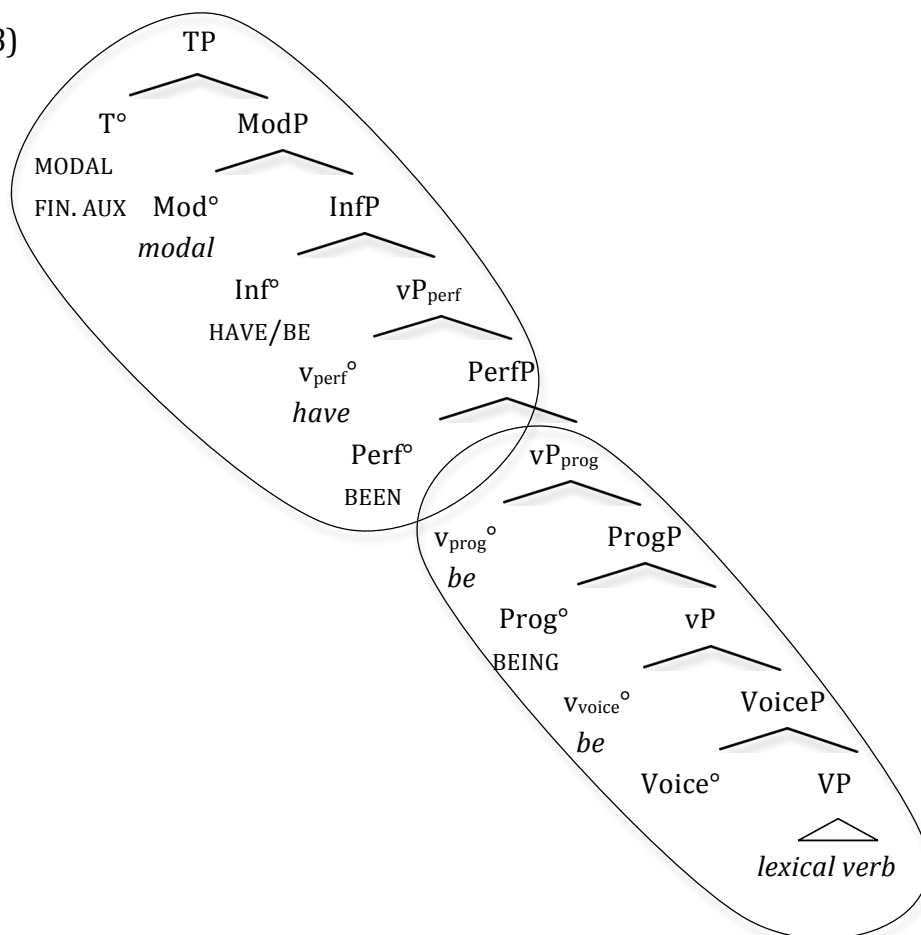
The second option is an elaboration of an idea mentioned in passing by Bjorkman (2011). Bjorkman tentatively suggests that the directionality of Agree could be parameterised across languages. That is, some languages may operate under Agree, whilst others may operate under Reverse Agree. This could be taken one step further by claiming that the directionality of Agree could be parameterised within languages. Namely, auxiliary verbs in English could operate under Standard Agree, hence the need for them to raise to check their inflectional features, whereas the lexical verb could operate under Reverse Agree, hence the reason why it doesn't raise. I entertain this as a possible alternative, but do not pursue this line of enquiry here, partly because it is not compatible with my claims made in chapter 6 regarding existential constructions.

themselves. The fact that this is not observed is potentially problematic. In all of the data reviewed in section 3.4, there are no real instances in which *be* and *been* behave apart. Indeed, to my knowledge there are no phenomena yet observed in Standard English in which *be* behaves conclusively apart from *been*.

Does this therefore prove the auxiliary raising approach wrong? I answer that this lack of a distinction between *be* and *been* does not necessarily mean auxiliary raising is incorrect but is instead the result of there being no structural divide between the landing sites of these two auxiliaries.

Recall that in section 3.5 I attributed the special behaviour of *being* to ellipsis, fronting and existential constructions uniquely privileging the aspectual layer in which *being* surfaces, i.e., the progressive aspectual layer, but not the layers in which *be* and *been* surface, i.e., the modal and perfect aspectual layers. Indeed, the fundamental aim of this thesis is to argue that a structural distinction exists between progressive and perfect aspect: I claim that the progressive aspectual layer patterns along with the voice layer and the lexical verb in comprising a discrete unit of structure whilst perfect aspect, modals, TP and CP constitute a separate, higher structural domain. I take the lower unit of structure to be susceptible to various syntactic phenomena that the higher is not. The general difference in behaviour between *be/been* on the one hand, and *being* on the other, can therefore be explained on account of *be* and *been* sitting on one side of this divide, whilst *being* sits on the other.

(98)

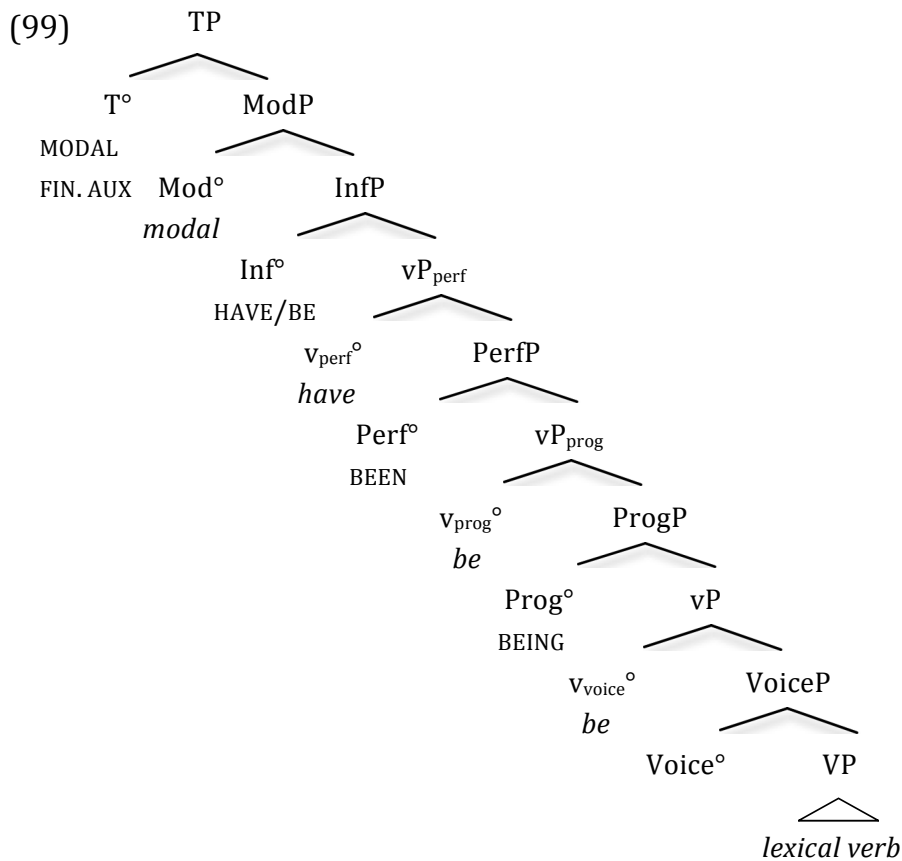


Note, however, that unlike with perfect and progressive aspect, I assume there to be no structural divide between the modal layer and the perfect layer. The empirical evidence for this observation involves VP ellipsis, fronting phenomena, existential constructions, idioms and selectional restrictions, discussion of which is reserved until chapters 4 and 5. Therefore, if there is no structural divide between the modal layer and the perfect layer, which act as the landing sites for *be* and *been* respectively, then it seems unlikely that there would be any syntactic operations which would target one of these layers at the exclusion of the other. Thus it is perhaps to be expected that there are no observed phenomena which can tease apart *be* and *been*.

In the following sub-section, I consider the hierarchy assumed so far and discuss to what extent it can vary in size depending on the functional layers that are projected.

3.7.4 What You See Is What You Get

So far this chapter has assumed the following structural hierarchy of the middle field in English:



Generally this is the hierarchy that will be adopted for the duration of this thesis. However, one point that has not yet been addressed is whether this hierarchy consistently projects as is, or whether it alters depending on what items are expressed semantically. For instance, does the perfect aspectual layer still project in the underlying derivation if perfect aspect is not expressed in the sentence.

Crucially I assume a What You See Is What You Get (WYSIWYG) approach: the relevant verbal and aspectual phrases only project when the necessary aspectual interpretation is expressed by the clause. In a standard matrix clause I assume the topmost projection TP to consistently project as well as the lowest projection VP, although in a copular construction VP would be replaced by the DP, AdjP or PP predicate. ModP, InfP, vP_{perf}, PerfP, vP_{prog} and ProgP, however, are only present underlyingly if modals, perfect aspect or progressive aspect, respectively, are expressed in the sentence. So a sentence which demonstrates no aspectual or modal content would exhibit the following underlying structure of the middle field:

(100) TP > vP > VoiceP > VP

The issue of the presence of vP and VoiceP is slightly more complex. Following Kratzer (1996), Bowers (2002), Collins (2005) and Merchant (2008a, 2013) I will

assume that both vP and VoiceP consistently project in unergative, transitive and ditransitive constructions, as well as in passive constructions. In other words, I claim that active and passive constructions are derived from the same underlying structure. Originally, Hale & Keyser (1993) proposed that v^o, the head which introduced Agentivity, was entirely absent from passive constructions. However, since Agentivity is in some way still implied in passive constructions, as noted by Kratzer (1996), among others, it has been argued that vP should therefore still project in passive constructions. Moreover, as previously stated, I follow Baker (1997), Eide & Åfarli (1997) and Bowers (2002) in assuming that the passive auxiliary is introduced in v^o, therefore the presence of vP in passive sentences is necessary. Similarly, since VoiceP is claimed to encode the active or passive status of a clause (Kratzer 1996; Bowers 2002; Collins 2005; Merchant 2008a, 2013), its presence in both passive and active sentences is also warranted.

I do, however, follow Hale & Keyser (1993) and Bowers (2002) in assuming that unaccusative constructions exhibit a reduced structure. Since Agentivity plays no role in these sentences and since they cannot be passivised either, I assume that both VoiceP and vP are entirely absent from unaccusatives. The structure of the middle field in an unaccusative construction, when modality and aspect are also not expressed in the clause, would therefore merely consist of a TP dominating a bare VP:

(101) TP>VP

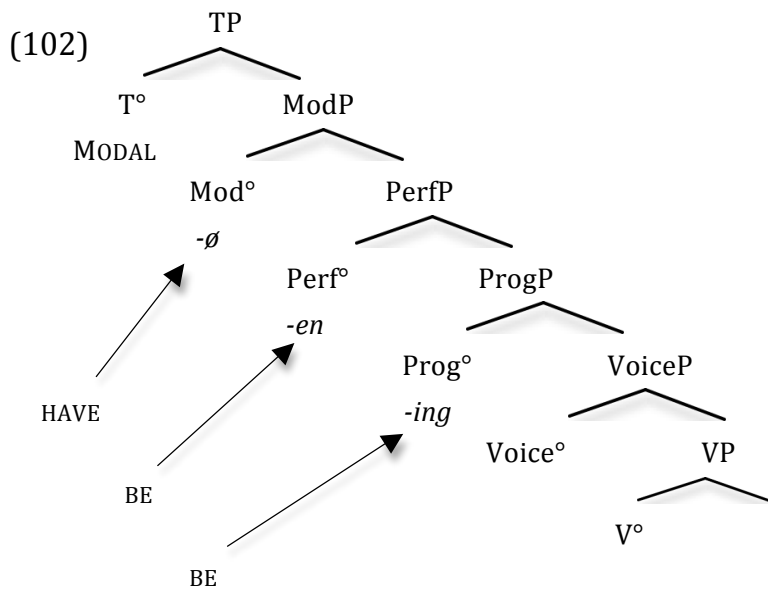
This assumption is rather inconsequential for the majority of the thesis, but will play an important role in chapter 6 when I consider in detail the distribution of the associate in English existential constructions.

This concludes the discussion on the structure of the middle field. In the next subsection I discuss an alternative to both auxiliary raising and affix lowering: auxiliary insertion. In particular I will highlight the shortcomings of this approach.

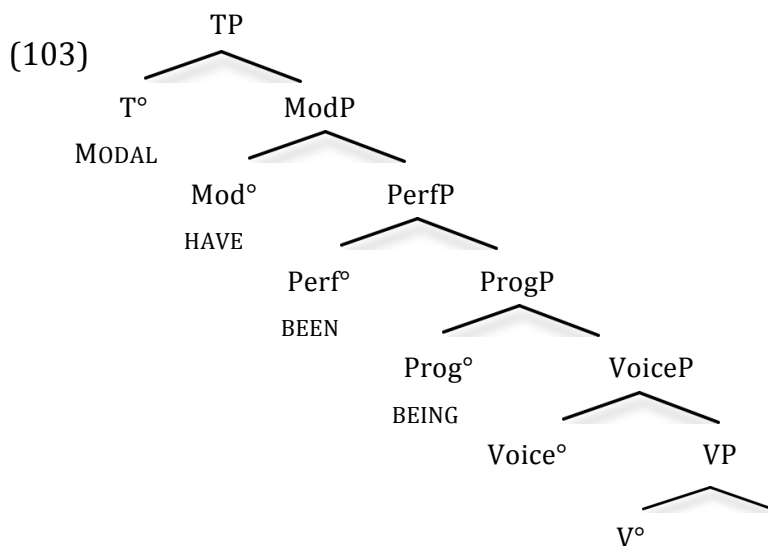
3.7.5 Alternative analysis: auxiliary insertion

An alternative to both affix lowering and auxiliary raising has been proposed by Schütze (2003) and Cowper (2010). In this account auxiliaries are inserted at PF directly into T^o or Aspect^o as a default means of hosting those inflectional affixes which could not attach to the lexical verb. Here I discuss Cowper's (2010) system since it is the most comprehensive. The diagram below illustrates the basic process

of auxiliary insertion, though I maintain the labelling conventions established in this chapter rather than those offered in Cowper (2010) for ease of exposition.



The advantage to this system is that it allows for auxiliary distribution to be correctly determined by morphological form but without the need to postulate additional vP shells, one of the fundamental drawbacks of the auxiliary raising approach, since there is no danger of auxiliaries raising into one another's trace positions.



Despite these apparent advantages, the auxiliary insertion approach has a number of drawbacks of its own. The most obvious problem is the fact that under this approach there are three default auxiliaries at PF in English: *be*, *have* and *do*. In order to determine which auxiliary is selected, Cowper (2010) is forced into stipulating that auxiliary selection is determined by the complement of the stranded inflectional

element that the auxiliary has been inserted to support. That is, *be* is inserted to support an inflectional element that has either a VoiceP or ProgP complement (or a DP, AdjP or PP complement in the case of copular constructions), whilst *have* is inserted to support an inflectional element with a PerfP complement.³⁹ The problem here is that there is no relation established between the stranded inflectional element and its complement, so it is unclear how the complement of the inflectional element can determine which auxiliary form should be inserted. This amounts to a stipulation.

With regards to *do*-support, the situation is more complex. Cowper (2010) claims that NegP is situated above TP and that in negated or SAI sentences T° raises to Neg $^\circ$ and C° respectively.⁴⁰ If a finite auxiliary is present, this would raise along with T° . However, if no auxiliaries are present, and there is only a lexical verb which remains in situ in V°/v° , then T° raises to Neg $^\circ$ or C° as an empty head. Cowper (2010) proposes that T° must be phonetically realised if it is not dominated by the TP it heads, therefore *do* is inserted whenever T° raises as an unfilled head.⁴¹ Whilst this might correctly identify the environments in which *do*-support applies, the proposal is dependent upon the unprincipled requirement that T° must be phonetically realised whenever it is not dominated by the TP it heads. This is somewhat of a problem for the auxiliary insertion approach.⁴²

Finally, recall the distinction that was drawn in section 3.7.1 between auxiliary verbs and lexical verbs. That is, auxiliary verbs can only be elided if they have an identical antecedent, whereas lexical verbs are not subject to such restrictions. This was argued to be on account of auxiliary verbs entering the derivation already inflected/valued, whilst lexical verbs enter the derivation bare. The direct insertion approach, however, has no means of explaining this distinction since auxiliaries, similar to lexical verbs, are argued to enter the derivation bare.

³⁹ Once again, I stress that Cowper's (2010) hierarchy differs from that posited here in terms of labelling, and that I have translated Cowper's system to the hierarchy posited in this thesis for ease of exposition.

⁴⁰ In order to have the subject preceding negation, Cowper (2010) claims that NegP inherits the EPP from TP.

⁴¹ In order to ensure that the lexical verb remains bare when *do*-support applies, Cowper (2010) claims that usually the finite lexical verb is valued in situ by T° , but that this relation is severed when T° raises to Neg $^\circ$ or C° . However, Cowper (2010) remains somewhat vague on exactly how this occurs, and the proposal amounts once again to a stipulation.

⁴² In this chapter I have obviously said nothing about *do*-support. This will be explained in chapter 6 where I assume *do* is inserted at PF to host finite inflections when such affixes have failed to attach to the lexical verb.

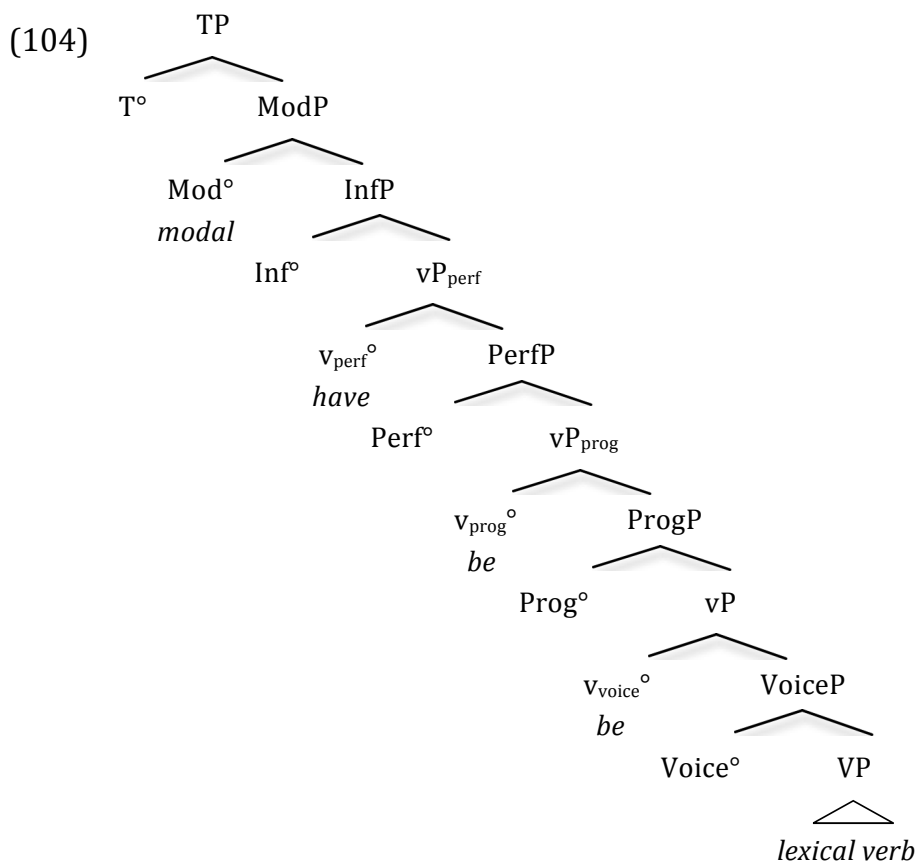
For these reasons I will not adopt the direct insertion approach, despite its initially appealing advantages, and maintain that the auxiliary raising approach is still best suited for explaining the auxiliary pattern of English.

This concludes discussion of the further issues. In the final section, I summarise and conclude this chapter.

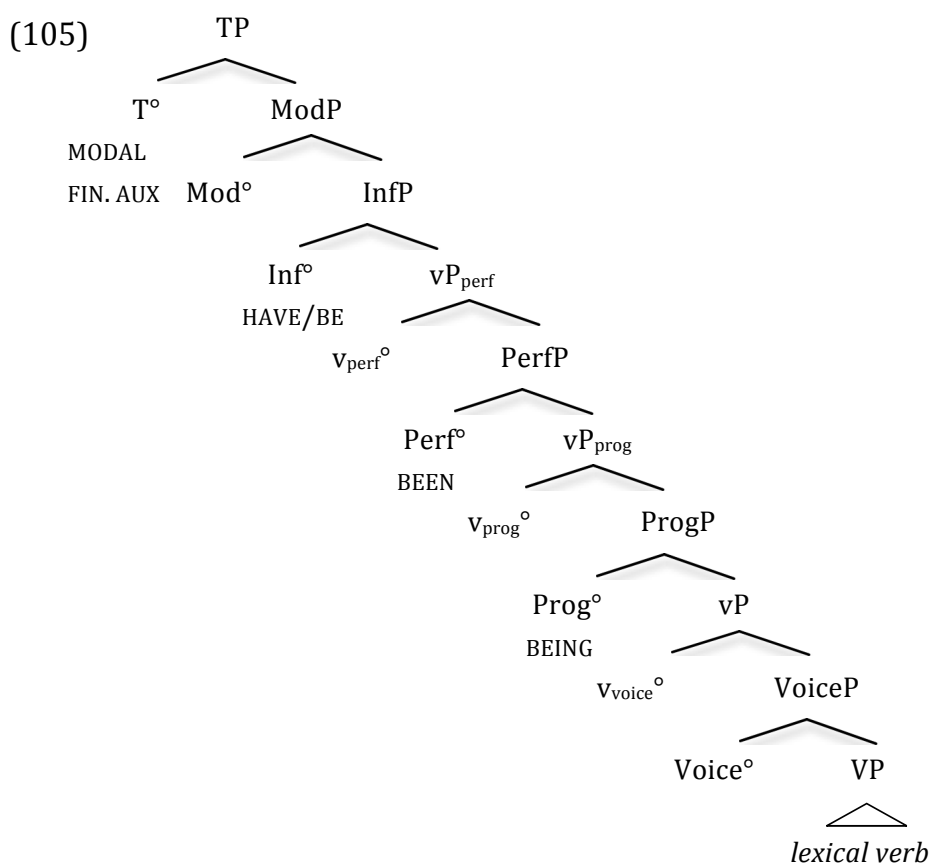
3.8 Summary and Conclusion

The current chapter set out to outline a number of background assumptions that will act as the basis for the remaining chapters of this thesis. In particular it set out to establish a structural hierarchy for the middle field of English and also address the issue of whether English non-finite auxiliaries raise to receive their inflections, or have such inflections lowered onto them. This latter point essentially asks the question of whether the affix lowering or auxiliary raising accounts are better suited for fully capturing the auxiliary inflectional system of English. With respect to this, this chapter arrived at the following conclusions:

- The functional hierarchy of the English middle field is as follows:



- The modal and aspectual layers of the functional hierarchy are only present in the underlying structure if the modal or aspectual interpretations provided by these projections are expressed in the clause. TP and VP consistently project whilst vP and VoiceP project in all active and passive constructions, but not in unaccusatives.
- Due to the empirical inadequacies of the affix lowering approaches, the auxiliary raising approach is best suited for capturing the auxiliary inflectional system of English. This implies that the surface distribution of auxiliary verbs is as follows:



- Auxiliary raising is a syntactic phenomenon that is featurally rather than morphologically motivated. An analysis, initially proposed by Bošković (2007), is utilised in which movement of the auxiliary is driven by a featural deficiency located on the auxiliary itself.
- The feature checking that the auxiliary undergoes is a concern for both the PF and LF interfaces, therefore its inflectional feature must be strong. As a result, the auxiliary undergoes overt movement in the narrow syntax.
- As per Lasnik (1995c) and Baker (2003), lexical verbs enter the derivation bare and receive their inflections via merger under PF linearisation.

The empirical data that led us to adopt an auxiliary raising approach over an affix lowering one was mainly concerned with the behavioural differences exhibited by *be* and *been* on the one hand, and *being* on the other. I argued that this distinction could best be captured under an analysis in which the progressive aspectual layer, together with the Voice and VP layers constitutes a discrete unit of syntactic structure that excludes the perfect and the modal layers, which together with TP and CP form a separate domain of syntactic structure. The lower domain, that which consists of progressive aspect and all projections below it, is uniquely privileged by existential constructions, ellipsis and fronting phenomena, whilst the higher domain is not. If *be* and *been* raise out of the lower domain into the modal and perfect layers, as the auxiliary raising analysis supposes, whilst *being* raises only as far as the progressive aspectual layer, crucially within the lower domain, this would explain the behavioural distinction between *be/been* and *being*.

As stated, this divide between perfect and progressive aspect is essentially the main argument of the thesis. In the following chapters I will argue at length for the existence of this divide and define it in terms of Phase theory. In the next chapter I discuss the ellipsis, fronting and existential data in greater depth within the context of Phases in order to convincingly argue for the existence of a phasal boundary between progressive and perfect aspect.

4

The Size of the Clause-Internal Phase

4.1 Introduction

In this chapter I argue that the clause-internal Phase boundary, which under standard minimalist assumptions is taken to be vP , may extend as far as the progressive aspectual layer, specifically vP_{prog} , when the Phase is considered in light of more elaborate structures such as the hierarchy established in chapter 3. Perfect aspect, on the other hand, is always contained within the higher clausal Phase, along with modals, TP and CP. This proposal is mainly motivated by the peculiar quirks that progressive aspect exhibits across VPE, VPF and existential constructions in English, as already illustrated in section 3.4 of the previous chapter, and further expanded upon here.¹

This chapter is structured as follows: in section 4.2 I show how the current understanding of ellipsis in terms of Phases predicts that the progressive aspectual layer of the clause should be contained within the clause-internal Phase, but not the perfect aspectual layer. Due to the complex nature of ellipsis, this will consume the majority of the discussion of this chapter. Section 4.3 illustrates how Chomsky's (2005), Fowlie's (2010) and Roberts' (2010) claims that only Phases can move predicts that the progressive aspectual layer, but nothing higher, should act as the clause-internal Phase when present, rather than vP . Section 4.4 seeks further support for this proposal from existential constructions, whilst section 4.5 concludes.

¹ This chapter is based on Harwood (*to appear*), a Natural Language and Linguistic Theory paper written by the author, and also on a co-authored paper, Aelbrecht & Harwood (2013).

4.2 Ellipsis and Phases

In this section I discuss the claim that ellipsis is constrained by Phases and show that, when applied to VPE and the English auxiliary paradigm, progressive aspect is included within the clause-internal Phase.² Section 4.2.1 presents the background literature on ellipsis and Phases and concludes, as per Bošković (*to appear a*), that ellipsis may target either the phasal complement or the entire Phase. In 4.2.2 I abstract away from Phase theory and focus on the size of the ellipsis site in English VPE, claiming, as per Aelbrecht & Harwood (2013), that VPE targets the progressive aspectual layer. In section 4.2.3 I deal with the implications that the conclusions from the previous sections have on the size of the clause-internal Phase. Section 4.2.4 then critically evaluates alternative analyses for VPE that have been presented in the literature, in particular those that focus on the ellipsis of *being* and optional ellipsis of other auxiliaries. Finally, section 4.2.5 summarises and concludes the discussion on ellipsis.

4.2.1 Background

This section discusses the previous literature which argues that ellipsis is constrained by Phases. Ultimately I adopt Bošković's (*to appear a*) claim that ellipsis may privilege either the phasal complement, or the entire Phase.

4.2.1.1 Ellipsis as non-pronunciation of the phasal domain

Ellipsis is the deletion of certain domains of syntactic structure. English VPE, for instance, involves deletion of the lexical verb and its internal arguments:

- (1) Apollo punched Rocky, and Mr. T did [~~punch Rocky~~] too.

I follow numerous authors (Ross 1969; Chomsky 1972; Sag 1976; Tancredi 1992; Chomsky & Lasnik 1993; Lasnik 1995a, 1999b, 2001b; Merchant 2001, 2004; Aelbrecht 2010) in assuming that ellipsis phenomena such as VPE are deletion of syntactic constituents at PF.

²I have nothing to say, however, about the licensing requirements on ellipsis.

A long-standing issue with ellipsis phenomena has been why only certain constituents are targeted by ellipsis. Gengel (2007, 2008) suggests a potential solution to this problem by connecting ellipsis sites to phasal Spell-Out domains. That is, Gengel (2007, 2008) observes that ellipsis sites appear to correspond to Spell-Out domains. This is most clearly illustrated in sluicing (Ross 1969; Saito & Murasugi 1990; Merchant 2001), which is the ellipsis of TP:

- (2) Pinocchio lied about something, but I don't know [_{CP} what [_{TP} ~~Pinocchio lied about~~].

Under the standard approach to Phase theory, C° is a Phase Head and TP is the Spell-Out domain. Therefore, ellipsis in (2) appears to target the Spell-Out domain of the clausal Phase.³

VPE can also be analysed as non-pronunciation of the Spell-Out domain of the clause-internal Phase. VPE has traditionally been analysed as deletion of VP (Akmajian & Wasow 1975; Sag 1976; Akmajian Steele & Wasow 1979; Lasnik 1999b, 2001b, Gengel 2007, 2008), containing the lexical verb and its internal arguments. If vP is the clause-internal Phase and v° the Phase Head, as per Chomsky (2000, 2001), then VP is the Spell-Out domain (under a minimal C-T-v-V structure), and hence the ellipsis site.

According to Gengel (2007, 2008), the elided constituent is always that part of the Phase which is shipped off from the syntax, namely the phasal complement. This makes sense intuitively: a completed Phase ships off its complement to PF and LF for pronunciation and interpretation. With regards to ellipsis, all that needs to be said is that, at PF, one chooses to either pronounce or not pronounce the Spell-Out domain. So ellipsis essentially marks the phasal Spell-Out domain for non-pronunciation at PF. Crucially then, ellipsis is constrained by Phases, in that it only ever targets phasal complements. This approach has been assumed by van Craenenbroeck (2010), Rouveret (2006, 2011, 2012), Gallego (2010), Sailor (2012), Wurmbrand (2012a) and Bošković (*to appear a*).

³ NP ellipsis is another possible instance of ellipsis targeting the phasal complement if one assumes, as per Chomsky (2005), that DPs constitute Phases.

4.2.1.2 The complement or the entire Phase?

However, as Bošković (*to appear a*) notes, the facts are not quite as simple as they at first appear. It has been claimed that Japanese, Korean, Turkish, Chinese and American Sign Language all allow for full argument ellipsis (Oku 1998; Kim 1999; Saito 2001, 2004, 2007; Tomioka 2003; Sugawa 2008; Sener & Takahashi 2010; D. Takahashi 2008a, b, 2010; Bošković 2011b; Koulidobrova 2011; Takita 2011a, b; cited in Bošković *to appear a*). This is illustrated below for Japanese:⁴

(3) a. Taro-wa sannin-no sensei-o sonkeisiteiru.

Taro-TOP three-GEN teacher-ACC respects.

‘Taro respects three teachers.’

b. Hanako-mo e sonkeisiteiru.

Hanako-also respects.

‘Hanako respects e, too.’

(Sener & Takahashi 2010, cited in Bošković *to appear a*:(30))

Saito (2007), D. Takahashi (2010) and Bošković (*to appear a*) additionally observe that Japanese allows for CP and PP argument ellipsis as well. If CPs, DPs and PPs are Phases, as assumed by Chomsky (2000, 2001, 2005), Fowlie (2010), Koopman (2010), Aelbrecht & Den Dikken (2013) and Bošković (*to appear a,b*),⁵ then the aforementioned data imply that ellipsis can also target the entire Phase rather than just the complement of the Phase Head. Indeed, Holmberg (1999, 2001), Fox & Pesetsky (2003), Aelbrecht (2012b) and Bošković (*to appear a*) have claimed outright that ellipsis indeed targets entire Phases. Going one step further, Bošković (*to appear a*) supposes that ellipsis is constrained by Phases in that only either the phasal complement or the entire Phase can be elided. That is, there is a degree of variation as to whether ellipsis privileges the one or the other. This choice can differ cross-linguistically, as well as between types of ellipsis within any one language.⁶

⁴ As Sener & Takahashi (2010) and Bošković (*to appear a*) note, the sentence in (3)b can have a sloppy interpretation which is only possible under an ellipsis analysis and not under a null pronoun/object drop analysis.

⁵ Chomsky (2000, 2001, 2005) does not actually explicitly assume PP to act as a Phase, though the rest of the aforementioned authors do.

⁶ It should be noted that, under this analysis, ellipsis can never target any other constituent, such as the complement of the complement of a Phase Head.

Bošković (*to appear a*) elaborates an argument involving extraction data in support of the claim that ellipsis can privilege either the phasal complement or the entire Phase. Here I summarise his argumentation.

First, note that if an entire Phase can be elided and ellipsis only targets that part of the Phase which is Spelled Out, then there is an implication that Spell Out of an entire Phase is sometimes possible.⁷ Recall furthermore that, in order for elements generated within the lower Phase to undergo operations within higher Phases, they must first proceed via the Phase Edge in order to escape Spell Out. Recall also that PIC₂ (Chomsky 2001) is assumed according to which Spell Out within a lower Phase does not occur until the Phase Head of the higher Phase has been Merged. For instance, in a minimal C-T-v-V structure, Spell Out from the vP Phase does not occur until C° is Merged. Bošković (*to appear a*) notes that these assumptions make an interesting prediction, namely that extraction from a Phase should be more restricted if the entire Phase is Spelled Out as opposed to when only the phasal complement is Spelled Out.

Consider, for instance, the extraction possibilities under a minimal C-T-v-V structure in which C and v are Phase Heads, and the items α and β represent an Agentive subject and a *wh*-object, respectively. Upon completion of the vP Phase, α and β raise to the specifiers of vP (if they do not occupy this position already, as is most likely the case for the Agentive subject):⁸

$$(4) \quad [{}_{vP} \beta \alpha [v [{}_{vP} [V t_p]]]]$$

Once TP is Merged, the Agentive subject α raises to the canonical subject position of Spec-TP:

$$(5) \quad [{}_{TP} \alpha [T^\circ [{}_{vP} \beta t_\alpha [v [{}_{vP} V t_p]]]]]$$

Merger of C°, the next Phase Head, instantly triggers Spell Out of the lower Phase. At this point the syntax is presented with a choice: to either Spell Out the phasal

⁷ Indeed, Fox & Pesetsky (2003, 2005), Svenonius (2004, 2005), Fowlie (2010), Richards (2011) and Aelbrecht (2012b) have all argued for full phasal Spell-Out. See section 4.2.1.4 for a formalisation of how Spell Out of the phasal complement or the entire Phase can occur.

⁸ I explicitly assume a theory which permits multiple specifiers.

complement, or the entire Phase. Consider what would happen in each instance. If only the phasal complement, VP, was Spelled Out, the lower Phase Head v° and its specifiers would survive Spell Out. Therefore the *wh*-object, β , remains in the derivation and is able to undergo movement to Spec-CP (I grey out the constituent that has been sent to Spell-Out):

$$(6) \quad [_{CP} \beta [C [_{TP} \alpha [T^\circ [_{VP} t_p t_\alpha [v [_{VP} V t_p]]]]]]]]$$

If, on the other hand, the entire lower Phase, including the Phase Head and Edge, was Spelled Out, then the *wh*-object, β , would also be sent to Spell Out and hence would be unavailable for further syntactic computations. The result therefore is that β would be unable to extract from the lower Phase and raise to Spec-CP:⁹

$$(7) \quad [_{CP} C [_{TP} \alpha [T^\circ [_{VP} \beta t_\alpha [v [_{VP} V t_p]]]]]]]$$

Crucially, extraction of elements from the clause-internal Phase into the complement of the higher Phase Head C° should always be possible. The difference between the two scenarios will be that Spell Out of the entire lower Phase should make extraction difficult for elements moving into the specifier of the C° Phase Head. When only the lower phasal complement is Spelled Out, however, and the Phase Head and its Edge survive, all kinds of extraction are predicted to be possible.

In other words, movement from the clause-internal Phase into the TP domain, hereby referred to as ‘low movement’, is always predicted to be possible regardless of whether Spell Out affects the complement of the Phase Head or the entire Phase. Under Spell Out of the entire Phase, however, movement from the clause-internal Phase into the higher CP layer, hereby referred to as ‘high movement’, becomes problematic. So when high movement is seen to occur, we can take this to be an indication that only the phasal complement has been sent to Spell Out. On the other

⁹ It has of course been argued that all operations triggered by a single head, e.g. C° , happen simultaneously (Chomsky 2005, Richards 2007). Therefore, Spell Out and movement of the operator to Spec-CP would occur at the same time and no restrictions on extraction would occur. This is not the case with PIC₂ (Chomsky 2000), however, in which Spell Out triggered by C° must precede any other operations related to C° , otherwise the Spell-Out domain of the clause-internal Phase would be visible to C° .

hand, if we see that high movement is disallowed, we can take this to be an indication that the entire Phase has been sent to Spell Out.¹⁰

One such instance in which the entire Phase is shipped off to Spell Out is under certain ellipsis phenomena in which an entire Phase is apparently elided, as was the case with the full argument ellipsis data, reviewed at the beginning of this section. Bošković (*to appear a*) observes that in these cases, high movement is not permitted. Shinohara (2006) and Saito (2007), for instance, note that A'-extraction is disallowed out of argument ellipsis sites in Japanese:

- (8) * Sono hon-o_i Taroo-wa [_{CP} Hanako-ga t_i katta to] itta si,
that book-ACC Taroo-TOP [_{CP} Hanako-NOM bought that] said and,
sono hon-o_j Ziroo-mo ∅ itta.
that book-ACC Ziroo-also ∅ said.
'Taroo said that Hanako bought that book, and Ziroo also said that she bought that book.'
(Shinohara 2006 and Saito 2007, cited in Bošković *to appear a*:(36))

Recall from (3) that Japanese exhibits full ellipsis of DP, PP and CP arguments, indicating ellipsis of the entire Phase in such instances. The discussion above implies that the Phase Edge of the DP, CP or PP argument is unavailable for A'-extraction out of this ellipsis site and therefore predicts A'-movement to be disallowed in such ellipses. Taking CP arguments as an example, this prediction is borne out in the data in (8): A'-extraction is not permitted under CP argument ellipsis. This data therefore provides further evidence that full argument ellipsis in languages such as Japanese involves full phasal ellipsis. This implies that, in general, entire Phases can be shipped off from the syntax and elided under certain circumstances, rather than just the phasal complement.

English also appears to exhibit instances of ellipsis in which entire Phases can be elided. Baltin (2006, 2007, 2012) and Aelbrecht (2010) have noted that British English *do* does not allow *wh*-object (high movement) extraction out of the ellipsis site:

¹⁰ This is obviously not the only restriction on high movement, since Locality considerations and island constraints also have an effect.

- (9) * Although I don't know who Thomas will visit, I do know who Aga will do
[visit t_{who}]. (Aelbrecht 2010:(83))

Bošković (*to appear a*) analyses this as ellipsis of the full vP Phase on account of A'-extraction being disallowed in such environments: the entire vP Phase is elided, therefore its Edge is not available for A'-movement to proceed through, thus explaining why A'-extraction is not possible out of such an ellipsis site.¹¹ This is contrasted with VPE in which *wh*-object extraction from the ellipsis site is allowed:

- (10) Although I don't know who John will visit, I do know who Fred will [visit
 t_{who}]. (Baltin 2007:(2))

On the basis of this contrast English VPE may be conceived of as ellipsis of the phasal complement: the phasal complement of the clause internal-Phase is elided, stranding the vP Phase Head and its Edge within the syntactic derivation. Therefore the Edge is available for high movement such as A'-movement to proceed through, explaining why A'-extraction is permitted in the case of VPE.

Hence, these data reveal that the choice of whether to elide the entire Phase or just the phasal complement can apparently vary within any one language. Bošković (*to appear a*) further claims that the choice of whether to elide the entire Phase or just the phasal complement can even vary even within a single ellipsis type, and that VPE in English is one such instance. I will follow this assumption. In the next section I provide novel evidence in support of this latter claim.

4.2.1.3 New evidence for full phasal ellipsis

We have already seen above that generally VPE privileges the phasal complement. I show here, however, that when ellipsis is applied to existential constructions, the data indicates that VPE can sometimes target the entire Phase. Consider the distribution of the derived associate of a passive existential:

- (11) There were **several men** arrested for drunkenness.

¹¹ See, however, Aelbrecht (2010) and Baltin (2012) for accounts of ellipsis extraction data which argue against a (necessarily) phasal approach to ellipsis. See also Haddican (2007) for an alternative pro-form analysis.

In this sentence, as briefly mentioned in chapter 3, the expletive *there* appears to occupy Spec-TP, preventing the derived associate from raising to this position. However, given that the derived associate is not occupying its base, post-verbal position, but occurs pre-verbally, we must conclude that some form of intermediate raising has taken place. Chomsky (2000, 2001) analyses this sort of construction as involving stranding of the associate on the clause-internal Phase Edge. Essentially, the derived associate raises to the clause-internal Phase Edge so that it can enter into a Case checking relation with T° in the higher Phase.¹² As mentioned already, Merger of expletive *there* into Spec-TP, however, satisfies the EPP on T° and blocks further raising of the associate, which must then have its Case feature checked through pure Agree with T°, without movement being involved. The derived associate is thus stranded on the Edge of the clause-internal Phase where it precedes the lexical verb.¹³ This analysis can be extended to other types of existentials as well, such as unergative and transitive existentials.

Returning to Phases and ellipsis, but with the aforementioned analysis of existentials in mind, it is interesting to note that when VPE applies in an existential construction, the associate does not escape ellipsis:

- (12) John said there were several people arrested last night, and indeed there were (***several people**) arrested.

If ellipsis in general could only target phasal complements, and if the associate of an existential indeed occupies the clause-internal Phase Edge, as has been argued, then one would expect the associate to survive ellipsis. That is, if VPE could only apply to the phasal complement of the clause-internal Phase, and associates surface on the Edge of this Phase, then the associate should not be elidable, contrary to fact. Given that the associate is affected by VPE I conclude that it must be included in the ellipsis site. This indicates that in this case the entire Phase must undergo ellipsis.

Moreover, recall that when an entire Phase has been elided, high movement becomes problematic. In light of this, it is remarkable, but expected under the

¹² Despite postulating raising to the edge of this Phase, Chomsky (2001) actually assumes the clause internal Phase in passive constructions to be a weak Phase, though Legate (2003) has shown the clause internal Phase to always be strong, even with passives and unaccusatives.

¹³ See section 4.4 for a more thorough discussion of existential constructions and Phases. Also see chapter 6 for a full, dedicated analysis.

approach I adopt, that whilst *wh*-movement is perfectly acceptable out of a non-elliptical existential construction, such extraction is impossible under VPE:

- (13) a. I don't know what there were so many people getting worked up about
t_{what} yesterday...
- b. * ... but I do know what there were [~~so many people getting worked up~~
~~about t_{what}~~] last week.

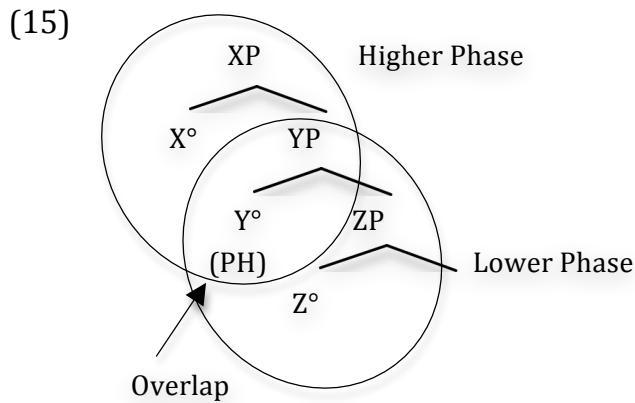
These data constitute further evidence that VPE, whilst generally privileging the phasal complement of the clause-internal Phase, can sometimes target the entire Phase.

This particular observation is also difficult to explain under more standard, non-phasal accounts of ellipsis extraction data, which predict VPE to uniformly allow for all kinds of extraction.

4.2.1.4 Formalising the choice between Phase and phasal complement

As was noted in the previous section, if ellipsis only ever targets Spell-Out domains, and entire Phases can sometimes be elided, then an entire Phase must sometimes, but not necessarily always, be able to act as a Spell-Out domain. This gives rise to the question of how full phasal Spell Out is sometimes possible. In order to address this point I elaborate on an idea suggested in Bobaljik & Wurmbrand (2005), who proposed that Phase Heads are in fact domains of overlap between two Phases. That is, under this view, I conjecture that the Phase Head (PH in the diagram in (15)) of the lower Phase is in fact a head which is simultaneously selected by both the first and second Sub-Numerations of the clause (cf. (14) – the first Sub-Numeration I indicate with **bold**, the second with *italics*). Therefore, when projected onto the syntactic workspace, this head simultaneously acts as the highest node of the lower Phase, and the lowest node of the higher Phase, meaning that the two Phases overlap at this point, as is shown in (15):

- (14) [***X*** [***Y***]***Z***]



This implies that Phase Head Y in fact shares Spell Out properties with both the lower and the higher Phase in that it can be Spelled Out with either one. The upshot of this is that there is a degree of optionality as to when Y is Spelled Out. It may Spell Out with the higher Phase as traditionally assumed, thus acting as an escape hatch for movement out of the lower Phase. This results in the traditional view of Phases in which the phasal complement of the lower Phase is Spelled Out separate from the Phase Head. The alternative is that Y is Spelled Out with the lower Phase, resulting in full phasal Spell Out, which would allow us to explain how entire Phases can sometimes be targeted by ellipsis. However, exactly how, when and why the derivation chooses to Spell Out the Phase Head is as yet not entirely clear and is a matter that I largely leave for future research. I assume that the default option is for Y to be Spelled Out with the higher Phase so that an escape hatch for movement is provided, and that Y is only Spelled Out with the lower Phase, i.e. full phasal Spell Out, when additional factors come into play. In section 4.2.3 I claim that one such instance in which full phasal Spell Out occurs is when ellipsis is required to privilege the full Phase in order to delete problematic syntactic items. In other words, full phasal Spell Out is sometimes required as a rescue mechanism. However, I do not necessarily claim this to be the only occasion in which full phasal Spell Out is possible. There may be a number of factors that could influence this decision for which further study is required.

This – admittedly still somewhat speculative – proposal also potentially solves a conceptual problem that has faced Phase theory since its initial inception, namely the notion of the Phase Head itself. Although the Phase Head has been conceptually necessary to act as an escape hatch for movement out of the Phase, the existence of a special Phase Head is a pure stipulation, since there is no principled reasoning why this head should be Spelled Out separate from the phasal complement. Indeed, Fox & Pesetsky (2003, 2005), Fowlie (2010) and Richards (2011) have all tried to dispense with the Phase Head and argue for full phasal Spell Out, deriving cyclic movement to the edge of the Phase via other means.

By claiming that the Phase Head is in fact an arbitrary syntactic item that is simultaneously selected by two Phases, and hence acts as a domain of overlap, we are actually able to dispense with the stipulated notion of Phase Heads whilst still allowing for a phasal escape hatch.¹⁴

In this thesis, consideration of full phasal Spell Out is only relevant for discussion on ellipsis, but not for the other phenomena to be explored. For the rest of this dissertation, therefore, I will continue to use the traditional terms Phase Head and Phase Edge for ease of exposition, though one might want to think of them in terms of overlapping domains.

To summarise section 4.2.1, discussion of the literature on Phases and ellipsis has led us to the conclusion that, as claimed by Bošković (*to appear a*), ellipsis privileges either the phasal complement, or the entire Phase, and that this can differ cross-linguistically, within any one language, and even within a single type of ellipsis. This was evidenced by full argument ellipsis in various languages, ellipsis of the associate on the Phase Edge in English existentials, and certain restrictions on extraction. Whilst, admittedly, it is not yet entirely clear nor predictable when ellipsis targets the phasal complement or the entire Phase, both options appear to be possible.

In section 4.2.2 I abstract away from the specifics of Phase theory and discuss the size of the ellipsis site in English VPE. In section 4.2.3 I bring together the conclusions from the previous two sections to argue that progressive aspect should be contained within the clause-internal Phase in English.

4.2.2 The VP Ellipsis site

4.2.2.1 The auxiliary ellipsis paradigm

VPE has often been analysed as deletion of VP or vP (Akmajian & Wasow 1975; Sag 1976; Akmajian Steele & Wasow 1979; Lasnik 1999b, 2001b; Johnson 2001, 2004; Merchant 2001, 2008a, 2013; Gengel 2007, 2008; Aelbrecht 2010), which contains the lexical verb and its internal arguments. However, the facts are not quite so simple. As mentioned in chapter 3, both Akmajian & Wasow (1975) and Sag (1976)

¹⁴ The concept of Phase Heads is perhaps not entirely dispensed with yet though, since Phase Heads under PIC₂ are needed to trigger Spell Out of the lower phasal complement. In order to dispense with this property of Phase Heads I claim that Spell Out of the lower phasal complement is triggered as soon as the last arbitrary item from the higher Sub-Numeration is merged, which almost invariably will be C°. Thus the Phase Head is no longer conceptually necessary.

note that when the full range of auxiliaries is considered, we see that it is not just the lexical verb that is elided:

- (16) Betsy must have been being hassled by the police, and...
- a. * Peter must ~~have been being~~ hassled by the police, too.
 - b. Peter must have ~~been being~~ hassled by the police, too.
 - c. Peter must have been ~~being~~ hassled by the police, too.
 - d. * Peter must have been being ~~hassled by the police~~, too.

(Sag 1976:(1.2.32))

It is clear that finite auxiliaries and modals cannot be elided. Sag (1976) additionally assumes that it is also impossible to elide the non-finite perfect auxiliary *have* (cf. (16)a).¹⁵ The non-finite auxiliary *been*, however, can be optionally elided, (cf.(16)b,c) and, most importantly, the auxiliary *being* is obligatorily elided under VPE (cf.(16)d).¹⁶ This paradigm is summarised in the following table, with the addition of *be*, which was not included in Sag’s (1976) paradigm but, as will be demonstrated in the following section, can also optionally elide.

Table 2: Auxiliary ellipsis paradigm of VPE

	Modal/finite aux	<i>Have</i>	<i>Be</i>	<i>Been</i>	<i>Being</i>	Lexical Verb
Elided	*	*	(✓)	(✓)	✓	✓

Putting aside the optional ellipsis cases for the moment and focusing on *being*, I conclude that if the passive auxiliary is obligatorily elided under VPE when it has raised into the progressive layer for inflectional purposes (recall that I claim *being* to raise to Prog^o), then the ellipsis site must be somewhat larger than previously assumed, extending as far as the progressive layer:

¹⁵ Whether non-finite *have* can actually be elided or not is a matter very much open to debate, and one which I discuss in section 4.2.2.3.

¹⁶ Aelbrecht & Harwood (2013) note that like other auxiliaries, *being* survives ellipsis if it does not have an identical antecedent:

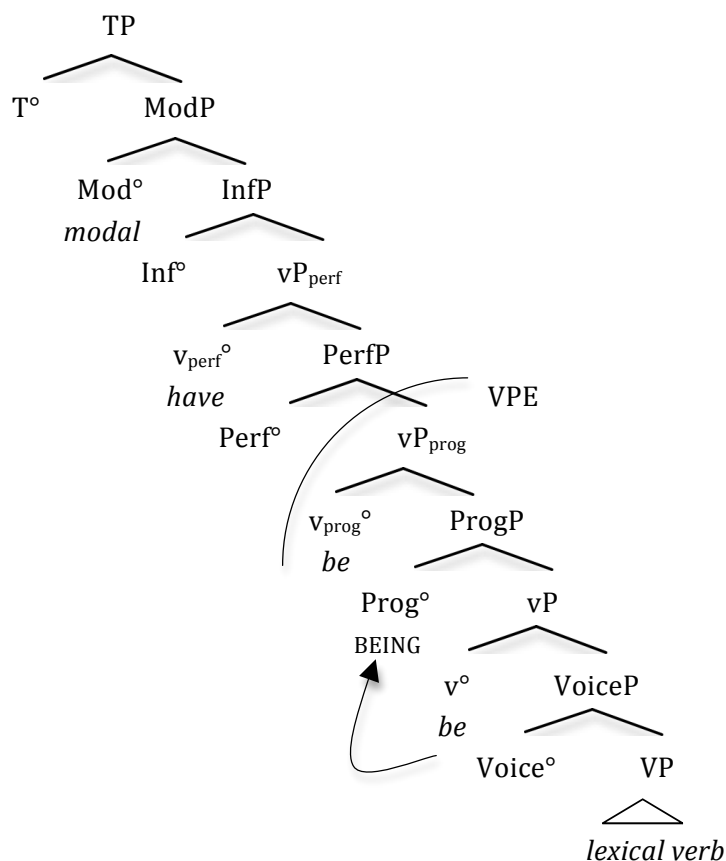
(i) A: I told you to be quiet.

B: I am being.

(Thoms 2012:(46))

Examples such as this are rather rare, however, and appear to be extremely unstable in that they often given rise to highly contrasting judgments. For these reasons I leave aside potential counter-examples such as this.

(17)



As noted in chapter 3, however, this proposal is not generally adopted in the literature: Lobeck (1987), Bošković (2004, *to appear* a), Thoms (2011) and Sailor (2012), in the spirit of Akmajian & Wasow (1975), Akmajian, Steele & Wasow (1979) and Iwakura (1977), claim that the obligatory ellipsis of *being* should instead be understood as resulting from the fact that *being* does not raise out of v°, and therefore that VPE is ellipsis of only vP. This obviously excludes VPE eliding only as much as VP, but it allows us to hold on to the notion that VPE targets vP.

In the previous chapter I already argued against such an approach and will continue to do so here. In what follows I review evidence provided by Aelbrecht & Harwood (2013) (A&H) which demonstrates that the progressive layer is indeed included in the ellipsis site in VPE. This gives a principled explanation for why *being* is obligatorily elided without needing to stipulate non-raising of this auxiliary: *being* raises into the progressive layer of the clause, but this is still included within the ellipsis site. Therefore it never escapes ellipsis. The relevant data also suggests that the perfect aspectual layer is not included within the ellipsis site.

In order to demonstrate empirically that the progressive aspectual layer should be included in the ellipsis site of English VPE but not the perfect aspectual layer, A&H turn to the optional ellipsis of non-finite auxiliaries as first noted by Akmajian & Wasow (1975) and Sag (1976) and as typified in (16)b,c.

4.2.2.2 Optional auxiliary ellipsis: auxiliary *be*

Recall from the data in (16) and from table 2 that the auxiliaries *be* and *been* can be optionally elided (and debatably non-finite *have* as well, as mentioned in footnote 15). There have been numerous attempts to explain the optional ellipsis data, but the different analyses can essentially be divided into two approaches: optional extension of the ellipsis site to include the projections containing these auxiliaries (Akmajian, Steele & Wasow 1979; Bošković *to appear a*), or optional raising of the auxiliaries out of the ellipsis site (Aelbrecht & Harwood 2013; Sailor 2012; Thoms 2012). However, irrespective of which analysis one chooses, the common consensus is that for an auxiliary to be optionally elided it must have, at the very least, been Merged inside the ellipsis site.

I show in this section, following A&H, that the only auxiliaries that can uncontroversially be elided are those which are first Merged within or below the progressive layer, i.e., the progressive, passive and copular auxiliaries. Section 4.2.2.3 shows that auxiliaries generated above the progressive layer, i.e., perfect *have*, cannot generally be elided.¹⁷ This suggests VPE targets as much as the progressive layer, but no more.

First of all, it is quite clear and fairly uncontroversial that both passive and copular auxiliaries can be elided. This is evidenced by the obligatory ellipsis of *being* illustrated in (18) below, and by the optional ellipsis of *be* and *been* (see (19) below for the passive auxiliary and (20) for the copula). If the passive and copular auxiliaries are Merged in v° , this shows that at least as much as vP is elided under VPE.

- (18) a. Goofy was being chastised, and Pluto was (***being**) ~~chastised~~, too. (pass)
b. Goofy was being annoying, and Pluto was (***being**) ~~annoying~~, too. (cop)
- (19) a. Roger has been framed, and Nixon has (**been**) ~~framed~~, too.
b. Roger will be framed for murder, and Nixon will (**be**) ~~framed for murder~~, too.
- (20) a. Betty has been in the garden, and Sam has (**been**) ~~in the garden~~, too.
b. Betty will be in the garden tonight, and Sam will (**be**) ~~in the garden tonight~~, too.

¹⁷ Another way of looking at this is to say that forms of *be* can be elided, whilst other types of auxiliaries cannot.

Obviously, cases in which *been* and *be* are optionally elided might give the impression that in such instances something larger is elided, such as PerfP or InfP, the heads of which these auxiliaries raise to. I argue, however, that this is an illusion. As will be demonstrated later, I take optional ellipsis of such auxiliaries to be due to optional raising of these auxiliaries out of the ellipsis site and not necessarily due to optional extension of the ellipsis site to include PerfP or InfP.

Moving on, A&H note that the ellipsis of progressive *be*, Merged in the progressive layer, is more complicated than the passive or the copula. Generally it looks like the progressive auxiliary, when realised as *be* or *been*, can optionally be elided:

- (21) a. Roger will be questioning our motives, but Peter won't (**be**).
b. Roger has been questioning our motives, but Peter hasn't (**been**).

However, observe that when progressive *be* or *been* is elided, the content of the elided constituent is unclear. The elided phrase in (21) is assumed to be [*be/been questioning our motives*], but a mismatch interpretation is also available in which progressive aspect is entirely absent and the elided constituent is in fact [*question/questioned our motives*]. This mismatch interpretation masks whether or not the progressive auxiliary can truly be elided.

A&H claim, however, that there are means of showing that progressive *be/been* can genuinely elide. Deal (2009) and Harwood (2011) have both observed for English that whilst the lexical verb in unaccusative existentials can surface in all inflectional forms, the lexical verb in unergative existentials is mysteriously restricted only to the progressive participle form:¹⁸

- (22) a. There **arrived** several letters in the mail today. (Finite)
b. There will **arrive** several letters in the mail today. (Infinitive)
c. There have **arrived** several letters in the mail. (Perfect)
d. There are several letters **arriving** in the mail today. (Progressive)
- (23) a. * There danced several hippos. (Finite)
b. * There will several hippos dance. (Infinitive)
c. * There have several hippos danced. (Perfect)
d. There were several hippos dancing. (Progressive)

¹⁸ The same restriction holds for transitive and ditransitive existential constructions as well.

Therefore, unergative existentials are considered to be dependent upon progressive aspect.¹⁹

If we apply ellipsis to an unergative existential construction, we can be certain as to the presence of progressive aspect in the underlying structure. That is, there is no potential aspectual mismatch reading available to mask the ellipsis of the progressive auxiliary. These patterns therefore provide a diagnostic for ellipsis of the progressive auxiliary. Indeed, in such constructions, we see that the progressive auxiliary can be optionally elided:²⁰

¹⁹ See chapter 6 for an explanation of these facts.

²⁰ As mentioned in chapter 3, it has been argued in the literature (Williams 1984; McNally 1992; Moro 1997; Law 1999) that existentials of the type depicted here in fact involve a reduced relative clause (RRC). That is, all the material following the associate is actually contained inside an RRC and is not part of the main clause (cf. (i)). If this is correct, we cannot use existentials to make any claims about VPE in main clauses. The supposed optional ellipsis of progressive *be* would actually be optional ellipsis of copula *be*, and the supposed ellipsis of the entire Phase observed in (12) and (13) would just be ellipsis of the nominal predicate.

(i) [_{TP} There were [_{DP} several hippos [_{RRC} (who were) dancing]]]

However, although an RRC structure for existentials is possible, existentials may also behave as full clause constructions, and moreover, so can those cases involving ellipsis. This is evidenced by the fact that these existentials exhibit properties which relative clauses do not. In chapter 6 I review this evidence more thoroughly, though here I provide three pieces of evidence from the literature and connect them with ellipsis to show that existential constructions, including those that have undergone ellipsis, can be derived from a full clause.

First of all, Deal (2009) has observed that whilst reduced relatives must precede full relatives, no such restriction occurs on existentials:

- (ii) a. The teacher scolded [the student [laughing in the hall] [who was wearing a cap]].
b.* The teacher scolded [the student [who was wearing a cap] [laughing in the hall]].
c. There is a man <laughing in the hall> [who's wearing a cap] <laughing in the hall>.

Therefore, existentials have an underlying structure available to them that does not involve an RRC, but a single full clause. Transferring this observation to existentials involving VPE, the same pattern holds:

- (iii) Bob said there had been a man who was wearing a cap laughing in the hall, but in fact there hadn't (been) [~~a man who was wearing a cap laughing in the hall~~].

Furthermore, Chomsky (2001) has observed that existential constructions permit idiom chunks, whereas existential constructions containing a relative clause do not:

- (iv) a. There was all hell breaking loose downstairs.
b.* There was all hell which was breaking loose downstairs.

Once again, in conjunction with VPE, existentials behave according to the full clause structure:

- (24) a. Bob said there had been a clown dancing at his birthday party, even though we all knew that there hadn't (**been**) ~~a clown dancing...~~
b. Bob says there will be a clown dancing at his birthday party, even though we all know that there won't (**be**) ~~a clown dancing...~~

A&H also note that there are certain idiomatic constructions which are dependent upon progressive aspect, for instance *be dying to*:

- (25) Bob is dying to meet you = Bob is keen to meet you.

Without progressive aspect, the idiomatic interpretation is altogether lost:

-
- (v) Barney said there would be all hell breaking loose downstairs, but I didn't think there would (be) ~~all hell breaking loose downstairs.~~

Finally, Milsark (1974); Rezac (2006) and Caponigro & Schütze (2003) observe that existential constructions without a lexical verb, i.e., those in which only copular *be* is present, are illicit under an eventive interpretation:

- (vi) *There's just been a dog.

Even in instances in which a relative clause is present, the derivation cannot be rescued since the lexical verb is contained inside the relative clause and therefore has no effect upon the acceptability of the main clause:

- (vii) *There's just been a dog which was dancing on stage

Therefore, if existential constructions could only ever be formed from RRCs, and not from matrix clauses, then all existentials in English should be illicit under an eventive interpretation. That is, the lexical verb that we see in existentials is predicted to always be embedded inside an RRC and so should not be able to render the main clause as licit. This is not the case, however, since existentials with a progressive unergative verb are licit under eventive aspect:

- (viii) There has just been a dog dancing on stage.

This suggests that existentials have an underlying full clause structure available to them. Once again, in conjunction with VPE, existentials behave according to the full clause structure:

- (ix) Barney says there has just been a dog dancing on stage, but I don't think there has ~~just been a dog dancing on stage.~~

All this implies that ellipsis in existential constructions is a normal case of VPE and therefore that any conclusions drawn from these types of constructions can be drawn about VPE in general.

- (26) a. Bob has died to meet you ≠ Bob has been keen to meet you.
b. Bob will die to meet you ≠ Bob will be keen to meet you.
c. Bob died to meet you ≠ Bob was keen to meet you.

Once again, if we apply ellipsis to such idioms, and the idiomatic interpretation remains intact, this is indicative that progressive aspect is present in the elided constituent. That is, there would be no potential mismatch interpretation available as an alternative to the ellipsis of the progressive auxiliary. This provides a further diagnostic for ellipsis of progressive *be/been*. Here too, we see that the progressive auxiliary can indeed be elided:

- (27) a. Bob has been dying to meet you, even though he says that he hasn't
(been) ~~dying to meet you~~.
b. Q: Are you sure Bob will be dying to meet George Lucas?
A: He most certainly will **(be)** ~~dying to meet George Lucas~~.

If the progressive auxiliary is first Merged in the progressive aspectual layer, the fact that forms of this auxiliary can elide suggests that at least as much as the progressive aspectual layer is included within the VP ellipsis site.

4.2.2.3 Non-finite *have*

A&H observe that the issue of whether perfect *have*, Merged in the perfect layer, is elidable, is still more complex. This is a notable grey area in ellipsis research with two competing viewpoints. Whilst Sag (1976), Zagana (1988), Lobeck (1987), Johnson (2001), Bošković (*to appear*) a) Sailor (2009, 2012), Wurmbrand (2012a) and Aelbrecht & Harwood (2013) all take it that *have* can in general not be elided, Akmajian, Steele & Wasow (1979), Lasnik (1995c) and Thoms (2011) have claimed that non-finite *have* can in fact elide. Evidence cited in favour of the latter claim are sentences such as the following, in which *have* appears to be optionally elided:

- (28) John might have called, and Bill might **(have)** [~~called~~], too.
(Wurmbrand 2012a:(35))

Against such a view, Johnson (2001) and Wurmbrand (2012a) argue that the presence of perfect aspect in the first conjunct does not necessarily imply the presence of perfect aspect in the ellipsis site: when perfect *have* is apparently elided,

the perfect layer, including the auxiliary, is in fact entirely absent from the second conjunct and the elided phrase is instead understood simply as [*call*]. This mismatch reading makes it unclear whether *have* can at all be elided. In order to rule out this mismatch interpretation Wurmbrand (2012a) employs conflicting time specifications between the first and second conjuncts, thereby forcing a reading in which perfect aspect would have to be present in the underlying derivation of the ellipsis site. In such cases her informants judged ellipsis of *have* as ungrammatical. This leads to the conclusion therefore that non-finite perfect *have* indeed cannot be elided.

- (29) John might have called yesterday, and Bill might ***(have)**, two days ago.
(Wurmbrand 2012a:(36))

Below I present three further contexts which can be exploited to ascertain whether or not non-finite perfect *have* can truly elide. The general finding is that *have* cannot so easily be elided, although idiolectal or dialectal variation are not discounted.

As discussed by A&H, one means of testing whether *have* can be elided is to exploit certain fixed expressions which are dependent upon perfect aspect: *have been to*, and *have been around the block*, in which *been* in both cases carries a motion reading that is otherwise unavailable without perfect aspect. In the absence of perfect aspect, these constructions are entirely ungrammatical:²¹

- (30) a. Bob has been to Rome.
b. * Bob was to Rome.
c. * Bob will be to Rome.
d. * Bob was being to Rome
- (31) a. Bob has been around the block a few times.
b. * Bob was around the block a few times.
c. * Bob might be around the block a few times.
d. * Bob was being around the block a few times.

²¹ The construction in (30) was noted by A&H. Thanks to Craig Sailor for pointing out the construction in (31).

If we apply ellipsis to patterns which are anteceded by such expressions, we can be certain as to the presence of perfect aspect in the underlying structure of the ellipsis site. Therefore no aspectual mismatch interpretation would interfere to mask the potential ellipsis of *have*, providing a further diagnostic for *have*-ellipsis. In such cases, we see that the non-finite perfect auxiliary cannot in fact be elided:

- (32) a. This time next year Bob will have been to Rome, and Betsy will ***(have)** ~~been to Rome~~, too.
b. Betsy thinks that Bob might have been around the block a few times, and I also seem to think that he might ***(have)** ~~been around the block a few times~~.

A further test discussed by A&H exploits Lasnik's (1995c) and Warner's (1986) observation (as also discussed in chapter 3) that, unlike lexical verbs, auxiliary verbs can only be elided if they have an identical antecedent:

- (33) a. Sue has **been** eaten by cannibals, and Bob might ***(be)** ~~eaten~~..., too.
b. Sue might **be** eaten by cannibals now that Bob has ***(been)** ~~eaten~~...

Thus, in (34) (adapted from Thoms 2011), the passive auxiliary in the elided constituent must be identical to its antecedent form *been*, in order for the sentence to be grammatical:

- (34) Bob might have been fired, and Morag might have **(been)** ~~fired~~, too.

This means that the elided passive auxiliary is dependent upon perfect aspect in order to be realised as *been* and fulfil the identity requirement. This provides us with another sentence that requires the presence of perfect aspect. No mismatch interpretation between the antecedent and the ellipsis site is available to mask the

potential ellipsis of *have*. Once again, we find ellipsis of non-finite *have* to be unacceptable:²²

(35) Bob might have been fired, and Morag might ***(have) been fired**, too.

The results are similarly replicated with the copular auxiliary:

(36) Bob might have been in the garden, and Morag might ***(have) been in the garden**, too.

Once again, ellipsis of copula *been* is dependent upon the presence of perfect *have* to provide the perfect aspectual inflections. Therefore, perfect aspect is forced in both conjuncts of the sentence, so no mismatch reading may interfere. This provides a reliable diagnostic for *have*-ellipsis. As the results above show, ellipsis of non-finite *have* is again unacceptable in these environments.

Finally, Sailor (2012) notes that *before*-clauses also force a reading that is dependent upon perfect aspect, meaning that once again no mismatch interpretation is available to obscure the potential ellipsis of *have*. In such cases, Sailor's (2012) informants rejected ellipsis of *have*:

(37) Mary could have studied harder for the exam. Before finally taking it yesterday, she really should ***(have)**. (Sailor 2012:(36))

Taken together, these four tests suggest that non-finite perfect *have* generally cannot be elided.

²² Note that the ellipsis site can be interpreted in one of two ways: the hearer can interpret the ellipsis site as containing *have* (see (i)), or they can accommodate with a mismatch interpretation without *have* (as in (ii)):

(i) * Ted might have been fired, and Morag might [~~have been fired~~], too.

(ii) * Ted might have been fired, and Morag might [~~be fired~~], too.

Both options lead to ungrammaticality: option 2 is illicit because of the identity requirement on *be* (i.e., there is no *be* present in the antecedent, so *be* cannot be elided), and option 1 is unacceptable because deletion of *have* is disallowed under VPE. Either way, the data demonstrates that *have* cannot be included in the ellipsis site.

However, a proviso is in order. The data is in fact not quite so clear-cut as I have presented it so far, as there tends to be disagreement with regards to the judgments. For instance, of the 20 British English speakers A&H consulted, 20% actually accepted ellipsis of *have* in (32).²³ All of their informants rejected ellipsis of *have* in sentences such as (35), though this sentence has been reported as grammatical in Thoms (2011). Moreover, Wurmbrand (2012a) has noted in her work a number of dissenting judgments in which ellipsis of *have* is deemed acceptable in sentences such as (29). Similarly, Sailor's (2012) work was based on American English informants, who he found to uniformly reject ellipsis of *have* in (37), but noted that a number of Canadian English speakers appeared to accept it. The issue as to whether *have* can be elided or not can therefore not be conclusively resolved at present.

However, of the 20% of informants who accepted ellipsis of *have* in sentences such as (32), A&H reported that some still regarded the sentence as degraded in comparison to cases in which *have* has not been elided. This is a notable contrast with ellipsis of *be* and *been*, for which speakers notice no difference in acceptability between sentences in which *be* or *been* have been elided, and sentences in which they have not.²⁴ Moreover, it should be noted that no speaker consistently accepted ellipsis of *have* across the various tested phenomena. Again, this contrasts with ellipsis of *be* and *been*, in which all informants consistently accepted ellipsis of these auxiliaries. The fact also remains that there are many speakers who indeed outright reject ellipsis of *have* in all contexts. Given the general tendency of the literature and judgments collected to date, I assume that the default option for English is that *have* cannot be elided. If the perfect auxiliary is Merged in the perfect layer, specifically in the head of vP_{perf} , then the fact that it cannot be elided suggests that the perfect aspectual layer is not included within the VPE ellipsis site.

However, I must also concede that there is idiolectal or dialectal variation in which certain speakers in certain contexts allow for apparent ellipsis of *have*. Because deletion of *have* appears to be somewhat restricted and unstable in comparison to *be/been* deletion, I would like to claim it is not actually *have* deletion as such, but rather a rescue mechanism that is available to certain speakers in certain linguistic contexts. This would explain the restricted nature of apparent *have*-deletion. Because it is not yet predictable which speakers allow for apparent ellipsis of *have*, nor in which contexts, it is difficult to ascertain exactly what this additional

²³ The 20 speakers stem from all parts of the UK, though there is a concentration of speakers from the north of England and the midlands.

²⁴ Native speakers of English will hopefully notice that the sentence they have just read involved ellipsis of *been* and that there was no question as to the acceptability of this sentence.

mechanism should be. Here I offer a few tentative proposals as to what operation may be involved in apparent *have*-deletion.

Modals aside, all finite auxiliaries in English have the property of being able to undergo cliticisation:

- (38) a. He's/They've gone home.
b. I'm/We're/He's going home.

Perfect *have* however, is unique in being the only non-finite auxiliary that can cliticise. This is perhaps best illustrated by the fact observed by Johnson (1988) and Kayne (1997) that *have* can cliticise to the modal and subsequently be pied-piped along with it during subject auxiliary inversion, whilst *be* cannot:

- (39) a. Shouldn't've Pam remembered her name?
b. * Shouldn't be Pam remembering her name?

(Adapted from Kayne 1997:51)

Auxiliaries that can cliticise in English appear to be susceptible to ever more extreme forms of cliticisation in which their phonological forms may be reduced to the point at which they are not pronounced at all. The contexts in which such a phenomenon can occur are rare, but one such instance is with finite auxiliaries in *wh*-questions in Northern varieties of British English:

- (40) a.% Where you been?
b.% What you doing?

Furthermore, as noted by Kayne (1997), non-finite *have* can cliticise in increasingly reduced forms. For instance, the more traditional 've cliticisation can be replaced by the significantly reduced form of 'a:²⁵

²⁵ See Kayne (1997) for an alternative analysis in which these cliticised forms actually constitute a distinct form from the perfect auxiliary, namely the complementiser *of*.

- (41) a. You should've closed the door behind you.
b. You shoulda closed the door behind you.

It seems possible therefore that non-finite *have*, like its finite counterpart, could cliticise in certain linguistic environments to the point at which it is not pronounced at all. I conjecture that one context in which such extreme cliticisation applies, albeit not necessarily restricted to Northern varieties of British English, is under ellipsis. That is, the apparent ellipsis of non-finite *have* could in fact be attributed to extreme cliticisation of *have* to the point of non-pronunciation, adjacent to an ellipsis site.²⁶

- (42) a. John might have called, and Bill might've [~~called~~], too.
b. John might have called, and Bill mighta [~~called~~], too.
c. John might have called, and Bill might [~~called~~], too.

As an alternative analysis for apparent *have*-deletion, Kayne (1997:49) has claimed that "some [varieties of] English are able to embed participial phrases directly under modals, without the intermediary of an auxiliary verb *have*." This is directly observable in other Germanic languages such as Swedish, Norwegian (Taraldson 1984; Julien 2002), Icelandic and Faroese (Einarsson 1945; Lockwood 1977). I illustrate this here with examples drawn from Norwegian:²⁷

- (43) Vi skulle gjort det før
we should done it before
'We should have done it before' (Kayne 1997:50)

It therefore may be possible that what looks like ellipsis of non-finite *have* in the English of some speakers may in fact be an instance of the modal introducing perfect aspect without the intervening auxiliary verb. This particular phenomenon may have

²⁶ It is well known that cliticisation of finite auxiliaries adjacent to an ellipsis site leads to ungrammaticality. However, Wood (1979) and Kayne (1997) have noted that it is perfectly acceptable for non-finite *have* to undergo cliticisation when adjacent to an ellipsis:

(i) A: Don't you think that Roland Rat should've left the party by now?
B: Yeah, he really should've/shoulda.

²⁷ See also Breitbarth (2005) for a discussion of similar data in diachronic German.

died out in certain varieties of English, but may exist in others in the context of ellipsis as a rescue mechanism for when *have* is apparently elided.

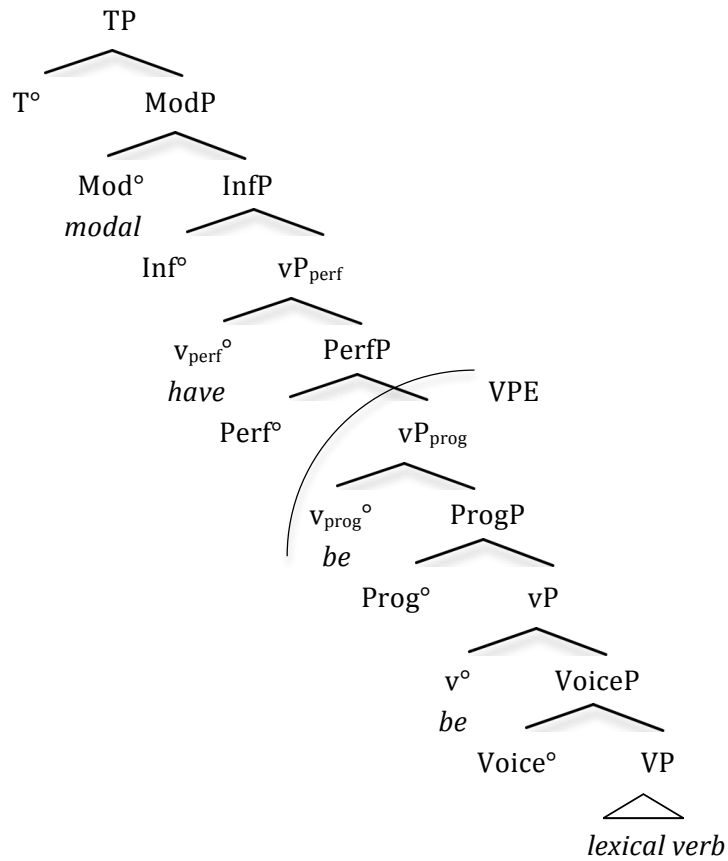
To conclude this discussion, I assume that the default option in English is that non-finite *have* cannot be elided and that those speakers who do allow for such apparent ellipsis utilise a rescue mechanism to obtain this effect, but which is not actually ellipsis in itself. I have presented two such potential mechanisms above.²⁸

4.2.2.4 Taking stock: VPE elides as much as vP_{prog}

I have so far shown, following A&H, that progressive, passive and copula auxiliaries can be elided under English VPE, whilst, under the default option, perfect *have* cannot. It is standardly assumed that in order for auxiliaries to be elided they must have been Merged within the ellipsis site. Since the auxiliaries which can uncontroversially elide are all Merged within or below the progressive aspectual layer, suggests that the ellipsis site can be as large as the progressive aspectual layer, specifically vP_{prog} , but no larger:

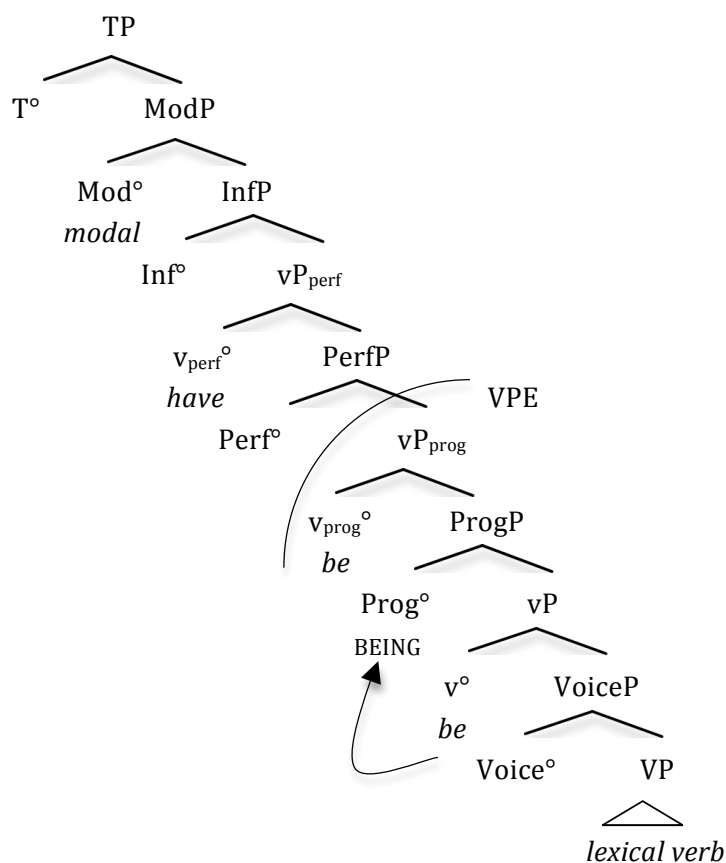
²⁸ An alternative option is to claim that the clause-internal Phase, which in the next section I will argue to be as large as vP_{prog} (but no larger), could act as a constraint on the amount of structure that is minimally elided, but that ellipsis could also optionally target structures larger than this. This would explain the optional ellipsis of various auxiliaries. In principle I am not opposed to this proposal, but in the following sections and chapters I show that VP fronting phenomena, idioms and existential constructions uniformly privilege the same unit of structure, that is, vP_{prog} , and nothing higher. It would therefore be a mystery why VPE can optionally privilege domains of structure larger than this, but the other phenomena cannot. Because of this issue I am not convinced that such a proposal could be easily formalised at present.

(44)



As stated earlier, this explains why *being* is always elided: it only raises to ProgP, which is inside the ellipsis site of vP_{prog}. *Being* never raises out of the ellipsis site, so it never escapes ellipsis:

(45)



In what follows I show how this assumption regarding the size of the ellipsis site can capture the rest of Sag’s (1976) auxiliary ellipsis paradigm, repeated here:

Table 2: Auxiliary ellipsis paradigm of VPE

	Modal/finite aux	<i>Have</i>	<i>Be</i>	<i>Been</i>	<i>Being</i>	Lexical Verb
Elided	*	*	(✓)	(✓)	✓	✓

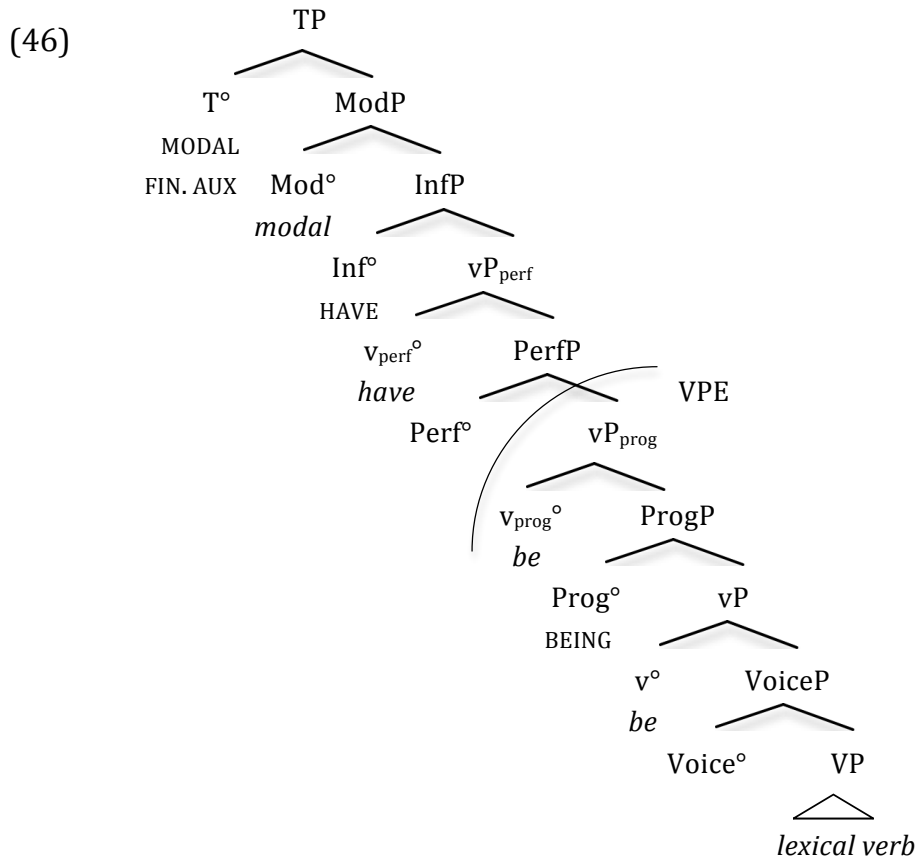
In section 4.2.2.4.1 I first deal with the more straightforward cases: the obligatory ellipsis of the lexical verb and the non-ellipsis of *have*, modals and finite auxiliaries. Section 4.2.2.4.2 deals with the more complex cases concerning optional ellipsis of *be* and *been*.

4.2.2.4.1 Lexical verbs, *have*, modals and finite auxiliaries

Beginning with the obligatory ellipsis of the lexical verb, I follow Bowers (2002) in assuming that the lexical verb in English, if it raises at all, raises to Voice°, but not

beyond this.²⁹ Therefore the lexical verb is unable to raise out of the vP_{prog} ellipsis site, so is obligatorily elided under VPE.

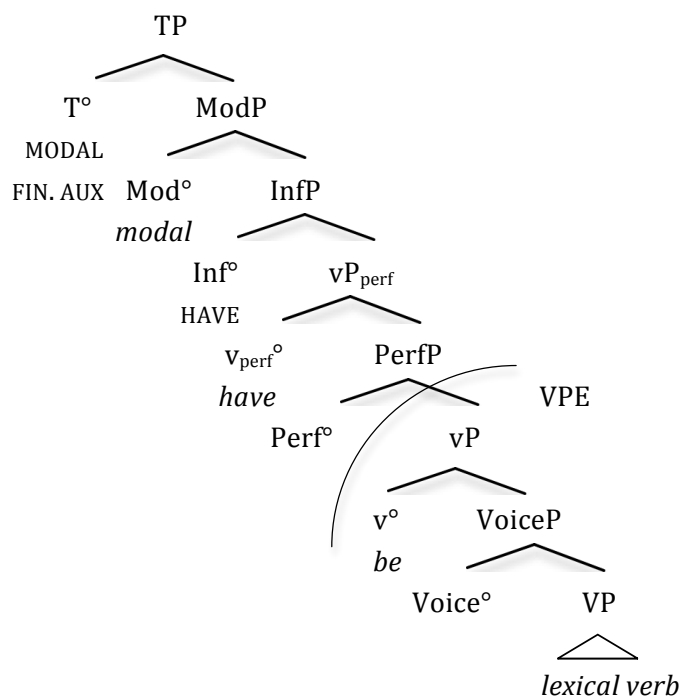
The non-ellipsis of non-finite *have*, and also modals for that matter, can also be easily explained: they are Merged above the ellipsis site, so naturally cannot be elided. Furthermore, all finite auxiliaries raise to T° , which is crucially above the ellipsis site, thus the non-ellipsis of finite auxiliaries is also captured.



Note that, since I assume WYSIWYG with respect to which projections are present in the structure, I predict that in the absence of progressive aspect, the site of English VPE is vP . In such instances, the lexical verb is still contained within the ellipsis site and so is elided under VPE. All finite auxiliaries raise to T° , thereby escaping ellipsis of vP , and *have* and modals are still contained outside of the ellipsis and so cannot be elided.

²⁹ In passive constructions especially, when v° is filled by passive *be*, raising of the lexical verb beyond Voice° would lead to a Locality violation.

(47)



4.2.2.4.2 Be and been

To finish this section, I discuss how the optional ellipsis of *be* and *been* is derived, drawing on the analysis developed in A&H.

Recall first of all from chapter 3 that I assume auxiliaries raise in order to check their own strong inflectional features. Because these features are strong, such raising and checking takes place in the overt syntax prior to Spell Out in order to converge at both PF and LF and prevent any crashes from occurring at either of these interfaces.

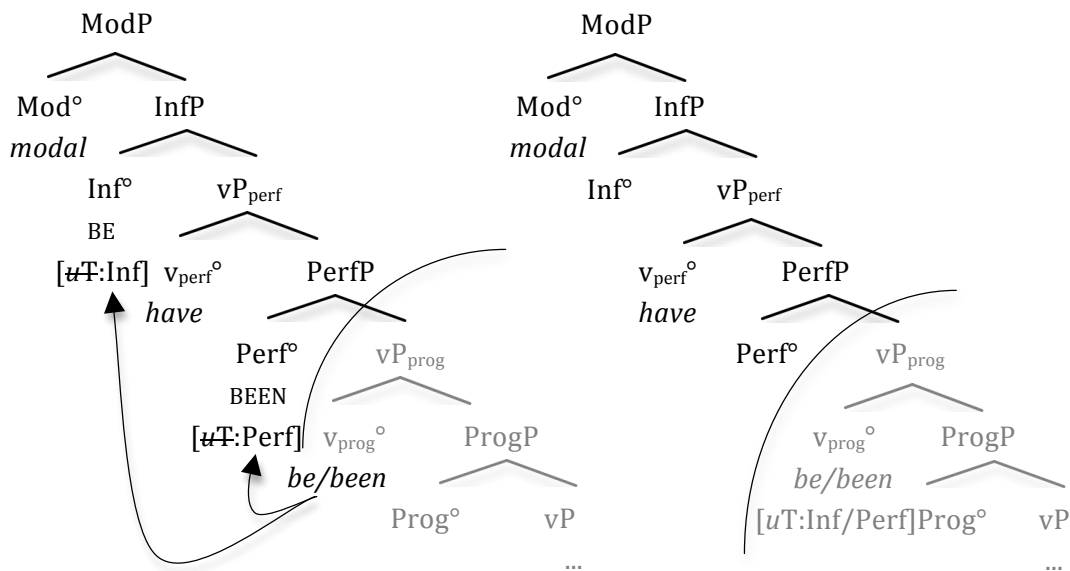
Following this assumption, A&H claim, in a nutshell, that optional ellipsis of *be/been* results from optional raising of these auxiliaries out of the ellipsis site. In the case of raising, the auxiliaries move out of the ellipsis site, surviving ellipsis, and have their inflectional features checked against the relevant aspectual heads. In the case of non-raising, the auxiliaries remain in the ellipsis site and are elided. This implies however that the auxiliary has been unable to check its strong inflectional feature against the relevant Aspectual head, leading to a potential derivational crash at the interfaces. However, when the auxiliary is elided, ellipsis also deletes the auxiliary's unchecked inflectional feature at PF, preventing a derivational crash at this interface. Therefore ellipsis rescues the derivation. With the auxiliary's inflectional feature being deleted at PF, this feature now only remains a problem for the LF interface, in which case it is checked covertly on the LF branch of the syntax, converging correctly at LF.

In other words, there are two derivational paths available, raising and non-raising, both of which result in a grammatical sentence, and so give rise to optionality.

To be more explicit, recall that the ellipsis site is vP_{prog}/vP (depending on whether or not progressive aspect is present). To surface as *be* or *been*, the progressive auxiliary – or its passive or copular alternative – should raise to the respective inflectional heads Inf° or $Perf^\circ$, which are crucially outside of the ellipsis site, in order to check its strong inflectional feature. Therefore such raising would cause the auxiliary to survive ellipsis.

However, raising of the auxiliary does not have to occur in contexts in which ellipsis takes place. When *be* and *been* are elided, it is because they have failed to raise out of the ellipsis site. Of course, this entails that the auxiliary has failed to check its strong inflectional feature against Inf° or $Perf^\circ$, which should cause a derivational crash at PF. However, ellipsis, being a PF deletion operation, is able to rescue the derivation. The problematic auxiliary, along with its strong unchecked feature, is deleted at PF by ellipsis, and is therefore no longer a problem for the PF interface. Therefore the derivation is saved. The diagrams in (48) show how ellipsis and non-ellipsis of non-finite auxiliaries works with the progressive auxiliary. This proposal sits in line with a large body of work that claims that ellipsis can act as a PF rescue operation for various phenomena (see Ross 1969; Chomsky 1972; Chomsky & Lasnik 1993; Lasnik 1995a, 1999b, 2001a,b; Merchant 2001; Fox & Pesetsky 2003; Bošković 2011b; Müller 2011).

(48) Non-deletion of *be/been* Deletion of *be/been*



Of course, ellipsis is only a PF deletion operation; it does not delete syntactic structures at LF. This implies that the auxiliary’s unchecked inflectional feature still exists on the LF branch of the syntax and must be checked before arrival at the LF

interface so as to prevent a derivational crash. In this case, the inflectional feature covertly raises and checks on the LF arm of the syntax, thereby correctly converging at LF. Due to the covert nature of this operation, and the fact that the morphological form of the auxiliary has been deleted, such raising and checking cannot be directly observed.³⁰

A potential problem with this approach is that it wrongly predicts that the finite copular, passive and progressive auxiliary should also be optionally elided, since this involves raising of auxiliaries from a position within the ellipsis site to T° , a position outside of the ellipsis site. But as illustrated in the paradigm in table 2, all finite auxiliaries escape ellipsis. It has been claimed, however, that a finite auxiliary in T° is independently needed in order to license VPE itself (Zagona 1982, 1988; Lobeck 1995; Johnson 2001; Gengel 2007; Aelbrecht 2010). This requirement on ellipsis licensing would naturally rule out ellipsis of finite *be*. Therefore, the inability of finite *be* to elide is in fact not a problem for the analysis I adopt.

Recapitulating, I propose that the ellipsis site is maximally vP_{prog} , which includes the base position of all instances of *be* (progressive, passive and copular). This one claim essentially captures the entire auxiliary ellipsis paradigm: *being* never raises beyond Prog° , so is always contained within the ellipsis site, explaining why this form is always elided under VPE. The lexical verb similarly does not raise out of the ellipsis site, and so is also obligatorily elided under VPE. *Have* and modals, on the other hand, are always Merged outside of the ellipsis site, and so cannot be elided. Since all finite auxiliaries raise to T° , which is crucially outside the ellipsis site, and are responsible for ellipsis licensing, they too cannot elide. *Be* and *been* are Merged within the vP_{prog} ellipsis site, but raise out of it to check their strong uninterpretable inflectional features. This captures their optional deletion: if they raise out of the ellipsis site to check their features, they survive ellipsis. If they remain in the ellipsis site, their strong uninterpretable features are elided along with them, preventing a derivational crash at PF. Since ellipsis does not delete LF structures, the auxiliary's

³⁰ Since progressive, passive and copula *be* are generally semantically contentless, however, an alternative option is to claim that the inflectional features they carry are purely PF features. That is, they must only be checked prior to PF and are of no concern to LF whatsoever, in which case, covert raising along the LF branch is not required. In chapter 3 the fact was briefly discussed that verbal head movement can have a semantic impact and so must undergo feature checking for the purposes of both PF and LF. This does not imply however that head movement always has semantic import. There may indeed be cases, such as raising of *be* and *been*, which only have morphological/phonological import, in which case it would make sense to claim that these auxiliaries only undergo raising and feature checking for the purposes of PF.

inflectional feature remains on the LF branch of the derivation, but is subsequently checked within the covert syntax for convergence at LF.

Therefore, by assuming that VPE targets the progressive aspectual layer, in particular vP_{prog} , when progressive aspect is present, we are able to fully capture Sag's (1976) paradigm for auxiliary ellipsis.

Having established that VPE in English targets as much vP_{prog} , the following subsection returns to the discussion of how ellipsis can be interpreted in terms of Phase theory. I show how the conclusions just drawn indicate that progressive aspect, when it projects, is contained within the clause-internal Phase in English.

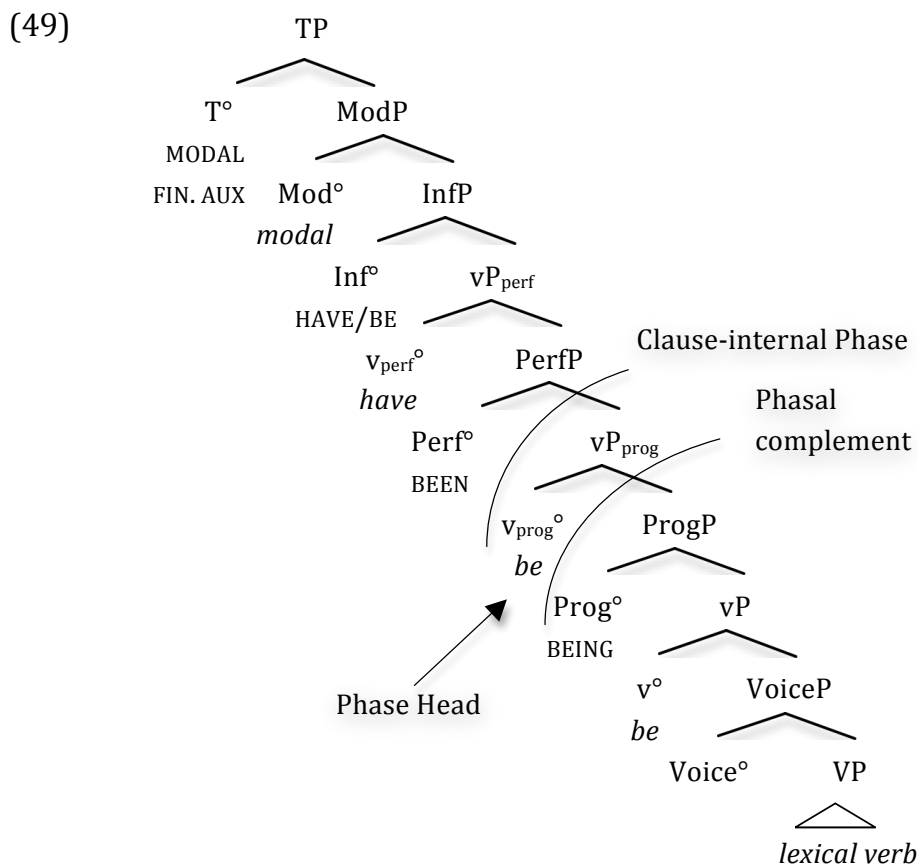
4.2.3 VPE and Phases

VPE has been analysed by Gengel (2007, 2008), Rouveret (2012), Sailor (2012), Wurmbrand (2012a) and Bošković (*to appear a*) as privileging that part of the clause-internal Phase that is sent to Spell Out. Given the conclusion drawn in section 4.2.2, namely that VPE targets as much as the progressive aspectual layer, but none of the perfect aspectual projections, this implies that the progressive layer, specifically vP_{prog} , should be contained within the clause-internal Phase in English. Therefore, the clause-internal Phase can be larger than vP as was traditionally assumed.

Section 4.2.1, however, established that ellipsis may target either the phasal complement, or the Phase itself. So whilst we have determined that vP_{prog} is contained within the clause-internal Phase, it is not yet clear whether this projection comprises the phasal complement, or whether it projects the clause-internal Phase itself. This section discusses the exact identity of the clause-internal Phase.

In section 4.2.1 it was generally shown that if high movement, that is, movement into the left periphery, could take place out of an ellipsis site, this was an indication of ellipsis privileging the phasal complement. Moreover, it was noted that VPE permits, for the most part, such extraction (see Baltin 2012), except in exceptional circumstances such as in existential constructions. This suggests that VPE mostly targets the phasal complement rather than the entire Phase, apart from a few rare instances. In what follows I take this to generally be the case, but claim that one such instance in which full phasal Spell Out occurs is under deletion of *be* and *been*.

I claim that when the progressive aspectual layer is present, the head of vP_{prog} itself, v_{prog}° (in which progressive *be* is base generated), acts as the clause-internal Phase Head.³¹



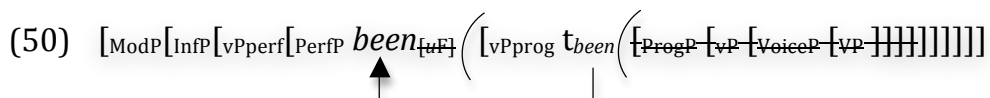
³¹ An alternative would be to claim that Perf° , when it projects, acts as the clause-internal Phase Head, with vP_{prog} its phasal complement. This would allow the entire progressive aspectual layer to be consistently included within the ellipsis site. Indeed, Bošković (*to appear a*) has claimed exactly this. See section 4.2.4 for a critical analysis of this approach.

Another potential option is to instead claim that v_{perf}° , headed by *have*, acts as the clause-internal Phase Head. In section 4.2.2 I established that the default option for English is that *have* cannot be elided, but this only indicates that vP_{perf} should not be included within the ellipsis. It makes no claims about PerfP itself. However, this would entail that as much as PerfP consistently sits within the phasal complement, meaning PerfP should be uniformly targeted by VPE. Since I claim *been* only raises as far as Perf° , this would incorrectly predict that *been* is obligatorily elided under English VPE rather than optionally. Moreover, as will be illustrated in sections 4.3 and 4.4, and also in chapter 5, there is no evidence that the perfect aspectual layer constitutes part of the clause-internal Phase. For these reasons, I discount this analysis also.

This implies that ProgP is consistently within the phasal complement, so it is uniformly targeted by English VPE, accounting for the obligatory ellipsis of *being* and the lexical verb.

Of course, I claimed in section 4.2.2 that VPE targeted vP_{prog} so that the base position of the progressive auxiliary was contained within the ellipsis site, thereby allowing us to capture the optional ellipsis of progressive *be/been*. To remain consistent with this, I claim that optional auxiliary ellipsis is one of the rare cases in which VPE targets the entire Phase rather than just the phasal complement so as to include the non-raised auxiliary within the ellipsis site. That is, if the progressive auxiliary *be/been* has not risen out of v_{prog}^o to either $Perf^o$ or Inf^o , and therefore still bears an uninterpretable feature, ellipsis privileges the entire Phase. This deletes the unchecked feature along with the auxiliary, thereby rescuing the derivation.³² So the optional deletion of *be* and *been* is in fact the result of an interplay between optional raising of the auxiliary, and optionally eliding the entire Phase rather than just the phasal complement. Below I illustrate the four paths available to the derivation using progressive *been* as an example, and explain what happens in each case:

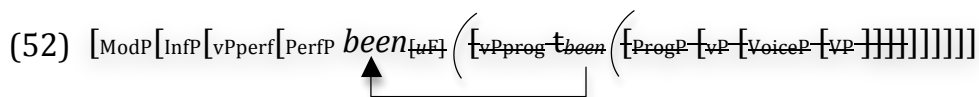
Option 1: The auxiliary raises and ellipsis targets the phasal complement:



Result: the auxiliary checks its feature and survives ellipsis – the derivation is accepted:

(51) Bob has been dying to meet you, even though he says that he hasn't **been**.

Option 2: The auxiliary raises and ellipsis targets the entire Phase:



³² I put aside the PF/LF distinction here for ease of exposition. Whenever deletion of the auxiliary's inflectional feature occurs under ellipsis, one should read this as deletion of the feature at PF, and that the feature is still checked covertly in the syntax before arrival at LF.

Result: the auxiliary checks its feature and survives ellipsis – the derivation is accepted. In principle this derivation is possible. However, I claim that ellipsis of the entire Phase occurs in these sorts of contexts only as a means of rescuing the derivation, i.e., deleting a non-raised auxiliary and its offending unchecked feature. Because in this instance there is no offending auxiliary to delete, ellipsis does not need to privilege the entire Phase. Therefore scenario 1 is chosen over scenario 2, in which case only the phasal complement is elided.

Option 3: The auxiliary does not raise and ellipsis targets the phasal complement:

$$(53) \ *[\text{ModP}[\text{InfP}[\text{vPperf}[\text{PerfP}([\text{vPprog } \textit{been}_{[uF]}([\text{ProgP}[\text{vP}[\text{VoiceP}[\text{VP}]]]]]]]]]]]]]$$

Result: The auxiliary survives ellipsis but the derivation crashes due to the presence of the unchecked feature on the auxiliary.

Option 4: The auxiliary does not raise and ellipsis targets the entire Phase:

$$(54) \ [\text{ModP}[\text{InfP}[\text{vPperf}[\text{PerfP}([\text{vPprog } \textit{been}_{[uF]}([\text{ProgP}[\text{vP}[\text{VoiceP}[\text{VP}]]]]]]]]]]]]]$$

Result: the auxiliary and its unchecked feature are deleted; the derivation is rescued:

$$(55) \ \text{Bob has been dying to meet you, even though he says that he hasn't.}$$

This proposal for optional auxiliary ellipsis is in the spirit of Bošković (*to appear a*), who also assumes that when the auxiliaries *be* or *been* have been optionally elided, VPE targets the entire Phase instead of the phasal complement.³³ In favour of this claim, Bošković (*to appear a*) notes that high movement is severely degraded when

³³ The difference between Bošković's (*to appear a*) approach and the one I advocate here is that Bošković (*to appear a*) assumes optional auxiliary ellipsis to only be due to a choice between eliding the phasal complement or the entire Phase, whereas I assume optional auxiliary raising to also play a role. As will be illustrated in section 4.3, this optional raising of auxiliaries in ellipsis contexts is crucial in accounting for the VP fronting data, something which Bošković's (*to appear a*) account is unable to straightforwardly explain. See section 4.2.4.1 for a detailed discussion of Bošković's (*to appear a*) analysis.

be or *been* have been elided, whereas similar A'-extraction is far more acceptable when *be* or *been* are stranded by ellipsis:

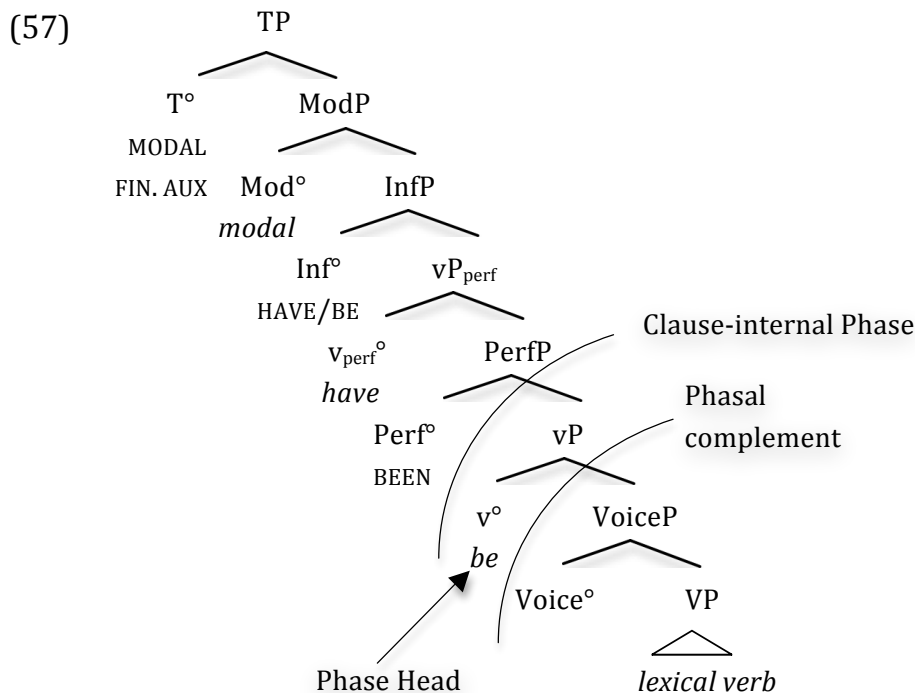
- (56) a.?* You wonder by whom Betsy must have been being hassled, and I wonder by whom Jane must have.
 b.? You wonder by whom Betsy must have been being hassled, and I wonder by whom Jane must have been.

(Bošković to appear a:(85) and (86))

This suggests that generally VPE targets the phasal complement, except in those instances in which *be* or *been* have not raised, when VPE targets the entire Phase to rescue the derivation.

In section 4.2.2 I also concluded that in the absence of progressive aspect, VPE targets vP. If this is correct it implies that the size of the clause-internal Phase can vary depending on which projections are present in the structure. In the remainder of this section I briefly discuss what I take to be the identity of the clause-internal Phase in the absence of progressive aspect.

Given the structure in (57), I take v° to act as the clause-internal Phase Head in the absence of progressive aspect.



This implies that VoiceP is the phasal complement and so is consistently targeted by VPE, whilst vP, the clause-internal Phase itself, may be optionally included within the ellipsis site. As previously stated, I assume that the lexical verb, if it raises at all, can only raise as far as Voice^o. Therefore the lexical verb never raises out of the phasal complement and so is uniformly elided under VPE. With regards to the optional ellipsis of passive and copula *be* and *been*, I assume something similar to the optional deletion of the progressive auxiliary, namely an interplay between optional auxiliary raising and VPE optionally privileging the entire Phase rather than just the phasal complement. That is, standardly the auxiliaries *be* and *been* raise out of v^o to either Perf^o or Inf^o in order to have their inflectional features checked. Generally in such instances, VPE targets the phasal complement of Voice^o. However, if these auxiliaries do not raise and remain in v^o, VPE privileges the entire clause-internal Phase of vP so that the non-raised auxiliary is included in the ellipsis site and is therefore deleted along with its problematic inflectional feature, thereby rescuing the derivation.

Again, evidence in favour of this type of analysis is the fact that, as noted by Bošković (*to appear a*), high movement is severely degraded when the passive auxiliary has been elided, suggesting the entire Phase is privileged in such instances. As a contrast, similar extraction is much more readily accepted when the passive auxiliary has been stranded, suggesting that only the phasal complement is targeted in such cases:³⁴

- (58) a.?* You wonder on which table your book must have been put, and I wonder on which table my CD must have.
b. ? You wonder on which table your book must have been put, and I wonder on which table my CD must have been.
(Bošković *to appear a*:(85) and (86))

To summarise, I have argued in this section that in the presence of progressive aspect, vP_{prog} acts as the clause-internal Phase. Generally, VPE privileges the phasal

³⁴ Bošković (*to appear a*) attributes the general degradedness of these sentences to the fact that there is a tension here with the principle of Max Elide (Merchant 2008b), which is stated as follows:

(i) Elide the biggest deletable constituent if the empty category contains an A'-trace.

In other words, if A'-movement has taken place out of an ellipsis, the largest elidable constituent is deleted. So sluicing (TP ellipsis) would usually take precedence over VPE in these contexts. The VPE examples in (56) and (58) violate this principle, leading to their degradedness.

complement, ProgP, explaining the uniform ellipsis of *being* and the lexical verb. When the progressive auxiliary *be* or *been* does not raise out of v_{prog}° , however, VPE privileges the entire Phase, deleting the problematic auxiliary. In the absence of progressive aspect, on the other hand, vP acts as the clause-internal Phase. VPE then elides the phasal complement of VoiceP, which contains the lexical verb and its internal arguments. But when the passive or copular non-finite auxiliary does not raise out of v° , VPE deletes the entire Phase, including the offending auxiliary.³⁵

If this line of reasoning is correct, it suggests that the clause-internal Phase can vary in size, with vP_{prog} acting as the Phase when the progressive aspectual layer is present, and vP otherwise. In chapter 7 I propose a formal explanation of how such a variable Phase boundary can be made possible under Phase theory.

Before concluding the discussion on ellipsis I critically evaluate, in the next section, previous attempts that have been made in the literature to capture the auxiliary ellipsis paradigm. Finally, section 4.2.5 concludes the discussion on ellipsis and Phases.

4.2.4 Previous approaches

This section is organised as follows: in section 4.2.4.1 I discuss Bošković's (*to appear a*) phasal approach to the auxiliary ellipsis paradigm. Section 4.2.4.2 discusses Thoms' (2012) cliticisation approach, section 4.2.4.3 discusses Sailor's (2012) optional raising approach, and finally, in section 4.2.4.4 I discuss Baker, Johnson & Roberts' (1989) gerund approach.

4.2.4.1 Bošković (*to appear a*)

Bošković's (*to appear a*) 'highest phrase is a Phase' approach defines the Phase boundary as being demarcated by the highest functional category within the Extended Projection (in the sense of Grimshaw 2000, 2005) of a lexical item.³⁶ That is, the lower bound of each Phase is always determined by a lexical item, whether that be a verb, preposition, noun, adjective or adverb, whilst the higher bound of the

³⁵ This analysis could also be straight forwardly extended to account for similar ellipsis data in tag-questions, as discussed in chapter 3.

³⁶ Despite the criticisms that will be levelled at Bošković's (*to appear a*) 'highest phrase is a Phase' analysis in this section, I am nevertheless grateful for his approach which has certainly been influential in the writing of this thesis, and generally the two analyses sit in line with a move towards a more dynamic understanding of Phases.

Phase is demarcated by the highest functional projection to be Merged in the functional sequence stemming from the lexical item. In the case of the clause-internal Phase, its lower bound is demarcated by either the verbal, prepositional, adjectival or nominal lexical predicate of the clause. The higher bound is demarcated by the final functional projection to be Merged into the Extended Projection line of that lexical predicate. In the absence of any aspectual layers, this would be v° . However, the aspectual layers are also part of the extended domain of the lexical predicate, meaning that when progressive aspect projects, this would be the highest functional projection, and so would act as the Phase. If perfect aspect is present, this would be the clause internal Phase since it is Merged higher than progressive aspect, yet is still a part of the Extended Projection of the lexical predicate.³⁷

Bošković (*to appear a*) uses this approach to provide an account of the auxiliary ellipsis paradigm in English VPE that was discussed in sections 4.2.2 and 4.2.3. Here I provide a critical overview of Bošković's analysis, outlining why the account offered in this chapter should be preferred.

Labelling aside, Bošković essentially assumes the same functional hierarchy that was established in chapter 3, including vP shells, and also assumes the same analysis with regards to auxiliary raising (though he motivates this through a morphological requirement rather than through feature checking). A WYSIWYG approach is also adopted. As previously mentioned in this chapter, Bošković also assumes that ellipsis may target either the phasal complement, or an entire Phase.

In the absence of any aspectual projections, Bošković takes vP to act as the clause internal Phase, as also claimed in this chapter. This implies that, under VPE, ellipsis is able to target either the entire vP Phase (cf. (59)b), or the phasal complement, VP (cf. (59)a) (there is no VoiceP intervening between vP and VP in Bošković's system). Similar to the analysis advocated in this chapter, Bošković claims that the lexical verb does not raise to vP (at least in ellipsis contexts in his account, following Lasnik 1999b), therefore it never escapes the ellipsis site.

- (59) a. $[_{TP} \left([_{vP} \left(\left[\text{VP} \text{lex } V \right] \right) \right)]$
- b. $[_{TP} \left(\left[\text{vP} \left(\left[\text{VP} \text{lex } V \right] \right) \right)]$

³⁷ A problem with this analysis that Bošković himself notes is that if the lower bound of every Phase is demarcated by a lexical item, what serves as the lower bound of the CP Phase? TP is obviously not a lexical item, and there does not in fact appear to be any consistent lexical item which can act as the lower bound of this Phase.

As previously stated, progressive aspect, being part of the Extended Projection of the lexical predicate, extends the size of the clause internal Phase when it projects. However, Bošković claims that when the progressive aspectual layer is present, ProgP acts as the clause internal Phase rather than the vP_{prog} shell above it. This is the first fundamental problem with his account: vP shells also form part of the Extended Projection under Bošković's assumptions,³⁸ and in the absence of any higher aspectual material, vP_{prog} would constitute the highest projection in the extended domain of the lexical verb. So it is a mystery why ProgP should in fact act as the clause internal Phase rather than the vP_{prog} shell. Moreover, by allowing ProgP to act as a Phase and not the vP shell selecting it, we are separating aspects and their associated auxiliaries by a phasal boundary. Auxiliaries are always closely tied to their aspectual forms: whenever ProgP is present, so is vP_{prog} , or whenever PerfP is present, so is vP_{perf} . It seems strange then that the auxiliary in vP_{prog} should be separated from its aspect in ProgP by a Phase boundary, as Bošković's proposal implies.³⁹

These matters aside, with ProgP acting as the Phase VPE has the option of privileging either the entire ProgP Phase itself, or the vP phasal complement. In order to account for the obligatory ellipsis of *being*, Bošković then claims that *being* is the only auxiliary that does not raise for inflectional purposes and instead has its inflection lowered onto it in its v° base position. The reason why he needs to invoke this is clear: if *being* rose to Prog° for inflectional purposes, it is predicted to only be optionally elided. In order for *being* to remain consistently within the ellipsis site, Bošković is forced to claim that *being* does not raise from its base position.

- (60) a. $[\text{TP } [vP_{\text{prog}} ([\text{ProgP } ([vP \textit{being} [vP \textit{lex V}]])])]]]$
- b. $[\text{TP } [vP_{\text{prog}} ([vP ([vP \textit{being} [vP \textit{lex V}]])])]]]$

As this thesis has already argued, however, there is no principled reason as to why *being* should be the only auxiliary not to raise, and there is in fact evidence to suggest that *being* does raise. This claim is therefore a stipulation.

³⁸ This is illustrated by the fact that the original vP acts as a Phase in the absence of any aspectual projections.

³⁹ This further implies that auxiliaries and their aspectual projections are separated at the level of Sub-Numerations, which is even more conceptually troubling.

In the presence of perfect aspect, which Bošković also assumes to constitute part of the Extended Projection of the lexical verb, PerfP acts as the clause internal Phase. Again, the vP_{perf} shell above PerfP curiously does not act as the Phase. This implies that VPE may target either the PerfP Phase itself, or the complement of the Phase - vP_{prog} or vP , depending on whether the progressive aspectual layer is present or not. The optional deletion of *been* now falls out of this analysis: *been* raises for inflectional purposes to $Perf^{\circ}$, which is optionally targeted by ellipsis.

- (61) a. $[TP [vP_{perf} ([PerfP \textit{been} ([vP_{prog} t_{been} [ProgP [vP \textit{being} [vP \textit{lex V}]])])])]]]$
 b. $[TP [vP_{perf} ([PerfP \textit{been} ([vP_{prog} t_{been} [ProgP [vP \textit{being} [vP \textit{lex V}]])])])]]]$

The analysis, however, has very little to say about the optional ellipsis of *be* and so is generally unable to capture the entire auxiliary ellipsis paradigm. Bošković tentatively claims in a footnote that Inf° , the landing site of *be*, could also potentially act as the clause-internal Phase Head when it projects, meaning ellipsis could target either $InfP$ or its complement, therefore possibly capturing the optional ellipsis of *be*. However, Inf° is also the landing site of non-finite *have*, meaning we would predict optional ellipsis of *have* to be as widely available as the optional ellipsis of *be*. As was argued in section 4.2.2.3, however, ellipsis of *have* is highly unstable, restricted and often rejected, something which Bošković's proposal would be unable to capture if it tried to seriously explain the ellipsis of *be*. Moreover, if in the presence of $InfP$ the complement of Inf° must always be elided under VPE, we should expect everything below the infinitival auxiliary to be obligatorily elided under ellipsis. Consider, however, (62), with non-finite *have* in Inf° , and *been* in $Perf^{\circ}$, in the complement of Inf° . Here one expects *been* to be obligatorily elided, rather than optionally, contrary to fact.

- (62) John could have been defeated, and Peter could have (been) ~~defeated~~ too.

These issues taken together mean that Bošković's approach does not correctly capture the auxiliary ellipsis paradigm of English.

Abstracting away from these matters, the most fundamental problem with the 'highest phrase is a Phase' approach is that it is unable to capture the unique behaviour of progressive aspect that sets it apart from higher aspectual forms in English. That is, the 'highest phrase is a Phase' approach is unable to exclude perfect

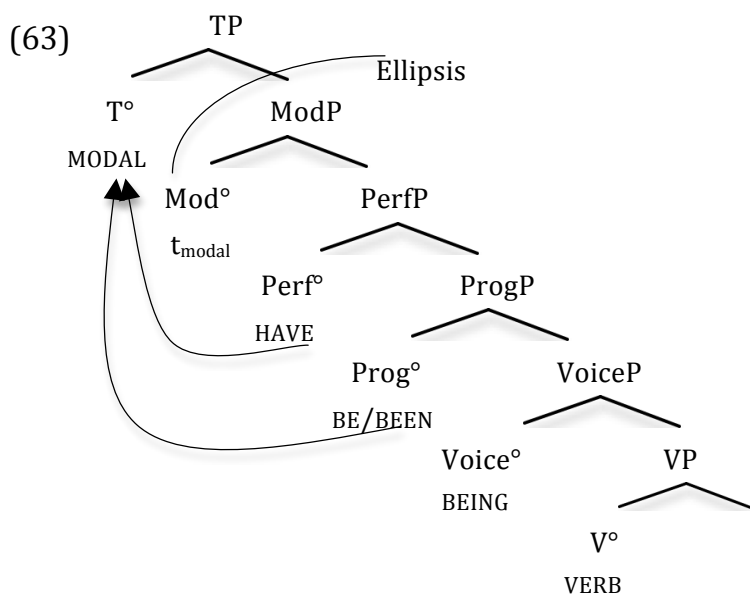
aspect from the clause-internal Phase, something which this thesis argues is necessary in order to explain many of the quirks that only progressive aspect exhibits. Admittedly, the VPE data can in places be somewhat unclear with regards to whether or not perfect aspect should be included within the clause-internal Phase, but the VPF and existential data reviewed in the next two sections, along with the idiomatic data discussed in the following chapter, show quite clearly that perfect aspect should be excluded from the clause-internal Phase.

For these reasons I maintain that the phasal ellipsis approach advocated in this chapter is better suited for explaining the auxiliary ellipsis paradigm, and that the variable approach to Phases I ultimately adopt (see chapter 7 for a formalisation) provides a better account for the English data in general, since it is able to capture the structural divide between perfect and progressive aspect that I argue to exist in English.

4.2.4.2 Thoms (2012)

Thoms (2012) takes quite a different approach to the ellipsis of *being* and the optional deletion of *be* and *been*. For him all auxiliaries check their inflectional features in their base positions via Reverse Agree (as per Bjorkman 2011), and ellipsis is licensed by subsequent movement of the finite auxiliary to T°. Under Thom's analysis, everything in the complement of T° is uniformly targeted by VPE in English. The only way that additional material, such as negation and non-finite auxiliaries, can survive is by cliticising to T°, thereby raising out of the ellipsis site. He claims that *have*, *be* and *been* optionally survive ellipsis by this optional cliticisation to T°. Since *being* is a prosodically heavy item, it cannot so easily cliticise to T°, which explains why it is obligatorily elided.⁴⁰

⁴⁰ Under the Reverse Agree analyses of the auxiliary system that Thoms (2012) adopts, auxiliaries are Merged directly into the head of their associated aspectual projections, as no raising for inflection takes place. Therefore there is no need to posit vP shells, leading to the more simplified functional hierarchy given in (63).



The first problem facing this approach is that, whilst there is plenty of evidence to suggest that non-finite *have* can cliticise to T°, the evidence regarding cliticisation of non-finite *be* seems to point the other way. Recall the data discussed by Johnson (1988) and Kayne (1997), where it is shown that non-finite *have* can cliticise to the modal in T° and subsequently undergo SAI, whilst, crucially, *be* cannot:

- (64) a. Shouldn't've Pam remembered her name?
 b. * Shouldn't be Pam remembering her name?

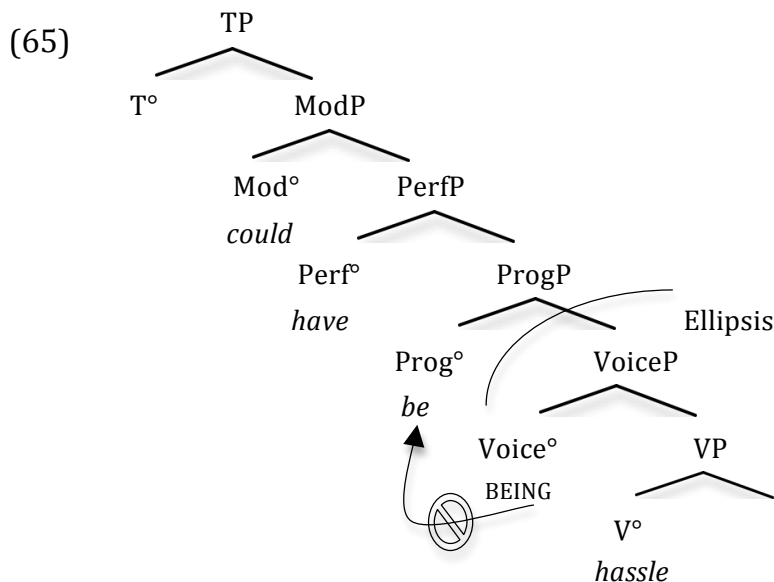
This suggests that optional cliticisation to T° cannot be used to explain optional ellipsis of *be* and *been*. Furthermore, this assumed optional raising of *be* and *been* through cliticisation cannot capture the obligatory raising that these auxiliaries exhibit in all other contexts. This will be illustrated using VPF phenomena and existential constructions in sections 4.3 and 4.4 respectively.

An additional problem facing Thoms' (2012) account is that he attributes the unique behaviour of *being* to this auxiliary being too prosodically heavy to cliticise to T°, therefore it remains in its base position. I have presented evidence in chapter 3 contrary to this claim, however, suggesting that *being* uniformly raises into the progressive layer for inflectional purposes.

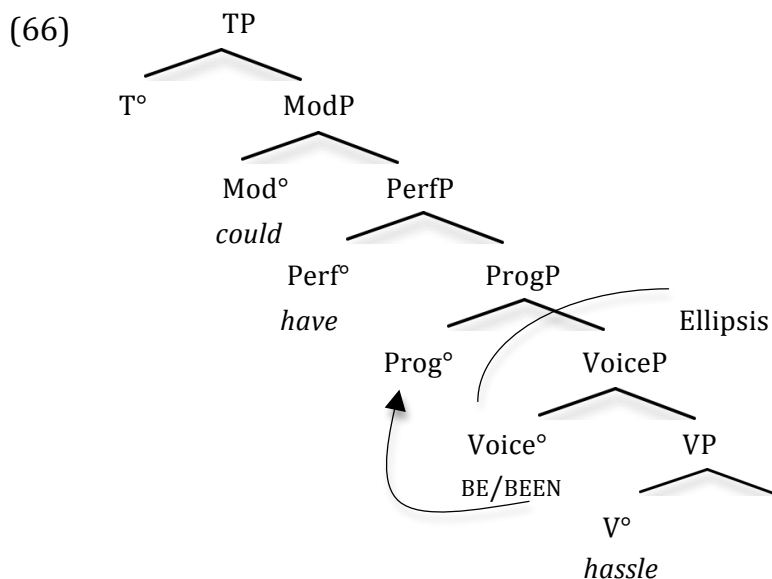
Finally, in more general terms, Thoms' (2012) approach fails to capture the structural divide that I argue to exist between perfect and progressive aspect. Due to these issues, I do not adopt Thoms' approach.

4.2.4.3 Sailor (2012)

Like Thoms (2012), Sailor (2012) also assumes uniform lowering of affixes onto the auxiliaries through a Reverse Agree model, as in Bjorkman (2011). Sailor claims, however, that ellipsis targets the projection headed by the passive auxiliary, VoiceP in the hierarchy he assumes (which is essentially the same hierarchy adopted in Thoms (2012), as depicted in (63)). Recall from chapter 3 that, in order to explain obligatory ellipsis of *being*, Sailor proposes that *being* does not raise out of VoiceP. He motivates this by claiming that the projection immediately above VoiceP, ProgP, is headed by the progressive auxiliary in such instances. This prevents *being* from raising out of the ellipsis site as there is no available position for the auxiliary to raise to.



In the case of passive *be* and *been*, Sailor assumes that ProgP still projects onto the clausal spine, but that its head is Spelled Out as null. Therefore Prog° presents a potential position for the passive auxiliaries *be* and *been* to raise to. This raising out of the ellipsis site Sailor claims to be optional, accounting for the optional deletion of *be* and *been*.



The problems facing Sailor's analysis, however, are as follows: first, as already mentioned in chapter 3, this optional raising of *be* and *been* to Prog° is unmotivated. These auxiliaries have already checked their inflectional features in their base position of Voice° through Reverse Agree, therefore it is not clear why these auxiliaries would then raise to Prog°.

Second, Sailor has no means of capturing the optional ellipsis of progressive *be* and *been*. His ellipsis site is VoiceP, which means that ProgP, headed by the progressive auxiliary in Sailor's hierarchy, is outside of the ellipsis site. Therefore there is no way in which the progressive auxiliary can undergo ellipsis. Sailor (2012) in fact assumes that ellipsis of the progressive auxiliary is impossible, but as the data in section 4.2.2.2 has shown, this claim is not borne out empirically.

Furthermore, Sailor's (2012) approach predicts passive *be* and *been* to optionally raise in contexts outside of ellipsis. As will be demonstrated in the following two sections, however, raising of these auxiliaries is in fact obligatory in non-ellipsis environments. This is problematic for Sailor's approach.

Finally, Sailor, like Bošković (*to appear*) and Thoms (2012) attributes the obligatory ellipsis of *being* to non-raising of this auxiliary. As discussed, he motivates this through Prog° already being filled by the progressive auxiliary, so raising of *being* out of its base position to Prog° is blocked. However, as previously mentioned, I have presented evidence in chapter 3 which shows that *being*, like all other auxiliaries, raises for inflectional purposes, which is problematic for Sailor's (2012) approach. Furthermore, attributing obligatory ellipsis of *being* to non-raising of this auxiliary out of Voice° once again fails to capture the structural divide that this thesis argues to exist between progressive and perfect aspect. For these reasons, I believe Sailor's analysis to be untenable also.

4.2.4.4 Baker, Johnson & Roberts (1989)

Baker, Johnson & Roberts (1989), following Sag (1976) and Lobeck (1987), have alternatively claimed that the obligatory ellipsis of *being* under VPE actually reflects a general property of ellipsis in that it cannot apply when governed by a *V+ing* form. Evidence for this comes from the fact that VPE is not permitted following a gerund either:

- (67) a. * I remember Mary having eaten an apple, and Gary having, too.
b. * I remember Mary having been angry about it, and Gary having, too.
(Baker, Johnson & Roberts 1989:(81))

In the case of *being*, if VPE cannot apply following any form of *-ing*, then it has no choice but to include the *being* form within the ellipsis site in order for VPE to be licit. However, there are a number of problems facing this analysis. First of all, Abney (1987), Malouf (1998) and Hudson (2003) have all noted that gerunds cannot be elided, even though common nouns in the same environment can be:

- (68) a. * John's passing the exam was surprising, and Bill's was even more so.
b. John's success in the exam was surprising, and Bill's was even more so.

This contrasts with *being* which obviously can be elided. If gerunds therefore cannot elide, despite appearing in a context in which ellipsis is licensed (as evidenced by the NP ellipsis in (68)b), whereas *being* can elide, this suggests that the connection between the two with regards to ellipsis is untenable. That is, if it is simply the case that ellipsis cannot apply following an *-ing* form, why is it that the syntax treats *being* and gerunds entirely differently when it comes to ellipsis: the ellipsis site is somehow expanded to include *being* when this auxiliary is present, whereas no such expansion occurs with gerunds? In fact, gerunds actually witness a positive reduction in the size of the ellipsis site in such cases:

- (69) Which bother's you more, John's having been arrested for drug dealing, or Bill's having been?

This contrast in behaviour between *being* and gerunds under ellipsis I consider to be problematic for Baker, Johnson & Roberts' (1989) approach.

The second issue is that the *-ing* form found in gerunds is not the same as progressive *-ing*, as demonstrated by the fact that progressive *-ing* and gerunds are not in complementary distribution:⁴¹

- (70) a. John's repeatedly having been running for office was starting to annoy us.
b. Play resumed just after four o'clock, the pitch having been sweating under the covers in the meantime.

Therefore it might be spurious to claim that ellipsis cannot apply after *-ing* forms if, whilst morphologically identical, the two *-ing* forms exhibit completely different syntactic functions.

Furthermore, it is also worth mentioning that Sag's (1976), Lobeck's (1987) and Baker, Johnson and Roberts' (1989) analysis misses the fact that *being* is not only uniquely privileged by VPE, but also by fronting phenomena and existential constructions, as was illustrated in chapter 3 and as will again be addressed shortly. By attributing the ellipsis of *being* to a peculiar fact about ellipsis itself, one is unable to explain why *being* behaves apart in phenomena other than ellipsis. Finally, note that, as it stands, Baker, Johnson and Roberts' (1989) approach has no means of capturing the optional deletion of *be* and *been*.

For these reasons I believe Baker, Johnson & Roberts' (1989) generalisation to be untenable.

4.2.5 Summary and conclusion

To summarise and conclude this discussion on ellipsis, I claimed in section 4.2.1 that VPE could optionally privilege either the entire clause-internal Phase, or its phasal complement.⁴² I justified this by tentatively proposing that Phase Heads were actually the result of a single head being simultaneously selected by two Phases and so acts as a domain of overlap which could be optionally Spelled Out with either Phase. In section 4.2.2 I abstracted away from Phase theory and provided evidence using auxiliary ellipsis data to argue that progressive aspect, though not perfect aspect, should be included within the ellipsis site in English VPE. This captures the

⁴¹ Thanks to Jeroen van Craenenbroeck for the examples in (70).

⁴² This claim essentially applies to ellipsis in general, though for present purposes I am primarily concerned with VPE.

auxiliary ellipsis paradigm: modals and non-finite *have* are Merged outside of the ellipsis site and so cannot be elided. Finite auxiliaries are required in T° , also outside of the ellipsis site, for ellipsis licensing, therefore these items cannot be elided either. Contrastively, the lexical verb and *being* are always contained inside the vP_{prog} ellipsis site and so must always be elided. Finally, the optional ellipsis of *be* and *been* was attributed to optional raising of these auxiliaries out of the ellipsis site: they either raise out and check their inflectional features, surviving ellipsis, or remain in the ellipsis site and are deleted along with their inflectional features by ellipsis itself. When applied to phasal ellipsis in section 4.2.3 I slightly modified this account by claiming optional ellipsis of these auxiliaries in fact resulted from an interplay of optional raising and ellipsis optionally targeting either the entire clause-internal Phase or its phasal complement. In section 4.2.3 I also highlighted the fact that if the progressive aspectual layer is elided under VPE, but not the perfect aspectual layer, this implies that a structural divide exists between these two layers in which progressive aspect constitutes part of the clause-internal Phase, whilst perfect aspect is contained within the higher clausal Phase. In the presence of progressive aspect I claimed that vP_{prog} projects the clause-internal Phase, and vP otherwise, implying that a variable Phase boundary is required. Finally, section 4.2.4 reviewed previous attempts made in the literature at capturing the auxiliary ellipsis paradigm and explained why the approach advocated in this chapter should be preferred.

In the following section I discuss certain VPF phenomena which suggest, in accordance with Fowlie's (2010) and Roberts' (2010) claims that only Phases can undergo movement, that the progressive aspectual layer is included within the clause-internal Phase.

4.3 Fronting Phenomena and Phases

This section is divided into two sub-sections: 4.3.1 discusses the identity of the preposed constituent in English fronting phenomena and how the relevant auxiliary paradigm can be captured with the claims made so far. Section 4.3.2 relates the conclusions made from section 4.3.1 to Phase theory, showing how fronting phenomena can provide further evidence in favour of the aspectual divide between progressive and perfect aspect.

4.3.1 The fronted constituent

A phenomenon that has been related to VPE in the literature is VP fronting (see Zagona 1982; Roberts 1990, 1998; Johnson 2001; Kim 2003; Aelbrecht & Haegeman 2012; Funakoshi 2012; Aelbrecht 2012a, Thoms & Walkden 2013). It has been amply noted that VPE and VP fronting (VPF) exhibit parallel syntactic behaviour (Zagona 1982; Johnson 2001). They occur in the same environments: “both an elided VP and the trace left by a fronted VP must be governed by an Aux” (Johnson 2001: 444). Neither occurs without either a modal, temporal auxiliary or *do*-support, as the contrasts in (71) show.⁴³

- (71) a. * I never thought I’d see Jess become a cook, but I saw [~~Jess become a cook~~].
b. * I never thought I’d see Jess become a cook, but [Jess become a cook] I saw *t*.
c. I never thought I’d see Jess become a cook, but I **did** [~~see Jess become a cook~~].
d. I never thought I’d see Jess become a cook, but [see Jess become a cook] I **did** *t*.

(Adapted from Aelbrecht 2012a)

A second similarity between VPE and VPF, as noted by Akmajian & Wasow (1975), Zagona (1982) and Johnson (2001) is that both generally target the same chunk of the verb phrase. As already mentioned in chapter 3, *being* is obligatorily fronted along with the lexical verb under VPF:

- (72) If Darth Vader says that Han Solo was being frozen in carbonite, then...
a. [**being** frozen in carbonite] he was.
b. * [frozen in carbonite] he was **being**.
- (73) If Darth Vader says that Han Solo was being stubborn, then...
a. [**being** stubborn] he was.
b. * [stubborn] he was **being**.

⁴³ Or infinitival *to*, see Johnson (2001), Aelbrecht (2012a), Aelbrecht & Haegeman (2012) for examples, although I stay away from discussion of infinitival *to* in this thesis.

Again, akin to VPE, non-finite *have* cannot be fronted:

- (74) If Luke says he would have fought hard, then...
- a. [fought hard] he would **have**.
 - b. * [**have** fought hard] he would.

A parallel case to VPF is that of specificational pseudo-clefting, which has also been argued to involve fronting (Blom & Daalder 1977; Declerck 1988; Den Dikken 1995; Heggie 1988; Heycock 1994; Higgins 1979; Moro 1997 and Verheugd 1990 (cited in Den Dikken 2006)). Sailor (2012) has noted that such instances of fronting also seem to target the same material. That is, *being* must be fronted with the lexical verb when pseudo-clefting occurs, whilst non-finite *have* cannot be:

- (75) Elmer Fudd should be being criticised.
- a. No, [**being** praised] is what he should be.
 - b. * No, [praised] is what he should be **being**.

- (76) Elmer Fudd should have been criticised.
- a. No, [praised] is what he should **have** been.
 - b. * No, [**have** been praised] is what he should.

Emonds (1976), Haegeman (2008), Heycock & Kroch (1999) and Hooper & Thompson (1973) have also analysed predicate inversion contexts as involving fronting of the predicate. In such cases, *being* is obligatorily fronted, whilst *have* cannot be:

- (77) a. [Also **being** examined for body parts] is the tonnes of rubble being removed from the site.
(*Guardian*, 14.9.1, p4, col 6, cited in Haegeman 2008:(19))
- b. * [Also examined for body parts] is **being** the tonnes of rubble being removed from the site.
- (78) a. [Also examined for body parts] will **have** been the tonnes of rubble being removed from the site.
- b. * [Also **have** been examined for body parts] will the tonnes of rubble being removed from the site.

If *being* has risen to occupy Prog^o in the progressive aspectual layer of the clause, and is obligatorily pied-piped by fronting, this suggests that as much as the progressive aspectual layer is fronted under fronting phenomena. If non-finite *have* raises to occupy Inf^o and cannot be fronted, this suggests that the modal layer is not included in the fronted constituent.

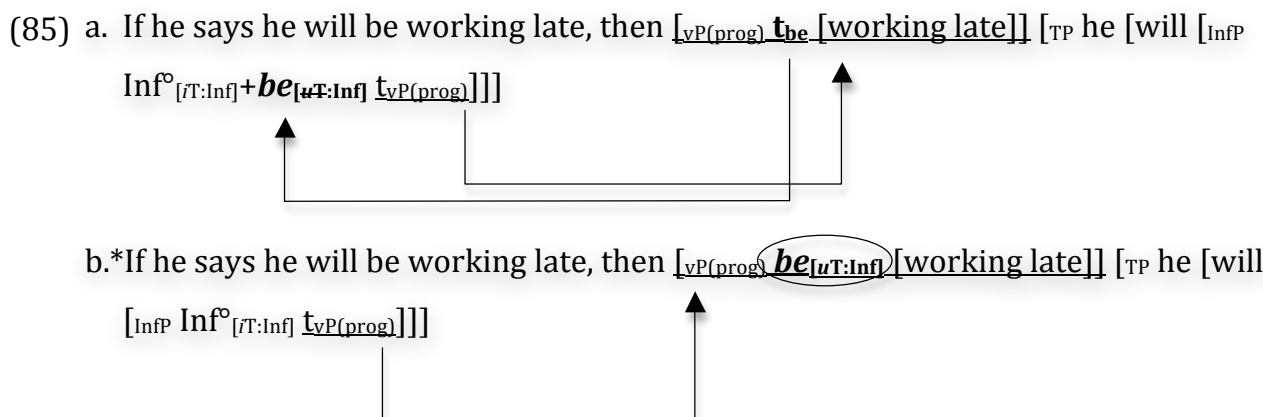
Interestingly, Akmajian, Steele & Wasow (1979) and Roberts (1998) note that, contrary to VPE, *be* and *been* cannot be fronted under VPF, not even optionally. Sailor (2012) notes the same for pseudo-clefting, and Aelbrecht & Harwood (2013) for predicate inversion:

- (79) If Darth Vader says he has been working late, then...
- a. [working late] he has **been**.
 - b. * [**been** working late] he has.
- (80) If Darth Vader says he will be working late, then...
- a. [working late] he will **be**.
 - b. * [**be** working late] he will.
- (81) Elmer Fudd should have been praised.
- a. No, [criticised] is what he should have **been**.
 - b. * No, [**been** criticised] is what he should have.
- (82) Elmer Fudd should be praised.
- a. No, [criticised] is what he should **be**.
 - b. * No, [**be** criticised] is what he should.
- (83) a. [Also examined for body parts] has **been** the tonnes of rubble being removed from the site.
- b. * [Also **been** examined for body parts] has the tonnes of rubble being removed from the site.
- (84) a. [Also examined for body parts] will **be** the tonnes of rubble being removed from the site.
- b. * [Also **be** examined for body parts] will the tonnes of rubble being removed from the site.

If *be* raises to Inf^o, and cannot be fronted, this once again suggests that the modal layer cannot be included in the fronted constituent. Moreover, if *been* raises to Perf^o,

and also cannot be fronted, this suggests that the perfect aspectual layer also cannot be included in the fronted constituent. Therefore the fronted constituent, similar to the ellipsis site of VPE, is as large as the progressive aspectual layer, specifically vP_{prog} , but no larger.

Of course, if VPE and VPF phenomena target the same chunk of structure, it is curious that VPE optionally includes *be* and *been* in this chunk, but VPF never does. This contrast can easily be captured under the system of Aelbrecht & Harwood (2013) that has been adopted in this chapter: optional deletion of *be* and *been* under VPE is due to the fact that the strong uninterpretable inflectional features on the auxiliaries are deleted at PF by ellipsis when the auxiliary does not overtly raise out of the ellipsis site. In fronting phenomena on the other hand, no ellipsis occurs to rescue the derivation. For *be* or *been* to undergo fronting they would have to remain in the proposed constituent, leaving their strong inflectional features unchecked. But because no ellipsis occurs, the strong unchecked features remain in the (moved) higher copy of the verb phrase, causing a crash at PF.



I consider this to be one of the most significant advantages of the approach I advocate over prior analyses: none of the alternative approaches reviewed in section 4.2.4 are able to explain the contrast between VPE and VPF straightforwardly. Bošković recognises in a footnote that there is a connection between VPE and fronting, though explicitly stays away from the issue. If we wish to maintain the link between VPE and fronting phenomena in that the site targeted by VPE is the same site targeted by fronting, then *been* at the very least, which according to Bošković can be elided by optionally extending the ellipsis site to include *been*'s landing site, is incorrectly predicted to be optionally fronted.⁴⁴

⁴⁴ As will be discussed shortly, I take the aforementioned fronting phenomena to be preposing of the entire clause-internal Phase. Since Bošković claims Per^o , the landing site of *been*, projects

For Thoms (2012) and Sailor (2012), optional raising of auxiliaries out of the ellipsis site occurs independently of the ellipsis operation. Therefore auxiliaries should optionally raise in all contexts. This implies that *be* and *been* should optionally raise out the fronting site in preposing contexts, wrongly predicting optional fronting of these auxiliaries.

Up to this point I have argued that as much as vP_{prog} is included within the fronted constituent in various VP fronting phenomena, akin to VPE. But the question now is: what does this have to do with Phases? In what follows I make clear the link between fronting and Phases and explain what the discussion above implies for the identity of the clause-internal Phase.

4.3.2 Fronting and Phases

Holmberg (2001), Chomsky (2005), Roberts (2010) and Fowlie (2010) have all claimed that the only phrases that can undergo movement are Phases. This has been further assumed by Koopman (2010) and Aelbrecht & Den Dikken (2013) in the context of prepositional phrases. Here I briefly outline the general empirical advantage to this claim. The phrasal constituents that can typically move in a sentence are commonly taken to be DPs, PPs, AdjPs, AdvPs, vPs and CPs. All of these elements have been claimed by various authors to act as Phases (Aelbrecht & Den Dikken 2013; Bošković *to appear* a,b; Chomsky 2000, 2001, 2005; Fowlie 2010; Koopman 2010, to name but a few).⁴⁵ It has long been known, however, that phasal complements, such as TP, cannot move independently (Abels 2003):

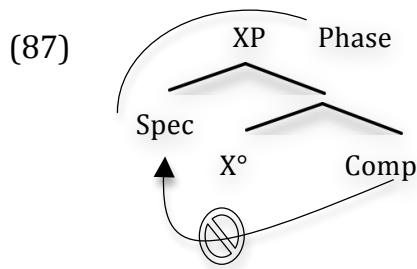
- (86) * [_{TP} His mother likes Mary] everyone believes [_{CP} that t_{TP}]
(Bošković *to appear* a:(11))

This has often been attributed to the fact that such constituents would have to proceed via the Phase Edge in order to undergo preposing. Of course, such complementiser to specifier movement within the same phrase is deemed an anti-

the clause-internal Phase when present, this would actually predict that *been* is obligatorily fronted, contrary to fact.

⁴⁵ Of course, more work needs to be done on this area to explain how stranding of PPs and quantifiers is able to occur. These issues, however, I leave aside for later research.

locality violation, hence the reason why movement of the phasal complement is generally impossible:⁴⁶



An alternative means of looking at this, however, is simply that the complement of a Phase Head can never be a Phase, and therefore cannot undergo movement, as suggested by Chomsky (2005).

Therefore, if only Phases can undergo movement, this would suggest that the VPF-type phenomena already discussed must be instances of the clause-internal Phase undergoing movement to the left periphery. Since I have shown that the fronted constituent corresponds to vP_{prog} , this suggests that vP_{prog} acts as the clause-internal Phase when it is present in the derivation (and vP otherwise). Similarly it suggests that higher aspectual layers such as perfect aspect are not included within this lower Phase.

In the next section I show how existential constructions, under Chomsky's (2000, 2001) analysis, add further support to the notion that progressive aspect projects the clause-internal Phase when present.

4.4 Existential Constructions and Phases

The data discussed so far suggests that progressive aspect shares a number of unique properties with the lexical verb and the voice layer to the exclusion of higher aspectual forms, i.e. they are obligatorily elided and fronted under VPE and VPF phenomena, respectively, leading us to conclude that the progressive aspectual layer acts as the clause-internal Phase when present in the derivation. A question that one might ask at this point is, if progressive aspectual genuinely projects the clause-

⁴⁶ In chapter 6 I return to anti-locality as a means of explaining the post-verbal distribution of the associate in unaccusative existentials.

internal Phase in English when present, shouldn't we be able to observe Edge effects at the periphery of the progressive aspectual layer? By the term edge effects I mean evidence that A or A'-movement proceed via the specifier of vP_{prog} , i.e. the Edge of the clause-internal Phase.

The answer is that we do potentially see such Edge effects, at least for A-movement, in the context of English existential constructions, to which I turn in this section. Consider the following passive sentence:

(88) **Many smurfs** were arrested for anti-social behaviour.

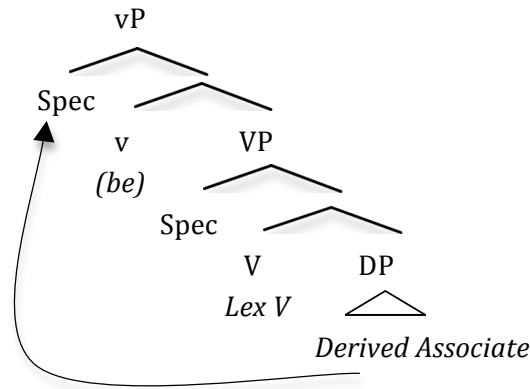
As already explained in chapter 2, the standard Minimalist analysis for this sentence is that the derived subject is Merged as complement of V° . It surfaces in the canonical subject position by first raising through the clause-internal Phase Edge (Spec- vP according to Chomsky 2000, 2001), and then raising to Spec-TP to satisfy the traditional EPP and check its Nominative Case feature. Consider, however, the distribution of the same derived subject in an existential construction:

(89) There were **many smurfs** arrested for anti-social behaviour.

Recall from the discussion in section 4.2.1 that in this sentence the expletive *there* occupies Spec-TP, preventing the derived subject (from now on the derived associate) from raising to this position. However, given that the derived associate is not occupying its base, post-verbal position, but occurs pre-verbally, it must have undergone some form of intermediate raising. As previously discussed, Chomsky (2000, 2001) analyses this pattern as involving stranding of the associate on the clause-internal Phase Edge. Here I show in more detail how the derivation proceeds under Chomsky's analysis, which presupposes a minimal C-T-v-V structure:

- (i) The first Phase is built up using material from the first Sub-Numeration up to the point when v° is Merged, thereby completing the Phase. The derived associate is Merged as complement of V° .
- (ii) Bearing unchecked Nominative Case features, the associate must undergo further operations in the higher Phase. Therefore, the associate raises to Spec- vP , the Phase Edge.

(90)



(iii) The second Phase is then constructed. Once T° is Merged we have an EPP feature to check. There are two ways of checking this feature: either the associate in Spec-vP raises to Spec-TP, or the expletive *there*, contained in the second Sub-Numeration, is Merged directly into Spec-TP. Since external Merge takes priority over Move, it is less costly to Merge the expletive into this position than to Move the associate. Therefore, expletive *there* is Merged from the second Sub-Numeration into Spec-TP, satisfying the EPP on T° . The associate is therefore stranded in the Spec-vP Phase Edge, where it has its Case feature checked by T° via Agree and subsequently values T 's phi-features in the process. Sitting on the Spec-vP Phase Edge, the associate precedes the lexical verb, but is situated below material in T° .

Recall now from chapter 3, how the derived associate is distributed in relation to auxiliaries. I repeat the relevant data below:

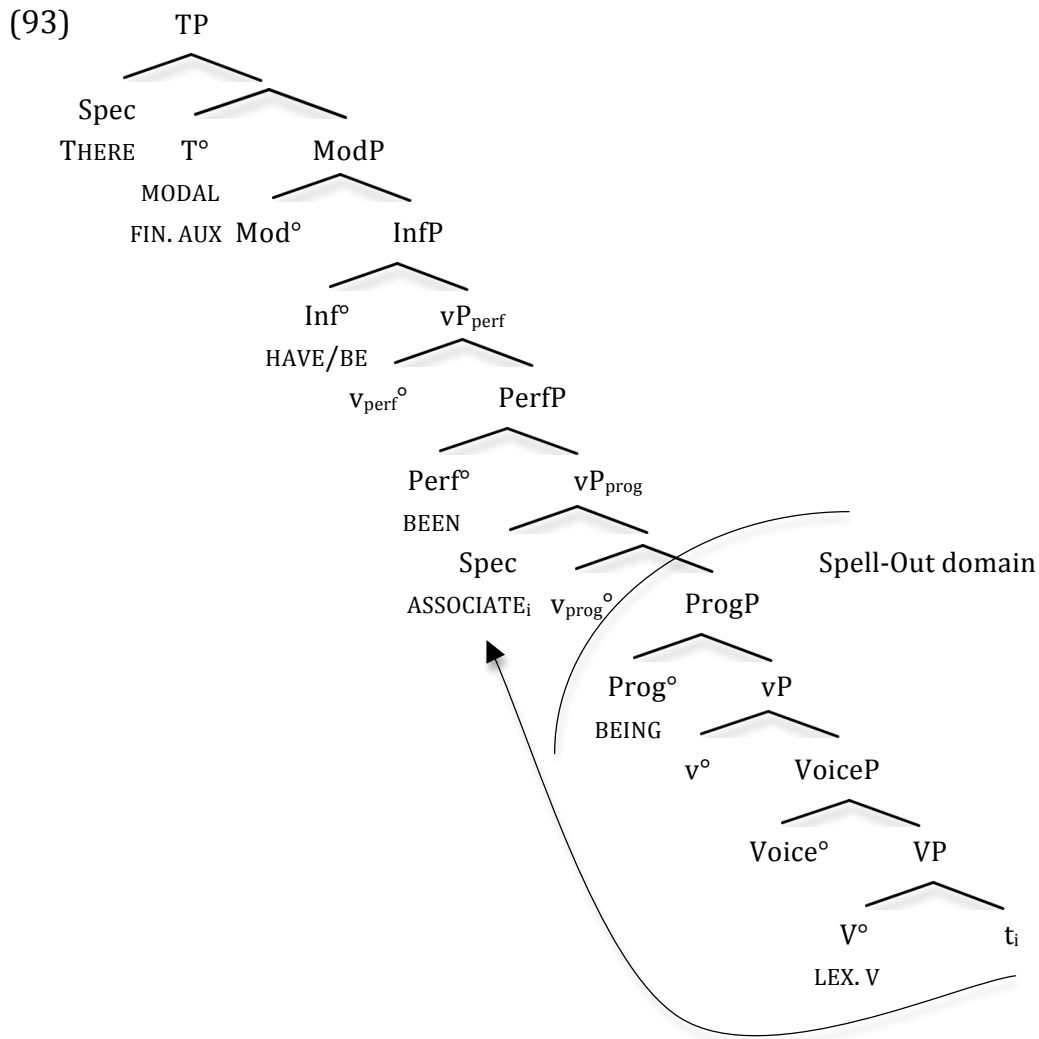
- (91)
- a. There were many smurfs **being** arrested for anti-social behaviour.
 - b. * There were **being** many smurfs arrested for anti-social behaviour.
 - c. There will **be** many smurfs arrested for anti-social behaviour.
 - d. * There will many smurfs **be** arrested for anti-social behaviour.
 - e. There have **been** many smurfs arrested for anti-social behaviour.
 - f. * There have many smurfs **been** arrested for anti-social behaviour.

The crucial fact here is that the associate must precede *being* but follow *be/been*. (92) summarises this pattern.

(92) be/been>**Subj**>being

If *being* surfaces in Prog° , as argued in this thesis, then the associate must be occupying a position higher than Spec-vP in order to precede this auxiliary. The question therefore arises as to which position the associate has raised to, and why? Since the associate follows *be*, which I have argued to occupy Inf° , we can rule out the associate occupying Spec-InfP . Even more crucially however, since the associate follows *been*, which I have argued to surface in Perf° , we can also rule out the associate occupying Spec-PerfP . Given the structural hierarchy I posited in chapter 3, the only two other positions available are Spec-ProgP and $\text{Spec-vP}_{\text{prog}}$.

Note that if vP_{prog} projects the clause-internal Phase when present, as I have argued, then $\text{Spec-vP}_{\text{prog}}$ would act as the clause-internal Phase Edge. This gives us a position for the associate to raise to that would automatically explain the distribution of the associate, and would furthermore provide a motivation for this movement, following Chomsky's (2000, 2001) basic analysis. Concretely, the associate, driven by a need to check its Case feature, raises to the $\text{Spec-vP}_{\text{prog}}$ Phase Edge so as to escape Spell Out and ultimately get its feature checked in the higher Phase. Obviously the associate in existential constructions does not raise any higher than this since Merger of *there* in Spec-TP blocks any further movement of the associate and strands it on the clause-internal Phase Edge. Finally, with the associate occupying the $\text{Spec-vP}_{\text{prog}}$ position, it correctly precedes *being*, but follows *be* and *been*.



Thus, by including progressive aspect within the clause-internal Phase we are able to correctly explain the distribution of existential associates without having to resort to any additional mechanisms. The above analysis also shows Edge effects to indeed be directly observable on the edge of the progressive aspectual layer, providing further evidence for the claim that vP_{prog} projects the clause-internal Phase when present.

Note furthermore that if the perfect aspectual layer constituted part of the clause-internal Phase as argued by Bošković (*to appear a*), we would expect the associate to raise to the edge of this layer, incorrectly predicting existential associates to precede *been* as well as *being*. This constitutes further evidence to the effect that perfect aspect, unlike progressive aspect, is not contained within the clause-internal Phase. Additionally, if optional raising of *be* and *been* occurs independently of ellipsis, as Thoms (2012) and Sailor (2012) claim, we would expect these auxiliaries to optionally follow the associate in existential constructions, rather than obligatorily preceding it. That is, such auxiliaries could potentially remain in $v_{prog}^{\circ}/v^{\circ}$, below the landing site of the existential associate, causing them to follow the associate at Spell Out. As the data in (91)d and f illustrate, however, this prediction is not borne out.

Of course, a lot of work still needs to be done on the topic of existentials for the analysis presented here to go through. In particular, the aspectual restrictions of unergative, transitive and ditransitive existential constructions, as discussed in section 4.2.2, still need accounting for (see Deal 2009 and Harwood 2011 for attempted explanations). Furthermore, an explanation still needs to be given for how post-verbal associates in unaccusative existentials can be derived:

- (94) a. There arrived **several letters**.
b. There have arrived **several letters**.
c. There will arrive **several letters**.

Here we still predict a clause-internal Phase to project, to the specifier of which the associate should raise in order to escape Spell Out, leading us to expect that the associate should surface in pre-verbal position, contrary to fact. In chapter 6 I provide an in-depth analysis of existential constructions to account for these data.

These matters aside, when one considers the facts in detail, Chomsky's (2000, 2001) Phase-based analysis of English existential patterns can be taken to lend independent support to the claim that progressive aspect is contained within the clause-internal Phase.

In the final section I summarise the main points of this chapter.

4.5 Summary and Conclusion

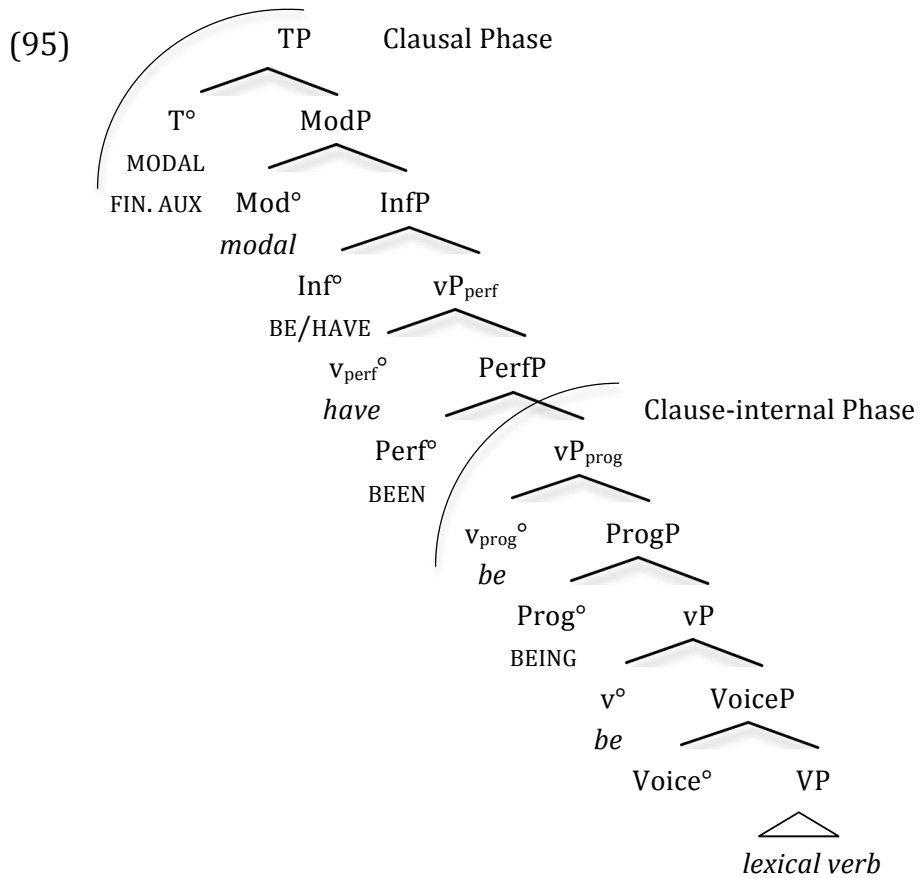
This chapter has aimed to show, on the basis of the behaviour of non-finite auxiliaries, that the boundary of the clause-internal Phase in English, when carefully considered in light of more elaborate structures, lies between perfect and progressive aspect. That is, progressive aspect constitutes part of the clause-internal Phase, along with the voice layer and the lexical verb, to the exclusion of perfect aspect, which constitutes part of the clausal Phase along with modals, TP and CP. This implies that the topmost projection of the progressive layer, namely vP_{prog} , projects the clause-internal Phase when progressive aspect is present in the derivation, and vP otherwise.

This claim is primarily evidenced by the differences in behaviour that auxiliaries exhibit when inflected for progressive aspect, i.e., *being*, compared to auxiliaries inflected for perfect or infinitival morphology, i.e., *have*, *be* and *been*. Specifically,

being shares a number of properties with the lexical verb that auxiliaries bearing higher inflections do not. In particular, *being* and the lexical verb are obligatorily elided under VPE, obligatorily fronted under VPF phenomena and must follow the associate in existential constructions, whereas the same cannot be said for auxiliaries bearing higher inflections. Under the proviso that all auxiliaries raise for inflection, and following the assumption that VPE, VPF and existentials are all constrained by the clause-internal Phase in some way, the data suggests that progressive aspect is contained within the same Phase as the lexical verb (and by extension, the voice layer), i.e., the clause-internal Phase. Perfect aspect and the modal layer, meanwhile, are external to this Phase, as indicated by the fact that auxiliaries which raise into these layers for inflection are notably less affected by the phenomena discussed in this chapter.⁴⁷ This suggests that perfect aspect and modals, together with TP and CP, constitute a separate, higher Phase, namely the clausal Phase.⁴⁸ Ultimately, this entire claim can be summarised with the following diagram:

⁴⁷ Obviously auxiliaries raising into these layers from the clause-internal Phase can be optionally elided, but I claimed this to result from optional raising out of the ellipsis site, and not optional extension of the ellipsis site to include the landing sites of these auxiliaries.

⁴⁸ If anything, auxiliaries inflected for infinitival or perfect morphology might be argued to pattern more with finite inflections in T°, at least in terms of their inability to be fronted and the requirement that they all precede the associate in existential sentences.



Observe, however that the evidence presented in this chapter in favour of the aforementioned aspectual divide has mainly been dependent on the unique behaviour of *being*. In the following chapter I abstract away from such auxiliaries and provide evidence from idioms, selectional restrictions, and mismatches under VPE and VPF, to further illustrate the uniqueness of progressive aspect.

5

Evidence Beyond Auxiliaries

5.1 Introduction

Up until now, the strongest evidence for the progressive aspectual layer constituting the clause-internal Phase has been the unique behaviour of *being* under VPE, VPF phenomena and existential constructions. Of course, as previously mentioned, an alternative analysis is that *being* is the only auxiliary which does not raise (Akmajian & Wasow 1975; Iwakura 1977; Akmajian, Steele & Wasow 1979; Lobeck 1987; Bošković 2004, *to appear* a; Thoms 2011; Sailor 2012). The advantage of the latter analysis is that it allows one to maintain the hypothesis that VPE and VPF consistently target the vP domain, and therefore that vP retains its sovereignty as the clause-internal Phase rather than having to posit some kind of variable Phase boundary as I assume. In chapters 3 and 4 I have attempted to dispel the non-raising of *being* account using both theoretical and empirical argumentation, but these points aside, such an analysis might so far remain a potential, genuine alternative to the one proposed in this thesis. Furthermore, claiming that existential constructions, ellipsis and fronting phenomena uniquely privilege the progressive aspectual layer, as I do, is admittedly as much of a stipulation at present as claiming that *being* does not raise out of its base position.

In this chapter, however, I support my claim for the special status of progressive aspect using evidence independent of the behaviour of *being*, namely data drawn from idiomatic constructions, ellipsis mismatches, fronting mismatches and selectional restrictions. By abstracting away from auxiliaries, I argue that the evidence reviewed in this chapter shows that progressive aspect in general patterns far more closely with the lexical verb and the voice layer than it does with higher aspectual forms. This suggests therefore that the unique behaviour of *being* that we have so far observed is not attributable to a unique property of this auxiliary in

particular, but to the special status of progressive aspect in general, namely that it is part of the clause-internal Phase whilst higher aspectual layers are not.

This chapter is structured as follows: in section 5.2 I show how Svenonius' (2005) claim that idiomatic constructions are constrained by Phases indicates that the progressive aspectual layer should be included within the clause-internal Phase to the exclusion of higher aspectual forms. In section 5.3 I return to ellipsis to discuss a potential problem for the analysis presented in the previous section, namely voice and aspectual mismatches, but argue that the data in fact constitutes further potential evidence in favour of the aspectual divide I have been arguing for. Section 5.4 explores additional support for this divide using inflectional mismatches in VPF, and section 5.5 draws on certain aspectual selectional restrictions which potentially add additional weight to my claim. Finally, section 5.6 summarises and concludes this chapter.

5.2 Idioms and Phases

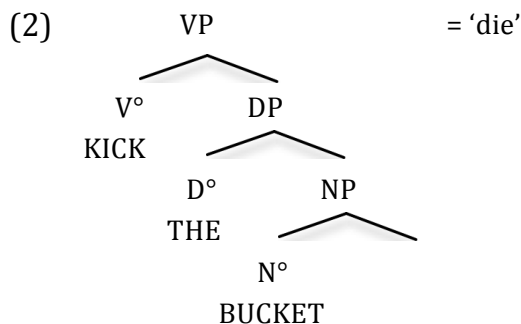
This section is divided as follows: section 5.2.1 provides a short background discussion of idioms, focussing in particular on Svenonius' (2005) claim that idioms are constrained by phasal domains. Section 5.2.2 observes that a number of idioms seem to exist that are dependent upon progressive aspect. I argue that this can be taken as independent support for the claim that progressive aspect is included within the clause-internal Phase. Section 5.2.3 discusses the fact that there do not appear to be any verbal idioms that are dependent on perfect aspect or modality, suggesting these layers are contained outside of the clause-internal Phase.

5.2.1 Background

A question puzzling syntacticians and semanticists is exactly how we are able to deduce the idiomatic interpretation of an idiom when it can in no way be derived from the meanings of any of the individual lexical items that comprise it. For instance, how can the individual lexical items *kick*, *the* and *bucket* be composed together to form the idiomatic meaning 'to die' when 'die' is in no way inherent to any of these individual lexical items:

- (1)
- a. Kick the bucket = 'die'
 - b. Kick = 'strike or propel forcibly with the foot'
 - c. The = 'definite article'
 - d. Bucket = 'a roughly cylindrical open container with a handle, usually made of metal, used to carry liquids or other materials'

Jackendoff (1997) accounts for this puzzle by claiming that, as well as individual lexical items being listed in the lexicon, so are actual chunks of syntactic structure. For instance, as well *kick*, *the* and *bucket* being individually listed in the lexicon, so too is the following syntactic structure:



Whenever this specific structure shows up in the derivation, our lexicon instantly recognises it as (potentially) corresponding to the idiomatic meaning 'die'.

Further to this, Chomsky (1980, 1981) and Marantz (1984) have noted a certain regularity to idiomatic expressions, in that they often correspond to verb phrases, i.e. idioms are generally comprised of a lexical verb and its internal arguments, as illustrated in the examples below:

- (3)
- a. Kick the bucket = die
 - b. Pass muster = meet with approval
 - c. Bring down the house = stimulate an audience to an enthusiastic response
 - d. Call off the dogs = stop threatening
 - e. Call the shots = be in charge
 - f. Crawl the walls = become agitated with boredom
 - g. Throw a spanner in the works = slow down or complicate operations
 - h. Miss the boat = be too late
 - i. Spill the beans = reveal a secret

(Svenonius 2005:(7))

There are also a number of idioms which go beyond the initial verb phrase and incorporate the subject as well:

- (4)
- a. The shit hit the fan = a seriously bad thing happened
 - b. All hell broke loose = the situation became chaotic
 - c. The cat is out of the bag = the secret has become known
 - d. The game is up = the deception has come to an end

(Svenonius 2005:(8))

Svenonius (2005) has additionally noticed that there seems to be a strict separation between the vP and TP domains with regards to verbal idioms. Whilst verbs regularly form idioms with their arguments and other material contained within vP, they do not form idioms with material generated outside of it. That is, verbal idioms seem not to exist in which a particular tense, modality or aspect contribute to the idiom. Whilst material in the TP domain can obviously embed idioms, as in (5) for instance, the particular idiomatic interpretation is not dependent upon the presence of these items. As illustrated below, the idiomatic interpretation is retained if the material from the TP domain is changed:

- (5)
- a. He might kick the bucket = He might die.
 - b. He kicked the bucket = He died.
 - c. He has kicked the bucket = He has died.
 - d. Did he kick the bucket? = Did he die?

This contrasts with the material from the vP domain upon which the idiom is dependent. If material from this lower domain is altered, the idiom is lost:

- (6)
- a. He hit the bucket ≠ He died.
 - b. He kicked the tub ≠ He died.
 - c. He kicked a bucket ≠ He died.

This suggests that verbal idioms potentially correspond to as much as vP, but nothing more. In this sense, idioms may be claimed to correspond to syntactic constituents.

This has led Svenonius to state that there is a size limitation to idioms, namely that of vP. Whilst verbal idioms may indeed be smaller than this boundary, they can be no

larger than it. He claims that this restriction on the idiomatic domain corresponds to that of a Phase. This makes intuitive sense: if Phases are shipped off from the syntax and interpreted separately from one another, there is no way in which a particular syntactic structure can be idiomatically interpreted by the lexicon if there is still material left behind in the syntax in the higher Phase upon which the idiom is reliant. Svenonius therefore concludes that idioms are constrained by Phases in that, whilst they can be smaller than the phasal domain, they can definitely be no larger than it. So essentially, idioms are unable to straddle the Phase boundary.¹

5.2.2 Progressive idioms

One problem that Svenonius notes with his analysis is the fact that there are a number of idioms which are reliant upon progressive aspect. Consider for instance the idiom that we previously encountered in chapter 4:

(7) DP_{subj} be dying to VP (e.g. Bob **is dying to** meet you.)

Most native speakers of English recognise this string as corresponding to the idiomatic interpretation 'X is keen to do something'. Recall, however, what happens when we remove the progressive aspect from the idiom:

- (8) a. Bob has died to meet you ≠ Bob has been keen to meet you.
b. Bob will die to meet you ≠ Bob will be keen to meet you.
c. Bob died to meet you ≠ Bob was keen to meet you.

As shown by the sentences in (8), in the absence of progressive aspect, we lose the idiomatic interpretation, and are only left with the rather obscure literal meaning.

¹ Interestingly it has been noted that idioms can be comprised of both the vP and CP phasal domains collectively:

- (i) a. Is the Pope Catholic?
b. Do bears shit in the woods?

But these idioms are notably different in not being productive. They are closed-off constructions that cannot be incorporated into a normal sentence since nothing about them is adaptable, not even their clause type (the hash marker indicates loss of the idiomatic meaning):

- (ii) a. # The Pope is Catholic.
b. # Bears shit in the woods.

This is a clear instance of an idiom which relies upon progressive aspect for its idiomatic interpretation. Under a more traditional approach to Phases in which only vP constitutes the clause internal phasal domain, this is a definite violation of Svenonius' claim that idioms may not straddle the Phase boundary. However, given the arguments put forward so far in this thesis, it acts as further evidence in support of the idea that the progressive aspectual layer constitutes a part of the clause-internal Phase.²

The idiom in (7) is not the sole counterexample to Svenonius' (2005) claims either. There exist a number of such idioms that are dependent upon progressive aspect (the hash marks indicate loss of the idiomatic reading):^{3,4,5}

- (9) a. Something is eating Bob = Something is bothering Bob.
b. # Something has eaten Bob.
c. # Something might eat Bob.
d. # Something ate Bob.
- (10) a. Bob is pushing up daisies = Bob is dead.
b. # Bob has pushed up daisies for a while now.
c. # Bob will push up daisies soon.
d. # Bob pushed up daisies.

² A question that might arise regarding the idiom in (7) is the fact that such an idiom does not have a subject that is consistently realised with the same lexical item, despite the domain of the idiom extending as far as the progressive aspectual layer. However, Svenonius assumes that there do not necessarily have to be concrete lexical items in place. For the idiom in (7) it is enough to claim that the corresponding syntactic structure (cf. (i)) requires an animate DP subject for the idiomatic interpretation to arise, but that this may be lexically realised with all manner of different nouns and pronouns:

(i) [_{VP(prog)} *be* [_{ProgP} *-ing* [_{VP} DP [dying to]]]]

³ For the idiom in (9), some speakers may require the particle *at* in order to obtain the idiomatic interpretation:

(i) Something was eating at Bob = Something was bothering Bob.

⁴ Svenonius (2005) notes the idiomatic construction in (9). Thanks to Craig Sailor for making me aware of the idioms in (10) and (11).

⁵ An additional idiom that is debatably dependent upon progressive aspect is the construction *raining cats and dogs*, for which some speakers appear to require progressive aspect in order to obtain the idiomatic interpretation, whilst others do not.

- (11) a. He is cruising for a bruising = He is doing something foolish that will result in him receiving physical harm.
b. # He has cruised for a bruising for a long time.
c. # You will cruise for a bruising if you're not careful.
d. # He cruises for a bruising every time he goes out.
- (12) a. They were chomping at the bit = They were keen to get started.
b. # They have chomped at the bit all day.
c. # They will chomp at the bit when they hear the ice-cream van coming.
d. # They chomped at the bit as soon as they heard the ice-cream van coming.

5.2.3 No larger idioms

Unlike progressive aspect, there appear to be no verbal idiomatic constructions dependent upon perfect aspect or any other higher material. Here I discuss four expressions which at first sight appear to contradict this generalisation, but which I will show to actually conform with my claims.

The first two apparent counterexamples we already encountered in chapter 4 when discussing deletion of non-finite *have*. As previously noted, the following two patterns are dependent upon the presence of perfect aspect:

- (13) a. John has been to Rome.
b. John has been around the block a few times.

However, I do not consider these constructions idioms in the same sense that the progressive idioms are. First, it should be noted that most idioms may lose their idiomatic interpretation if the ingredients which compose them are modified, but the outcome will still be a grammatical sentence (if sometimes a little semantically odd when the only interpretation that can be enforced is the literal reading), as was illustrated with the idioms in (8)-(12). On the other hand, when perfect aspect is removed from the sentences in (13), the resulting sentence is entirely ungrammatical.

- (14) a. * John is to Rome.
b. * John might be to Rome.
c. * John is being to Rome.

- (15) a. * John was around the block a few times.
b. * John might be around the block a few times.
c. * John is being around the block a few times.

This suggests therefore that the dependency on perfect aspect in these constructions is not due to a particular interpretational requirement at LF, as with most idioms, but some kind of syntactic, or even phonological, constraint. This implies that such constructions are not in fact to be treated as idioms.

It should also be noted that other than perfect aspect, a common element across these two examples is that neither contains a lexical verb, and instead employs the auxiliary *been*. It is possible that this auxiliary is an independent lexical item that carries with it some meaning of transit. This is evidenced by the fact that the same auxiliary can be used to similar effect in the closely related language of Dutch, though without the need for perfect aspect:

- (16) Ik ben naar de kapper
I am to the hairdresser's
'I am going to the hairdresser's'

Of course, the fact that the Dutch instance of this auxiliary is not dependent upon perfect aspect but the English equivalent is remains to be explained. One possibility is that this particular auxiliary is always listed in the English lexicon as *been*, but is listed more abstractly in the Dutch lexicon.

A third idiom which is sometimes raised as a possible counterexample is the following:

- (17) The cat has got your tongue = You seem speechless.

At first glance this idiom appears to be dependent upon perfect aspect. It is probably correct that this string is most often produced with perfect aspect, but it is not actually dependent upon the perfect aspectual layer for its idiomatic interpretation. As the following two sentences demonstrate, the idiomatic reading survives in the absence of perfect aspect:

- (18) a. The cat has your tongue = You are speechless.
b. What was the matter, did the cat get your tongue? = Were you speechless?

Therefore, the idiom presented in (17) is not actually problematic for my proposal.

A final potential counter-example, cited in Svenonius (2005), is the following idiom:

(19) Heads will roll = People will be fired.

(Svenonius 2005:(8))

This appears to be an instance of an idiomatic construction that is dependent upon modality. However, similar to the example discussed in (17), whilst this idiom is most commonly produced with a modal present, it is not actually dependent upon modality, as illustrated below:

- (20) a. Many heads have rolled at the national bank since the financial meltdown.
= Many people have been fired.
b. Over at the national bank, heads are rolling = People are being fired.
c. Heads roll almost daily over at the national bank = People are fired daily.

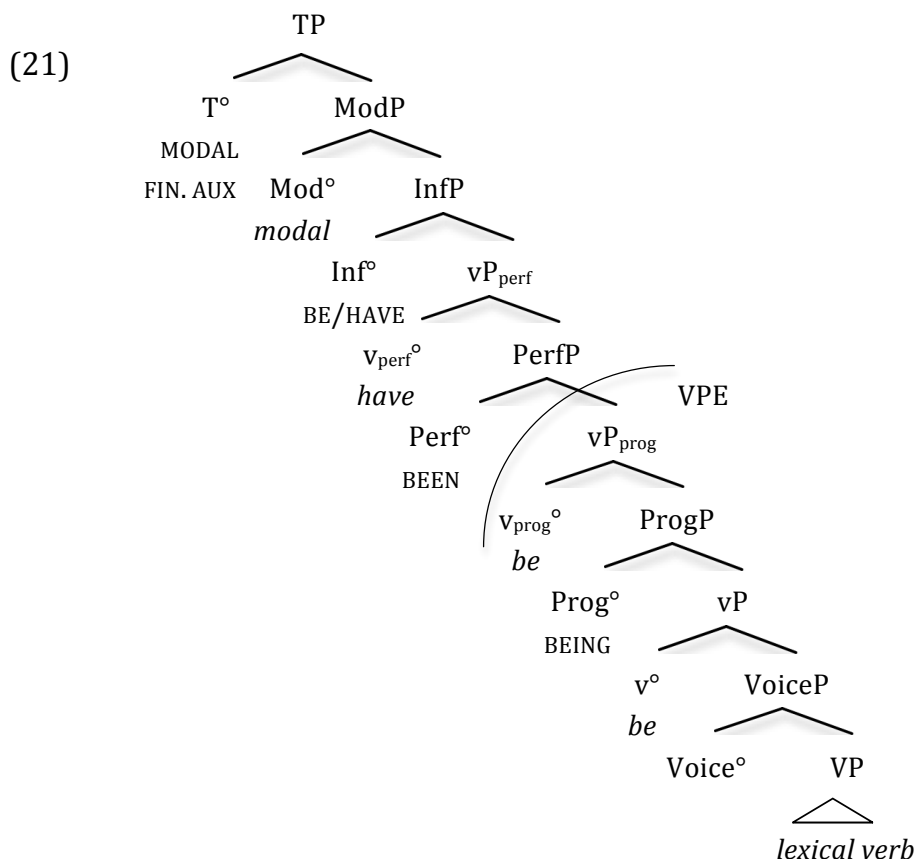
Therefore, in the lack of any evidence to the contrary, it seems safe to claim that progressive aspect can play a crucial role in the construction of idioms, whilst perfect aspect and modals cannot. Given Svenonius' claim that idioms are constrained by phasal domains, this suggests that progressive aspect is contained within the clause-internal Phase, whilst perfect aspect and modals are not.

In the following section I provide additional evidence for this aspectual divide drawn from mismatches under VPE.

5.3 Ellipsis mismatches

5.3.1 Voice mismatches

Recall from the previous chapter that I claimed ellipsis generally targets the topmost projection of the progressive aspectual layer when progressive aspect is present, namely vP_{prog} .⁶

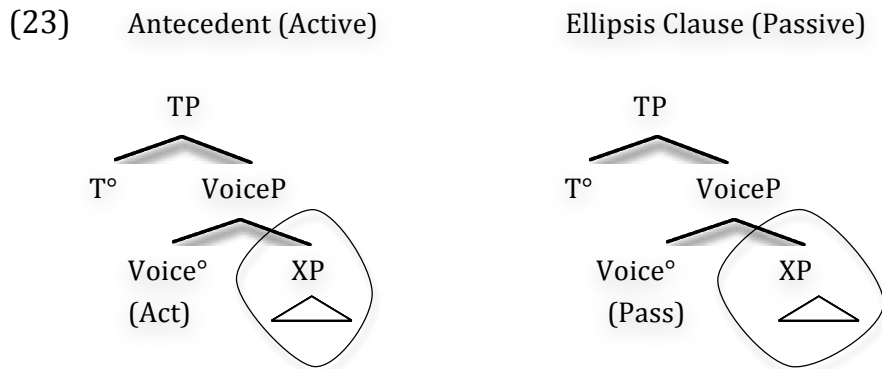


An issue that can be raised against this analysis, however, involves voice mismatches under VPE. Merchant (2008a, 2013) notes that voice mismatches between antecedent and ellipsis clause are possible under ellipsis: the antecedent clause may be active, whilst the ellipsis clause bears passive voice, and vice versa.

⁶ When applied to Phases I actually claimed that ellipsis sometimes privileges the complement of the clause-internal Phase, namely ProgP, and sometimes the entire Phase itself, namely vP_{prog} . For ease of exposition, however, I will simply follow the notion in this chapter that ellipsis targets vP_{prog} .

- (22) a. The janitor must remove the trash whenever it is apparent that it should be [removed]. (Act-Pass)
 b. The system can be used by anyone who wants to [use it]. (Pass-Act)
 (Merchant 2008a:169)

Merchant accounts for this mismatch by claiming that VoiceP, which is taken to encode the passive or active status of the clause, remains outside of the ellipsis site and is therefore not subject to the recoverability requirement of ellipsis. That is, because VoiceP survives ellipsis, it does not need to be formally identical to the VoiceP contained in the antecedent and therefore is easily recovered following ellipsis. I illustrate this in the diagram below with an active antecedent and a passive ellipsis clause.



The problem for the analysis of ellipsis that I have presented in this thesis is that, as indicated below, VoiceP is always contained within the ellipsis site.

- (24) [ModP [InfP [vPperf [PerfP ([vPprog [ProgP [vP (VoiceP) VP]]]]]]]]]

This implies that VoiceP should be subject to the identity condition, so we expect voice mismatches between the antecedent and the ellipsis clause to actually be illicit, contrary to judgments like those reported in (22) above.

However, the judgments on voice mismatches are more complex. Kehler (2002) and Merchant (2013) note that permissible voice mismatches in English VPE are in fact a rarity that are only possible in very specific discourse contexts that strongly favour the mismatch reading and exclude the non-mismatch reading. Indeed, contrary to what the data in (22) suggest, mismatches in VPE are, for the most part, unacceptable:

- (25) * John will penalise someone unfairly, but Mary won't be [~~penalised~~
~~unfairly~~].

(Thoms & Walkden 2013:(35))

In other words, if voice mismatches are in fact mostly unacceptable in VPE, it seems more plausible that Voice is actually contained inside the ellipsis site and so is generally not recoverable. The only exception to this is that narrow set of discourse contexts which are adequately set up to prime the mismatch reading, therefore momentarily allowing for a relaxation of the strict identity requirement (Thoms & Walkden 2013). In other words, I claim that VoiceP is contained inside the ellipsis site, but that it can be recovered with a great deal of effort so long as enough clues are given by the discourse context as to the value of Voice. Therefore, the voice mismatch data are not necessarily problematic for the analysis presented in the previous chapter.

5.3.2 Aspectual mismatches

In relation to the discussion on voice mismatches, I return to the matter of aspectual mismatches discussed in chapter 3 and show how this can constitute further evidence towards the progressive aspectual layer being contained within the ellipsis site. Recall that, as Quirk et al (1972), Sag (1976), Warner (1986), Lasnik (1995c) and Rouveret (2012) note, the lexical verb, unlike auxiliary verbs, does not require an identical antecedent in order to be elided:

- (26) a. Ted **ate** a bunny burger, and Robin will [~~eat...~~] too.
b. First Ted **ate** a bunny burger, and now Robin has [~~eaten...~~].
c. Ted will **eat** a bunny burger because Robin has [~~eaten...~~].
d. Ted has **eaten** a bunny burger, and now Robin might [~~eat...~~].

Lasnik (1995c) and Quirk et al (1972) note, however, that lexical verbs in the progressive form behave differently from other lexical verbs. The generalisation is the following: if the antecedent contains a progressive lexical verb, and the ellipsis site does not, VPE is allowed; but if VPE aims to elide a lexical verb inflected for progressive aspect, without this verb occurring as a progressive in the antecedent, the sentence is ungrammatical:

- (27) a. John was **sleeping**, and Mary will [**sleep**], too.
b. * John **slept**, and Mary was [**sleeping**], too.
c. * John will **sleep**. Mary is [**sleeping**] now.
d. * John won't **enter** the competition, but Peter is [**entering the competition**].

(Lasnik 1995c:(43), (62), (63) and (70) respectively)

Lasnik (1995c) accounts for this in the following way: he assumes, as mentioned in chapter 3, that whilst auxiliary verbs enter the derivation bearing inflectional features, lexical verbs in English enter the derivation bare and receive their inflections via affixation under PF linear adjacency. Moreover, Lasnik (1995c) claims that ellipsis takes place before the process of affixation. Therefore, in the examples above, the lexical verb is elided before it can receive the progressive *-ing* affix. The progressive *-ing* affix is subsequently left stranded without a verb to attach to, resulting in a violation of the SAF, causing the derivation to crash:⁷

- (28) * John slept, and Mary was *-ing* [**sleep**], too.

The main problem with this explanation – as Lasnik notes – is that it is unclear why there is no crash when a lexical verb inflected for perfect aspect is elided without an identical antecedent.

- (29) a. John may be **questioning** our motives, but Peter hasn't [**questioned our motives**].
b. Peter **saw** your parents last week, but he hasn't [**seen your parents**] since.
(Lasnik 1995c:(73) and (74) respectively)

In these examples also, the perfect *-en* inflection should be left stranded without a verb to attach to, violating the SAF:

- (30) Peter saw your parents last week, but he hasn't *-en* [**see your parents**], since.

⁷ The example in (27)a, in which a progressive lexical verb antecedes an elided infinitival verb, is permitted because, according to Lasnik (1995c), there are no inflections to be left stranded with infinitivals.

The fact that examples such as this are acceptable is a mystery for Lasnik's (1995c) analysis.

Moreover, the supposed stranding of the progressive affix should lead to ungrammaticality in all instances of ellipsis in which a progressive lexical verb is elided, even when there is an identical antecedent, contrary to fact:

(31) Bert is **climbing** a tree, and Ernie is, too.

In the example above, the elided progressive lexical verb has an identical antecedent, but even in this instance, Lasnik's (1995c) analysis predicts the sentence to be illicit: the progressive inflection in the second conjunct will still be stranded by ellipsis, thereby violating the SAF.

(32) Bert is **climbing** a tree, and Ernie is *-ing* [~~climb a tree~~], too.

The fact that the sentence in (31) is grammatical is problematic for Lasnik (1995c).

Therefore, the stranding of the progressive *-ing* affix without a host cannot be used to account for the unacceptability of (27)b-d, which involve a progressive ellipsis site but a non- progressive antecedent.

More importantly, however, Potsdam (1997) points out that progressive lexical verbs without an identical antecedent can be more easily elided if "contextualisation that aids in the recovery of the meaning of the elided VP is supplied", citing the following examples:⁸

- (33) a. A: Why don't you **sit** quietly? B: I am [~~sitting quietly~~].
b. "I must **see** you alone," she said. "You are [~~seeing me alone~~]," his uncle said.
c. John said that he would never **take** money on the side but I knew he was [~~taking money on the side~~].
d. John **left** because Mary was [~~leaving~~].
e. The baby will **sleep** if he sees that his brother is [~~sleeping~~].
(Potsdam 1997:(14) and fn.1)

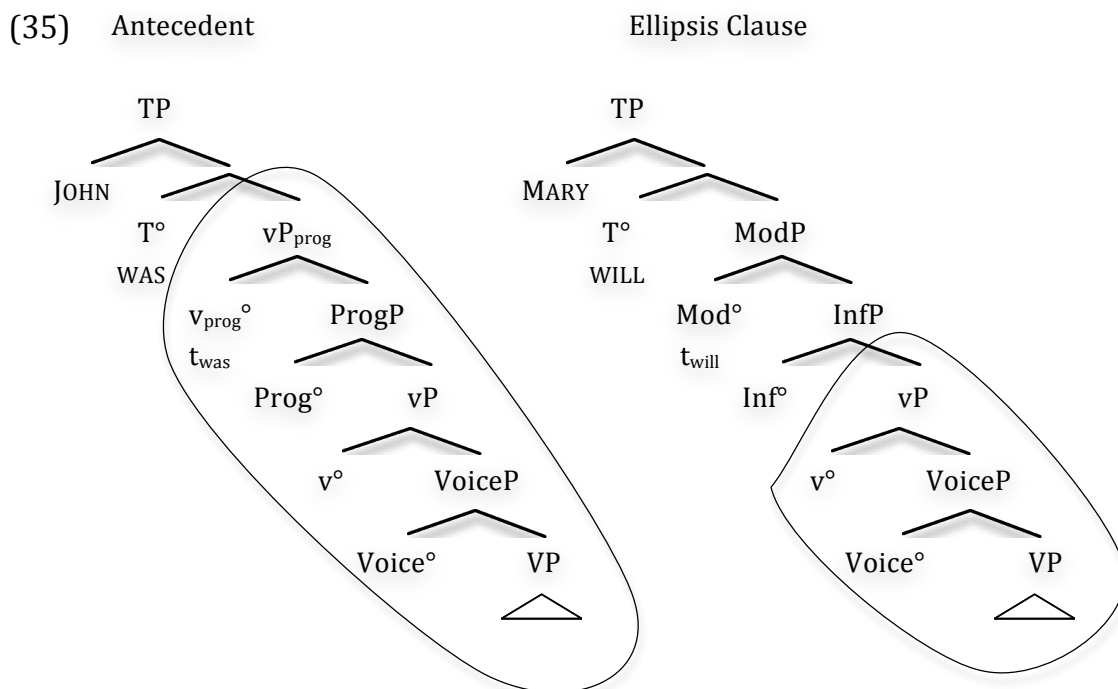
⁸ Similar data has also been pointed out to me by Jason Merchant, Gary Thoms and Craig Sailor.

This is reminiscent of the voice mismatch data, for which I have claimed that VoiceP is contained within the ellipsis site, but can be exceptionally recovered if sufficiently aided by the discourse context. In other words, I claim that the reason that progressive lexical verbs are difficult (though not impossible) to elide without an identical antecedent is because the progressive projection which provides the relevant inflection and interpretation, i.e., ProgP, is contained within the ellipsis site. Therefore, aspectual mismatches involving progressive aspect in the ellipsis site are generally ruled out in English, and it is only with great effort and with considerable reliance upon the discourse context that the listener is able to recover the necessary information encoded within ProgP.

To illustrate what is meant, consider the grammatical case in (27)a, repeated below, which involves a progressive lexical verb in the antecedent, and a non-progressive verb in the ellipsis site.

(34) John was **sleeping**, and Marry will [**sleep**], too.

Here the verbal layer in the antecedent is more articulated than in the ellipsis clause, as it includes both ProgP and vP_{prog}, which are absent from the ellipsis site. Therefore the ellipsis site is fully included in the antecedent, and hence, fully recoverable:



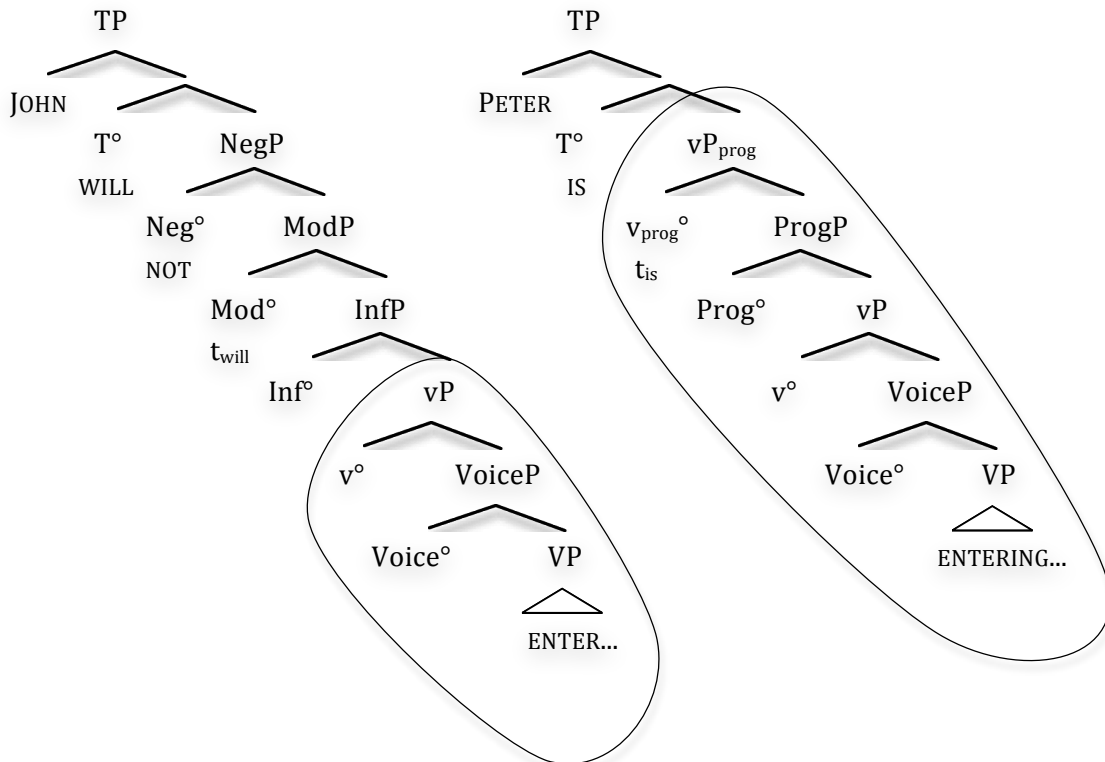
This does not hold for those instances in which the ellipsis site itself contains a progressive, but not the antecedent, as illustrated in (27)d, repeated below.

(36) * John won't **enter** the competition, but Peter is [**entering** the competition].

Here the verbal layer in the ellipsis site is larger than that in the antecedent. Therefore the ellipsis site is less easy to recover.

(37) Antecedent

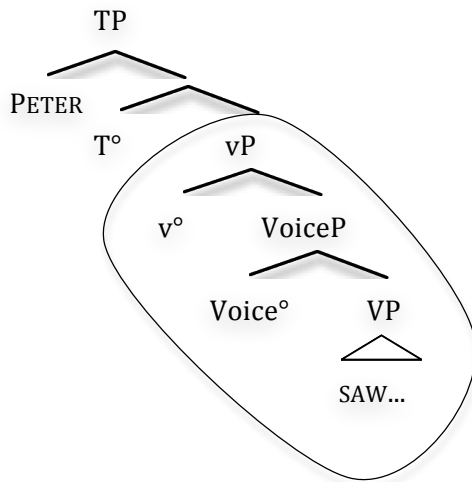
Ellipsis Clause



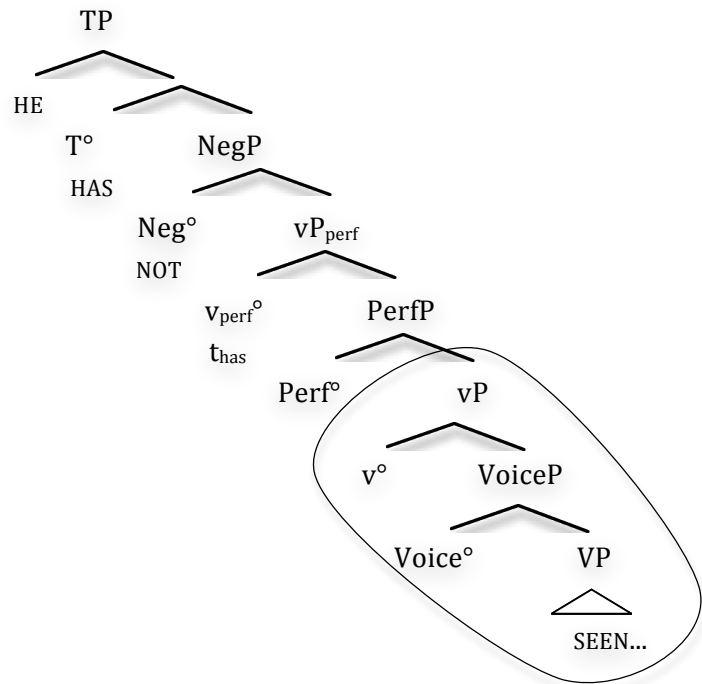
In this instance, ellipsis may be illicit on account of a non-antecedent ProgP being contained within the ellipsis site that cannot be recovered, violating the recoverability condition. Alternatively, if enough clues are given by the discourse context, extra pressure may be placed on the interpretative component in order to ensure the recovery of the progressive interpretation.

The same problem does not arise when the elided lexical verb is inflected for perfect morphology while such inflections are absent from the antecedent, as in (29). Lasnik (1995c) notes that the lexical verb in these examples appears to be much more easily recoverable than the progressive examples. I conjecture that the reason for this is because, as already claimed, perfect aspect is not contained within the ellipsis site of English VPE. Therefore, the presence of perfect aspect in the antecedent is immaterial in terms of the recoverability condition. In other words, the ellipsis site does not include the perfect aspectual layer; therefore the perfect aspectual layer does not need to be recovered:

(38) Antecedent



Ellipsis Clause



This seems to constitute further evidence in support of the claim that progressive aspect, but not perfect aspect, is included within the VPE ellipsis site.

5.3.3 Voice and aspectual mismatches combined

Further data in favour of the analysis just presented is drawn from the observation made by Merchant (p.c.), Wurmbrand (2012a) and Aelbrecht & Harwood (2013) that voice mismatches are illicit with progressive aspect in the ellipsis clause, but not with higher aspectual forms, such as perfect aspect.

- (39) a. The system can't be used by just anyone, even though Mary has [~~used the system~~] already twice.
 b. * The system can't be used by just anyone, even though Mary has been [~~using the system~~] all year.

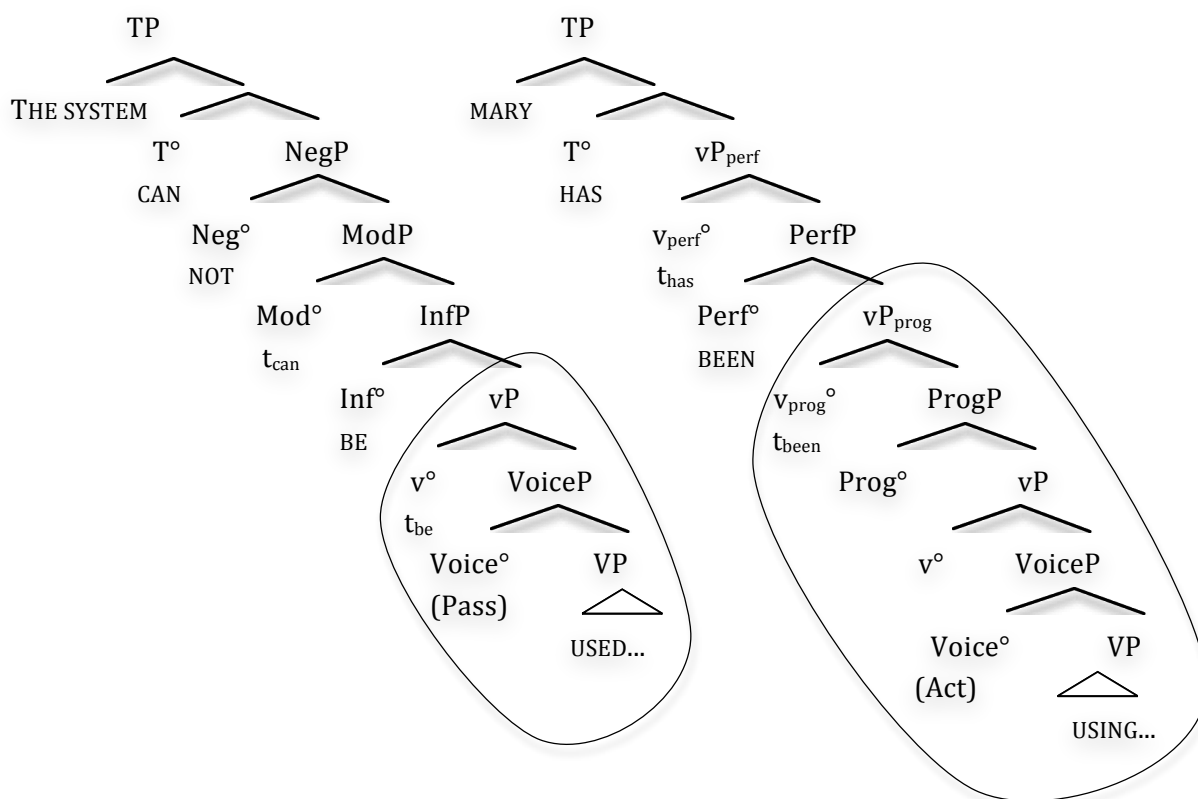
(Aelbrecht & Harwood 2013:(55), adapted from Wurmbrand 2012a:(24) and (29))

I explain this contrast as follows: when both VoiceP and ProgP are elided and neither have matching components in the antecedent, as in (39)b, the listener must try to recover the specifications of both Prog° and Voice°. In this case, there is too much information to recover. No matter how much discourse context is given, there is still

too much work involved for the elided constituent to be correctly interpreted, therefore the derivation crashes.

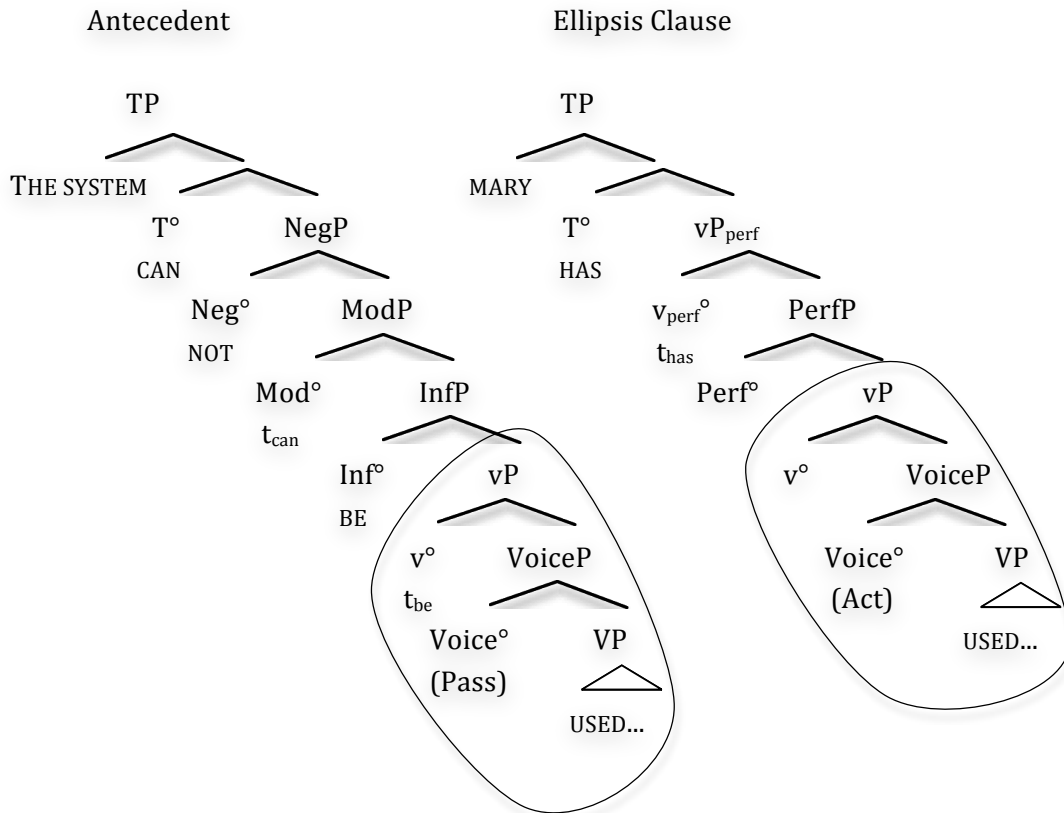
(40) Antecedent

Ellipsis Clause



When it appears as though VoiceP and PerfP have been elided, however, as in (39)a, and neither have identical antecedents, it is only actually VoiceP that is elided, since PerfP is in fact external to the ellipsis site. Therefore, the listener only needs to recover VoiceP itself and not perfect aspect. With the syntactic information of only one head to recover, the listener can be appropriately aided by the discourse in order to retrieve the specifications of Voice°. Therefore the derivation is permitted.

(41)



This further suggests, therefore, that progressive aspect is always internal to the VPE ellipsis site, and perfect aspect is always external to it.

This concludes the discussion of the mismatch data in English VPE, which I have argued to actually provide further evidence in favour of the claim that VPE privileges the progressive layer, but not the perfect layer. If ellipsis is constrained by Phases, as I have argued in the previous chapter, this once again implies that progressive aspect is included within the clause-internal Phase at the exclusion of perfect aspect, which must be contained within the clausal Phase.

In the following section I discuss certain inflectional mismatch data in VPF which further argues for the existence of this aspectual divide in English.

5.4 Fronting mismatches

Emonds (1976), Ward (1985) Oku (1996, 1998), Urushibara (1997), Rouveret (2012) and Thoms & Walkden (2013) note an interesting contrast between perfect and progressive aspect within English VPF. They observe that the fronted perfect participle can optionally surface in its bare form, whereas the fronted progressive participle must surface bearing progressive inflections:

- (42) a. We thought she would lose her temper, and [**lost** her temper], she has.
b. We thought she would lose her temper, and [**lose** her temper], she has.
(Emonds 1976:115)

- (43) a. I thought I was losing my temper, and [**losing** my temper] I was indeed.
b. * I thought I was losing my temper, and [**lose** my temper] I was indeed.
(Thoms & Walkden 2013:(32))

I speculate that this further argues for a structural divide between progressive and perfect aspect. The analysis presented in this section is merely a suggested line of enquiry that fits in with the central claim of this thesis, but is not necessarily pivotal for the analysis of the entire thesis. The most important aspect of this section in general I take to be the empirical data, with the analysis secondary to that.

In order to capture the data above I conjecture that the operations of affixation under linear adjacency (which, as claimed in chapter 3, is how lexical verbs receive their inflections in English) and preposing of the clause-internal Phase to the edge of CP may be optionally ordered with respect to one another.

In the case of progressive inflections, which are contained within the same phasal domain as the lexical verb, the ordering of affixation and fronting is immaterial. Whether affixation precedes fronting, or fronting precedes affixation, the progressive inflection will remain adjacent to the lexical verb and so will always attach to it. I illustrate these two derivational options below:

Option 1: Affixation > Preposing

- (i) Affixation occurs, merging the progressive *-ing* inflection together with the lexical verb by virtue of the two items being string adjacent:

(44) ... and I was indeed [_{vP(prog)} -ing + **lose** my temper]

- (ii) Preposing occurs, moving the clause-internal Phase to the CP specifier:

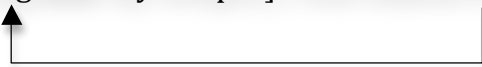
(45) ... and [_{vP(prog)} **losing** my temper] I was indeed t_{vP(prog)}.



Option 2: Preposing > Affixation

(i) Preposing occurs, moving the clause-internal Phase to the CP specifier:

(46) ... and [_{VP(prog)} -ing **lose** my temper] I was indeed t_{VP(prog)}.



(ii) Affixation occurs: the progressive *-ing* inflection remains adjacent to the lexical verb, therefore these two items can be merged together at PF:

(47) ... and [_{VP(prog)} -ing + **lose** my temper] I was indeed t_{VP(prog)}.

Therefore, both derivational paths converge on the same result: progressive aspect affixes to the lexical verb.

Perfect inflections, however, are external to the lexical verb's phasal domain and so the two derivational paths yield different results: if affixation precedes preposing, the perfect inflection will attach to the lexical verb, but if preposing precedes affixation, the perfect inflection will be left stranded and the lexical verb is Spelled Out as its bare form. Below I illustrate both derivational options:


Option 1: Affixation > Preposing

(i) Affixation occurs: the perfect inflection is string adjacent to the lexical verb, therefore the two items can merge together:⁹

(48) ... and she has -en [_{VP} + **lose** her temper]

(ii) The clause-internal Phase is then preposed, moving the perfect participle with it:

(49) ... and [_{VP} **lost** her temper] she has t_{VP}.

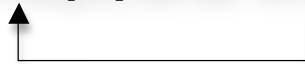


⁹ I assume affixation can take place across Phase boundaries.

Option 2: Preposing > Affixation

(i) Preposing occurs, moving the clause-internal Phase to the CP specifier:

(50) ... and [_{VP} **lose** her temper] she has -en t_{VP}.



(ii) The perfect affix is left stranded by the preposed Phase and so is no longer string adjacent to the lexical verb. Therefore affixation cannot apply and the lexical verb is Spelled Out as its bare form.

(51) ... and [_{VP} **lose** her temper] she has -en t_{VP}.

A remaining issue, however, is why no derivational crash occurs when the perfect affix is stranded. Without a verb to attach to, this stranded affix should violate the SAF and cause a derivational crash, contrary to fact.

This matter aside, by claiming the progressive aspectual layer to be included within the clause-internal Phase along with Voice and the lexical verb, whilst perfect aspect remains external to this Phase, we are able to begin to understand the VPF mismatch data.

Note furthermore that the analysis presented above predicts that a fronted lexical verb should also be optionally inflected for Tense, since Tense is external to the clause-internal Phase, similar to perfect aspect. The passive participle, on the other hand, should obligatorily receive passive inflections since these are internal to the clause-internal Phase, akin to progressive aspect. This prediction is borne out:

(52) a. Everyone said that Susan lost her temper, and [**lost** her temper] she did.
b. Everyone said that Susan lost her temper, and [**lose** her temper] she did.
(Thoms & Walkden 2013:(28))

(53) a. Eric said they'd penalise him unfairly, and [**penalised** unfairly] he was indeed.
b. * Eric said they'd penalise him unfairly, and [**penalise** unfairly] he was indeed.
(Thoms & Walkden 2013:(34))

As stated at the beginning of this section, the analysis presented here is tentative and not without its shortcomings, but the empirical data, at the very least, offer additional support for the aspectual divide that is central to this thesis.

In the following section I briefly discuss one final piece of evidence for this aspectual divide which draws upon certain selectional restrictions that progressive aspect exhibits.

5.5 Selectional restrictions

Potential further evidence for the divide between progressive and perfect aspect is the fact that progressive aspect is uniquely sensitive to lexical restrictions with regards to the lexical verb. That is, progressive aspect can select for dynamic verbs, but not stative verbs, whilst there are no such apparent restrictions for perfect aspect:

- (54) a. Bert is climbing a tree.
b. * Bert is knowing French.

- (55) a. Bert has climbed a tree.
b. Bert has known French (for a long time).

This suggests that progressive aspect is much more closely tied to the lexical verb, perhaps being contained within the same structural domain, than higher aspectual forms such as perfect aspect.

Note furthermore that Voice, also contained within the same structural domain as the lexical verb, is similarly sensitive to certain selectional restrictions regarding the lexical verb. Unlike progressive aspect, Voice is not sensitive to the dynamic/stative properties of verbs (cf. (56)), but it is sensitive to their status as one, two or three place predicates. That is, Voice can only select transitive and ditransitive lexical verbs, not ergative or unaccusative verbs (cf. (57)):

- (56) a. The tree was climbed.
b. The answer was known (by everyone in the room).

- (57) a. Bert and Ernie were arrested (by the police).
b. Bert was given a 3-month prison sentence (by the judge).
c. * Ernie was laughed.
d. * Ernie was arrived.

Note, once again, that perfect aspect does not appear to exhibit any such selectional restrictions on the verb (cf. (58)). This further indicates that perfect aspect differs from Voice and progressive aspect by not being contained within the same structural domain as the lexical verb. Perfect aspect is instead more likely contained within the same domain as modals and Tense, since these functional forms also do not exhibit any selectional restrictions on the lexical verb (cf. (59) and (60)).

- (58) a. The police have arrested Bert and Ernie
b. The judge has given Bert a 3-month prison sentence.
c. Ernie has laughed (heartily).
d. Ernie has arrived.

- (59) a. Bert will climb a tree
b. Bert will know French (by the end of his erasmus in Paris)
c. The police will arrest Bert and Ernie
d. The judge will give Bert a 3-month prison sentence.
e. Ernie will laugh (heartily).
f. Ernie will arrive.

- (60) a. Bert climbed a tree.
b. Bert knew French.
c. The police arrested Bert and Ernie
d. The judge gave Bert a 3-month prison sentence.
e. Ernie laughed (heartily).
f. Ernie arrived.

This concludes discussion of the data beyond auxiliaries which argues for a phasal divide between perfect and progressive aspect. In the following section I summarise and conclude this chapter.

5.6 Summary and conclusion

This chapter has reviewed data from idiomatic constructions, voice and aspectual mismatches in VPE, inflectional mismatches in VPF, and certain selectional restrictions, in order to illustrate the unique behaviour of progressive aspect independent from auxiliaries. This further justifies the location of the clause-internal Phase boundary between progressive and perfect aspect in English. Furthermore, by abstracting away from auxiliaries, the data additionally suggests that the peculiar behaviour of *being* observed in the previous chapter is not derived via any unique properties of *being* itself, but instead reflects a general property of progressive aspect, namely, progressive aspect, in particular vP_{prog} , constitutes the clause internal Phase when present in the structure, to the exclusion of higher aspectual forms.

In the following chapter I return to the matter of existential constructions which, whilst exploited to various effects in chapters 3 and 4, have yet to be provided with a thorough analysis of their own. In particular I will try to capture the aspectual restrictions present on such constructions, as well as the full distribution of the associate, using the claims and assumptions that have been made so far in this thesis.

6

An Existential Crisis

6.1 Introduction

Over the course of this thesis, existential constructions have been frequently exploited to justify many of the claims that I have made. In particular they have been used to show that there is a distributional difference between *be/been* and *being*, that full phasal ellipsis is possible and that A'-movement is prohibited in such contexts. They also made clear that the progressive auxiliary can indeed be elided, and that Phase Edge effects are observable on the edge of the progressive aspectual layer. However, these constructions are yet to be presented with a full derivational analysis of their own. Obviously any arguments made which utilise such constructions to prove a point may hold less weight if these constructions are themselves not fully understood.

As was demonstrated in chapter 4, existential sentences are much more complex than they initially appear. In particular two rather puzzling facts emerged from the discussion. The first puzzle concerns the aspectual restrictions that certain existential constructions exhibit: whilst the lexical verb in unaccusative existentials can occur in all inflectional forms, the lexical verb in transitive existentials is restricted only to the progressive and passive participle forms (cf. section 4.2.2.2 of chapter 4, and also section 6.2 of this chapter). A second puzzling contrast between unaccusative and transitive existentials concerns the distribution of the associate: in transitive existentials, the associate appears in a pre-verbal position, whereas in unaccusative existentials, the associate is post-verbal (cf. section 4.4, chapter 4, and also section 6.6 of this chapter). This latter issue is particularly troubling since in chapter 4 existential subjects were predicted to uniformly raise to the pre-verbal position of the clause-internal Phase Edge, contrary to fact.

The purpose of this chapter is to provide a fuller account of existential derivations with a view to solving these two particular issues.¹ I show how the principle assumptions made so far in this thesis, in particular the hybrid approach to verbal inflection adopted in chapter 3, and the identity of the clause-internal Phase presented in chapters 4 and 5, can correctly capture the relevant data. Therefore existential derivations can be better understood, but in a manner which remains consistent with the previous content of this thesis.

In a nutshell, I argue that the aspectual restrictions can be explained if one assumes the lexical verb in English remains in situ and receives its inflection through linear adjacency (as claimed in chapter 3), and that associates can act as interveners for the purposes of verbal inflection. Since I assume, as was proposed in chapter 4, that the pre-verbal associate in transitive existentials surfaces on the edge of the progressive aspectual layer, it would not intervene for affixation between the lexical verb and progressive and passive inflections, but does so with respect to higher inflections. In unaccusative existential constructions, on the other hand, the associate is Spelled Out in post-verbal position and so does not intervene between the lexical verb and any of the inflectional elements.

In order to fully explain the distribution of associates across the various existential constructions I maintain that the pre-verbal distribution of the English associate can be derived by claiming that the associate is generally stranded on the Edge of the clause-internal Phase. I attribute the post-verbal position of the associate in unaccusative existentials to the reduced phasal structure that unaccusative verbs exhibit and the notion of anti-locality.

The two goals of this chapter will be tackled separately. I first deal with the aspectual restrictions on existential constructions, and then discuss the distribution of the associate. The following sections are organised as follows: section 6.2 describes the aspectual restrictions on English existential constructions. Section 6.3 discusses and evaluates previous analyses made in the literature to capture the pattern and motivates the need for a novel analysis. Section 6.4 acts as a preliminary to the analysis, returning to discussion of the hybrid approach to English verbal inflection as laid out in chapter 3, in particular to the notion of affixation under linearisation in order to introduce the concept of interveners. In section 6.5 I present a novel analysis for the aspectual restrictions in English existential sentences, and in section 6.6 I provide an account for the distribution of the associate across the various existential constructions of English. Section 6.7 then looks beyond Standard

¹ I limit this chapter to existential *there* constructions and not presentational *there* sentences as discussed in Aissen (1975).

English with a view to capturing the cross-linguistic distribution of transitive existential constructions. Section 6.8 at last provides the much promised discussion of whether or not existential constructions are derived from a full clause or a reduced relative. Finally, section 6.9 summarises and concludes.

6.2 Aspectual restrictions

As explained in chapter 3, existential constructions are typically characterised by a semantically contentless expletive, *there*, occupying the canonical subject position, whilst the logical subject, i.e. the associate, occupies a lower position in the clause:²

- (1) There was a wand up the magicians' sleeve.

Existential constructions exhibit many interesting properties, such as the definiteness effect, i.e., the requirement that the associate be indefinite (see Farkas 1996; Holmback 1984; Keenan 1987; Lumsden 1988; McNally 1997; Milsark 1974; Prince 1981; Wilkinson 1988; Woisetschlaeger 1983; Belletti 1988):

- (2) * There was the wand up the magicians' sleeve.

There are also restrictions on the nature of the predicate: the post-nominal material cannot be a DP predicate despite the fact that DPs can act as predicates in copular constructions (see Carlson 1977; Keenan 1987; McNally 1997; Milsark 1974):

- (3) a. * There was a woman a contestant on the game show.
b. A woman was a contestant on the game show.

² Throughout this chapter I will generally indicate the associate with underlining, and verbs/predicates in **bold** where relevant.

The restrictions that this chapter largely concerns itself with, however, are the aspectual restrictions on certain English existentials (Emonds 1970; Milsark 1974; Deal 2009).

The majority of languages that exhibit existential constructions are entirely productive in terms of their compatibility with all varieties of verbal inflection. In Dutch transitive existential constructions (TECs), for instance, the lexical verb can be inflected for finite, infinitival, perfect, progressive or passive morphology:³

- (4) Er **koopt** iemand een brood. (Finite)
there **buys** someone a loaf.of.bread
'Someone is buying a loaf of bread.'
- (5) Er moet iemand een brood **kopen.** (Infinitive)
there must someone a loaf.of.bread **buy**
'Someone has to buy a loaf of bread.'
- (6) Er heeft iemand een brood **gekocht.** (Perfect)
there has someone a loaf.of.bread **bought**
'Someone has bought a loaf of bread.'
- (7) Er is iemand een brood **aan het kopen.** (Progressive)
there is someone a loaf.of.bread **on the buy**
'There is someone buying a loaf of bread.'
- (8) Er werd iemand **gearresteerd.** (Passive)
there became someone **arrested**
'There was someone arrested'

Standard English existential constructions, however, are notable for being severely restricted with regards to which inflectional forms the lexical verb can take. In particular, English TECs can only occur with the progressive and passive participle

³ I follow Haegeman (2001) in assuming that Dutch exhibits genuine TECs, contra Koenenman & Neeleman (2001).

forms of the lexical verb.⁴ Finite, infinitival and perfect inflectional forms are unacceptable:⁵

- | | | |
|-----|---|---------------|
| (9) | a. * There buys someone a book. ⁶ | (Finite) |
| | b. * There should someone buy a book. | (Infinitive) |
| | c. * There has someone bought a book. | (Perfect) |
| | d. There was someone buying a book. | (Progressive) |
| | e. There were several people arrested . | (Passive) |

I will term this the aspectual restrictions on English TECs. Note however, that only lexical verbs are subject to this restriction. Auxiliary verbs are of course free to receive all types of inflection:

- (10) There **may have been** many people **being** arrested.

To further complicate matters, Standard English unaccusative existential constructions (UECs) are fully productive, similar to TECs in most other languages. That is, the lexical verb is unconstrained in terms of the inflectional forms it can take:⁷

⁴ Arguably an existential construction containing a passive participle is not a transitive existential in some sense, but an entirely independent passive existential. However, given the standard generative analysis that passives are derived from transitives (Baker, Johnson & Roberts 1989; Chomsky 1975; Collins 2005), I assume passive existentials to share the same basic underlying structure as transitive existentials and to only be minimally different from them on the surface. For this reason, and for ease of exposition, I bundle passive existentials together with transitives.

⁵ Unergative and ditransitive existentials in English are also subject to the same restrictions. For the sake of simplicity I do not discuss these constructions here, although the analysis I eventually offer for TECs can be straightforwardly carried over to their unergative and ditransitive counterparts.

⁶ The variant in which the associate precedes the finite lexical verb is also, of course, ungrammatical:

(i) * *There someone buys a book.*

⁷ As mentioned in chapter 3, unaccusative existentials lack a passive form since there is no implied Agentive theta role.

- (11) a. There **arrived** several letters in the mail today. (Finite)
 b. There will **arrive** several letters in the mail today. (Infinitive)
 c. There have **arrived** several letters in the mail. (Perfect)
 d. There are several letters **arriving** in the mail today. (Progressive)

To summarise, in Standard English TECs, the lexical verb is restricted to its progressive and passive participle forms, despite the fact that auxiliary verbs are compatible with all types of inflectional affixes. In English UECs, on the other hand, the lexical verb is free to receive all types of inflection. This can be summarised in the following table:

Table 3: aspectual properties of English TECs and UECs

Lex. Verb Inflection	TEC	UEC
Finite	✗	✓
Infinitival	✗	✓
Perfect	✗	✓
Progressive	✓	✓
Passive	✓	N/A

Much of the current chapter will be concerned with explaining these facts.⁸ The analysis itself, found in section 6.5, continues to adopt the hybrid approach to verbal inflection (Lasnik 1995c), and considers what impact the surface position of the associate has on the process of affixation. The major claim is that if the pre-verbal associate in English TECs occupies the edge of the progressive aspectual layer, as I have already supposed in chapter 4, then it intervenes between the lexical verb and finite, infinitival and perfect morphology, thus preventing PF merger of such items, but does not intervene for progressive and passive morphology. In UECs, on the other hand, the associate appears in post-verbal position, meaning that it does not intervene between the verb and any of its potential affixes, so the lexical verb in such instances can receive any inflectional form.

Moving beyond Standard English, section 6.7 shows how this analysis is also potentially able to capture the cross-linguistic distribution of TECs, which I argue to be principally conditioned by the parameter of whether V-to-T movement is allowed or not. Though as will be seen with the Belfast English data (Henry & Cottell, 2007), the distribution of the associate also plays an important role.

⁸ This chapter also stays away from existentials involving to-infinitives, gerunds and lexical verbs such as *seem*.

In the following section I first discuss previous attempts made in the literature to capture the paradigm outlined in table 3 and explain why an alternative analysis is required.

6.3 Previous approaches

There are currently two principle analyses in the generative literature for the aspectual restrictions on Standard English existential constructions: the reduced relative analysis (Jenkins 1972; Law 1999; McNally 1997; Williams 1984) and low Merger of *there* (Bowers 2002; Deal 2009; Henry & Cottell 2007; Richards 2007b; Richards & Biberauer 2005). Section 6.3.1 discusses the former, whilst section 6.3.2 discusses the latter.

6.3.1 The reduced relative analysis

As already mentioned in chapter 4, Jenkins (1972), Law (1999), McNally (1997) and Williams (1984) have claimed that in existentials, the verbal material to the right of the associate is embedded inside a reduced relative clause (RRC) which modifies the DP associate itself:

(12) There was [_{DP} a rabbit [_{RRC} **being pulled** from the magicians' hat]].

For reasons unclear (though see Bhatt (1999) and Kayne (1994) for an analysis), the lexical verb in English RRCs is also restricted to passive and progressive participle forms:⁹

⁹ This is if one only considers what Bhatt (1999) refers to as participle RRCs, and not to-infinitive RRCs (see below), which Bhatt (1999) argues to be structurally distinct.

(i) The bus [soon to arrive] will be the right bus.

- (13) a. * The only bus [**arrives** on time] is the ghost bus. (Finite)
b. * The bus [soon **arrive**] will be the right bus. (Infinitive)
c. * The bus [just **arrived** at the bus stop] is the wrong bus. (Perfect)
d. The man [**waiting** at the bus stop] is my brother. (Progressive)
e. The man [**knocked** down by the bus] was my brother. (Passive)

Therefore, if the verbal material following the associate in an English TEC indeed corresponds to an RRC, this would explain the aspectual restrictions on these constructions:

- (14) a. There was [_{DP} a rabbit [_{RRC} **hiding** in a magic hat]].
b. There was [_{DP} a rabbit [_{RRC} **arrested** for a crime he didn't commit]].

Moreover, since all verbal material precedes the associate in unaccusative existentials, the verb cannot constitute part of an RRC modifying the associate DP in such cases and is therefore not subject to the same aspectual restrictions that verbs in RRCs are subject to.

- (15) There **arrived** several letters in the mail.

Thus the lexical verb in UECs is free to receive all types of inflection. In principle this captures the aspectual restrictions on English existentials.

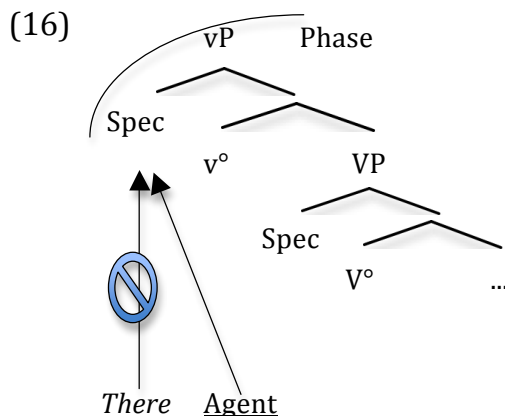
As elegant as this proposal might be, Milsark (1974), Barwise & Cooper (1981), Keenan (1987), Lasnik (1995b), Lumsden (1988), Chomsky (2001), Huddleston & Pullum (2002), Caponigro & Schütze (2003), Rezac (2006) and Deal (2009) have shown, with numerous different diagnostics, that English TECs are ambiguous structures. That is, an RRC analysis is indeed available to these types of sentences, but they can equally be derived from a full clause. To enter fully into the debate of whether English TECs can be derived from a full clause or whether they only have an RRC analysis would involve too much of a detour at this point, but see section 6.8 for a review of the arguments made in the literature from which I conclude that a full clausal analysis is indeed available to existential constructions.

Therefore, though the RRC analysis may be able to explain the aspectual restrictions on TECs when they are indeed derived from an RRC (although the aspectual restriction on RRCs are themselves not entirely understood), the explanation does not carry over to the alternative derivation in which existential

constructions are derived from a full clause. For this reason, we must look for an alternative account that is compatible with a full clause analysis.

6.3.2 Low Merger of *there*

Bowers (2002), Deal (2009), Henry & Cottell (2007), Richards (2007b) and Richards & Biberauer (2005) offer an explanation for the aspectual restrictions that is compatible with the full clause analysis of English TECs. The authors claim that expletive *there* is not universally Merged in Spec-TP as Chomsky (2000, 2001) assumes. Instead the authors argue that, for Standard English, *there* is Merged on the edge of the clause-internal Phase, Spec-vP (under the traditional assumptions of Phase theory). This, however, is the same position in which the Agentive subject is Merged in transitive constructions. Therefore the expletive and the Agent compete for the same position. In every case, the Agent wins, meaning there is no position available in a transitive construction for the expletive to be Merged into.¹⁰ This explains the general ban on TECs in Standard English.^{11,12}

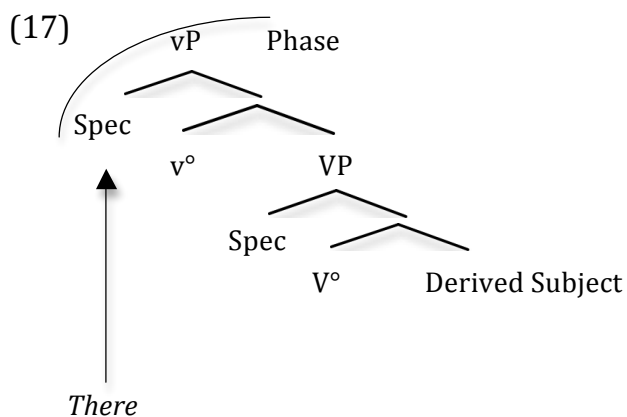


Since unaccusative existentials lack the Agentive subject, Spec-vP remains empty and is therefore a viable position for *there* to be Merged into:

¹⁰ If *there* were to be inserted, it would block insertion of the Agent and thus the thematic structure of V would be incomplete, also rendering a derivational crash.

¹¹ For languages which allow fully productive TECs, the above-mentioned authors assume the expletive to be Merged on the Spec-CP Phase Edge. Therefore Merger of the expletive is not subject to whether or not an Agentive subject is present in such languages.

¹² In the following diagrams I omit VoiceP since the proponents of the 'low-Merger of *there*' analysis are not in agreement as to where this projection is located.



This explains the general admittance of UECs in English.

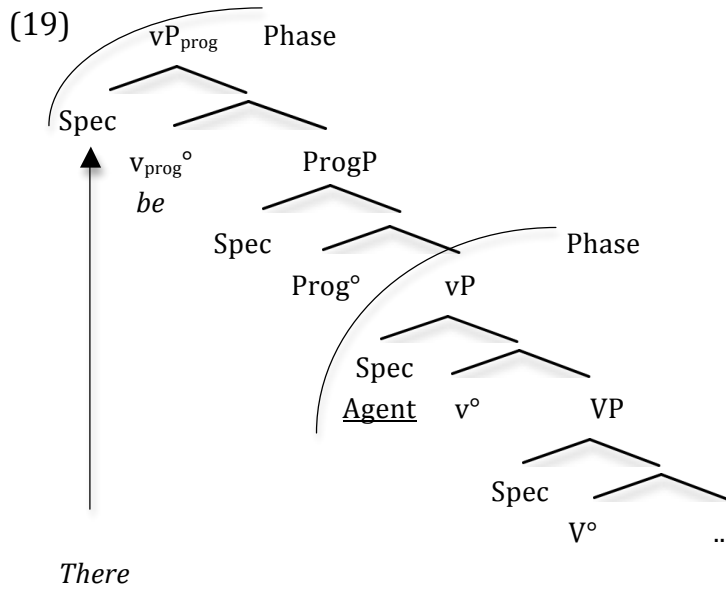
The same principle also applies to TECs in which the lexical verb has been passivised, in which case Spec-*vP* is once again empty and therefore available for Merger of expletive *there*, explaining the existence of passivised TECs in English:¹³

(18) There were several people **arrested**.

In order to account for the fact that active TECs *are* permitted in English if the lexical verb is inflected for progressive aspect, Deal (2009) claims, following Butler (2004) and Henry & Cottell (2007), that each auxiliary verb is Merged into its own *vP* shell introducing a separate Phase. Consequently, expletive *there* may be alternatively Merged on the edge of these subsequent Phases. Therefore, since Spec-*vP* proper is not a viable position for Merger of *there* in active TECs, such constructions are dependent upon the presence of an additional auxiliary, such as progressive *be*, to introduce a new Phase, as it offers a position in which *there* can be Merged:

¹³ Observe that this position is not compatible with Collins's smuggling account of passivisation in which the *by*-agent in passive sentences is realised in its thematic position. Such an account combined with the 'low Merger of *there*' analysis would predict that passive existentials are incompatible with a *by*-agent, contrary to fact:

(i) There were several students arrested by the riot police last night.

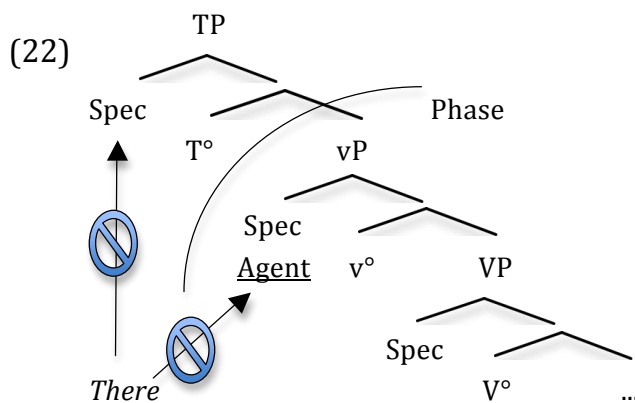


This explains why progressive TECs such as (20) are allowed, because the progressive auxiliary introduces a separate Phase in the specifier of which expletive *there* can be Merged.

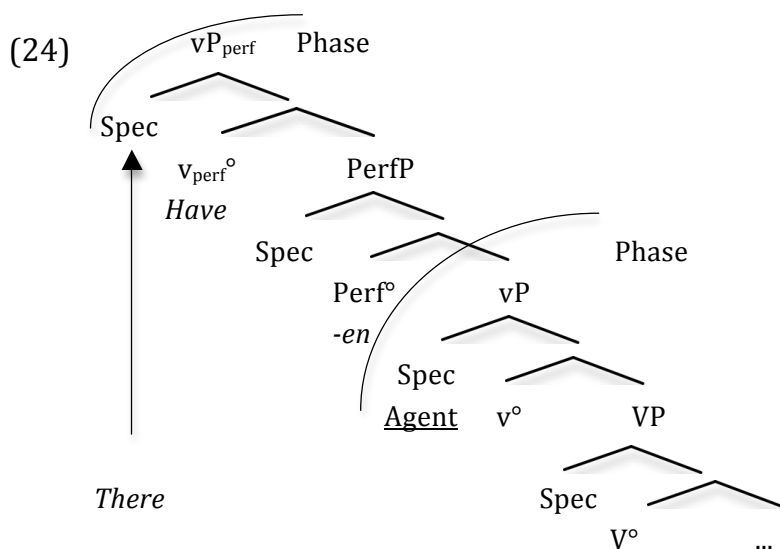
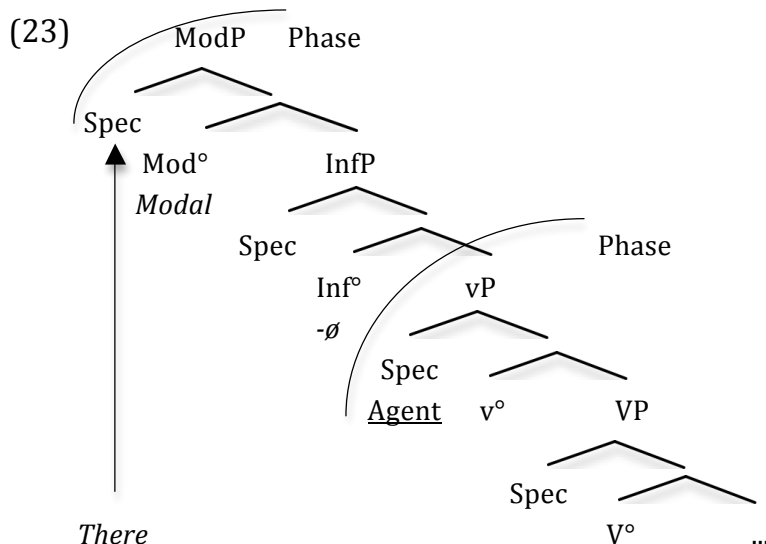
(20) There was a man **buying** a book.

On the other hand, finite TECs such as (21) are disallowed because there is no auxiliary available to introduce an extra Phase beyond the original vP. Therefore, with the Agentive subject in Spec-vP, there is no position available in which *there* could be Merged.

(21) * There **buys** a man a book.



One of the shortcomings of this proposal, however, is that Butler (2004), Deal (2009) and Henry & Cottell (2007) assume all auxiliaries introduce a separate Phase. This implies that perfect *have* and modals should also introduce a Phase, in the specifier of which *there* could be Merged:

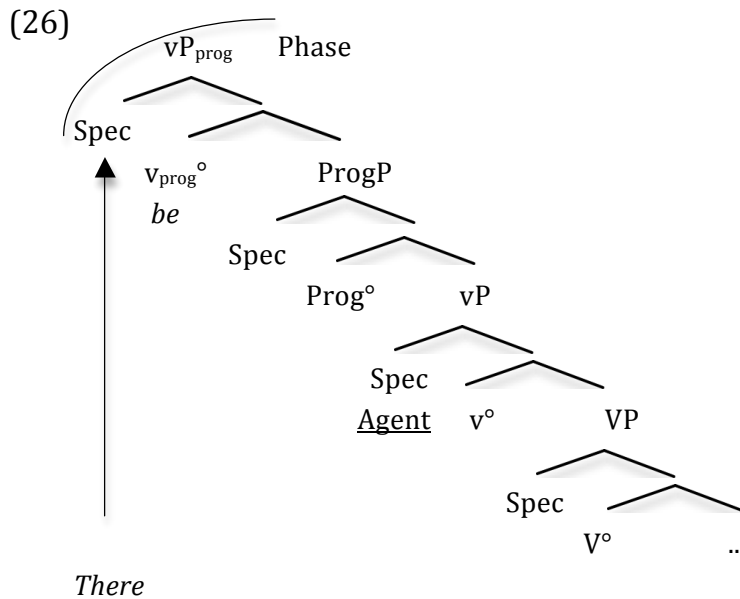


Therefore, this approach is unable to rule out sentences such as (25)a,b.

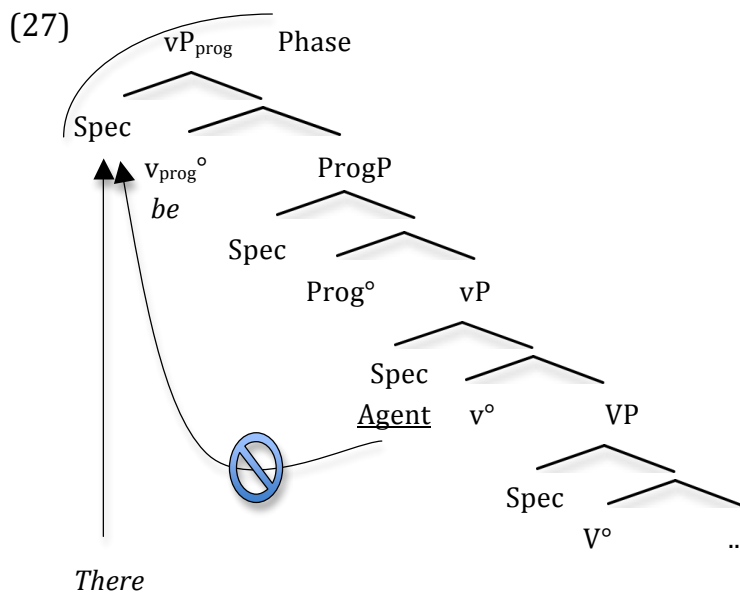
- (25) a. * There has a man bought a book.
 b. * There should a man buy a book.

Of course, the low-Merger of *there* analysis as presented in Deal (2009) could potentially be salvaged under the phasal approach adopted in this thesis, in which progressive aspect, but not perfect aspect or modals, extends the size of the clause-

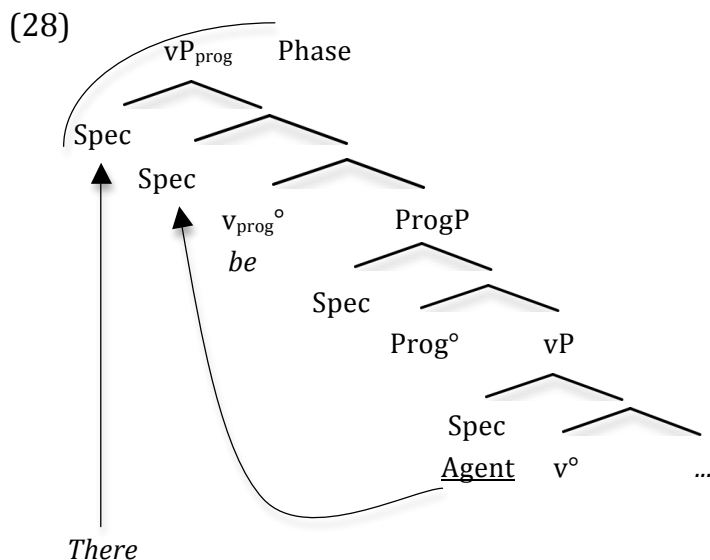
internal Phase. This would provide *there* with an available Phase Edge specifier to Merge into.



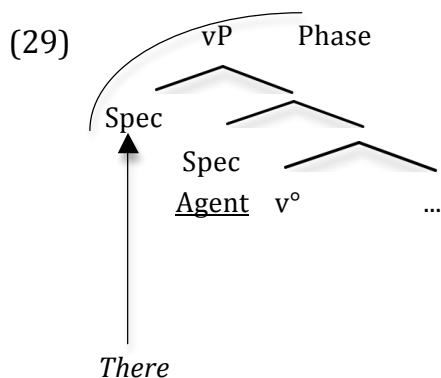
However, the ‘lower Merger of *there*’ approach is irreconcilable with the account adopted in this thesis for the distribution of associates, since I claim associates generally raise to and are stranded on the clause-internal Phase Edge, as per Chomsky (2000, 2001). If this position is already occupied by the expletive, such movement of the associate to the same position would be blocked by Locality.



One could potentially solve this problem by appealing to multiple specifiers, therefore allowing both *there* and the displaced associate to occupy vP_{prog} specifiers on the Phase Edge:



However, the low-Merger of *there* analysis must explicitly ban multiple specifiers so that *there* and the Agentive subject are forced to compete for the same initial Merge position. Without this, there would be nothing to stop the expletive from merging as a specifier of the same projection in which the Agentive subject is Merged:



Therefore the low-Merger of *there* analysis would be robbed of its ability to explain the aspectual restrictions on TECs, which was the primary purpose of this analysis in the first place. Due to these issues, I do not adopt the “low Merger of *there*” analysis.

In section 6.5 a novel account to the problem is presented. Before this, section 6.4 returns to discussion of the hybrid approach to verbal inflection in order to introduce the concept of interveners as this will be crucial for the analysis.

6.4 Affixation and interveners

In this section I return to discussion of the hybrid approach to verbal inflection as posited in chapter 3, focusing in particular on the process of affixation that the non-raised lexical verb undergoes in English, and the concept of interveners.

Recall that this thesis adopts a hybrid approach to verbal inflection, as advocated by Lasnik (1995c). Under this system, verbs can receive inflections in one of two ways: they either undergo overt head movement in the narrow syntax to the relevant inflectional head for the purposes of abstract feature checking, or they remain in situ and are merged together with their inflectional affix by virtue of the two items being string adjacent at PF linearization. As discussed in chapter 3, English is argued to exhibit both options (Baker 2003; Lasnik 1995c): auxiliaries undergo overt movement in the syntax, whilst the lexical verb remains in situ and receives its inflection under linear adjacency. The process of auxiliary raising in the syntax has already been discussed at length in this thesis, so will not be discussed again here. However, the process of affixation to the lexical verb via linear adjacency, and especially the notion of interveners, requires further elaboration, as this will be crucial for the analysis presented later in this chapter.

This thesis generally assumes that the lexical verb remains in situ in English (Chomsky 1993; Emonds 1979; Pollock 1989), or at least does not raise beyond Voice^o. In order to explain how lexical verbs are able to receive their inflections I assumed in chapter 3, as per Chomsky (1957), Marantz (1988), Halle & Marantz (1993), Bobaljik (1994), Lasnik (1995c) and Baker (2003), that lexical verbs enter the derivation bare and receive their inflections – which become affixal in the case of the lexical verb, see Lasnik (1995c) – by virtue of being string adjacent to these affixes at PF linearization.¹⁴ That is, the lexical verb does not receive inflections until PF, when the hierarchical dependencies of the syntax have been dispensed with and a strict linear order has been imposed. At this point, the syntactic hierarchy is no longer at play and the only operations that can occur are between elements that are linearly adjacent to one another. In the case of the lexical verb, it can be merged together with the relevant inflectional affix if the two elements are string adjacent to one another:

¹⁴ Lasnik (1995c) and Baker (2003) differ from Chomsky (1957), Marantz (1988), Halle & Marantz (1993) and Bobaljik (1994) in assuming that affixation is not the only process of inflection: as already stated, they also assume syntactic head movement to be an alternative option, as is the case with auxiliaries.

(30) Judge Doom TENSE + **frame** Roger Rabbit = Judge Doom framed Roger Rabbit.

This explains how the lexical verb can receive inflections in English without having to raise.

Sometimes functional elements or arguments can intervene between the lexical verb and its inflectional affix to disrupt merger. The marker of sentential negation, for instance, is one such intervener:

(31) Judge Doom TENSE *not* **frame** Roger Rabbit.

Negation disrupts the linear adjacency of Tense and the lexical verb, and hence PF merger of the two items is effectively blocked.

(32) a. * Judge Doom framed not Roger Rabbit.
b. * Judge Doom not framed Roger Rabbit.

Instead the dummy auxiliary *do* must be inserted to host the finite inflection:

(33) Judge Doom did not frame Roger Rabbit.

This explains the need for *do*-support with negation.

Similarly, if an argument intervenes, this also prevents the lexical verb and tense from merging. This is evidenced in *wh*-questions. In these cases, T° raises to C° whilst the subject remains in Spec-TP, thereby intervening between tense and the lexical verb:

(34) Why TENSE Judge Doom **frame** Roger Rabbit?

Again linear adjacency is disrupted and Tense and the lexical verb are prevented from merging:

(35) a. * Why framed Judge Doom Roger Rabbit?
b. * Why Judge Doom framed Roger Rabbit?

Once again, the dummy auxiliary *do* must be inserted to host the finite inflection:

(36) Why did Judge Doom frame Roger Rabbit?

However, if the canonical subject is itself a *wh*-item, it moves above the tense affix in C°, to Spec-CP. Therefore, it no longer intervenes between tense and the lexical verb:¹⁵

(37) Who TENSE + **frame** Roger Rabbit?

The result is that the two elements can be merged together, explaining why no *do*-support is required when the *wh*-subject has raised to Spec-CP:

(38) Who framed Roger Rabbit?

Interestingly, adverbs seem not to act as interveners:

(39) Judge Doom TENSE *dastardly* **frame** Roger Rabbit
= Judge Doom *dastardly* framed Roger Rabbit.

This can potentially be explained under a Late Adjunction approach to verbal modifiers (Baker 2003, Lebeaux 1989, Newell 2005, Stepanov 2001), in which adjuncts are not Merged into the derivation until later, after merger under PF adjacency has occurred. Therefore, adverbs do not intervene for the purposes of affixation.

Note that for verbs which undergo overt syntactic head movement, such as English auxiliaries, arguments and functional elements like negation will not act as interveners since they only intervene at PF linearization and not in the syntax. This is evidenced by the fact that auxiliaries can raise over negation, and also over the subject in *wh*-questions:

¹⁵ Traces have been claimed not to act as interveners within the merger under adjacency literature.

- (40) a. Roger Rabbit **was not** framed by Eddie Valient.
b. Who **was** Roger Rabbit framed by?

This concludes our explanation of the basic principles behind merger under adjacency.

To summarise this section, verbal inflection operates in one of two ways: either in the narrow syntax, in which case the verb undergoes overt head movement to the relevant inflectional head for the purposes of feature checking; or it happens at PF: in this case the verb remains in situ and is merged together with the inflectional affix by virtue of them being string adjacent at (PF) linearisation.

English exhibits both options, as already discussed in chapter 3: auxiliaries undergo syntactic head movement, whilst lexical verbs remain in situ and receive inflections via linear adjacency. For verbs which undergo head movement in the syntax, functional items such as negation, and arguments, do not act as interveners – the verb (a head) can simply raise over these (phrasal) elements in order to check its inflectional features. For verbs which remain in situ and receive inflection at linearisation, functional elements and arguments do count as interveners between the lexical verb and its inflectional affix, thereby preventing attachment of the affix onto the verb.

These assumptions will be crucial in accounting for the aspectual restrictions on English existentials, which is provided in the next section.

6.5 Explaining the aspectual restrictions

Recall first the pattern that this chapter is aiming to account for. Lexical verbs in English TECs are restricted only to their progressive and passive participle forms:

- | | | | |
|------|------|---|---------------|
| (41) | a. * | There buys someone a book. | (Finite) |
| | b. * | There should someone buy a book. | (Infinitive) |
| | c. * | There has someone bought a book. | (Perfect) |
| | d. | There was someone buying a book. | (Progressive) |
| | e. | There were several people arrested. | (Passive) |

Lexical verbs in English UECs, on the other hand, are not subject to any such restrictions:

- (42) a. There arrived several letters in the mail today. (Finite)
b. There will arrive several letters in the mail today. (Infinitive)
c. There have arrived several letters in the mail. (Perfect)
d. There are several letters arriving in the mail today. (Progressive)

To explain this pattern I will claim, following the conclusions drawn in chapter 4, that the pre-verbal associate in English TECs occupies the edge of the progressive aspectual layer. Therefore, the associate intervenes between the lexical verb and perfect, infinitival and finite inflections, preventing PF merger of these items. However, in this position the associate does not intervene with respect to progressive and passive inflections. The associate in UECs, on the other hand, sits in post-verbal position, therefore it does not intervene at any point between the verb and its inflections. As a result, the post-verbal associate does not block affixation and the lexical verb is free to receive all types of verbal inflection.

Section 6.5.1 provides the analysis of English TECs in detail, whilst section 6.5.2 does the same for UECs.

6.5.1 English transitive existential constructions

The first point to consider when accounting for the aspectual restrictions on TECs in Standard English is the distribution of the associate. Recall from chapters 3 and 4 that the associate always appears in a pre-verbal position in these constructions, even when the lexical verb has been passivised and the associate is a derived subject:

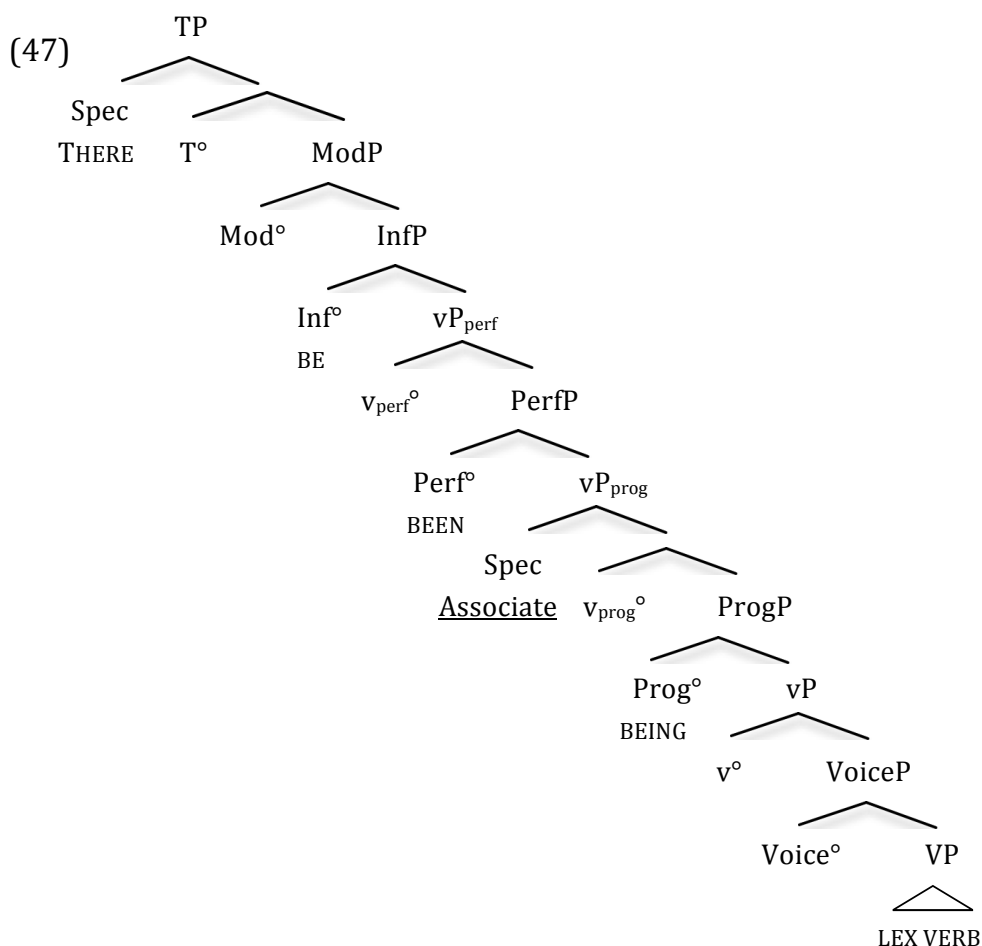
- (43) a. There was someone **buying** a book. (Progressive)
b. There were several people **arrested**. (Passive)

Moreover, it was also noted that both derived and Agentive associates must follow infinitival forms of auxiliaries (see (44)), and also those inflected for perfect aspect (see (45)), but must precede auxiliaries inflected for progressive aspect (as in (46)):¹⁶

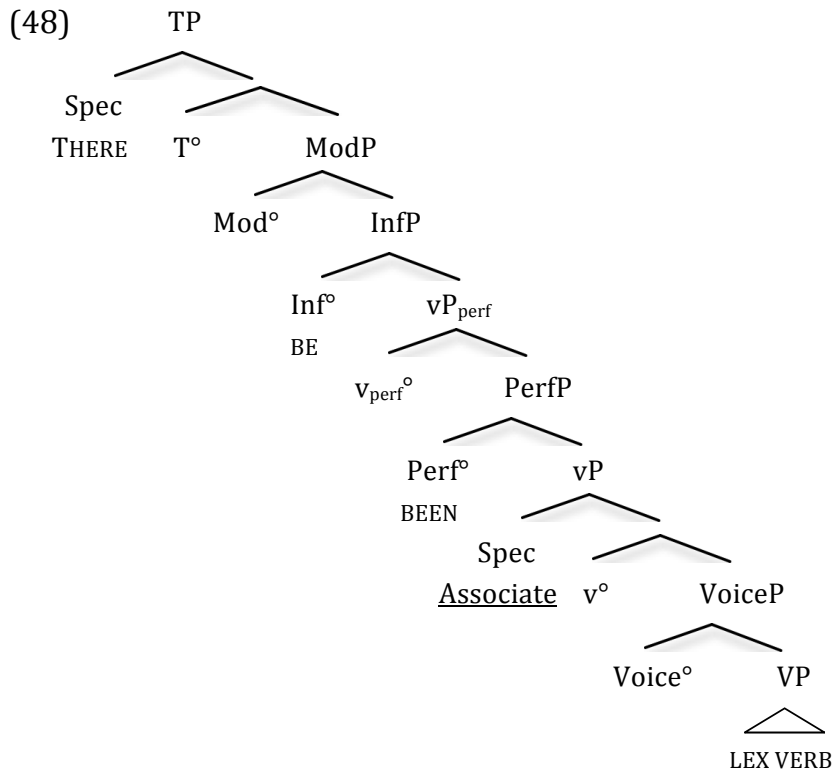
¹⁶ Since non-passive TECs lack a *being* form, it is somewhat harder to demonstrate the distribution of the Agentive associate with regards to *being*, though in copular existentials in Standard English, the Agentive associate can indeed be found preceding the copular instance of *being*, as illustrated in (46)b.

- (44) a. There will **be** many people arrested for drunkenness tonight.
 b. Tomorrow there will **be** a plague of rabbits in your garden.
 c. Tomorrow there will **be** many rabbits breeding on your front lawn.
- (45) a. There have **been** many people arrested for drunkenness.
 b. There has **been** a plague of rabbits in your garden all morning.
 c. There have **been** many rabbits breeding on your front lawn.
- (46) a. There were many people **being** arrested for drunkenness.
 b. There were several rabbits **being** loud and obnoxious yesterday.

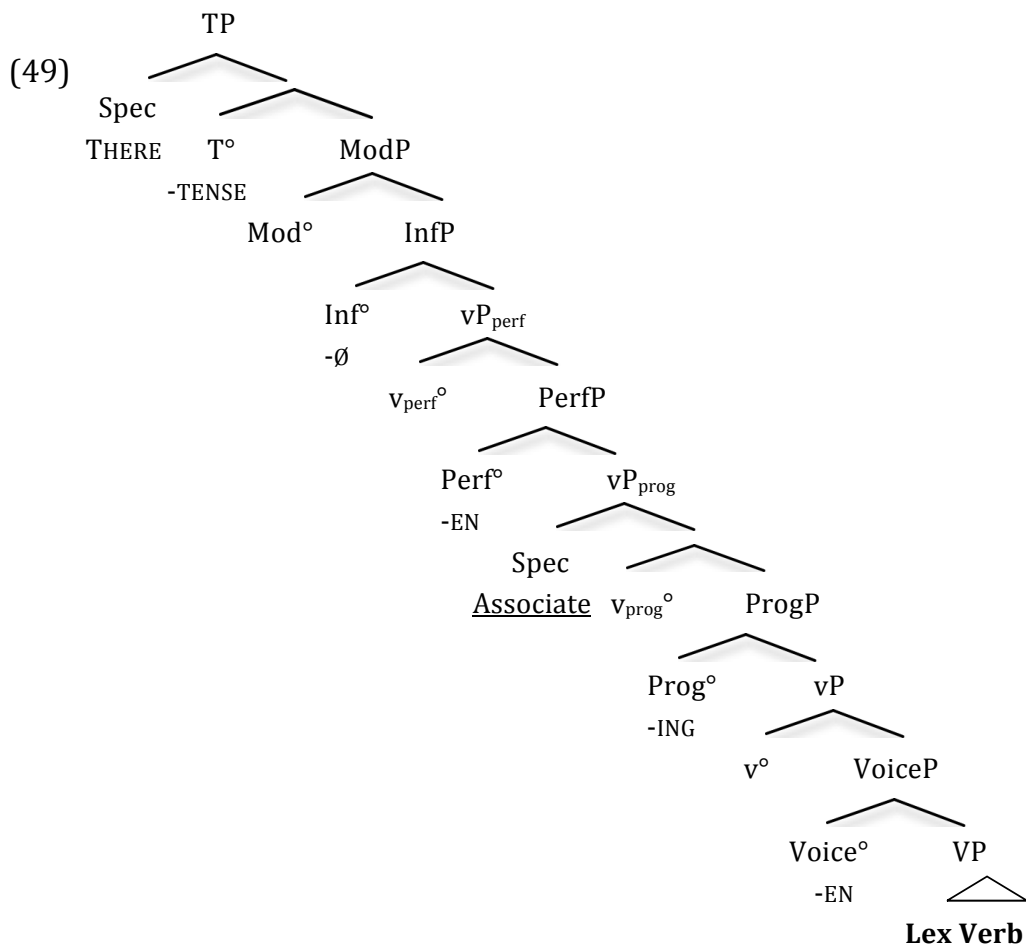
This data I already analysed in chapters 3 and 4 as indicating that the associate in English TECs generally surfaces on the edge of the progressive aspectual layer when such projections are present:

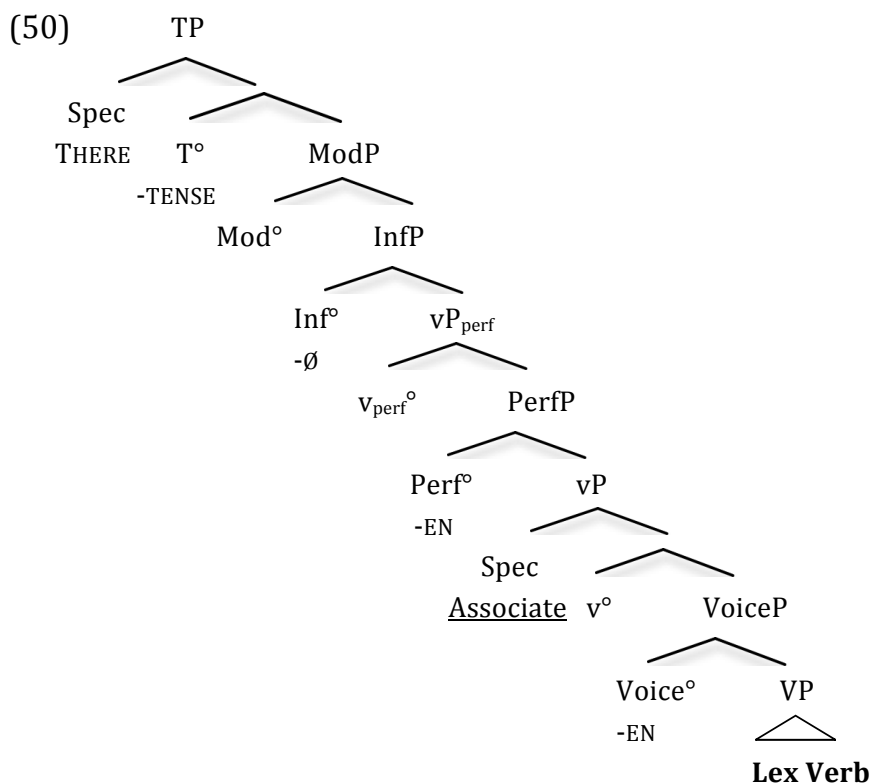


I furthermore assumed that in the absence of progressive aspect, the associate surfaces in Spec-vP (as Chomsky 2000, 2001 claims for all pre-verbal associates):



Consider now where the associate sits, both in the presence and absence of the progressive layer, in relation to the inflectional affixes with which the lexical verb can merge at PF:





Crucially, the associate always surfaces above passive and progressive inflectional morphology, but below finite, infinitival and perfect morphology. Consider now what this generally implies at PF when the syntactic hierarchy no longer matters and a strict linear order has been implemented:

(51) There > -TENSE > -∅ > -EN > Associate > -ING > -EN > **Lex Verb**

Recall that arguments can intervene for the purposes of merger under linear adjacency, blocking affixation of the inflection onto the lexical verb in such cases. With this in mind, observe that the associate does not intervene between the lexical verb and progressive or passive inflectional affixes. Therefore, the lexical verb can merge at PF with these affixes:

- (52) a. There was a man -ING + **buy** a book. = There was a man buying a book.
 b. There were several people -ED + **arrest** = There were several people arrested.

However, the associate does intervene between the lexical verb and finite, infinitival and perfect inflections, preventing PF merger of the lexical verb with these affixes:

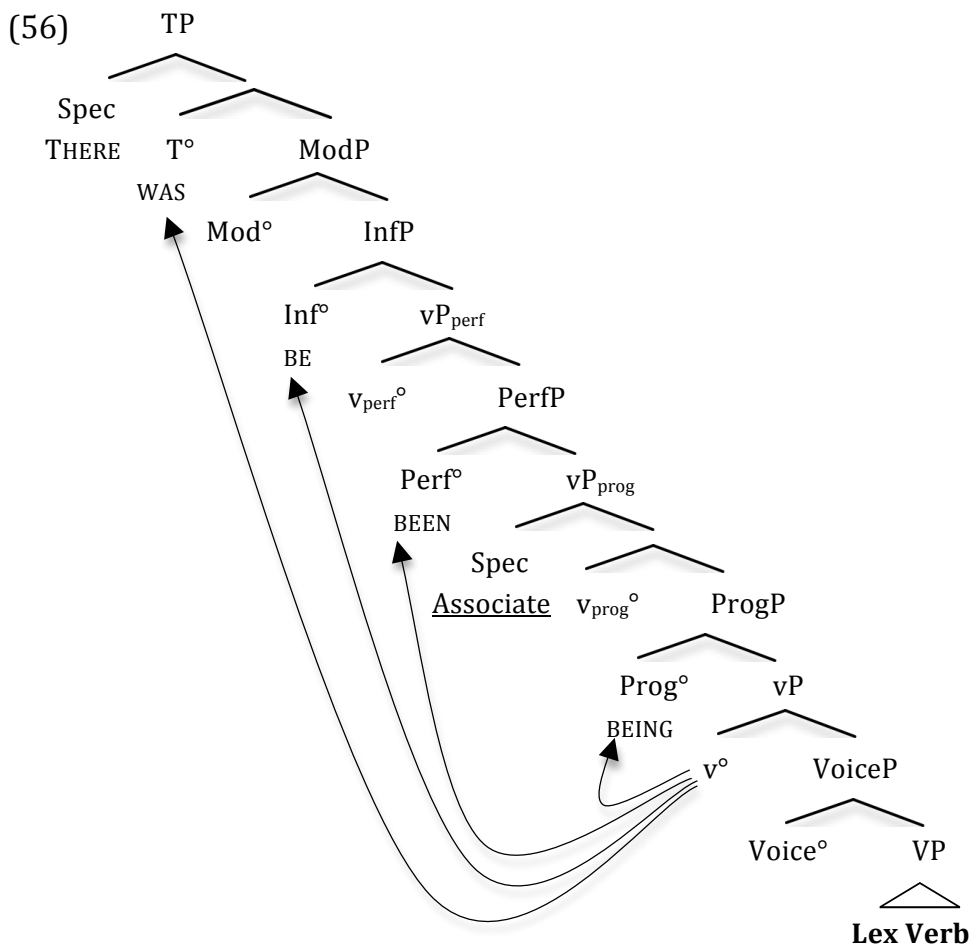
(53) There has -ED someone **buy** a book. = *There has someone bought a book.

(54) There will -∅ someone **buy** a book. = *There will someone buy a book.

(55) There -TENSE someone **buy** a book = *There buys someone a book.

This explains why progressive and passive participle forms of the lexical verb are possible in English TECs, but not perfect, infinitival or finite forms.

Since auxiliaries undergo syntactic head movement, they are not subject to linearisation constraints. Therefore the associate does not act as an intervener for auxiliaries, so they are free to surface in any type of inflected form, raising in the syntax beyond the associate if need be. I illustrate this below with the passive auxiliary, though the same principle applies to other auxiliaries.



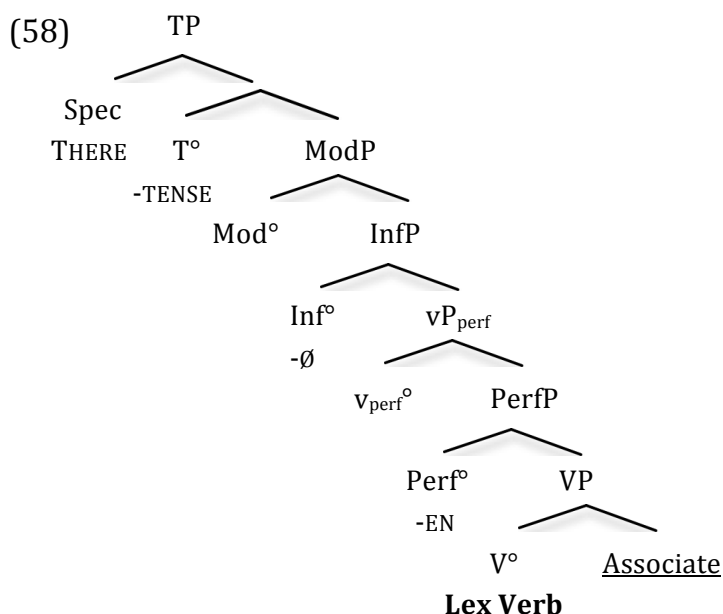
This explains the aspectual restrictions on the lexical verb in Standard English TECs. In the next section I explain why English UECs are not subject to the same restrictions.¹⁷

6.5.2 English unaccusative existential constructions

In contrast to TECs, the derived associate in English UECs actually occurs in post-verbal position:^{18,19}

- (57) a. There **arrived** several letters in the mail today. (Finite)
 b. There will **arrive** several letters in the mail today. (Infinitive)
 c. There have **arrived** several letters in the mail. (Perfect)

I assume therefore that the associate remains in its base position as the complement of V° :²⁰



¹⁷ If correct, this analysis would actually constitute further evidence towards the argument that both associates and *being* raise to the progressive aspectual layer rather than remaining in their base positions and the passive auxiliary having its inflection lowered onto it as claimed by Akmajian, Steele & Wasow (1979), Akmajian & Wasow (1975), Bošković (2004, To appear a), Iwakura (1977), Lobeck (1987) and Thoms (2011).

¹⁸ See section 6.6 for an explanation of this distribution.

¹⁹ I initially leave aside UECs bearing progressive aspect until the end of this section for ease of exposition, as these types of UECs are slightly more complex.

²⁰ Recall that I assume vP and VoiceP to be absent in unaccusative constructions.

This implies that when the structure is linearised the associate, remaining in post-verbal position, does not intervene between the lexical verb and any of its potential inflectional affixes:

(59) There > -TENSE > -∅ > -EN > **Lex Verb** > Associate

Therefore, the lexical verb is free to Merge at PF with any inflectional affix:

- (60) a. There -TENSE + **arrive** several letters = There arrived several letters.
b. There will -∅ + **arrive** several letters = There will arrive several letters.
c. There have -ED + **arrive** several boxes = There have arrived several boxes.

This generally explains the lack of aspectual restrictions on English UECs.

One issue which arises in the data, but which I have so far neglected to comment on, is the fact that when the unaccusative verb is inflected for progressive aspect, the associate appears in pre-verbal position, similar to in TECs:

- (61) a. There are several letters **arriving** in the mail today.
b. * There are arriving several letters in the mail today.

I assume that in this instance, the associate raises above the progressive inflection to Spec-vP_{prog}, similar to English TECs. From here, the associate does not intervene between the progressive morpheme and the lexical verb, so the two elements may merge together at PF:

(62) There were several letters_i -ING + **arrive** t_i = There were several letters arriving.



This account captures the aspectual restrictions on English TECs, and the lack of such restrictions in English UECs: the associate of the UEC generally remains in post-verbal position in English, so is unable to intervene between the lexical verb and its affixes for the purposes of verbal inflection, unlike in English TECs in which the pre-verbal associate intervenes for a number of inflectional forms.

Having fully captured the aspectual restrictions of English existentials, I turn now in section 6.6 to the distribution of the associate, with a view to fully explaining why

it appears in the positions in which it does. I come back to the aspectual restrictions in section 6.7, where I explore the cross-linguistic implications of the analysis I have offered here.

6.6 The distribution of the associate

The pattern to account for is the following:

- In English TECs, the associate always appears in pre-verbal position where it also precedes *being* but follows *be/been* when such auxiliaries are present.
- In English UECs, the associate appears in post-verbal position, except when the lexical verb is inflected for progressive aspect, in which case the associate appears pre-verbally.

To understand this distribution, the following has been assumed:

- In English TECs, the associate raises to Spec-vP_{prog} when the progressive layer is present, and to Spec-vP otherwise.
- In English UECs, the associate remains as the complement of V^o, except when the progressive layer is present, in which case the associate raises to Spec-vP_{prog}, similar to in TECs.

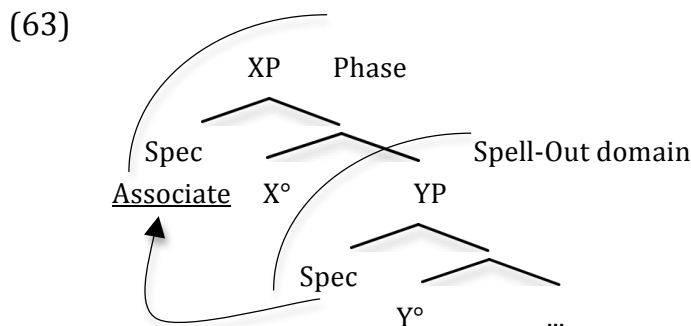
The task here is to understand *why* the associate should surface in these positions. To explain the distribution of the pre-verbal associate in TECs I maintain the analysis presented in chapter 4. That is, I adopt Chomsky's (2000, 2001) assumption that the pre-verbal associate in TECs is stranded on the clause-internal Phase Edge, in combination with the claim made in this thesis that the progressive aspectual layer constitutes the clause-internal Phase when the progressive projections are present. Regarding the post-verbal position of the associate in UECs, on the other hand, I claim the clause-internal Phase in unaccusatives consists only of VP, and therefore that raising of the derived associate to the Phase Edge in this instance is banned due to anti-locality (Abels 2003; Boškovic *to appear* a,b; Grohmann 2000; Pesetsky & Torrego 2001). With progressive unaccusatives, however, the size of the clause-internal Phase is extended significantly enough to circumvent such anti-locality violations.

In section 6.6.1 I tackle the distribution of associates in TECs, whilst in section 6.6.2 I deal with the distribution of associates in UECs. Section 6.6.3 discusses any further issues which arise, and also provides supporting evidence for the analysis. Finally, section 6.6.4 summarises the discussion.

6.6.1 Associates in transitive existential constructions

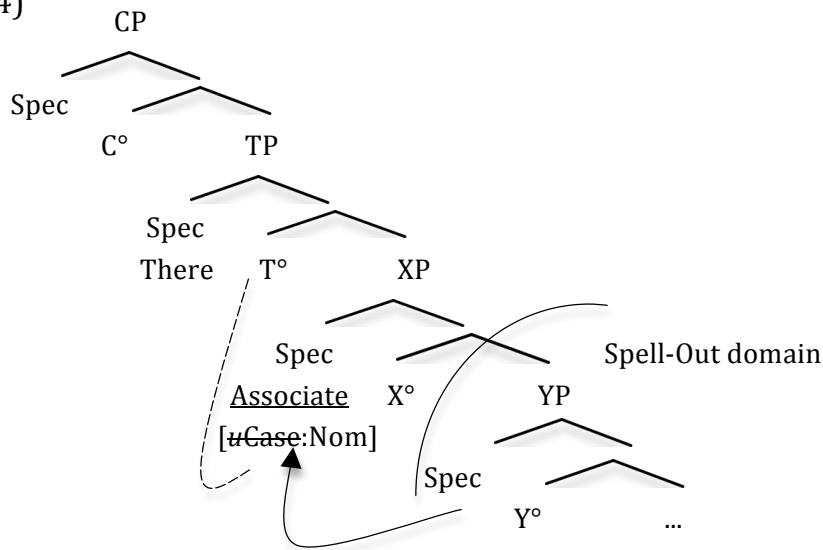
This section essentially constitutes a brief recap of the analysis given in chapter 4.

By recasting Chomsky's (2000, 2001) analysis of existential constructions in light of the approach to Phases adopted in this thesis, we are able to easily explain the distribution of the associate in English TECs. Recall, first of all, Chomsky's (2000, 2001) analysis of the basic data: the associate is Merged within the clause-internal Phase bearing an unchecked Nominative Case feature which must be checked by T° in the higher Phase. It therefore raises to the clause-internal Phase Edge so as to escape Spell Out of the phasal complement (the Spell-Out domain) and remain accessible:



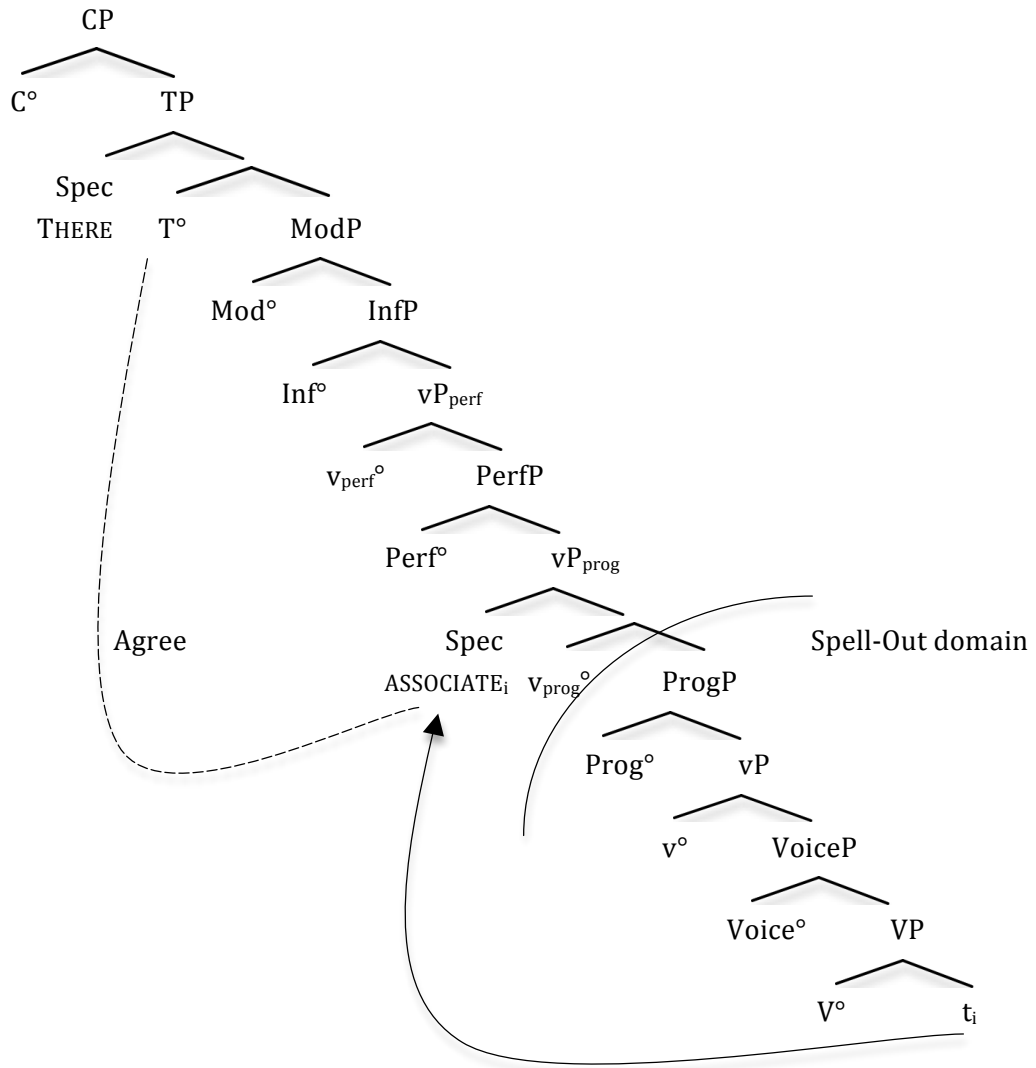
As a result, the associate will be visible to T° when T° is finally Merged in the higher Phase. If the construction were non-existential, the associate, i.e., the subject, would raise to Spec-TP to satisfy the EPP and have its Case checked by T° in that position. However, in an existential construction, expletive *there* is Merged directly into Spec-TP, satisfying the EPP and thereby blocking any further movement of the associate. The associate is therefore stranded on the Edge of the clause-internal Phase where it has its Case feature checked by T° via Agree (and subsequently values T's phi features off the back of this operation). This is illustrated in the following diagram (the solid line represents Move, the dotted line Agree):

(64)

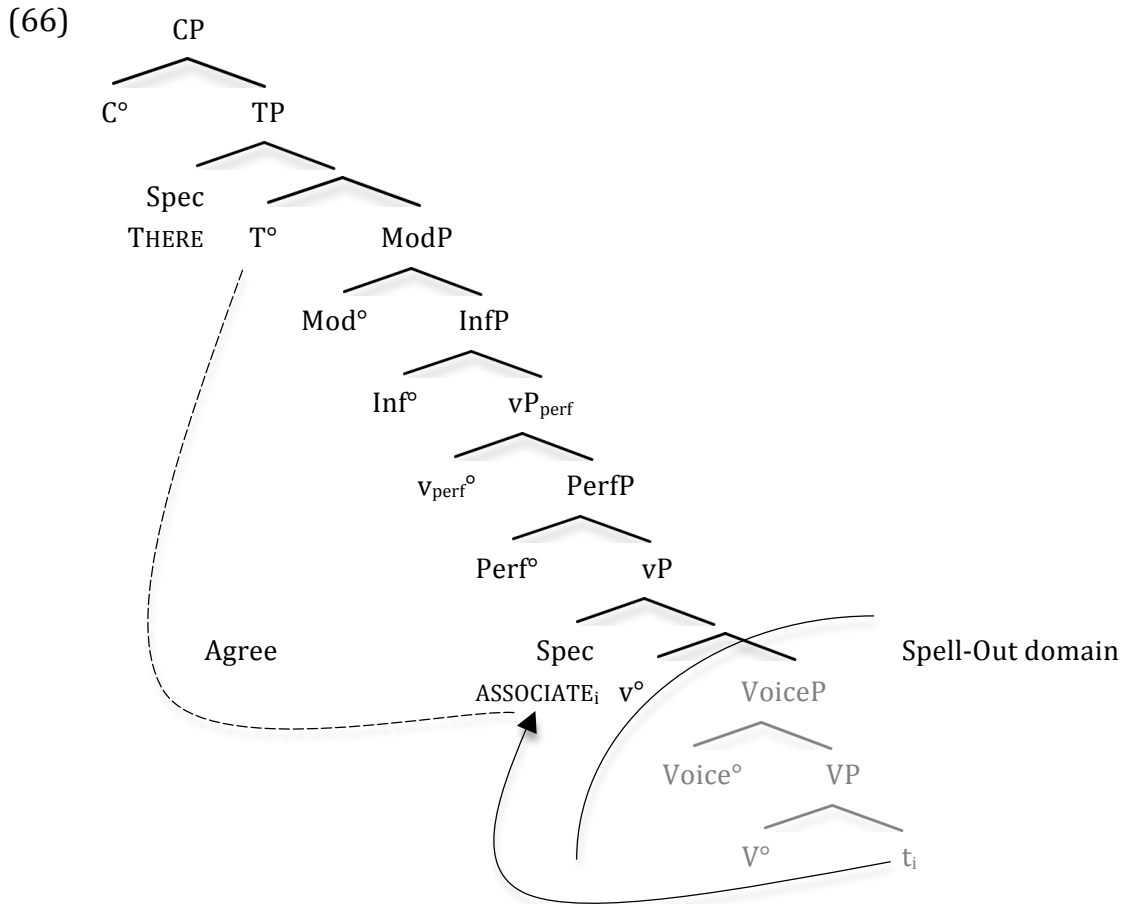


If vP_{prog} acts as the clause-internal Phase when the progressive aspectual layer projects, then the associate would naturally raise to the Phase Edge of Spec- vP_{prog} , explaining how the associate surfaces in this position. I illustrate this below with the derived associate of a passivised TEC, but the same principle also applies to non-passivised TECs, the only difference being that the associate raises from Spec- vP to Spec- vP_{prog} rather than from the complement of V° .

(65)



Obviously, when the progressive aspectual layer does not project, vP acts as the clause-internal Phase, in which case the associate raises to the Spec-vP Phase Edge:



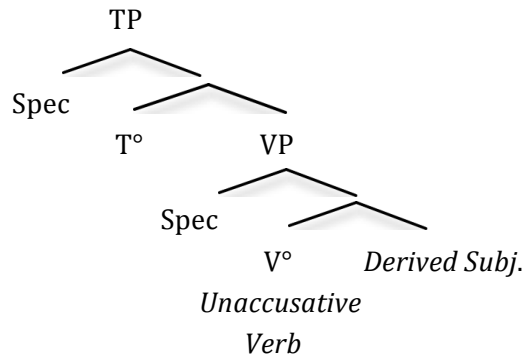
This explains the distribution of the associate in English TECs. In the next section I turn to the somewhat more complex distribution of derived associates in English UECs.

6.6.2 Associates in unaccusative existential constructions

Explaining the post-verbal distribution of the associate in UECs is more difficult. In a nutshell I claim that the size of the clause-internal Phase in unaccusatives is significantly reduced, corresponding to that of VP. Raising of the derived associate from complement of V° to the Spec-VP Phase Edge is subsequently prohibited in these cases as it would constitute an anti-locality violation. Therefore the associate is stranded in its base position.

Recall from chapter 3 that I assume vP and VoiceP to consistently project in all transitive constructions, including those that have been passivised, but that such projections are absent with unaccusatives (see also Bowers 2002 and Hale & Keyser 1993 for similar claims). Therefore TP and VP are the only phrases which consistently project in unaccusative constructions.

(67)



Since I have assumed the size of the clause-internal Phase to significantly influence the distribution of associates in English, the first task here is to establish exactly what the status of the Phase is in the reduced structure in (67). Chomsky (2000, 2001) generally assumes that in unaccusative constructions, in which v° is absent (or present but defective according to some other accounts), the clause-internal Phase still exists, but it is not Spelled Out independently from the clausal Phase. In this sense, the clause-internal Phase of unaccusative constructions should be considered a weak Phase which does not exhibit any of the syntactic, semantic or phonological independence that a strong Phase would exhibit.

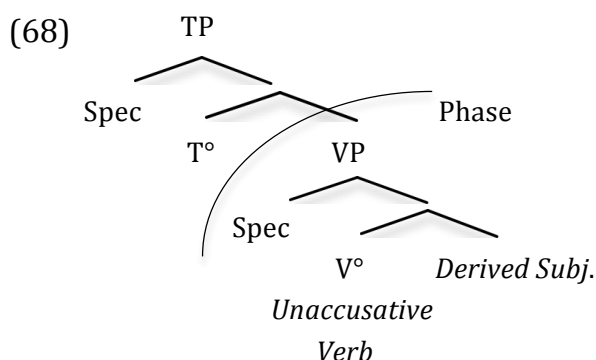
Legate (2003) has shown, however, using evidence from reconstruction effects, parasitic gaps and quantifier raising in antecedent-contained deletion (ACD) contexts, that raising to the clause-internal Phase Edge still takes place in unaccusative constructions. This suggests therefore that such Phases do still exhibit syntactic independence. Moreover, using the nuclear stress rule, Legate (2003) has similarly shown that such Phases exhibit phonological independence. Therefore, clause-internal Phases of unaccusative constructions should still be considered to be independently Spelled Out, despite the lack of v° .²¹

If the clause-internal Phase indeed projects in unaccusative structures such as (67), what exactly is the identity of the Phase in these environments? Since I have argued in the preceding chapters that the size of the clause-internal Phase can be extended beyond vP to include the progressive projections when they are present in the derivation, it seems equally logical to assume that the size of the clause-internal Phase can also shrink in the absence of vP and VoiceP, so that VP acts as the Phase.²²

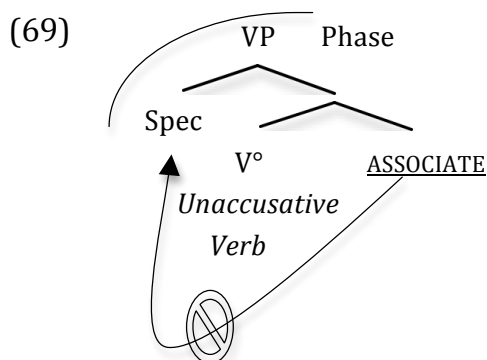
²¹ This implies that the strong Phase/weak Phase distinction should be entirely dispensed with.

²² Because I have claimed that TP is not contained within the clause-internal Phase in active and passive sentences, I similarly assume it would not be contained within the clause-internal Phase in unaccusative sentences either.

Therefore I claim that in unaccusative sentences, VP projects the clause-internal Phase:



Recall that in TECs, the associate, bears an unchecked Nominative Case feature that must be checked against T° . In order to have this feature checked, the associate raises to the edge of the clause-internal Phase so as to escape Spell Out of the phasal complement and remain visible to T° , thereby allowing its Case feature to be checked. Merger of expletive *there* in Spec-TP prevents the associate from raising any further, therefore stranding the associate on the clause-internal Phase Edge. In UECs we would also expect the derived associate, bearing an unchecked Nominative Case feature, to equally raise to the clause-internal Phase Edge. However, this would involve the associate raising from its base position as the complement of V° , into the specifier of the same phrase, Spec-VP. Such movement is ruled out by anti-locality (Abels 2003; Bošković *to appear* a,b; Grohmann 2000; Pesetsky & Torrego 2001), which bans complement-to-specifier movement within a single phrase. This rules out movement of the phasal complement in general. Therefore, the associate remains in its base, post-verbal position.



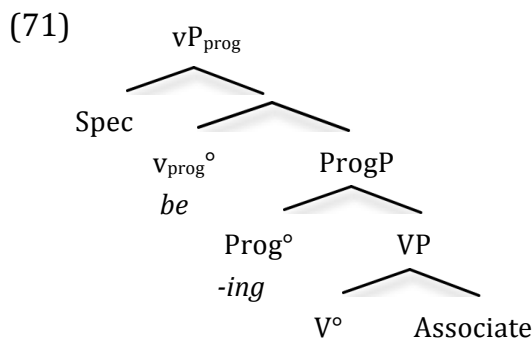
Finally, when T° is Merged, expletive *there* is Merged directly into Spec-TP, satisfying the EPP and preventing the associate from raising. The associate is therefore

stranded in its base, post-verbal position, correctly explaining the general distribution of the associate in UECs.²³

Before finishing this section, I discuss UECs in which progressive aspect is present, in which case the associate occurs in pre-verbal position, surfacing, as I have suggested, in Spec- vP_{prog} (cf. (61), repeated below).

(70) There are several letters **arriving** in the mail today.

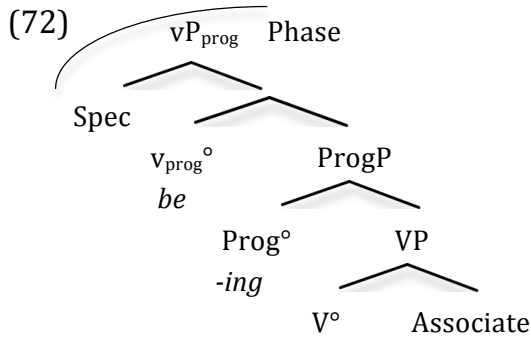
As previously assumed, vP and VoiceP never project with unaccusatives. The progressive aspectual layer, on the other hand, can project in unaccusative constructions when it is expressed in the derivation:



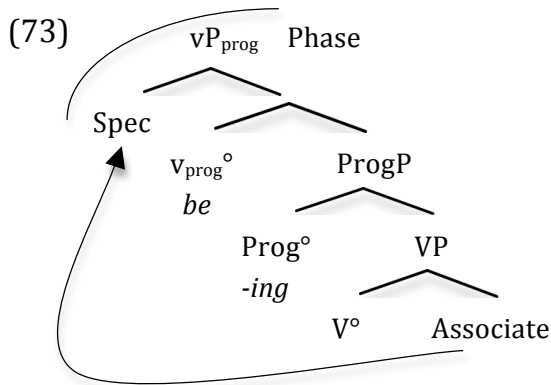
The question once again arises as to where the clause-internal Phase boundary lies in these environments.

I have argued in the preceding chapters that the boundary of the clause-internal Phase can be extended beyond vP to include the progressive projections when they are present in an active or passive derivation. Therefore it seems equally logical to assume that in unaccusative derivations, the phasal boundary can be similarly extended beyond VP to include the progressive layer when such projections are present. Thus, the unaccusative VP is denied phasal status in the presence of progressive aspect, and instead vP_{prog} projects the clause-internal Phase:

²³ This raises the question of how the post-verbal associate is able to have its Nominative Case feature checked. See section 6.6.3.1 for an explanation.

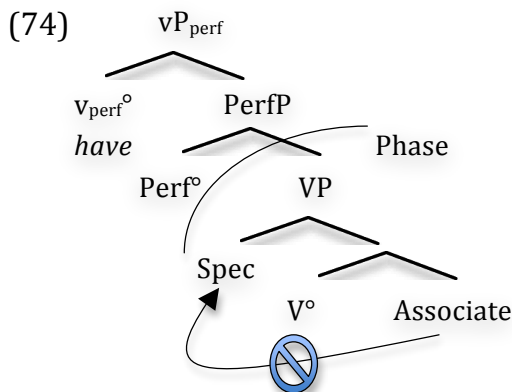


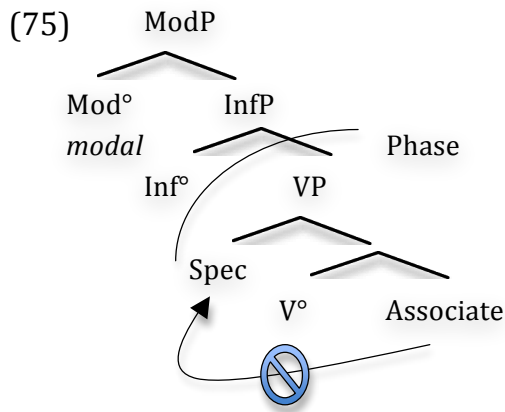
In this instance, the derived associate is able to move to the Phase Edge since this involves raising from the complement of V° to Spec- vP_{prog} rather than to Spec-VP. This movement is obviously not within the same phrase and so does not constitute an anti-locality violation.



The derived associate is then stranded in this position upon Merger of expletive *there* into Spec-TP during construction of the higher Phase. This correctly derives the pre-verbal distribution of the derived associate in progressive UECs in English.

Recall also that neither perfect aspect nor the modal layer constitute part of the clause-internal Phase. This explains why a pre-verbal position is not available when these projections are present in UECs: they do not extend the size of the clause-internal Phase, so there are no means of circumventing the anti-locality violation that would ensue when the associate raises to the Spec-VP Phase Edge:





This captures the distribution of the associate in English UECs.

The general analysis offered in this section gives rise to two further questions, namely, how the derived associate of a non-progressive UEC is able to have its Case feature checked by T° if it remains inside the clause-internal Phase, and how derived subjects in standard unaccusative constructions are able to ultimately raise to Spec-TP if they are unable to proceed to the clause-internal Phase Edge first. I deal with each of these issues in the following section, as well as providing further evidence for the analysis in general.

6.6.3 Further Issues

In section 6.6.3.1 I discuss how the derived associate of UECs is able to have its Nominative Case feature checked, whilst in section 6.6.3.2 I discuss how derived subjects of non-existential unaccusative constructions can ultimately raise to Spec-TP. In section 6.6.3.3 I provide supporting evidence for the analysis using A'-movement.

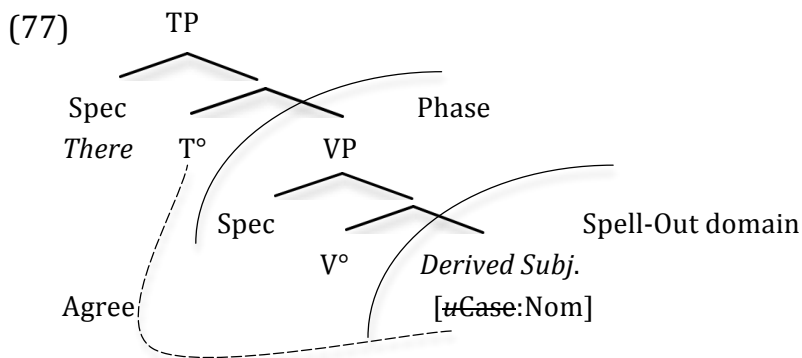
6.6.3.1 Case checking of the derived associate

One question which remains to be answered is how the post-verbal associate in non-progressive UECs is able to have its Nominative Case feature checked if it does not raise to the clause-internal Phase Edge. Recall that for TECs I assumed the associate raises to the Phase Edge so as to escape Spell Out of the clause-internal phasal complement, thus rendering itself visible to T° in the clausal Phase. T° is therefore able to probe the associate, checking its Nominative Case feature. However, if the post-verbal associate remains in its base position in UECs, it remains internal to the clause-internal Phase, raising the question of how it is able to have its Nominative Case feature checked by T° in this position.

To solve this issue, recall that chapters 2 and 4 explicitly adopt the PIC₂, which I repeat below:

- (76) Given structure $[_{ZP} Z [_{XP} [_{HP} \alpha [H YP]]]]$, with H and Z the heads of Phases – The domain of H is not accessible to operations at ZP; only H and its edge α are accessible to such operations.

The PIC₂ implies that the phasal complement of the first Phase is not shipped off from the syntax until the second Phase Head is Merged. Concretely, the phasal complement of the clause-internal Phase is not sent to Spell Out until C° is Merged. This implies that the entire clause-internal Phase remains visible to T°, which is Merged before C°. Therefore, if the derived associate of a non-progressive UEC remains as the complement of V°, it can still be probed by T° (provided that C° has not yet been Merged), thereby checking the associate's Nominative Case feature.



This explains how the derived associate of non-progressive UECs is able to have its Case feature checked, despite not having raised out of the clause-internal Phase. For the derived associate in progressive UECs I assume, similar to TECs, that the associate has its Case feature checked by T° on the clause-internal Phase Edge.

Of course, the above argumentation implies that A-movement never has to necessarily proceed to the clause-internal Phase Edge under the PIC₂, since arguments can always be probed by T° in their base positions regardless. If this is the case, why are associates in TECs (and progressive UECs) still required to raise to this position, as established in section 6.6.1? I assume that if an item can move to the clause-internal Phase Edge, it does so. This is because, under the PIC₂, items on the clause-internal Phase Edge can be probed either by a head within the higher CP Phase, or the higher C° Phase Head itself, whereas items within the phasal complement can only be probed by a head within the complement of C°, but not by the actual C° Phase Head itself. If we assume all syntactic items to be blind in that they cannot look ahead to know where they will have their features satisfied, then it is always in the best interests of each syntactic item to raise to the Phase Edge so as to maximise its range of potential probes. Therefore, if the associate is able to raise to the clause-internal Phase Edge, it does so in order to make itself visible to the

most number of probes possible, thereby increasing its chances of having its Case feature checked.

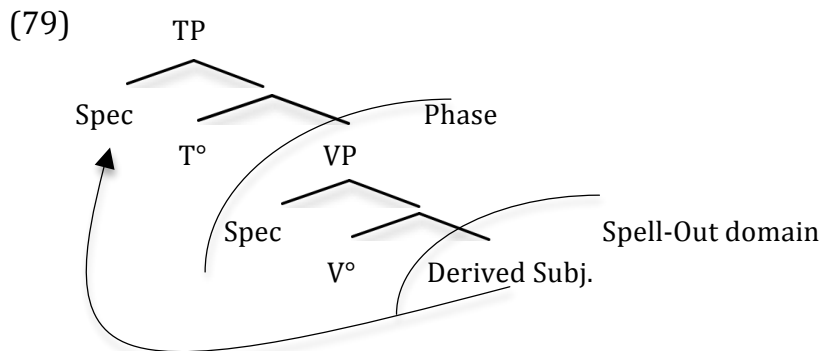
In the following sub-section I discuss how the derived subject is ever able to raise to Spec-TP in non-existential unaccusative sentences.

6.6.3.2 Raising to Spec-TP of the derived subject

Appealing to the PIC₂ to solve the issue of how the post-verbal associate in a UEC is able to have its Case feature checked also allows us to solve another issue: if the derived subject of an unaccusative is never able to raise to the clause-internal Phase Edge, how is it able to then proceed to the canonical subject position of Spec-TP in non-existential constructions?

(78) The guests **have arrived** on time.

Since, under the PIC₂, the derived subject can still be probed by T° up until the point that C° is Merged, raising to the Phase Edge is not necessarily required in order for the subject to ultimately proceed to Spec-TP. T° can simply probe the derived subject in its base position, causing the subject to then raise, but skipping the initial Phase Edge specifier.



This explains how derived subjects of unaccusatives can ultimately raise to the canonical subject position. In the following section I provide supporting evidence for the analysis.

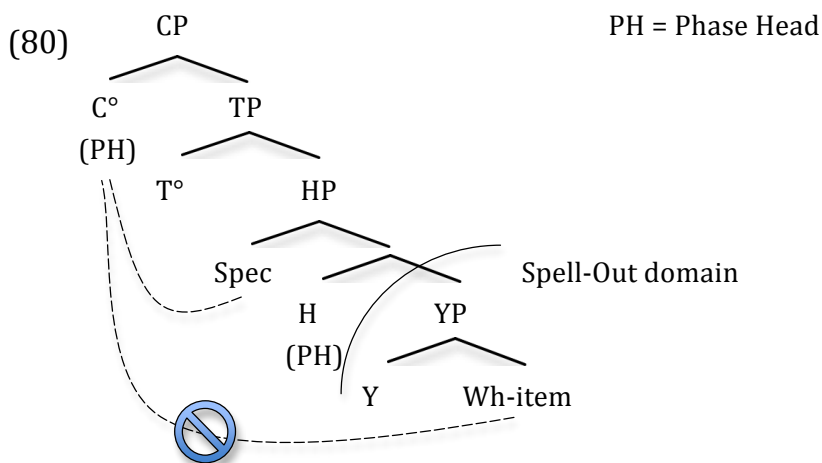
6.6.3.3 Supporting evidence from A'-movement

Here I provide supporting evidence from A'-movement for the claims made in section 6.6 in general regarding the distribution of the associate.

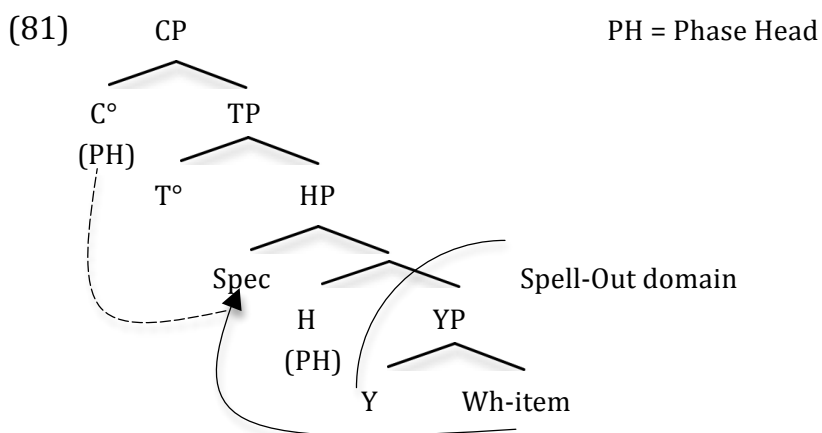
In the previous sections I established that subjects and associates do not necessarily have to proceed to the clause-internal Phase Edge, since the PIC₂ allows

T° to probe these items in their base position. In other words, under the PIC₂ A-movement in general does not automatically have to proceed through the clause-internal Phase Edge (an observation also made by Richards 2012).

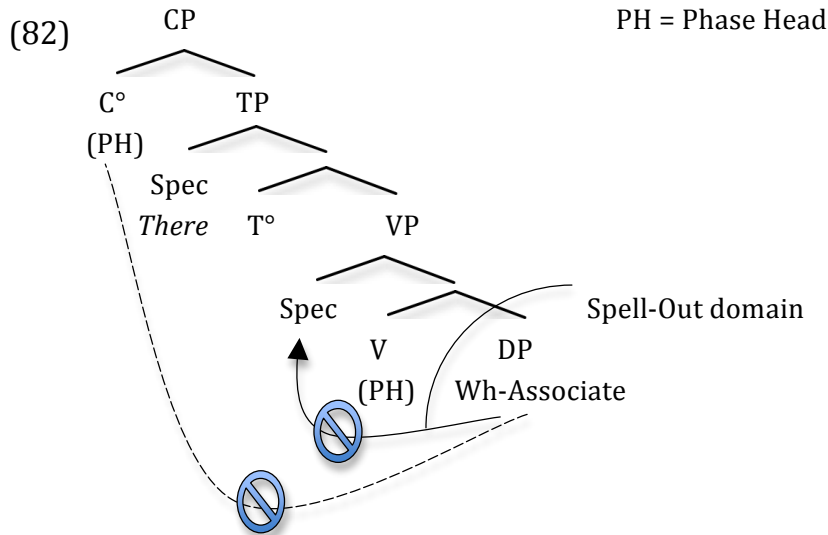
A'-movement differs from A-movement in a crucial way, however, in that it must proceed via the clause-internal Phase Edge. A'-movement is typically triggered by features on the clausal Phase Head C°. Therefore, items undergoing A'-movement must be probed by C° itself, once this head is Merged. The PIC₂, however, assumes Merger of C° triggers instantaneous Spell Out of the clause-internal phasal complement, rendering this domain invisible to C°. Only the Phase Edge of the clause-internal Phase remains visible to C°. I illustrate this in the diagram below, in which I use dashed lines to indicate probing of the subject/associate by C°, which would ultimately result in movement of the subject/associate to Spec-CP:



Therefore, items within the clause-internal Phase which must undergo A'-movement are required to proceed first to the Phase Edge so as to be available to C°.



This leads us to an interesting prediction: if expletive *there* is Merged into Spec-TP, this would prevent the derived associate of a UEC from raising out of the phasal complement of the clause-internal Phase altogether. Therefore, A'-movement of the associate in these instances is expected to be wholly unacceptable since the associate fails to reach the Phase Edge due to anti-locality:



As noted by Aissen (1975) and Hartmann (2005), such A'-extraction of the associate in UECs is indeed prohibited, exactly as predicted:²⁴

²⁴ This contrasts with A'-movement of the derived subject in unaccusative constructions, which is acceptable:

(i) *Which guests arrived on time?*

If derived subjects of unaccusatives are also unable to raise to the clause-internal Phase Edge, but the PIC₂ generally requires A'-movement to proceed via this Phase Edge, how is it that *wh*-movement of the subject is still permitted in these instances? The answer here is simple. All *wh*-subjects are first required to undergo A-movement to the Spec-TP subject position for Case checking and to satisfy the EPP, before then undergoing A'-movement to Spec-CP (contra Chomsky's (2005) parallel movement). Therefore, due to the PIC₂, a derived *wh*-subject of an unaccusative construction can be probed by T° in its base position as complement of V° (as established in the previous section), causing the subject to raise to Spec-TP, skipping the clause-internal Phase Edge in the process.

(ii) [_{TP} *Which guests* T [_{VP(Phase)} *arrived* t_{wh-subj} *on time*]]?

Once in Spec-TP, the *wh*-subject is then free to be probed by C° and raise to Spec-CP:

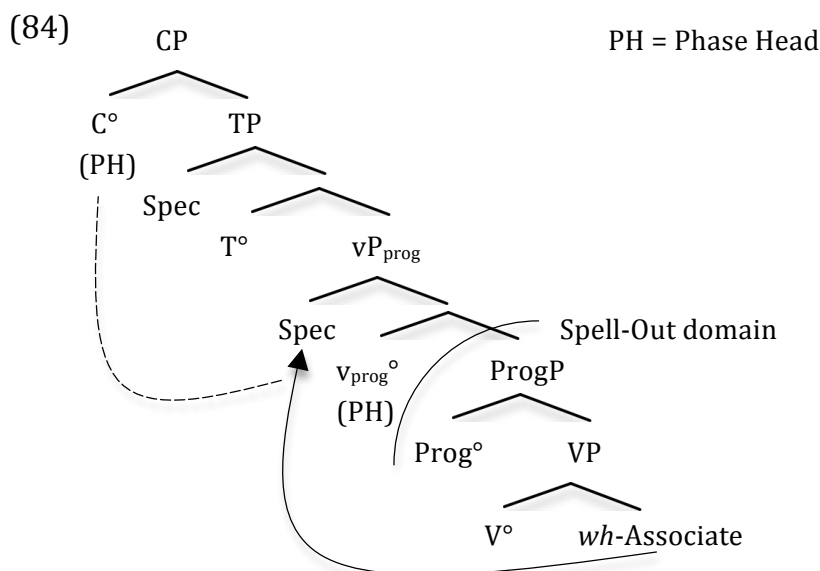
(iii) [_{CP} *Which guests* [_{TP} t_{wh-subj} T [_{VP(Phase)} *arrived* t_{wh-subj} *on time*]]]?

So A'-movement of the canonical subject appears to be one of the few instances in which A'-movement is not necessarily required to proceed via the Phase Edge since T° provides the subject with an alternative intermediate position to raise to on its way to C°.

(83) * How many guests have there arrived?

This I believe to be quite convincing support for the analysis I have offered regarding the distribution of the associate.

Note, as a contrast, that if a progressive UEC is the only UEC in which the derived associate is able to occupy the clause-internal Phase Edge, as I have claimed, then we predict that A'-movement of the associate should be allowed in these circumstances. That is, occupying the Phase Edge, the associate should be able to be probed by C° in this position, meaning A'-movement of the associate should be possible in progressive UECs:



As originally noted in Aissen (1975), Moro (1997) and Hartmann (2005), such A'-extraction is indeed possible:

(85) How many guests will there be arriving?

This constitutes further evidence for the analysis I have offered.

Finally, since associates in English TECs also occupy the Phase Edge, we expect A'-extraction of these items to also be possible. Once again, to the benefit of the proposed analysis, this prediction is borne out:

- (86) a. Who is there performing at the academy this week?
(McNally 1997:(81))
b. ? How many people were there arrested last night?

6.6.4 Summary

To summarise this section, in TECs the associate raises to the clause-internal Phase Edge of either Spec- vP_{prog} or Spec- vP (depending on whether progressive aspect is present or not) in order to have its Nominative Case feature checked. This places the associate in pre-verbal position. The associate is then stranded in this position by Merger of expletive *there* in Spec-TP. UECs, however, lack vP and VoiceP, meaning that VP typically projects the clause-internal Phase. In this case, the derived associate is unable to raise from the complement of V° to the Spec-VP Phase Edge as this would constitute an anti-locality violation. Therefore the associate remains in its base, post-verbal position and is prevented from raising by Merger of expletive *there*. The associate however, still has its Nominative Case feature checked by virtue of T° being able to probe inside the Spell-Out domain of the lower Phase (in accordance with PIC₂). In progressive UECs on the other hand, the progressive aspectual layer extends the clause-internal Phase once again to vP_{prog} . In this case, the associate is able to raise to the pre-verbal position of Spec- vP_{prog} , as this does not constitute an anti-locality violation. This analysis was supported with evidence involving restrictions on A'-movement of the associate in UECs and the lack of such restrictions in TECs and progressive UECs.

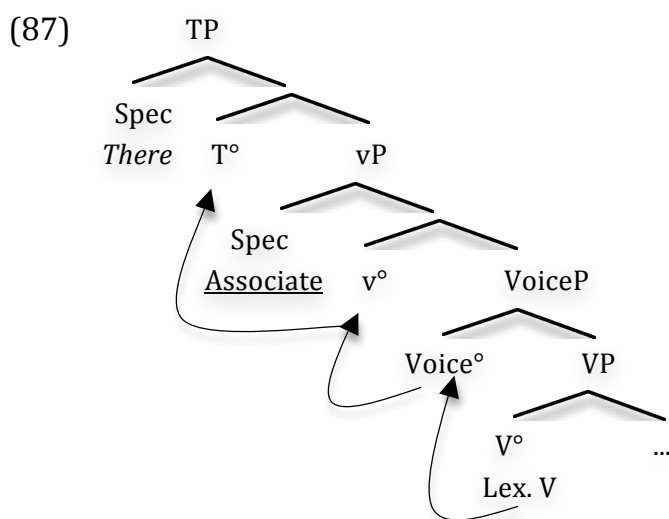
Therefore, this section has shown how the distribution of associates in English existential constructions can be captured using the claims and assumptions made so far in this thesis, in particular the PIC₂, anti-locality, and the approach to Phases adopted in the previous chapters. This concludes discussion of the distribution of the associate. In the next section I move beyond Standard English and explore the cross-linguistic consequences of the analysis presented in section 6.5 for the aspectual restrictions on existential constructions.

6.7 Beyond Standard English

As previously stated, this thesis assumes a hybrid approach to verbal inflection (Lasnik 1995c) in which verbs may receive inflections in one of two ways: they either undergo overt head raising in the syntax for abstract feature checking, or they

remain in situ and are merged together with the relevant inflectional affix at PF by virtue of the two elements being linearly adjacent to one another. In English, the lexical verb exhibits the latter of these two options, which I have used to explain the aspectual restrictions on English existential constructions. That is, the aspectual restrictions on English existentials can be understood through a complex interplay between the distribution of the associate, and the requirement that the lexical verb be string adjacent to its inflectional affix. In the case of TECs, the associate sits in a pre-verbal position which intervenes for the purposes of finite, infinitival and perfect aspectual morphology, but not for progressive and passive morphology. In UECs, however, the associate surfaces post-verbally, meaning it does not intervene for any kinds of inflection.

This leads us to an interesting cross-linguistic prediction: languages which exhibit overt raising of the lexical verb should exhibit fully productive TECs. That is, verbs which overtly raise for inflectional purposes do not fall victim to interveners such as associates as they raise in the narrow syntax for inflectional feature checking. Therefore, if a language exhibits overt raising of the lexical verb, it should be able to raise within the syntax beyond the pre-verbal associate in order to reach the higher inflections:



In other words, if the lexical verb raises overtly in the syntax, the distribution of the associate should not have an effect on which inflectional affixes the lexical verb can combine with. Thereby, fully productive TECs should be permitted in languages which exhibit such overt movement of the lexical verb.

Whilst a large-scale study of the world's languages is yet to be undertaken, this generalisation seems to hold of the small cross-section of (mainly) European languages that have been extensively discussed in the existential literature. Bobaljik

& Jonas (1996), Jonas (1996), Koeneman & Neeleman (2001) and Vikner (1990, 1995) have all observed that Icelandic, Yiddish, Faroese I, German and Dutch simultaneously exhibit fully productive TECs and overt V-to-T movement,²⁵ whilst English, Danish, Swedish, Faroese II and Afrikaans do not exhibit V-to-T movement and either lack TECs altogether, or exhibit severely restricted forms of these constructions. In other words, fully productive TECs seem to only be found in those languages that exhibit overt V-to-T movement, suggesting that such movement is indeed a determining factor as to whether languages permit fully productive TECs or not.

The only apparent exception to this generalisation is that of dialectal Belfast English (BelfE) which, like Standard English, does not exhibit V-to-T movement (cf. (88)), but which, as noted by Henry & Cottell (2007) (H&C), allows for much more productive TECs (cf. (89)):

- (88) a. (BelfE:*) Went a linguist to that conference? (H&C:(17))
b. (BelfE:*) She read not the book. (H&C:(19))
c. (BelfE:*) They drank never coffee. (H&C:(21))
- (89) a. (BelfE:✓) There have lots of people eaten their lunch. (H&C:(4))
b. (BelfE:✓) There shouldn't anybody say that. (H&C:(2))

At first glance, this is a direct contradiction of the cross-linguistic generalisation I made above, namely that fully productive TECs are restricted only to those languages which allow overt raising of the lexical verb. However, upon closer inspection, the BelfE data is not actually problematic for the analysis I propose, and, if anything, actually provides fairly strong support for the claim I have made.

H&C observe that the associate in BelfE TECs has a much freer distribution than its Standard English counterpart. That is, the associate may optionally precede any auxiliary except for the finite auxiliary:

- (90) There (*lots of students) should (lots of students) have (lots of students)
been (lots of students) taking the classes. (H&C:(3))

²⁵ It has been argued that Dutch does not constitute overt V-to-T. See Haegeman (2001) however, for arguments of why Dutch has such movement.

Whilst it is not entirely clear why the BelfE associate has such a freer distribution,²⁶ it definitely appears to optionally occupy positions higher than Spec-vP_{prog}. The fact that the associate can precede *been* suggests it can optionally raise somewhere beyond Perf^o, and the fact that it can precede infinitival *have* suggests that the associate can also raise beyond Inf^o. The only position the associate cannot actually occupy is that of the canonical subject position, Spec-TP, as evidenced by the fact that the associate cannot precede the finite auxiliary. This is obviously expected if Spec-TP is already filled by *there*, as standardly claimed.

If we assume that the lexical verb in BelfE remains in situ, similar to Standard English, and is merged together at PF with the relevant inflectional affix by virtue of linear adjacency, then the aspectual data of BelfE TECs easily falls out: the associate may optionally precede Perf^o and Inf^o, the locus of perfect and infinitival inflections:

(91) There T^o (Associate) Inf^o (Associate) Perf^o (Associate) **Lex V**.

This implies that at linearization, the associate does not necessarily always intervene between the lexical verb and perfect or infinitival inflectional affixes:

(92) There T^o (Associate) -∅ (Associate) -EN (Associate) **Lex V**.

Therefore, the lexical verb may merge together at PF with perfect or infinitival inflections, since the two elements can be linearly adjacent to one another:

(93) There have lots of people -EN + **eaten** their lunch already
= There have lots of people eaten their lunch already.

(94) There shouldn't anybody -∅ + **say** that.
= There shouldn't anybody say that.

Since the associate never raises to Spec-TP, however, it will always intervene for the purposes of finite inflections.

²⁶ See Henry & Cottell (2007), however, for a suggested analysis. I also discuss this proposal in the following chapter when considering the cross-linguistic implications of my research in general.

(95) There –TENSE associate **Lex V**.

Therefore we expect BelfE TECs to be ungrammatical if the lexical verb is finite. Indeed, H&C observe this to be exactly the case: simple finite TECs are ungrammatical in BelfE, irrespective of whether the finite lexical verb precedes or follows the associate:

- (96) a. (BelfE:*) There read nobody the book. (H&C:(23))
b. (BelfE:*) There lots of people attended those lectures. (H&C:(32))

H&C arrive at essentially the same analysis for simple finite TECs in BelfE and provide further support for this claim by observing that simple finite TECs in BelfE are grammatical if they are rescued with *do*-support:²⁷

- (97) a. (BelfE:✓) There did lots of students read that book. (H&C:(112))
b. (BelfE:✓) There did somebody ask that question already. (H&C:(113))

So whilst the freer distribution of the associate raises an interesting issue, the existence of (almost fully) productive TECs in BelfE is not actually a problem for the analysis I offer, and in fact provides even stronger support for the account presented in this chapter.

Returning to the generalisation made at the start of this section, namely that fully productive TECs are restricted only to those languages which exhibit overt V-to-T movement, it is worth noting that just because a language exhibits such movement, does not mean it will necessarily exhibit fully productive TECs. This is indeed the case for French, which apparently lacks TECs altogether, despite exhibiting overt V-to-T movement.

- (98) * Il a un homme mangé une pomme
there has a man eaten an apple
(Koeneman & Neeleman 2001:(3a))

²⁷ In light of this, it is remarkable that Standard English does not similarly exhibit the option of *do*-support in simple finite TECs as well. This is a problem for the analysis I propose and one which I am unfortunately currently unable to solve.

I do not claim that whether a language exhibits overt V-to-T movement or not is the only factor in accounting for the cross-linguistic distribution of TECs, merely that it is a restriction on their productivity. Many other elements may play a role in the distribution and productivity of TECs, such as the position of the associate, which may differ quite drastically across languages and language families.

It is also worth noting that many of the languages mentioned above, irrespective of whether they exhibit overt V-to-T movement or not, or fully productive TECs, demonstrate fully productive existential constructions if the associate appears in post-verbal position, exactly as expected under the analysis I offer. This has already been illustrated for English throughout this paper, and is illustrated below for French:

- (99) Il est arrivé un homme
there is arrived a man
'There has arrived a man'

(Koenenman & Neeleman 2001:(3)b)

This I find to be quite an encouraging observation in favour of the analysis I have proposed.

6.8 Existentials: a full clause or a reduced relative?

Before concluding this chapter, I provide in this section the long-promised review of the evidence presented in the literature which argues for a full clausal analysis of existential constructions.

As mentioned in previous chapters, Jenkins (1972), Williams (1984), Moro (1997), Law (1999) and McNally (1997) have variously analysed the material found to the right of the associate in active and passive TECs as comprising an RRC which is embedded inside the DP of the associate:²⁸

²⁸ Law (1999) and McNally (1997) only actually claim that passivised TECs are exclusively derived from a RRC analysis. As will be shown in the following sub-sections, however, both active and passive TECs exhibit behaviour which indicates they can both be derived from a full clause.

- (100) a. [TP There were [DP several hippos [RRC (who were) **dancing**]]]
b. [TP There were [DP several hippos [RRC (who were) **arrested**]]]

If this analysis is correct, existential constructions cannot actually tell us anything about the structure of full clauses. That is, all of the arguments and analyses that have been made throughout this thesis based on the behaviour of existential constructions would be compromised.

However, Milsark (1974), Barwise & Cooper (1981), Keenan (1987), Lasnik (1995b), Lumsden (1988), Chomsky (2001), Huddleston & Pullum (2002), Caponigro & Schütze (2003), Rezac (2006) and Deal (2009) have all claimed that both active and passive TECs in English are in fact ambiguous structures which, though derivable from an RRC analysis, can also be derived from a full clause. The arguments in favour of this claim ultimately amount to the fact that TECs exhibit various properties that are typical of full clauses, but which relative clauses and RRCs themselves do not exhibit. Below I present seven such properties. Section 6.8.1 discusses the restricted application of the verb *going to*, section 6.8.2 deals with heavy NP shift, 6.8.3 with extraction, 6.8.4 with eventive interpretations, 6.8.5 with the requirement that RRCs must precede full relatives, 6.8.6 with idioms and 6.8.7 with the Negative Polarity Item (NPI) *every*. Finally, section 6.8.8 sums the evidence up. With each property I compare the behaviour of the existential to that of the relative and the reduced relative clause, showing how they behave apart, therefore leading us to the conclusion that existential constructions can also be derived from full clauses.

6.8.1 Going to

Huddleston & Pullum (2002) note that TECs are generally compatible with the future expression *be going to*, whilst this verb does not occur in RRCs:

- (101) a. There are some people going to be disadvantaged by the new tax system.
(Huddleston & Pullum 2002:1395)
b. * Those people going to be disadvantaged by the new tax system will have to be compensated in some way.

Whilst it is not entirely clear what position *going to* occupies in the functional hierarchy, the fact that it appears in TECs but not in RRCs is already indicative that

existential constructions are not subject to the same derivational constraints as RRCs, and therefore are not necessarily derived from the same underlying structure.

6.8.2 Heavy NP shift

Huddleston & Pullum (2002) also note that the associate of an existential can be dissociated from the post-nominal material by undergoing heavy NP shift:

- (102) a. There were **killed** some 650 infantrymen from the 2nd Battalion.
(From Huddleston & Pullum 2002:1395)
b. There was **sitting on the shelf** a range of novels written in the 20th century.

This heavy NP shift over the lexical verb would not be possible if the lexical verb were an RRC modifier of the NP itself:

- (103) a. We buried the 650 infantrymen from the 2nd Battalion **killed in yesterday's attack**.
b. * We buried **killed in yesterday's attack** the 650 infantrymen from the 2nd Battalion.
- (104) a. They were selling a range of novels **written in the 20th century**.
b. * They were selling **written in the 20th century** a range of novels.

6.8.3 Extraction

Milsark (1974), Keenan (1987), Lasnik (1995b), Chomsky (2001), Huddleston & Pullum (2002) and Caponigro & Schütze (2003) all observe that whilst A'-extraction is possible out of the post-nominal material in an existential construction, it is not possible out of a full or reduced relative clause.

- (105) a. Which building was there a large gorilla climbing?
(There was a large gorilla climbing the Empire State Building)
- b. * Which building was there a large gorilla that was climbing?
(There was a large gorilla that was climbing the Empire State Building)
- c. * Which building did the army shoot the gorilla climbing?
(The army shot the gorilla climbing the Empire State Building)
- (106) a. Who were there many people arrested by last night?
(There were many people arrested by the police last night)
- b. * Who were there many people who were arrested by last night?
(There were many people who were arrested by the police last night)
- c. * Who did I speak to the people arrested by last night?
(I spoke to the people arrested by the police last night)

Moreover, McNally (1997) (and also section 6.6.3.3) notes that A'-extraction of the DP associate is also possible in existential constructions, thereby dissociating it from the post-nominal material.

- (107) a. Who is there performing at the Academy this week?
- b. ? How many people were there arrested last night?

This contrasts with RRCs in which it is impossible to dissociate the head DP from the RRC modifier:

- (108) a. * Who did the musicians admire performing at the Academy this week?
- b. * Who did the revolutionists admire arrested during last night's protest.

6.8.4 Eventive interpretation

Milsark (1974), Rezac (2006) and Caponigro & Schütze (2003) have observed that existential constructions without a lexical verb, that is, those in which only copula *be* is present, are illicit under an eventive interpretation:

- (109) * There's just been a dog.

Even in instances in which a relative clause is present, the derivation cannot be rescued since the lexical verb is contained inside the relative clause and therefore has no effect upon the acceptability of the main clause:

(110) * There's just been a dog which was dancing on stage

Therefore, if existential constructions could only ever be formed from RRCs, and not from full clauses, then all existentials in English should be illicit under an eventive interpretation. That is, the lexical verb that we see in existentials is predicted to always be embedded inside an RRC and so should not be able to render the main clause as licit. This is not the case however, since existentials with a progressive verb are licit under eventive aspect:

(111) There has just been a dog dancing on stage.

This can also be demonstrated for passive existentials:

- (112) a. * There've just been several fish.
b. * There've just been several fish which were caught.
c. There've just been several fish caught.

6.8.5 RRCs must precede full relative clauses

Barwise & Cooper (1981), Keenan (1987), McNally (1997) and Deal (2009) have observed that whilst reduced relatives must precede full relatives, no such restriction occurs on existentials:

- (113) a. The teacher scolded [the student [laughing in the hall] [who was wearing a cap]].
b. * The teacher scolded [the student [who was wearing a cap] [laughing in the hall]].

(114) There is a man <laughing in the hall> [who's wearing a cap] <laughing in the hall>.

The same pattern holds for passive existentials:

- (115) a. We began rebuilding the house destroyed yesterday which had been built by our forefathers.
b. * We began rebuilding the house which had been built by our forefathers destroyed yesterday.
- (116) There was a house <destroyed yesterday> [which had been built by our forefathers] <destroyed yesterday>.

6.8.6 Idioms

Chomsky (2001) also observes that existential constructions permit idiom chunks, whereas existential constructions containing a relative clause do not:

- (117) a. There were tabs being kept on Kate.
b. * There were tabs which were being kept on Kate.
- (118) a. There was all hell breaking loose downstairs.
b. * There was all hell which was breaking loose downstairs.

6.8.7 Every

Finally, McNally (1997) and Lumsden (1988) observe that DPs headed by *every* can appear in existentials:

- (119) There is every breed of dog with any chance of winning competing in the competition.

Ladusaw (1979) illustrates with examples such as the following that *every* licenses NPIs only within the DP it heads, and not external to that:

- (120) a. Everyone with any money has bought a VCR; why haven't you?
b. * Everyone has any money.

If the post-nominal material in the existential was a DP modifier, we would expect to find NPIs licensed within them as well, contrary to fact:

- (121) * There is every breed of dog with any chance of winning competing in any competition.

We also do not find licensed NPIs within the post-nominal material of passivised TECs either:

- (122) a. There was every child with any chance of causing a fuss given a sweet to keep them quiet.
b. * There was every child with any chance of causing a fuss given any sweet to keep them quiet.

6.8.8 Summing up

The data just reviewed over the previous seven sections shows existential constructions to exhibit behaviour which is permitted in full-clausal derivations and disallowed in RRCs. This suggests that whilst English TECs could in principle be derived from an RRC analysis, they can also be derived from a full clause. Therefore, the claims made in this thesis regarding the derivational paths of TECs, and the arguments made using such constructions, remain valid.²⁹

²⁹ Of course, the question arises of why the post-nominal material in TECs and the material contained inside an RRC appear so alike? As discussed in section 6.3.1, both RRCs and TECs are restricted to progressive and passive participle instantiations of the lexical verb. Furthermore, as noted throughout this thesis, the only auxiliary that can follow the associate of a TEC is that of *being*, which is similarly the only auxiliary that can appear in an RRC:

- (i) a. The boy [being punished] is my brother.
b. * The boy [been punished] is my brother.
c. * The boy [be punished] is my brother.
d. * The boy [was punished] is my brother.

In order to explain the aspectual makeup of RRCs, Kayne (1994) and Bhatt (1999) claim such clauses to be comprised of the same material that makes up the matrix clause, but only up to the aspectual layers. Given that RRCs exhibit no evidence of perfect aspect, but plenty for

6.9 Summary and conclusion

This chapter set out to fully explore the derivations of transitive and unaccusative existential constructions which over the course of this thesis have been frequently exploited in support of a number of theoretical claims, but which had yet been provided with a complete derivational analysis of their own. In particular this chapter aimed to explain two residual problems remaining from the treatment of existential constructions in this thesis: the presence of aspectual restrictions on TECs in Standard English and the absence of such restrictions on UECs, and the contrast between the pre-verbal distribution of TEC associates and the post-verbal distribution of the associate in UECs. Over the course of this chapter I have shown how these issues can be accounted for using the claims and assumptions that have already been made in this thesis so far.

I have claimed that the aspectual restrictions on existential constructions result from an interplay between the distribution of the associate and the requirement that lexical verbs in English remain in situ, only merging together at PF with their intended inflectional affix by virtue of the two elements being linearly adjacent. In Standard English TECs the associate sits in a pre-verbal position which intervenes between the lexical verb and perfect, infinitival and finite inflections, therefore blocking merger of these items at PF, but not for progressive and passive inflections, which the associate has risen beyond. In UECs on the other hand, the associate sits in post-verbal position and so does not intervene for any types of verbal inflection.

In order to explain the distribution of the associate, I claimed the TEC pre-verbal associate is stranded on the clause-internal Phase Edge which, in English, can extend as far as the progressive aspectual layer. In UECs, however, the clause-internal Phase consists solely of VP, to the edge of which the derived associate is unable to raise as this would constitute an anti-locality violation. Therefore the associate is stranded in

progressive aspect, it seems logical that such clauses should include the progressive aspectual layer, but not the perfect aspectual layer:

(ii) The kangaroo [_{VP(prog)} saving the children from the well] is called Skippy.

Indeed, this constitutes the same structural domain that I have argued to comprise the clause-internal Phase. Therefore it is possible that RRCs are composed solely of the clause-internal Phase. This would explain why the post-nominal material in TECs and the material contained inside an RRC appear so alike: associates in TECs occupy the edge of the clause-internal Phase and RRCs are composed solely of such a Phase. Of course, this is but a tentative proposal for which further research is required in order to fully justify such a claim. I leave this for future work.

its base, post-verbal position. Compelling evidence for this analysis was presented involving certain restrictions on A'-extraction of the associate.

Moving beyond English, I claimed that if a language exhibits overt raising of the lexical verb, then the associate would not matter as an intervener, meaning the lexical verb would be free to receive all kinds of inflection. Therefore, fully productive TECs should be restricted to those languages which exhibit overt lexical verb raising (though this does not imply that all languages with overt V-to-T movement will necessarily exhibit fully productive TECs). A brief cross-linguistic study of the languages most cited in the existential literature reveal this generalisation to be true. Furthermore, many of the cited languages, irrespective of whether they exhibit overt V-to-T movement or not, demonstrate fully productive existential constructions when the associate sits in post-verbal position. These cross-linguistic observations support my analysis.

The only apparent counter-example cited in the data is that of Belfast English, which displays no overt V-to-T movement, but exhibits much more productive TECs than Standard English. I argued this to be on account of the much freer distribution of the associate, which can occur higher than in Standard English and so does not necessarily intervene for the purposes of perfect and infinitival morphology. Because the associate can never raise to Spec-TP however, it will always intervene for finite inflections, explaining why simple finite TECs are still disallowed in Belfast English. So the Belfast English data, rather than acting as a counter-example, actually provides strong evidence for the claim made in this paper.

The final section of this chapter provided evidence in favour of TECs being derived from a full clause-analysis.

In this chapter, and also in the preceding chapters, I have argued the clause-internal Phase to correspond to vP_{prog} when progressive projections are available, vP otherwise, and VP in the absence of vP and VoiceP in unaccusative constructions. This implies that vP does not uniformly project the clause-internal Phase and that a variable, context sensitive Phase boundary is required. In the following chapter I provide a formal explanation for how such a variable Phase boundary can be possible within Minimalism.

This chapter has also already hinted at some cross-linguistic implications of the research presented here. In the following chapter I further discuss the cross-linguistic applications of my research, in particular what the approach to Phases posited in this thesis implies for the size of the clause-internal Phase across languages.

7

Theoretical and Cross-Linguistic Implications

7.1 Introduction

This chapter deals with the theoretical and cross-linguistic implications of the analysis presented in this thesis. As such, the chapter will essentially be divided into two parts: the first part discussing the theoretical implications, and the second part discussing the cross-linguistic implications.

On the basis of evidence from ellipsis, fronting, existential constructions, idioms and selectional restrictions, this thesis has argued for the existence of a structural divide between perfect and progressive aspect in English. Progressive aspect constitutes a discrete unit of structure along with voice and the lexical verb to the exclusion of perfect aspect, which, together with modality, tense and the complementiser layer, constitutes a separate, higher unit of structure.

I have analysed this divide in Phase theoretic terms, claiming that the lower structural domain corresponds to that of the clause-internal Phase, whilst the higher structural domain corresponds to that of the clausal Phase. With regard to the clause-internal Phase, I claim vP_{prog} projects this Phase when the progressive aspectual layer is present in the underlying structure, and vP otherwise, except in unaccusative constructions where the absence of vP and VoiceP implies VP projects the clause-internal Phase. This denies vP of its exclusivity as the clause-internal Phase, and calls for a variable, context-sensitive Phase boundary which alters depending on the projections that are present.

In the first part of this chapter I formalise how such a variable Phase boundary is possible. Specifically, I claim that the last Merged item from a Sub-Numeration projects the Phase, whatever that last Merged item may be. By taking progressive aspect to be contained within the same Sub-Numeration as the lexical verb, but not perfect aspect, this allows for a variable Phase boundary in which progressive

aspect, when present in the derivation, constitutes the clause-internal Phase instead of vP, which it dominates.

Of course, this proposal, like all the claims made so far in this thesis, is specific to Standard English. One particular burning issue is to what extent these claims and observations carry over cross-linguistically. Is the aspectual divide I have argued for a universal property of all languages, or is the size of each Phase a point of cross-linguistic variation? Is an approach such as the variable Phase approach required for all languages? Can the same diagnostics used for identifying the clause-internal Phase in English be applied to other languages?

The second part of this chapter explores the cross-linguistic implications of my research. I show, using evidence from VPE in European Portuguese and Taiwanese, and Edge effects in Irish, that a similar aspectual divide may exist beyond English. This suggests that the separation of the aspectual hierarchy in the way I have argued for is more than just a language-specific property of English. I argue at the same time, however, that it is not a universal property. There are obviously many languages that do not realise progressive aspect, in which case it is currently unclear where the clause internal Phase boundary may lie. Furthermore, the diagnostics I have used for English to demonstrate that progressive aspect projects the clause-internal Phase suggest, when applied cross-linguistically, that some languages may contain as much as perfect aspect within the clause-internal Phase, whilst for other languages, this Phase may correspond to smaller units of structure. I conclude therefore that the size of the clause-internal Phase may be a point of linguistic variation. Whilst it is not yet clear why the size of the clause-internal Phase may vary cross-linguistically, the evidence reviewed in this part makes it increasingly apparent that a variable/dynamic approach to Phases, of the sort I argue for in this thesis, is needed in order to capture such cross-linguistic variation.

As stated at the start of the introduction, this chapter is divided into two parts: section 7.2 discusses the theoretical consequences of my research, and section 7.3 explores its cross-linguistic implications.

7.2 Formal implications

This section is structured as follows: section 7.2.1 provides the formal explanation for how progressive aspect can constitute a part of the clause-internal Phase but not perfect aspect. Section 7.2.2 deals with any issues which arise from this formal analysis and finally, section 7.2.3 concludes.

7.2.1 Formalising the Variable Phase boundary

Here I provide a formal explanation for how a variable Phase boundary, of the sort I have argued for, is possible within the Minimalist framework. Section 7.2.1.1 provides the formal analysis itself, whilst section 7.2.1.2 tries to provide a deeper understanding of the aspectual divide in terms of predication.

7.2.1.1 The Variable Phase boundary

Essentially I propose that we should maintain the hypothesis that Phases are determined by Sub-Numerations (Chomsky 2000, 2001). As discussed in chapter 2, the main clausal spine is divided into two Sub-Numerations, one containing the lexical verb and all related projections, and the second containing TP and CP (assuming a minimal CP>TP> v P>VP structure for the time being). Each of these Sub-Numerations acts as a Phase when it has been Merged into the syntactic workspace. Under the original formulation of Phases it was assumed that once v° was Merged into the workspace, the first Phase was complete, and upon Merger of C° the second Phase was complete.

However, determining the completion of a Phase upon the Merger of a particular head seems to be rather stipulatory, and a needless complication to the system. Moreover, such heads are not necessarily always present in the structure, but evidence suggests that the clause-internal Phase remains intact and is still independently Spelled Out in such cases, contra Chomsky (2000, 2001). This was argued in the previous chapter to be true for unaccusatives, in which v° is absent, but the clause-internal Phase still projects, as also claimed by Legate (2003).¹ Therefore it seems that v° is not required to complete the Phase or render it as syntactically, semantically and phonologically independent. This implies that the autonomous Spell Out properties of Phases in general are independent from specific Phase Heads. The theory of Phases needs to be adapted to reflect this property.

This issue, and the need for a variable Phase boundary of the sort argued for throughout this thesis, are simultaneously solved with the system I propose here. I claim that Sub-Numerations do indeed constitute Phases when they have been Merged into the workspace, but that they are not dependent upon the Merger of a specific head. Instead, when building a Phase, the Phase itself is not complete until the last item in the Sub-Numeration has been Merged into the workspace, irrespective of what that last item is. This last item is given the status of Phase Head

¹ This was evidenced, though not explicitly pointed out, in chapter 6 by the fact that post-verbal associates in UECs are unable to undergo A'-extraction. This implies that they are invisible to C° and must therefore have been Spelled Out with the clause-internal Phase.

and the phrase it projects constitutes the Phase, implying that all projections below this are contained within the Phase. This removes the sovereignty of vP acting as the clause-internal Phase, and allows for a variable Phase boundary.²

Of course, one may ask how the syntax knows when to grant the status of Phase to a projection. The answer to this is: once the Sub-Numeration has been exhausted. The derivational system continues to Merge items from the Sub-Numeration until there is no more material left to (externally) Merge. The fact that no further material is available informs the syntax that the Sub-Numeration has been exhausted and therefore that the Phase is complete. Therefore the last Merged item is crowned as the Phase Head, and the phrase it projects is the Phase.

To summarise, we have arrived at the following system for variable Phases:

- (1) a. Phases are determined by Sub-Numerations.
- b. The last item from a Sub-Numeration to be Merged into the workspace projects the Phase, irrespective of what that item is.

I now show how this allows the progressive aspectual layer, but no higher aspectual material, to project the clause-internal Phase when present in the derivation, and vP otherwise.

So far I have argued that the boundary for the clause-internal Phase is located between progressive and perfect aspect. This implies that the two Sub-Numerations of the main clausal spine potentially consist of the following elements:³

- (2) a. [Prog *be*, ProgAsp, Passive/Copula *be/v*, Voice, V]
- b. [C, T, *Modal*, Inf, Perf *have*, PerfAsp]

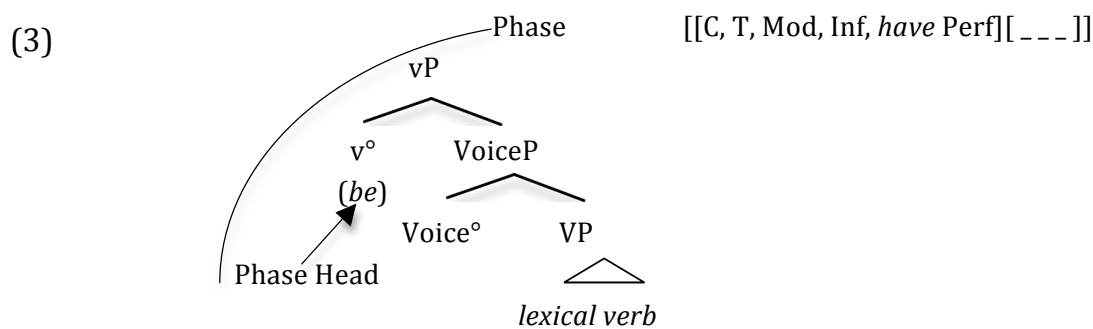
The most important divide here is that progressive aspect and the progressive auxiliary are contained within the first Sub-Numeration, along with the voice layer and the lexical verb, whilst perfect aspect and the perfect auxiliary *have* are

² Rizzi (2005) has made similar suggestions for a variable Phase boundary with respect to an articulated CP layer.

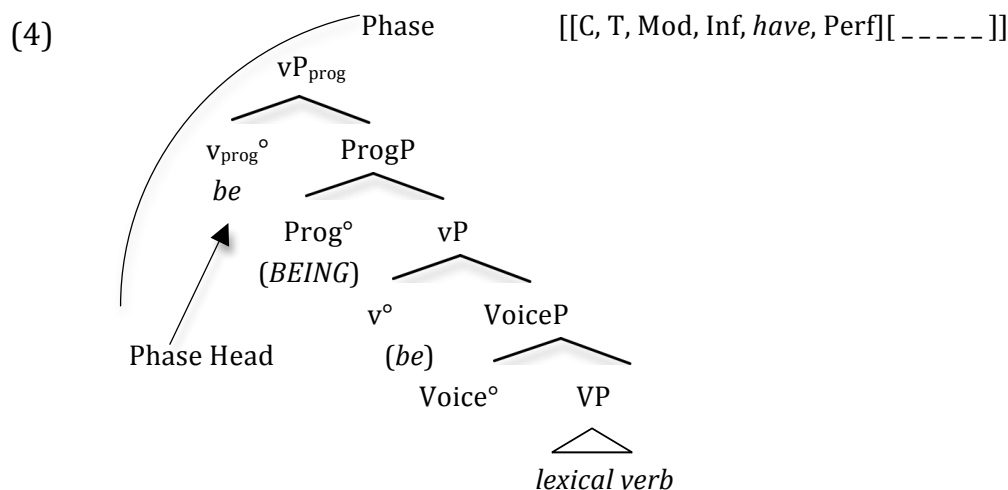
³ I put aside arguments and other phrases that might be Merged in specifiers and consider only those items which are Merged directly into a head position. In light of phrases, it might be better to restate the rule in (1)b so that it only applies to heads. Therefore it would read: the last HEAD from a Sub-Numeration to be Merged into the workspace projects the Phase, irrespective of what that HEAD is.

contained in the second Sub-Numeration, along with the modal layer, tense and the CP layer.

Applying the variable Phase approach to this division in the Sub-Numerations provides us with the following phasal system: if progressive aspect is absent from the derivation, the last item to be Merged from the first Sub-Numeration would be that of passive/copula *be* in v° , or simply v° itself, depending on whether the sentence is active, passive, or a copular construction. This means that in the absence of progressive aspect, vP is the highest projection of the first Sub-Numeration, and so constitutes the Phase. Once vP has projected onto the workspace, the syntax finds that the first Sub-Numeration is exhausted and so assigns vP its phasal status:

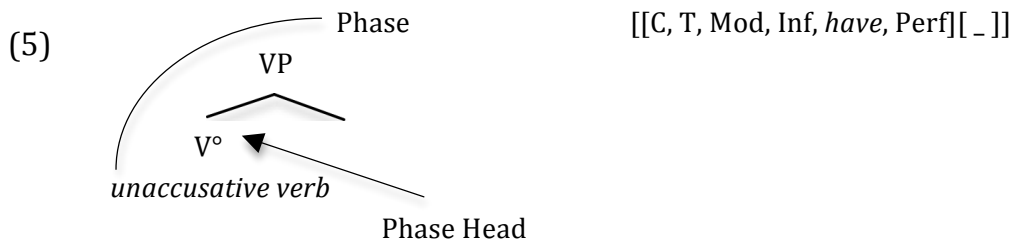


If progressive aspect is present on the other hand, the progressive auxiliary *be* is the last item to be Merged from the first Sub-Numeration. Therefore, the phrase it projects, vP_{prog} , constitutes the clause-internal Phase, crucially depriving vP of any phasal status:⁴

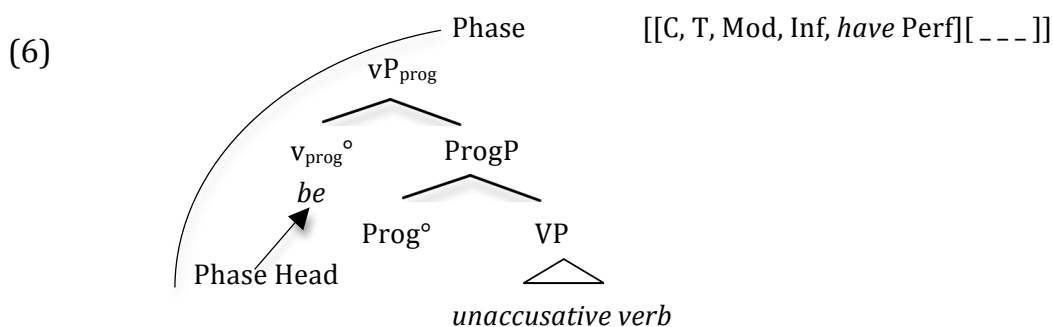


⁴ I do not claim vP is assigned phasal status and then has this stripped away from it within the same derivation by Merger of progressive aspect. Rather, I claim that phasal status is only assigned once the Sub-Numeration is exhausted.

Finally, recall from the previous chapter that I assumed unaccusatives exhibit a significantly reduced structure in which *vP* and *VoiceP* are entirely absent, and instead *VP* constitutes the clause-internal Phase. The variable Phase approach explains how *VP* can project the Phase in these instances: in the case of an unaccusative (and in the absence of progressive aspect, see below), only *V*, i.e., the unaccusative verb itself, would be contained within the first Sub-Numeration. Therefore *V* is the first and, more importantly, last item to be Merged from the Sub-Numeration. Once *VP* projects, we find the Sub-Numeration to be exhausted and so grant *VP* phasal status:



Recall, furthermore, from the previous chapter, that I additionally assumed progressive aspect to project the Phase when present in unaccusative sentences, rather than *VP* itself. This easily falls out of the formal analysis presented so far: if progressive aspect were present in an unaccusative sentence, it would be contained within the first Sub-Numeration along with the unaccusative verb itself. Therefore, *vP_{prog}*, being the last Merged item in such instances, would actually act as the clause-internal Phase instead of *V°*:



In sum, the variable Phase approach advocated here allows the clause-internal Phase to consistently project, even in the absence of *vP*, since it is no longer reliant upon *vP* itself, merely on the completion of the first Sub-Numeration. Therefore, this proposal removes the sovereignty of *vP* acting as the clause-internal Phase, and allows for a variable Phase boundary which can be determined by whatever item is Merged last from the Sub-Numeration into the syntactic workspace.

The question arises of course as to why the aspectual system should be divided in this way. That is, why should perfect aspect be contained in the second Sub-Numeration and therefore, the clausal Phase, along with Tense and modality, whilst progressive aspect is contained within the first Sub-Numeration and therefore, the clause-internal Phase, along with voice and the lexical verb?

In what follows, I tentatively propose that the first Sub-Numeration is made up of material that comprises the predicate layer of the clause, and that progressive aspect, yet not higher material, forms part of the predicate. In the next section I provide support for this claim.

7.2.1.2 The progressive predicate

Predication is (and has been) a core concept in the interpretation of sentences and is a key ingredient in most linguistic approaches, including the generative framework. In a system that postulates a syntax/semantic mapping it seems plausible to postulate that the predication domain of a clause should correspond to a structural entity. However, while it is natural to assume that the lexical verb may constitute the core of the predicate, there is no consensus within the generative literature as to what the ultimate size of this predicational entity can be. Grimshaw (2000, 2005), for instance, assumes that the domain of the verbal predicate can extend as far as T° . I follow Chomsky (2000, 2001) and Bowers (1993, 2001, 2002), however, in assuming that the predicational layer generally corresponds to the vP domain. I furthermore assume, as per Chomsky (2000, 2001) that this predicational layer constitutes the first Sub-Numeration and therefore, by extension, the clause-internal Phase. I speculate that progressive aspect, but crucially no higher material, is included within the first Sub-Numeration because it forms a part of the predicate. This is in line with, Bowers (2002:204), who also tentatively assumes that the progressive aspectual layer may constitute part of the predicational zone.

As an indication that progressive aspect comprises part of the predicate, Heycock (2011) has noted that progressive aspect can be co-ordinated with nominal, adjectival and prepositional predicates at the predicate level:

- (7) Julia is tired and suffering from a cold and (thus) [a good candidate for a miracle cure]/[in a terrible mood].

(Adapted from Heycock 2011:2)

This potentially shows the predicational nature of progressive aspect.

Voice, which is also contained within the first Sub-Numeration/clause-internal Phase, must similarly behave as part of the predicate. This is indicated by the fact that Voice can also be co-ordinated with other predicates:

(8) Julia is tired and worn down by her work.

Another possible indication that progressive aspect, and Voice too, is part of the predicate is that it is the complement of *be* in English. This is identical in form to copula *be*, which appears alongside AP, DP and PP predicates. It is thus possible that progressive and passive *be* are simply instances of a copula selecting a verbal predicate, suggesting once again the predicational nature of the progressive. The perfect auxiliary in English, on the other hand, is *have*, which is rather distinct from the copular auxiliary, suggesting that perfect aspect, unlike progressive, is not a part of the predicate.⁵

Progressive aspect also stands out from the other verbal inflections regarding its morphological form in many languages: progressive inflection seems to have more nominal properties than other verbal inflections. In English the *-ing* suffix makes clear the link with gerunds, which can be seen as nominalisations, to different degrees, as in (9)a. Also in other languages the progressive inflection has nominal properties, such as in Dutch and German: in Dutch (see (9)b), for instance, it comes with a definite article. Thus, it seems that in languages that express the progressive, its form is quite different from how verbal inflections normally behave in these languages, and seems to have some nominal properties.

(9) Ted('s) growing (of) a beard was the worst idea ever.

(10) De krokodil was aan het dansen.
the crocodile was on the dancing
'The crocodile was dancing.'

This data taken together may therefore indicate the reason why progressive aspect is contained within the first Sub-Numeration of the main clausal spine and so acts as part of the clause-internal Phase when it projects: progressive aspect constitutes part of the predicational layer, which itself constitutes the first Sub-Numeration of the clause. This is a tentative suggestion, however, that is not without its problems

⁵ Obviously many languages such as French, Dutch, Serbo-Croatian and many of the Celtic languages (to name but a few) realise perfect aspect with a copular auxiliary as well. This potentially suggests that certain languages are able to include perfect aspect within the predicate, causing a larger clause-internal Phase than in English. This may be a point of cross-linguistic variation. See section 7.3 for discussion of the cross-linguistic implications of this thesis.

(as will be reviewed in sections 7.2.2.1 and 7.3.3), and merely indicates one potential way forward for understanding this aspectual divide.

The following section deals with any further issues which arise from the formalisation presented in section 7.2.1 in general.

7.2.2 Further Issues

Two issues arise from the formal analysis presented above. Section 7.2.2.1 further discusses the reason for there being an aspectual divide between progressive and perfect aspect, whilst section 7.2.2.2 discusses a tension that arises between the variable Phase approach presented in this chapter, and the notion of overlapping phasal domains presented in chapter 4.

7.2.2.1 Why is there an aspectual divide?

In section 7.2.2.1, the issue was raised that it is not yet entirely clear why progressive aspect should be contained within the first Sub-Numeration, whilst higher aspectual material is contained in the second. Some evidence suggests that progressive aspect constitutes part of the predicational layer to the exclusion of higher aspectual forms, and that this is the reason for such a divide, though this is ultimately a speculation that requires further investigation. At present, whilst we are able to provide a formalisation for the aspectual divide, it essentially remains a stipulation that the Sub-Numerations should be divided in the way I have argued and requires further research to understand exactly why this division in the aspectual hierarchy should exist.

It is possible that the answer lies in the semantics, though a detailed semantic study of the uniqueness of progressive aspect, parallel to the syntactic study presented in this thesis, is beyond the scope of the current dissertation. The aim of this dissertation has been first and foremost to convincingly argue empirically that a structural divide exists between progressive and perfect aspect. Once this argument is accepted, only then can we begin to properly understand why such a divide exists. This dissertation therefore has only begun to scratch at the surface of the issue.

Ramchand & Svenonius (2013) have attempted to provide a deeper understanding of this cut between perfect and progressive aspect, though this research is still in its early stages. Essentially they propose that the clausal hierarchy should be divided into the following three primitive zones of structure:⁶ events

⁶ Ramchand & Svenonius 2013 abstract away from Phase theory for their account of the aspectual divide.

(Davidson 1967), situations (Barwise & Perry 1983; Kratzer 1989) and propositions. The event description zone corresponds to the VP layer, situation descriptions to the TP layer and the propositional domain to the CP layer. The event layer denotes events or sub-events, and is also home to Thematic role assignment and the properties of stativity and dynamicity. The situational layer is an elaboration of eventualities which existentially closes the event. This is where the time parameter is contained. The proposition zone is an elaboration of situations which existentially closes the situation. It is anchored to the utterance context and is where speaker-oriented parameters come into play.

Crucially, Ramchand & Svenonius assume that progressive aspect is contained within the event layer as a species of V head: V_{evt} . They justify this by claiming that the progressive head selects for a dynamic eventuality and creates a dynamic eventuality description.⁷ Perfect aspect, on the other hand, they assume to be contained within the situational layer. They justify this by claiming that perfect aspect selects for a situation and then builds a complex derived stative situation which is temporally specified.

By defining the aspectual divide I have identified along event-situation lines, this may begin to provide a more in-depth understanding of the structural split between perfect and progressive aspect that I have identified in this thesis. Nevertheless, further research is required on this topic, especially in the semantics, before any conclusive understanding can be offered.⁸

7.2.2.2 Tension between variable Phases and overlapping domains

A second issue to be addressed is the point established in chapter 4 that ellipsis usually targets the phasal complement, but can also exceptionally target the entire Phase in certain circumstances. This contradicts Gengel's (2007, 2008) initial claim that ellipsis is non-pronunciation at PF of the phasal Spell-Out domain, i.e., the phasal complement. In order to explain the possibility of full phasal ellipsis, it was assumed that full phasal Spell Out must sometimes be possible. To understand this, I tentatively expanded on a claim made by Bobaljik & Wurmbrand (2005) in which it was proposed that Phase Heads are domains of overlap between two Phases. That is, Phase Heads are in fact heads which are simultaneously selected by both the lower and higher Phases and so share Spell Out properties with both, meaning there may be a degree of optionality as to whether the Phase Head and its related projection is

⁷ This might better explain why progressive aspect can only select for dynamic and not stative verbs.

⁸ See also Hinzen (2012) for discussion of Phases from a more semantic perspective.

Spelled Out with the first Phase or the second Phase. This would explain how both phasal complement and full phasal Spell Out are possible.

This may be compatible with a traditional, rigid approach to Phases in which vP always acts as the clause-internal Phase, in which case v° would always be selected by both the first and second Sub-Numerations of the clause:

(11) [C T [v] V]

Observe, however, that there is a tension between the concept of overlapping domains and the variable Phase approach I have proposed in this chapter. That is, the Phase Head is never fixed under the variable Phase approach. If one wished to maintain both the concepts of variable Phase boundaries, and overlapping domains, one would have to claim that v_{prog}° , when present, is simultaneously selected by the first and second Sub-Numerations, but nothing else, and that in the absence of progressive aspect, v° is simultaneously selected by both Sub-Numerations.

(12) a. [C T [v_{prog}] Prog v Voice V]
b. [C T [v] Voice V]

This is an undesirable consequence. Hopefully this thesis has made clear the advantages of both the variable Phase approach and the notion of overlapping domains, but presently I have no means of resolving this tension between the two proposals and must leave this as a matter for future research.

In the final section I sum up the main points of this section.

7.2.3 Summary and conclusion

To summarise, I have shown how a variable Phase boundary can be achieved within the Minimalist Framework, and all that is needed to achieve this is the rule in (1), repeated here:

(13) a. Phases are determined by Sub-Numerations.
b. The last item from a Sub-Numeration to be Merged into the workspace projects the Phase, irrespective of what that item is.

Under the assumption that progressive aspect, but not perfect aspect, is contained within the first Sub-Numeration of the clause, this rule is able to explain how vP_{prog}

can act as the clause-internal Phase when it projects, and *vP* otherwise: progressive aspect, if present, is Merged last from the first Sub-Numeration. This denies *vP* of its perpetual status as the clause-internal Phase and allows the progressive aspectual layer to take on the properties of the clause-internal Phase when it projects. When progressive aspect is absent, however, *vP* is the last-Merged item from the first Sub-Numeration and so acts as the Phase as standardly assumed. In unaccusative patterns, *V* is the only item contained within the first Sub-Numeration (in the absence of progressive aspect). Therefore *V* is the first and, crucially, last item to be Merged from this Sub-Numeration, and hence projects the clause-internal Phase in such instances. Finally, I justified this dividing of perfect and progressive aspect across the two Sub-Numerations of the clause by arguing that progressive aspect forms a part of the predicational layer in English, whilst perfect aspect does not.

The system of variable Phases adopted in this thesis is similar in spirit to the dynamic approach to Phases as argued for by Wurmbrand (2012b, *to appear* b) and Bošković (*to appear* a, b). Wurmbrand (2012b, *to appear* b) has claimed that all aspectual layers should be contained within the clause-internal Phase when such projections are present in the derivation. As detailed in chapter 4, Bošković (*to appear* a, b) has formalised this claim by proposing a dynamic approach to Phases in which the highest functional item within the extended domain of a lexical item acts as the Phase. This is known as the ‘highest phrase is a Phase’ approach. I have already discussed Bošković’s (*to appear* a, b) proposals in detail in chapter 4, so a repeat of such discussion here is unwarranted. Generally, however, the approach adopted in this thesis sits in line with the aforementioned analyses, except with one crucial difference: the above-mentioned authors assume perfect aspect to also be contained within the clause-internal Phase in English, and formalise their proposals in accordance with this. As this thesis contends, however, there are many empirical arguments to the effect that only progressive aspect should be contained within the clause-internal Phase, with perfect aspect constituting part of the higher clausal Phase. For this reason the formalisations presented by the authors mentioned above cannot be fully reconciled with the empirical data from English. Therefore I maintain that the variable Phase approach advocated here is better equipped for capturing the English data.

The following section considers the cross-linguistic implications of this thesis.

7.3 Cross-linguistic implications

In this section I observe that there may be a number of other languages which exhibit a similar aspectual divide to English, suggesting the split between perfect and

progressive aspect is not just a language-specific property of English. This is evidenced in section 7.3.1. However, data provided in section 7.3.2 suggests there are also languages in which the aspectual divide is placed higher or lower than in English. This stops me short of claiming that the cut between perfect and progressive aspect is a universal property. Instead I propose that the location of the clause-internal Phase boundary is a point of cross-linguistic variation. Finally, section 7.3.3 summarises and concludes this section and discusses a number of further issues.

7.3.1 Evidence for a progressive Phase

This section is principally divided into two parts. The first part discusses cross-linguistic cases of VPE in which it appears as though as much as the progressive aspectual layer is targeted, and the second discusses the language of Irish in which Phase Edge effects are observable at the edge of the progressive aspectual layer.

7.3.1.1 VPE

Two languages are discussed here. Section 7.3.1.1.1 explores VPE in European Portuguese, and section 7.3.1.1.2 deals with VPE in Taiwanese.

7.3.1.1.1 VPE in European Portuguese

European Portuguese (EP) has been noted for being one of the few romance languages which actually permits VPE (Raposo 1986; Matos & Cyrino 2001; Cyrino & Matos 2002, 2005; Goldberg 2005; Tescari 2013):

- (14) A Ana já tinha lido o livro à irmã,
the Ana already had read the book to-the sister,
mas a Paula não tinha [~~lido o livro~~ ~~à~~ ~~irmã~~].
but the Paula not had read the book to-the sister
'Ana had already read the book to her sister but Paula had not.'

(Cyrino & Matos 2002:(1))

Unlike English, however, EP has also been argued to exhibit overt movement of the lexical verb out of vP for inflectional purposes (Raposo 1986; Ambar 1987, 1989; Galves 1994, 2001; Costa 1998, 2004; Modesto 2000; Brito 2001; Matos & Cyrino 2001; Costa & Galves 2002; Cyrino & Matos 2002; Ambar, Gonzaga & Negrão 2004; Goldberg 2005; Cyrino 2011; Tescari 2013). This is evidenced by the fact that finite lexical verbs in EP undergo T to C movement in *wh*-questions:

- (15) Quem **viu** o João?
who saw the João?
'Who did João see?' (Costa 2004:25)

Furthermore, the finite lexical verb must also precede low adverbs such as *completamente* 'completely':

- (16) a. * O João *completamente* **acabou** o seu trabalho.
the João completely finished the his work.
'João completely finished his work.'
b. O João **acabou** *completamente* o seu trabalho.
the João finished completely the his work.
(Galves 2001:109)

This overt movement is not just restricted to finite lexical verbs either. As the following data indicates, progressive participles must also raise beyond low adverbs:

- (17) a. * O João *completamente* tinha estado **a ler** o livro.
the João completely had been reading the book
'João had been completely reading the book.'
b. * O João tinha *completamente* estado **a ler** o livro.
the João had completely been reading the book
c. * O João tinha estado *completamente* **a ler** o livro.
the João had been completely reading the book
d. O João tinha estado **a ler** *completamente* o livro.
the João had been reading completely the book
(Costa 2004:(69))

This suggests therefore that lexical verbs in EP, whether finite or non-finite, uniformly raise for inflections.

Such overt raising of the lexical verb gives rise to what tends to be referred to as 'V-stranding VPE' in which the finite lexical verb raises out of the (traditionally vP) ellipsis site to T°, thereby escaping ellipsis. Therefore the only elements which are in

fact elided in such instances are the arguments and prepositional phrases internal to the vP ellipsis site:⁹

- (18) A Ana não leva o computador para as aulas, pois
the Ana not brings the computer to the classes, because
os amigos também não **levam** [~~o computador para as aulas~~].
the friends too not bring the computer to the classes.
'Ana does not bring her computer to classes because her friends don't,
either.'
(Cyrino & Matos 2002:(9))

Interestingly, Cyrino & Matos (2002, 2005) have observed that lexical verbs inflected for progressive or passive morphology cannot escape VPE in EP, parallel to *being* in English:¹⁰

- (19) Ela está a ler livros às crianças mas ele não está (***a ler**)
she is reading books to the children but he not is reading
[~~livros às crianças~~].
books to the children.
'She is reading books to the children but he is not'.
(Cyrino & Matos 2005:(53))

⁹ Raposo (1986) and Cyrino & Matos (2002) discuss the fact that such verb-stranding VPE is ambiguous between a genuine case of ellipsis and Null Object constructions. However, the authors note that typical cases of Null Object in EP only involve the dropping of the direct object, whereas VPE includes all the complements of the verb. Thus, whilst the sentence in (i) is ambiguous between VPE and Null Object on account of the fact that the verb only selects a direct object, the sentence in (ii) is clearly an instance of Null Object:

(i) O João leu esse livro e a Ana também leu ____.
the João read that book and the Ana too read ____.
'João read that book and Ana did, too/João read that book and Ana read it, too.'
(Cyrino & Matos 2002:(11))

(ii) Ela trouxe o computador para a Universidade e ele trouxe [-] para o escritório.
She brought the computer to the University and he brought [-] to the office
'She brought the computer to the University, and he brought it to the office.'
(Cyrino & Matos 2002:(12))

Therefore, sentences such as (18) must be exclusive cases of verb-stranding VPE given that they involve ellipsis of a number of internal arguments. Cyrino & Matos (2002) also further distinguish between verb-stranding VPE and Null Object using strict identity and pronominal alternation.

¹⁰ Cyrino & Matos (2002) note that stranding of the progressive and passive participles in (19) and (20) are permissible under an object drop interpretation. This, however, is a very different derivation from those involving ellipsis.

- (20) O carro foi atribuído à Maria, mas os outros prêmios não
the car was given to the Maria, but the other prizes not
foram (***atribuídos**) [~~à Maria~~].

were given to the Maria.

'The car was given to Maria, but the other prizes were not'.

(Cyrino & Matos 2002:(29))

Contrastively, lexical verbs inflected for perfect aspect are only optionally elided in EP, parallel to *been* in English:

- (21) Ela tem lido livros às crianças,
she has read books to the children,
mas ele também tem (**lido**) [~~livros às crianças~~].
but he too has read books to the children.

'She has read some books to the children, but he also has.'

(Cyrino & Matos 2002:(30)/(31))

If lexical verbs raise for inflectional purposes in EP, but are obligatorily elided under VPE when they have risen into the Voice or progressive aspectual layers for inflection, this suggests that these layers are targeted by VPE in EP, parallel to English. Indeed, Cyrino & Matos (2002) and Matos (2001) have claimed exactly this. Moreover, since the lexical verb need not be elided when it has risen to the perfect aspectual layer for inflection, I conjecture that the perfect projections are not targeted by VPE in EP, once again parallel to English.

To explain the optional ellipsis of the perfect participle I assume an optional raising account similar to the optional deletion of *been*: whilst lexical verbs in English enter the derivation bare and receive inflections via affixation, lexical verbs in EP behave more like English auxiliaries in that they enter the derivation readily inflected and overtly raise in the narrow syntax for inflectional feature checking.¹¹ When the perfect participle is stranded by VPE in EP, it has risen out of the ellipsis site (which I take to be as large as the progressive layer) to Perf^o, where it has its feature checked and escapes ellipsis. When the perfect participle is elided, however,

¹¹ This has similarly been claimed by Lasnik (1995c) and Baker (2003) for any language which exhibits V^o to T^o movement.

it remains in the ellipsis site and has its feature deleted at PF by ellipsis, thereby rescuing the derivation.¹²

In sum, the data indeed appears to suggest that, parallel to English, VPE in EP targets the progressive aspectual layer, but not the perfect aspectual layer. If ellipsis is constrained by Phases, as I have assumed throughout this thesis, this implies that progressive aspect also demarcates the clause-internal Phase boundary in EP.

7.3.1.1.2 VPE in Taiwanese

Taiwanese does not exhibit auxiliary verbs or aspectual inflections. Rather, perfect and progressive aspect, and passive voice, are realised through independent particles:

- (22) A-Ha u teh hoo mama pak thau-chang
A-Ha PERF PROG PASS mother put.up hair
'A-Ha is having her hair put up (on her) by her mother'
(Sailor & Kuo 2010:(3))

Sailor & Kuo (2010) assume these markers to be Merged directly onto the heads of their relevant aspectual phrases. They also note that VPE is possible in Taiwanese:

- (23) gua chang b-o khi hak-hau, tan-si i u.
1p yesterday neg.PERF go school but 3p PERF
'I didn't go to school yesterday, but he did.'
(Sailor & Kuo 2010:(7))

Taiwanese VPE does not target perfect markers or modals, however: "they remain outside of and adjacent to the ellipsis site" (Sailor & Kuo 2010:2), parallel to English VPE.

¹² The fact that finite lexical verbs in EP are obligatorily stranded by VPE can once again be attributed to the claim that VPE is itself licensed by finite verbs in T° in EP (Cyrino & Matos 2002, Matos & Cyrino 2001).

- (24) A-Ying u kha-kha-cchiuN, A-Ha ma u [~~pha-kha-cchiuN~~].
A-Ying PERF sneeze A-Ha also PERF sneeze
'A-Ying has sneezed, and A-Ha has too.'
(Sailor & Kuo 2010:(8))

- (25) A-Ying thang sai cchiah, A-Ha ma **thang** [~~sai—cchiab~~].
A-Ying may drive car A-Ha also may drive car
'A-Ying may drive, and A-Ha may as well.'
(Sailor & Kuo 2010:(9))

- (26) A-Ying ai u sai cchiah, A-Ha ma ai u [~~sai—cchiab~~].
A-Ying should PERF drive car A-Ha also should PERF drive car
'A-Ying should have driven, and A-Ha also should have.'
(Sailor & Kuo 2010:(9))

Taiwanese and English also behave similarly with respect to what *is* included in the ellipsis site: the progressive particle *teh* cannot survive Taiwanese VPE:

- (27) A-Ying b-o teh cchih kau, tan-si A-Ha u (***teh**)[~~cchih-kau~~].
A-Ying neg.PERF PROG feed dog but A-Ha PERF PROG feed dog
'A-Ying hadn't been feeding the dog, but A-Ha had been.'
(Sailor & Kuo 2010:(15))

One could say that the progressive particle needs the lexical verb as a host and is therefore elided along with it, but as Sailor and Kuo note, adverbs can intervene between *teh* and the main verb, which shows that *teh* is a free morpheme:

- (28) A-Ying chim-ma **teh** man-man-a **thiah** chhu.
A-Ying now PROG slowly destroy house
'A-Ying is now slowly destroying the house.'
(Sailor & Kuo 2010:(16))

They argue therefore that the deletion of *teh* "is not due to an adjacency/morphological requirement [since] it can be separated from V. Instead, its behavior must be due to a structural property of VPE" (Sailor & Kuo 2010:4), which they call The Progressive Prohibition: "VP Ellipsis necessarily elides at least the

maximal projection of progressive morphology. That is, VP ellipsis is actually at least ProgP ellipsis” in Taiwanese. (Sailor & Kuo 2010:4).

Once again, if ellipsis is constrained by Phases, this suggests that progressive aspect demarcates the clause-internal Phase in Taiwanese when these projections are present in the structure. This concludes discussion of VPE. In the following section I move on to edge effects.

7.3.1.2 Edge Effects in Irish

This section explores edge effects at the periphery of the progressive aspectual layer in Irish. As stated in chapter 4, by the term edge effects I mean evidence that A or A'-movement proceeds via the edge of those constituents that we take to be Phases.

McCloskey (2012) has argued that progressive aspect in Irish also constitutes the clause-internal Phase when it is present in the derivation on account of edge effects being observable at this boundary. Such edge effects are manifested by both A and A'-movement. I deal with A-movement first.

7.3.1.2.1 A-movement to the progressive layer

Irish is typically a VSO language in which the subject appears to occupy Spec-vP.¹³ In the example below, the subject follows the finite verb:

- (29) **Cheannaigh siad** teach ar an bhaile mhór anuraidh.
bought they.NOM house on the town big last-year
'They bought a house in town last year.'

(McCloskey 1997:(20))

However, there are instances in which the subject seems to raise beyond Spec-vP, namely in the presence of progressive aspect. In these cases, the subject must precede the progressive particle:

- (30) Bhí **siad** **ag** cuntas na vótaí.
were they.NOM PROG counting the votes
'They were counting the votes.'

(McCloskey 2012:(37))

¹³ See McCloskey (1997), however, for discussion on whether the subject truly sits in Spec-vP in Irish, or whether it raises out of the vP domain.

This suggests that in the presence of the progressive, subjects in Irish are required to raise to the edge of the progressive aspectual layer.

I conjecture that this raising of the subject to the edge of the progressive layer in Irish is for Case checking reasons. This can be argued for by exploiting a certain class of verbs which exist in Irish known as salient unaccusatives. These verbs typically mark their subjects with a preposition, which is taken by McCloskey (1996) to assign Case to the subject. Therefore the subject has no need to check Case elsewhere and so remains internal to the vP:

- (31) *Laghdaigh ar a neart.*
decreased on his strength
'His strength decreased.'

(McCloskey 1996:(2))

McCloskey (2012) notes that when a salient unaccusative is inflected for progressive aspect, the subject similarly remains internal to the vP on account of having received Case from its preposition:

- (32) *Bhí ag laghdú ar a neart.*
was PROG lessening on his strength
'His strength was waning.'

(McCloskey 2012:(37))

This obviously contrasts with the subject in (30) which is not marked by any preposition, and subsequently moves to the edge of the progressive layer. This suggests therefore that the raising of the subject depicted in (30) is motivated by the subject's need to check/receive Case elsewhere in the structural hierarchy. The reason why it raises to the edge of the progressive layer in particular I assume to be because this position provides an escape hatch out of the clause-internal Phase, thereby allowing the subject to check Case in the higher phasal domain, akin to the movement of the associate in English existentials discussed in chapter 6: both Irish subjects and English associates raise to the edge of the clause-internal Phase so as to receive Case in the higher phasal domain.¹⁴ Therefore, if the subject raises to the

¹⁴ As the discussion in chapter 6 highlighted, however, the story is not quite so simple as this, since A-movement to the Phase Edge is not necessarily required under the PIC₂. I argued there however that if a subject/associate can raise to the Phase Edge, it does so, as this maximises the

edge of the progressive layer in such instances, we are led to the conclusion that progressive aspect must constitute the clause-internal Phase in Irish.¹⁵

7.3.1.2.2 A'-movement through the progressive layer

McCloskey (2012) further argues that it is not only A-movement that proceeds via the progressive aspectual layer in Irish, but also A'-movement. He observes that the progressive particle is strangely affected when the direct object of a progressive verb undergoes A'-movement, in that it appears in the lenited form *a*. This particular form has been analysed by Clements et al. (1983) as a *wh*-form of the progressive particle:

- (33) a. Céard a cheapann tú atá mé a dhéanamh_ istigh anseo?
 what C_t think.PRES you C_t-be I PROG_{wh} doing t_{wh} in here
 'What do you think I'm doing in here?'
- b. an rud deas a chonaic mise m'athair a chur _
 the thing nice C_t saw I my-father PROG_{wh} putting t_{wh}
 faoin tuí inné
 under-the straw yesterday
 'the pretty thing that I saw my father hide under the straw yesterday.'
- c. Déistean a bhíodh scéalta unafáis na meán a
 disgust C_t be.PAST.HAB stories horror.GEN the media PROG_{wh}
 chur _ air.
 putting t_{wh} on-him
 'it was disgust that the media's horror stories were causing him.'
- d. ag dúil le mise a oiread oibre a dhéanamh agus a bhí
 PROG expecting with me as-much work.GEN do[-FIN] as C_t was
 m'athair a dhéanamh _
 my-father PROG_{wh} doing t_{wh}
 'expecting me to do as much work as may father was doing.'
- e. diabhal cianóg a bhí sé a fháil _
 devil farthing C_t was he PROG_{wh} getting t_{wh}
 'not a damn farthing was he getting.'

(McCloskey 2012:(40))

range of potential probes for the subject. This can equally be applied to subjects in Irish. For ease of exposition, I will not refer to this technicality in the main body of the text.

¹⁵ Observe that the subject in (29) need not raise beyond its base position of Spec-vP because, in the absence of progressive aspect, vP projects the clause-internal Phase. Therefore, the subject is already on the Phase Edge and so can already receive Case from the higher phasal domain without having to raise further.

Given the lack of any standardly assumed syntactic relationship between these two disparate elements, McCloskey (2012) supposes that the only way in which a *wh*-object could possibly influence the syntactic form of the progressive particle would be for the *wh*-object to proceed through the progressive aspectual layer when undergoing A'-movement.

An argument in favour of this proposal is the fact that the *wh*-object noticeably has a similar effect of lenition on the C head of every CP phrase that it passes through, as seen in (33)a-e, above, and (34), below. That is, the complementiser, usually *go/gur*, is reduced to the form *a* when the *wh*-item has passed through its specifier. Since *wh*-objects have a similar effect on progressive particles, this suggests that they pass through the edge of the progressive layer as well.

Further supporting evidence also comes from the fact that this effect of the *wh*-object on the progressive particle is cyclic. That is, the *wh*-progressive marker may head each progressive phrase through which the *wh*-object has raised:

- (34) céard a tá tusa a cheapadh a tá mé a cheapadh_?
what C_t be.PRES you PROG_{wh} thinking C_t be.PRES I PROG_{wh} thinking t_{wh}
'What are you thinking that I'm thinking?'

(McCloskey 2012:(41))

This indicates that A'-movement proceeds successive cyclically through the progressive aspectual layers, clearly demonstrating edge effects at these boundaries. This all strongly suggests that the progressive aspectual layer in Irish also projects the clause internal Phase when present in the derivation.

To sum up: using VPE in European Portuguese and Taiwanese, and cyclic A and A'-movement in Irish as diagnostics, this section has shown that there is some cross-linguistic justification to the claim that progressive aspect demarcates the clause-internal Phase boundary when present in the derivation. In the following section, however, I discuss cross-linguistic counter-evidence to my claim in which the size of the clause-internal Phase in some languages appears to be larger or smaller than in English.

7.3.2 Counter-evidence

The data discussed so far implies that progressive aspect constitutes a part of the clause-internal Phase in languages as disparate as European Portuguese, Taiwanese and Irish. However, the evidence discussed in this section stops me short from claiming this to be a universal phenomenon. I again divide this section into two, the first dealing with ellipsis, the second with edge effects.

7.3.2.1 Ellipsis

With regards to VPE, there are a number of languages which appear to demonstrate ellipsis of perfect aspect, contrary to the English, EP and Taiwanese data. This is shown to be potentially the case for Welsh in section 7.3.2.1.1 and Dutch in section 7.3.2.1.2. Section 7.3.2.1.3 discusses data from Brazilian Portuguese which suggests that ellipsis targets a constituent smaller than progressive aspect.

7.3.2.1.1 VPE in Welsh

Rouveret (2012) argues that Welsh also exhibits VPE:

- (35) Mi geith Mair aros y nos a geith Sioned hefyd.
PRT can Mair stay the night and can Sioned too
'Mair can stay the night and Sioned can, too.'

(Rouveret 2012:(1))

Like Taiwanese, Welsh also realises aspectual forms with particles rather than inflections:

- (36) Mae Siôn wedi bod yn gweithio am awr rwan.
is Siôn PERF be PROG work around hour now
'Siôn has been working for an hour.'

(Rouveret 2012:(42))

However, unlike Taiwanese, the particle realising perfect aspect can be elided under Welsh VPE, suggesting that as much as the perfect aspectual projections are included in the ellipsis site:

- (37) Mai Siôn wedi bod yn gweithio am awr rwan...
is Siôn PERF be PROG work around hour now...
a. ...a mae Mair [~~wedi bod yn gweithio am awr~~], hefyd.
and is Mair PERF be PROG work around hour, too.
b. * ...a mae Mair wedi bod [~~yn gweithio am awr~~], hefyd.
and is Mair PERF be PROG work around hour, too.
'Siôn has been working for an hour now and Mair has been too.'

(Rouveret 2012:(44))

It should be observed, however, that the apparent ellipsis of the perfect particle in (37)a does not rule out a mismatch interpretation in which perfect aspect is altogether absent from the second conjunct. Furthermore, both the perfect particle and the progressive auxiliary have been stranded by ellipsis in (37)b, in which case it is not entirely clear which stranded element is causing the derivation to crash. Therefore the data above does not yet conclusively show that the perfect particle can be elided in Welsh. Nevertheless, if these issues could be overcome, and it is shown that the perfect particle can indeed be elided, this would suggest that perfect aspect in Welsh is included in the VPE ellipsis site and therefore in the clause-internal Phase.

7.3.2.1.2 Dutch Modal Complement Ellipsis

Whilst Dutch lacks VPE, it does demonstrate modal complement ellipsis (MCE) (Aelbrecht 2010) in which everything in the complement of the modal is elided:

- (38) Roos wil Jelle wel helpen, maar ze kan niet.
Roos wants Jelle PRT help but she can not
'Roos wants to help Jelle, but she can't.'

(Aelbrecht 2010:19)

Aelbrecht (2010) observes that in these environments, the non-finite perfect auxiliary is elided:

- (39) Q. Zal Charlotte tegen morgen haar kamer hebben opgeruimd?
will Charlotte by tomorrow her room have cleaned?
'Will Charlotte have cleaned her room by tomorrow?'
A: Ze zal wel moeten haar kamer ~~hebben~~ opgeruimd.
she will PRT must her room ~~have~~ cleaned.
'She'll have to have.'

Whilst I will not go into the obviously different licensing mechanisms involved in MCE compared to VPE, it is possible to analyse this difference in the size of the ellipsis site as being indicative that perfect aspect is also included in the clause-

internal Phase in Dutch. This is especially the case if one wishes to claim that ellipsis is universally constrained by Phases.^{16,17}

7.3.2.1.3 VPE in Brazilian Portuguese

Whilst the EP data has provided quite encouraging supporting evidence in favour of the claims made in this thesis, the data involving Brazilian Portuguese (BP) is quite the contrary.

Recall that with EP it was shown that verb-stranding VPE was possible in which the lexical verb, raising overtly for inflection in Portuguese, can move out of the ellipsis site and so is stranded by the elision. Given that progressive and passive participles are obligatorily deleted under VPE, however, I claimed VPE privileges the progressive layer in EP, following Cyrino & Matos (2002) and Matos (2001). Additionally, the perfect participle can be optionally elided in EP, which I attributed to optional raising out of the ellipsis site.

In contrast to EP, progressive and passive participles actually behave similarly to the perfect participle in BP: they are only optionally elided under VPE:

- (40) Ela está a ler livros às crianças mas
she is reading books to the children but
ele não está (**a ler**) [~~livros às crianças~~].
he not is reading books to the children.
'She is reading books to the children but he is not'.

(Cyrino & Matos 2002:(44))

¹⁶ See Aelbrecht (2010) however for an account which argues against a phasal analysis for MCE.

¹⁷ It is worth noting that perfect aspect is sometimes realised with a copula rather than *have*, in Dutch:

- (i) Ik ben naar de kapper geweest.
I am to the hairdresser's been.
'I have been to the hairdresser's.'

In section 7.2.1.2 I noted that the auxiliary selecting perfect aspect in English is not a copula. I claimed that this was indicative that perfect aspect does not comprise part of the predicate in English and therefore, by extension, the clause-internal Phase. If Dutch can realise perfect aspect with a copula, however, this might suggest that Dutch differs from English in including perfect aspect within the predicate, explaining why it is included within the clause-internal Phase.

- (41) O carro foi atribuído à Maria, mas
the car was given to the.Maria, but
os outros prémios não foram (**atribuídos**) [~~à Maria~~].
the other prizes not were given to Maria.
'The car was given to Maria, but the other prizes were not'.
(Cyrino & Matos 2002:(45))

- (42) Ela tem lido livros às crianças, mas
she has read books to the children, but
ele também tem (**lido**) [~~livros às crianças~~].
he too has read books to the children.
'She has read some books to the children, but he also has.'
(Cyrino & Matos 2002:(30)/(31))

Cyrino & Matos (2002) essentially analyse this as indicating that the identity of the ellipsis site in BP corresponds to a smaller unit of structure than in EP. Specifically, I am forced to conclude that only the projection of the lexical verb itself, VP, is targeted by VPE in BP and that the optional ellipsis of the progressive and passive participles, similar to the perfect participle, arises from optional raising of the lexical verb out of the ellipsis site.

Once again, if one wishes to maintain the notion that ellipsis is constrained by Phases, this would suggest that only VP itself constitutes the clause-internal Phase in BP and that the voice and progressive aspectual layers are external to this domain of structure.

This concludes discussion of the ellipsis data. In the following section I move on to further counter evidence for my claim involving edge effects.

7.3.2.2 Edge effects

In the first section I discuss edge effects in Belfast English (BelfE), before turning to similar effects for Icelandic in the second.

7.3.2.2.1 Edge effects in Belfast English

Recall from chapter 6 that transitive existential constructions in BelfE (Henry & Cottell 2007) were shown to be far more productive than in Standard English. Specifically, they permit perfect and infinitival forms of the lexical verb, even though the lexical verb generally does not raise for inflection in BelfE.

- (43) a. (BelfE:✓) There have lots of people **eaten** their lunch. (H&C:(4))
b. (BelfE:✓) There shouldn't anybody **say** that. (H&C:(2))

This was initially problematic for my proposal that the intermediate position of the associate intervenes for affixation between the lexical verb and higher inflections, therefore restricting the inflectional form of the verb to progressive and passive participles in such environments. However, the BelfE data was shown not to actually be an issue, on account of the freer distribution of the associate compared to Standard English:

- (44) a. There (*lots of students) should (lots of students) have (lots of students) been (lots of students) taking the classes.
(BelfE – Henry & Cottell 2007:(3))
b. There (*many students) may (*many students) have (*many students) been (many students) being paid to purposefully fail their exams.
(Standard English)

Given that the associate can optionally precede *been* and *have*, I analysed this, following Henry & Cottell (2007), as indicating that the associate can raise to the edge of the perfect and modal layers, therefore not necessarily intervening between the lexical verb and the affix for these types of inflections.

However, with regards to the restricted distribution of the associate in Standard English, which must precede the lexical verb and *being*, but no other verbal material, I assumed the associate surfaces only on the edge of the progressive aspectual layer. This I claimed to result from A-movement of the associate to the clause-internal Phase Edge, which I take to be vP_{prog} in English, where it is subsequently stranded by merger of expletive *there* in the canonical subject position. Therefore, the intermediate distribution of associates in existentials should be taken to indicate the edge of the clause-internal Phase. If this is indeed the case, then the freer distribution of the associate in BelfE is puzzling. If the associate can alternatively surface on the edge of the perfect and modal layers, this would suggest that such layers can also act as Phases themselves, either projecting their own Phases, as Henry & Cottell (2007) claim (similar to Butler 2004 and Deal 2009), or somehow optionally extending the clause-internal Phase boundary to include them.

In any case, the data and resulting analyses once again indicate that progressive aspect is not universally unique in projecting phasal properties, and that other layers within the middle field can also boast such properties.

7.3.2.2.2 Edge effects in Icelandic

It has been similarly noted by Sigurdsson (1991), Vikner (1990) and Jonas & Bobaljik (1993) that the associate in Icelandic TECs, whilst exhibiting a fairly restricted distribution similar to English, nevertheless occurs significantly higher in the functional hierarchy. Concretely, the associate follows the finite verb, but precedes all other verbal material:¹⁸

- (45) a. tad mundu einhverjir bátar hafa verid keyptir.
there would some boats have been bought
'There would have been some boats bought.'
- b. * tad mundu **hafa** einhverjir bátar verid keyptir.
there would have some boats been bought
- c. * tad mundu **hafa verid** einhverjir bátar keyptir.
there would have been some boats bought
(Sigurdsson 1991:353)

This data might indicate that the associate in fact surfaces on the edge of the modal layer, suggesting that the modal projections determine the clause-internal Phase in Icelandic rather than the progressive or perfect layers.

This concludes the discussion of the cross-linguistic counter-evidence to my claim that the progressive aspectual layer constitutes the clause-internal Phase when present. In the following section I summarise the data and discuss what possible conclusions can be made from the evidence at hand.

7.3.3 Summary, conclusions and further issues

If VPE and certain A and A'-movement effects can be taken as diagnostics for the clause-internal Phase, then the data reviewed in section 7.3 suggests that a similar Phase boundary exists at the edge of the progressive aspectual layer in languages as disparate as EP, Taiwanese and Irish. This indicates that the aspectual divide I have identified for Standard English is more than just a property specific to English. However, similar data reviewed in section 7.3.2 shows that such a divide does not exist in the same place in Welsh, Dutch, BP, BelfE and Icelandic, in which as much as

¹⁸ Note, however, that the associate can also optionally appear in post-verbal position:

(i) tad mundu hafa verid keyptir einhverjir bátar.
there would have been bought some boats

(Sigurdsson 1991:353)

the perfect or even modal layer, or conversely as little as VP, can be considered to constitute the clause-internal Phase. Therefore I do not claim that the aspectual divide I have identified for English is a universal property, rather it is a point of cross-linguistic variation in which the size of Phases, in particular the clause-internal Phase, can differ drastically between languages.

This conclusion obviously throws into question the claim I made to justify the aspectual divide for English: namely that the clause-internal Phase is defined in terms of predication and that progressive aspect, but not perfect aspect, constitutes part of the predicational layer. If this were the case, why would Taiwanese, EP and Irish also determine the predicational layer via similar means, but not Welsh, Dutch, BP, BelfE and Icelandic? Welsh and Dutch, for instance, would appear to include as much as perfect aspect within the predicational layer, Icelandic and BelfE as much as modality, and BP would exclude all forms of modality, aspect and voice from its predicational domain. Indeed, this state of affairs seems unlikely. If anything, the cut across the functional hierarchy of the middle field seems somewhat arbitrary at present. Of course, it may very well be that there are other forces at work which are responsible for determining this divide cross-linguistically, but exactly what these determining factors are is a source for further research. Before such inquiries can be undertaken, however, we must first establish, through thorough empirical investigation, exactly where the clause-internal Phase boundary lies cross-linguistically. Once a more general picture has been acquired of how the functional hierarchy is divided across the languages of the world, only then can we begin to properly understand the reason behind such divides.

Further influencing factors should not be ruled out either when considering the cross-linguistic positioning of the clause-internal Phase boundary. Operations such as Phase sliding and Phase extension (Den Dikken 2007; Gallego 2010) may come into effect in certain languages, in which movement of the Phase Head extends the size of the phasal domain. Van Craenenbroeck & van Koppen (2012) have also claimed that Phases in certain contexts can be voided and are therefore not Spelled Out independently. These various mechanisms may serve to further mask the identity of the clause-internal Phase in various languages, thus making the task of identifying the Phase all the more challenging.

There is also the question of what diagnostics should be used to distinguish the Phase. In this thesis I have employed existential constructions, idioms, selectional restrictions and various facts involving VPE and VP fronting phenomena to identify the clause-internal Phase in English, but can the same diagnostics be applied cross-linguistically? Moreover, what tests can be applied beyond the clause-internal Phase, that is, to identify the constituents corresponding to the clausal Phase, or the DP, PP, AdjP and AdvP Phases? In the theoretical assumptions I have adopted it is implied that existential constructions, idioms, ellipsis and phrasal movement should all provide universal diagnostics for identifying Phases in general. But consider, for

instance, the various forms of ellipsis that are on offer: VPE, pseudo-gapping, BE *do*, MCE, sluicing, stripping, slurping, gapping, comparative deletion, null complement anaphora, and NP ellipsis, to name some of the more common types. Obviously there is much debate as to which of these types of ellipsis are indeed cases of ellipsis, and which are susceptible to pro-form analyses, but regardless of this, the question is raised: are all of these forms of ellipsis really constrained by Phases? It may very well be the case that each language must be judged on its own terms, with its own separate set of diagnostics, in order to establish where the phasal boundaries lie.

It seems, however, from the data reviewed in this section and the preceding chapters, that Phases are surely context sensitive and variable across languages. This has indeed been shown to be the case for at least the clause-internal Phase in this thesis, and has equally been argued by Bošković (*to appear a,b*) to be true for DP and PP phases. This is something which Phase theory, as it currently stands, is unable to capture. A rigid system in which v° and C° exclusively act as the Phase Heads of the clausal spine needs to be reassessed to make way for more flexible systems in which the Phase boundaries can shift and adapt dependent upon the material that is present. This is something that the current thesis, along with the proponents of dynamic Phases in general, has sought to address. I conclude that something like the variable Phase approach posited in this thesis is needed to capture the shifting identity of Phases cross-linguistically.

This concludes discussion of the theoretical and cross-linguistic implications of my research. In the final chapter I summarise and conclude this thesis.

8

Conclusion

This thesis has sought to identify the location of the clause-internal Phase boundary in light of more enriched structures. Rather than considering the identity of the clause-internal Phase exclusively within a minimal CP>TP>vP>VP environment, as is the tradition of the Minimalist Program, I have instead explored the size of this constituent in the context of a more elaborate functional hierarchy in which aspect and modality exert their influence on the clause.

Careful consideration of the data has shown that there is a structural divide between progressive and perfect aspect, in which progressive aspect patterns more with the voice layer and the lexical verb across a variety of empirical phenomena, whilst perfect aspect does not exhibit such behaviour, and instead patterns more with modality and Tense.

This aspectual divide was quite clearly evidenced by the idiosyncratic behaviour of *being* under VPE, fronting phenomena and existential constructions. Assuming this auxiliary raises into the progressive aspectual layer for inflection, the fact that it is so notably affected by the aforementioned phenomena suggests that they all uniquely privilege a domain of structure that includes the progressive projections, but no functional layers beyond that. Further evidence involving idioms, inflectional mismatch data in VPE and VPF, and certain selectional restrictions, moved beyond auxiliary verbs to show that the unique behaviour of progressive aspect was a general property of the progressive aspectual layer itself, and not simply of the auxiliary *being*.

These observations have led me to claim that progressive aspect, when present in the underlying derivation, constitutes part of the clause-internal Phase together with voice and the lexical verb. Perfect aspect, on the other hand, is excluded from the clause-internal Phase and in fact constitutes part of the higher clausal Phase along with modals, Tense and C^o, when it is present in the derivation.

Regarding the precise identity of the clause-internal Phase, I claim that vP does not rigidly project the Phase, counter to traditional assumptions, and that the

topmost projection of the progressive aspectual layer, namely vP_{prog} , delineates the Phase when present. When progressive aspect is absent from the derivation, however, vP constitutes the Phase. This calls for a variable Phase approach in which the boundary of the Phase can extend upwards depending on what material is present in the structure. Since the phasal boundary is no longer fixed, this implies that the clause-internal Phase could also shrink in size. I claimed this to be the case in unaccusative constructions in which vP and VoiceP are absent, in which case VP acts as the Phase.¹

In order to allow for a variable, context sensitive Phase boundary, I claimed that Phases are indeed determined by their Sub-Numerations, but that completion of the Phase is not dependent upon the Merger of a particular Phase Head. Rather, the Phase is projected by the last item to be merged from the Sub-Numeration, irrespective of what that item is. This rule is formalised as follows:

- (1) a. Phases are determined by Sub-Numerations.
- b. The last item from a Sub-Numeration to be Merged into the workspace projects the Phase, irrespective of what that item is.

I claim that progressive aspect, but not perfect aspect, is contained within the first Sub-Numeration of the clause, i.e. that which determines the initial Phase. The rule above implies that progressive aspect, since it is merged later than v° , would project the Phase when present in the derivation. In the absence of progressive aspect, the task of projecting the clause-internal Phase falls to whatever other item is last Merged from the Sub-Numeration, which would be v° in active and passive constructions, and V° in unaccusatives.

The empirical arguments that have been presented throughout this thesis in favour of there being a structural divide between perfect and progressive aspect have largely been restricted to Standard English. As such my claim as to the existence of a phasal boundary between these two aspectual layers is particular to English. When similar diagnostics for the identity of the clause-internal Phase were applied cross-linguistically it was observed that, whilst some languages may indeed exploit a similar division in the functional hierarchy to English, this split is by no means a universal property. Many languages, it seems, are able to locate the dividing line at significantly higher or lower positions on the structural hierarchy of the middle field. This has led me to conclude that the size of the clause-internal Phase is

¹ Unless of course progressive aspect is present, in which case vP_{prog} once again projects the Phase.

a point of cross-linguistic variation. The where's, why's and how's of this latter point I leave open to future research.

At the very least, however, this dissertation has set out to demonstrate the uniqueness of progressive aspect. That is, in English, there appears to be a split in the structural hierarchy in which progressive aspect, and everything below it, can be considered a discrete unit of structure, separate from perfect aspect and all projections beyond that. Even if one would rather not define this split in terms of phases, I have hopefully at least shown this aspectual divide in English to be genuine.

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