Multidominance, ellipsis, and quantifier scope

Published by
LOT
Trans 10
3512 JK Utrecht
The Netherlands

phone: +31 30 253 6006

e-mail: lot@uu.nl
http://www.lotschool.nl

Cover illustration: *Volts no10* by Olivier Du Tré

ISBN: 978-94-6093-086-7
NUR 616

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Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 28 juni 2012
klokke 11.15 uur

door

Tanja Maria Hugo Temmerman

geboren te Aalst, België
in 1985

Promotiecommissie

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You can’t win until you’re not afraid to lose.
– Jon Bon Jovi

voor mijn grootouders

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ACKNOWLEDGMENTS

No duty is more urgent than that of returning thanks.
– J. Allen

I feel very lucky to have had the opportunity to spend more than four years learning, teaching, and travelling. Being a PhD candidate has enriched me both academically and personally. I am grateful to everyone who played a part in making this experience a truly memorable one.

First and foremost, I warmly thank the two people that deserve my gratitude most. Although I cannot mention their names here according to the Leiden tradition, I want to make sure they know how much I appreciate their encouragement, advice, guidance, and support. They have been my teachers, my highly critical reviewers, my mentors. It has been a pleasure and privilege working with them. I am certain that I would not be where I am today if it wasn't for them.

I would like to thank Kyle Johnson, Anikó Lipták, and Andrés Saab for reading and approving the manuscript, and for the valuable comments and suggestions they provided. I am also grateful to them for taking the time to discuss my work (whether it made it into this dissertation or not) or linguistics in general at several occasions during the past years. In the same respect, I would like to thank Lobke Aelbrecht, Sjef Barbiers, Eefje Boef, Hans Broekhuis, Leston Buell, Lisa Cheng, Guglielmo Cinque, Norbert Corver, Roberta D'Alessandro, Marijke De Belder, Karen De Clercq, Marcel den Dikken, Jenny Doetjes, James Griffiths, Kleanthes Grohmann, Bettina Gruber, Liliane Haegeman, Dany Jaspers, Marjo van Koppen, Richard Larson, Jason Merchant, Martin Salzmann, Erik Schoorlemmer, Balázs Surányi, Peter Svenonius, Gary Thoms, Heimir Freyr Vidarsson, Guido Vanden Wyngaerd, and Jan-Wouter Zwart. This dissertation and my work in general have benefited greatly from the input of the aforementioned people. Parts of this dissertation were presented at NELS 41 at the University of Pennsylvania in October 2010, the Syntax Circle at Leiden University in June 2011 and the Quirky Ellipsis Workshop at the University of Groningen in November 2011. I am thankful to the audiences of these conferences and workshops for their useful comments and critical questions.

This dissertation could not have been written without the help of native speakers of English. I owe a great debt to Leston Buell, James Griffiths, Jeremy Hartman, Will Harwood, Kyle Johnson, Allison Kirk, Jason Merchant, Rachel Nye, Gary Thoms, and Reiko Vermeulen. I would like to thank them for their patience in filling out numerous lengthy questionnaires and answering all my questions.

During my time as a PhD candidate, I have had the privilege to work in several departments at various universities. Spending time in these different environments and with the wonderful colleagues I met there contributed immensely to my development as a linguist, researcher, and teacher.

My first and last home was LUCL. Thanks to Gea Hakker, Alice Middag, Merel van Wijk, and Simone Heidt for helping me out quickly and efficiently with many practical issues. I would like to thank my (former) fellow LUCL PhD candidates for making me feel at home in the Netherlands, for the nice coffee breaks and lunches, especially at the early stages of my PhD: Enrico Boone, Camelia Constantinescu, Stella Gryllia, Margarita Gulian, Sita ter Haar, Annemiek Hammer, Pepijn Hendriks, Allison Kirk, Kathrin Linke, Hilke Reckman, Káča Součková, Marijn van 't Veer, Annemie Verbist, Rebecca Voll, Jenneke van der Wal, and Jurriaan Witteman. Thanks to Maarten van Leeuwen and Suzanne Fagel for always having their office door open for me and especially for the great evening in San Francisco in the summer of 2009. Special thanks go to Erik Schoorlemmer and Nana Kusuma for being dear colleagues and friends: I hope we will continue our visits across the Dutch-Belgian border for many years to come.

I was given the opportunity to gain teaching experience at the English department of Leiden University and later on at the Dutch department of the Facultés Universitaires Saint-Louis in Brussels. I am grateful to my colleagues there for the excellent cooperation: Bert Botma, Marion Elenbaas, Colin Ewen, Martina Noteboom, and Thijs Porck in Leiden and Sabine De Knop and Julien Perrez at FUSL.

Last but not least, my deepest thanks to CRISSP (the Center for Research in Syntax, Semantics, and Phonology) at the University-College Brussels for providing a splendid, stimulating working environment. Marijke De Belder, Adrienn Jánosi, Dany Jaspers, Koen Roelandt, Mansour Shabani, Jeroen van Craenenbroeck, and Guido Vanden Wyngaerd: it was a real pleasure to work with you and to share many social occasions. I also want to thank the CERES-members Elke Brems, Brecht de Groote, Tom Toremans, and Walter Verschueren for the enjoyable moments I had with them in the office.

I profoundly appreciate the opportunities I've been given in the course of my PhD to attend LOT schools, OWLi '08 in Barcelona, and numerous interesting conferences and workshops. Travelling, discovering new cities, and meeting interesting and talented people is without any doubt one of the best parts of being a linguist. It is impossible to mention everyone, but I feel lucky to have shared these moments with Lobke Aelbrecht, Eefje Boef, Guro Busterud, Lieven Danckaert, Karen De Clercq, Bettina Gruber, Will Harwood, Herman Heringa, Huib Kranendonk, Marlies Kluck, Marika Lekakou, Jason Merchant, Rachel Nye, Mari Nygård, Dennis Ott, Radek Šimík, Gary Thoms, Barbara Tomaszewicz, and Heimir Freyr Vidarsson. I am sincerely grateful to Amélie Rocquet for always being there with kind words of support and advise. A very special thanks to Marijke De Belder, Ankelien Schippers, and Martin Salzmann, my linguistic partners in crime with whom I spent many hours discussing life in restaurants and bars around the world (and even on a ferris wheel). I am delighted that Marijke and Ankelien have accepted to be my *paranimfen* at the defense. In addition, I hereby also would like to thank *anyone* whom I might have forgotten to mention in the previous paragraphs.

A special mention goes to my two co-authors. I have learned tremendously from brainstorming, discussing, and disagreeing before agreeing with them. Although they are very different people, I truly appreciated working together with both of them and I am thankful for the very fruitful cooperation. I enjoyed their company in the office, on skype, and at the conferences we attended together. I can only hope we will collaborate again at some point in the future.

I would like to thank the non-linguists in my life, who help me see that being a linguist is only one part of me. Most of them I have known since childhood or for at least ten years, so I feel safe to say they are keepers.

First of all, thanks to my fellow *Oilsjteneers/Iendrachtsupporters/carnavalisten* (you know who you are) for all the fun moments we have shared throughout the years in our hometown. Always remember: *weir doeng voesj!*

Thanks to Guy and *De legen bokal* for reminding me that one never knows enough, for the competitive yet amusing evenings and for lengthy conversations at unpredictable moments. Raf, *bedankt voor de muziek*. You have always believed in me, and that means a lot to me. Iwein, thanks for being there at the important moments, for being upfront and critical with me, and for your support and confidence.

I am thankful to the friends with whom I spent many hours at the dinner table ('*komen eten*' & *gaan eten*), who took me on weekend getaways, and who let me rediscover board games. Therefore, thanks to Vos (Koen) & Vanessa, Jeroen & Marijke, Lies & Thomas, and Lore & Mike. I am especially grateful for the close friendship and the tremendous support of *de duifjes* throughout the years. It is a real pleasure and blessing when someone takes you for who you are and you never have to worry about what you can or cannot say. Finally, many many thanks go to Joachim and Kelly, probably my 'oldest' friends. I am very happy that our friendship has proven strong throughout the years. I want to thank you guys for your company at all kinds of occasions, for the laughter and the long conversations.

Koen, thank you for your support, encouragement, and patience, for taking care of me, for putting things in perspective, and for making sure I got out of the house once in a while in the last months. It is wonderful sharing our love for concerts, wining and dining, and travel. For being at my side and much more, thank you.

My family has always encouraged me to work hard and has been supportive of my PhD-dreams, even if that meant that I had to move relatively far away from my hometown. I want to thank them for being understanding and for their unconditional love. Thanks to my brother Hans and aunties Nelly and Natie for the many fun moments we had at several gigs. A special thanks to my parents, Frank and Sandra, not only for all of the aforementioned, but also for being friends rather than parents. We have shared numerous hours in front of a television screen – watching cycling races – and in restaurants and bars all over Europe. I hope we will continue our regular visits and travels in the future.

This dissertation is dedicated to my grandparents and therefore, my final words – in Dutch – go to them. *Oma Maria, het doet me veel pijn dat je er niet meer bent om het einde van mijn reis met me te delen. Ik mis je. Oma's Maria en Lisette, pepe Hugo en opa Alex, bedankt voor jullie begrip en steun. Het kleine meisje van toen is geworden wie ze nu is dankzij jullie aandacht en onvoorwaardelijke liefde. Daarom is dit boek voor jullie.*

CHAPTER 1

INTRODUCTION

1 Empirical domain and theoretical scope

This dissertation provides a novel perspective on the interaction between quantifier scope and ellipsis. On the empirical side, it investigates the scopal behavior of English negative indefinites, modals, and quantified phrases in ellipsis.

Firstly, the present dissertation investigates previously undiscussed data concerning the scope possibilities of negative indefinites in ellipsis. One of the crucial observations is that a negative indefinite in object position cannot scope out of a verbal ellipsis site (for instance, above a modal). Consider the contrast in (1)-(2):

(1) Quentin Tarantino can offer no help. (¬ > *can*, % *can* > ¬)

(2) Q: Who can offer no help?
A: % Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. (* ¬ > *can*, % *can* > ¬)

While the negative indefinite can either scope above or below the modal *can* in a non-elliptical clause (cf. (1)), it cannot scope over the modal if it is contained in a verbal ellipsis site (cf. (2)).

Although negative indefinites and quantificational DPs are often considered two sides of the same coin, their scopal behavior in ellipsis seems to indicate otherwise. On the basis of data from the literature and new observations, it is shown that Quantifier Raising (QR) of a quantificational object (for instance, across a modal) can escape a verbal ellipsis site. Consider the sentences in (3) and (4):

(3) [Suppose someone wants to give you a present, gives you a list, and says:]
You can order every item on the list.

Reading 1: The person is very generous; you are allowed to order all items on the list. (*can* > ∀)

Reading 2: You will receive a present, but the present has to be one of the items on the list. For every item that is on the list, though, you are allowed to choose it. That is, you are allowed to choose whatever item you like from the list.
(∀ > *can*)

(4) [Suppose someone wants to give you and John a present, gives you a list, and says:]
You can order every item on the list and John can too.

To the extent that the inverse scope reading (∀ > *can*) is available in the non-elliptical sentence in (3) for my informants, it is also available in the elliptical counterpart in (4). As this inverse scope is the result of an object QP undergoing QR to a position above the modal, this means that QR of the object QP is able to escape a verbal ellipsis site (to a position above the licensing modal).

This dissertation investigates these scopal patterns in ellipsis, most of which have gone hitherto unnoticed. The primary empirical goal of this dissertation is to answer the two main research questions in (5):

(5) a. Why does ellipsis block high scope of object negative indefinites?
b. Why is QR of a quantified object out of an ellipsis site allowed?

The research question in (5)a also raises the following additional research questions, which will be addressed in this dissertation:

(6) a. If verbal ellipsis is licensed by a modal, do negative indefinites always show the same scopal possibilities when this modal is deontic, epistemic, or dynamic? If so/not, why (not)?
b. Is it possible for a negative polarity item *any* to antecede the ellipsis of a negative indefinite? If so/not, why (not)?

This dissertation presents a unified account of why negative indefinites in object positions cannot scope out of a verbal ellipsis site, while quantificational objects can undergo QR out of a verbal ellipsis site.

It is argued that both English negative indefinites and quantificational phrases decompose into two independent elements. Their formation is the result of a morphological process, which I refer to as Fusion Under Adjacency (FUA). An analysis of English negative indefinites that involves decomposition and fusion might seem surprising at first sight, as the two components of a negative indefinite (sentential negation and an indefinite determiner) are not obviously string adjacent. I propose that the locality/adjacency required for fusion of the negation and the indefinite is established under remerge (multidominance), in combination with cyclic Spell-Out/linearization. Similarly, two components of a quantified determiner – a quantificational operator and the determiner heading its restriction – fuse under adjacency in a multidominant, cyclic model of the grammar.

The main claim of this dissertation is that the PF-process of ellipsis can bleed the formation of negative indefinites. I consider ellipsis to be PF-phenomenon that involves the non-pronunciation of terminal elements and the deletion of linearization statements. This dissertation argues that, given that ellipsis is a PF-process, it can block the morphological process of Fusion Under Adjacency (at PF) in the formation of a negative indefinite. I take (the licensing of) ellipsis to occur in the course of the derivation: an ellipsis site is shipped off to PF as soon as the licensing head is merged. I propose that the timing of FUA plays a crucial role: it has to happen before the ellipsis licensor merges. If FUA does not take place before merger of the licensor, the formation of the negative indefinite is bled. The lack of a blocking effect of ellipsis in QR (which also involves FUA) is accounted for by the fact that QR always targets the vP-periphery. Because QR is always short, FUA always takes place before the ellipsis licensor is merged, explaining why ellipsis never blocks QR.

As such, in addition to providing an account for the scopal behavior of quantificational elements in ellipsis, this dissertation also sheds new light on the syntax-to-PF mapping. The theoretical aim of the present dissertation is to contribute to our understanding of the transfer of multidominant phrase markers – built in narrow syntax – to PF for (non-) pronunciation in a model that assumes cyclic Spell-Out/linearization and derivational ellipsis (i.e. a cyclic view on the syntax-to-PF-mapping).

2 Outline of the dissertation

Chapter 2
Chapter two establishes the theoretical foundations of the dissertation. It is argued that a syntactic object can be remerged, which results in this object having two mothers (i.e. multidominance). This chapter also discusses how multidominant structures are linearized in a cyclic Spell-Out/linearization model of the grammar. Finally, it introduces the PF-phenomenon of ellipsis, (the licensing of) which is considered to take place in the course of the derivation.

Chapter 3
After having established the theoretical base, this dissertation moves on to a detailed study of the scopal behavior of English negative indefinites in clausal and verbal ellipsis. Chapter three first introduces two empirical generalizations, establishing that verbal ellipsis blocks high-scoping negative indefinites (for instance, scoping above a deontic modal), while clausal ellipsis does not. This chapter presents an analysis of negative indefinites and their interaction with verbal and clausal ellipsis in the multidominant, cyclic framework developed in chapter two. It is argued that English negative indefinites consist of two subparts, sentential negation and an indefinite determiner, which undergo Fusion Under Adjacency. The PF-process of ellipsis, (the marking of) which occurs in the course of the derivation, can bleed this morphological process.

Chapter 4
Chapter four presents an extensive empirical overview of the interaction between English epistemic and dynamic modals, negative indefinites, and verbal ellipsis. It is shown that only a narrow scope reading is available for an object negative indefinite in verbal ellipsis licensed by an epistemic or dynamic modal (irrespective of its scopal possibilities in a non-elliptical clause), confirming the findings of chapter three. The account developed in chapter three straightforwardly carries over to verbal ellipsis licensed by epistemic and dynamic modals.

When an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis, however, the negative indefinite may not only have a narrow scope reading: it may also scope high, above the epistemic modal. Similarly, when a dynamic modal does not license ellipsis, but is part of a verbal ellipsis site licensed by *do,* all scopal possibilities become available. In this chapter, it will be argued that the former observation is accounted for if the epistemic modal and the aspectual auxiliary co-license verbal ellipsis. This co-licensing only occurs after movement of the epistemic modal. The latter observation is shown to follow from the account developed in chapter three if the dynamic modals under scrutiny involve a biclausal structure.

Chapter 5

Chapter five first presents data showing that Quantifier Raising can escape a verbal ellipsis site in English. This chapter provides an analysis of this observation in the cyclic, multidominant framework developed in this dissertation. QR is proposed to be the result of remerge of the NP-part of a quantificational phrase and Fusion between two adjacent heads, the quantificational operator and the head of its restriction. This chapter argues that verbal ellipsis does not block QR because QR always targets vP, so that Fusion Under Adjacency always occurs before the ellipsis licensing head is merged.

Chapter 6

The final chapter summarizes the dissertation, concludes and formulates suggestions for further research.

CHAPTER 2

THE FRAMEWORK

1 Introduction

This dissertation adopts a generative perspective on language and assumes a derivational model of the grammar. In particular, it is to be situated in the Minimalist Program (Chomsky 1993, 1995, 2000, 2001). In this modular view of the language faculty, syntactic structures are derived in the computational system C_{HL} via the primitive, recursive structure-building operation Merge. The output of the syntactic computation is sent off to the semantic and phonological component (also named the LF- and PF-interface, respectively). This dissertation focuses primarily on the transfer (Spell-Out) of the syntactic object to PF for pronunciation. More specifically, it takes a closer look at how (multidominant) syntactic structures are linearized into a string. To this end, a cyclic view of the syntax-to-PF mapping and linearization is adopted. The derivation only sends subparts to PF (to be precise, phasal complements and complex left branches). Crucially, it is argued that a fixed linear order once established cannot be changed later on in the derivation. In section 2 of this chapter, I argue that a syntactic object can be 'remerged', which results in this object having two mothers. That is, multidominant phrase markers exist. In section 3, I discuss the specifics of how the linearization algorithm produces consistent linearization statements for multidominant structures in a cyclic Spell-Out/linearization model of the grammar.

This dissertation crucially also centers on the interaction between multidominant phrase markers, cyclic Spell-Out/linearization and ellipsis. Ellipsis is a PF-phenomenon that involves the non-pronunciation of terminal elements and the deletion of linearization statements. I take ellipsis to take place in the course of the derivation, conforming to the cyclic view of the syntax-to-PF mapping. Section 4 discusses the phenomenon of ellipsis.

2 Merge, remerge, and multidominance

In the Minimalist Program (Chomsky 1993, 1995 *et seq.*), it is often assumed that a syntactic structure is constructed out of a numeration (resource, (sub)array, …) N of terminal elements. On the basis of N, the computational system C_{HL} computes a derivation, which will be handed over to the PF- and LF-components. Chomsky (1995) takes the (bottom-up) construction of phrase markers to arise from the primitive structure building operation Merge.[1] Merge is a simple, recursive, grouping operation. Syntactic derivations start out with a collection of terminals to which Merge iteratively applies, until one single phrase marker is constructed from those terminals. Merge combines two syntactic objects α and β, and yields a new, more complex, syntactic object. This new complex object is a set containing the two elements α and β, i.e. {α, β}.[2] It is important to note that Merge not only applies to terminal elements; it can also apply to a complex syntactic object which is itself the output/result of Merge. That is, Merge is recursive and gives rise to syntactic hierarchy. The definition of Merge is given in the two representations in (1):

(1) a. Merge (α, β): {δ,{α, β}}[3]

b. Merge (α, β): δ or δ (i.e. linear order not determined)

$$\begin{array}{c} \delta \\ \diagup\;\diagdown \\ \alpha \quad \beta \end{array} \qquad \text{or} \qquad \begin{array}{c} \delta \\ \diagup\;\diagdown \\ \beta \quad \alpha \end{array}$$

Note for (1) that the only constraint Merge imposes when producing phrase markers is binary branching. Merge does not specify linear order: "Just as the sound-meaning relation in the sign is both universal and arbitrary, being left unspecified by UG

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[1] The operation Merge belongs Chomsky's (2005) *first factor*, genetic endowment: Merge is given; it is not acquired. As noted by Krivochen (2011:22), "Merge is an operation that 'comes free', […] (a) it is computationally costless and (ii) it cannot be reduced or decomposed."

It has also been proposed that Merge is feature-driven, like all operations in C_{HL} (cf. Adger 2003; Pesetsky & Torrego 2006; Müller 2011). If this view is adopted, though, Merge does not 'come for free'. A feature on an element that conveys 'I am mergeable' justifies the operation. See also Krivochen (2011) for discussion.

[2] For arguments that not Set Merge (as presented here), but Pair Merge is the basic structure building operation, see Jaspers (1998), Langendoen (2003), Zwart (2009a, 2009b, 2011), and De Belder & van Craenenbroeck (2011). Here, I will stick to Set Merge, which is the standard technical implementation of Merge in present-day minimalism. However, my account is also compatible with an implementation of Merge as Pair Merge. See also Citko (2005:146, fn.2).

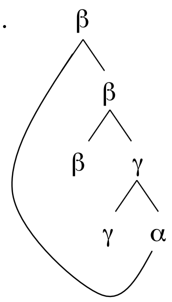
[3] δ is the label of the complex constituent. The value of δ depends on the properties of α and β: either α or β will function as the head of the newly formed constituent. For discussion of projection/labeling, see Chomsky (1995:244ff). See Collins (2002), however, who argues in favor of a label-free syntax (labels are not necessary).

[Universal Grammar], so the relation between the structures (sets of sets of signs) created by Merge and the actual instantiations of those signs, particularly on the PF side, is partially unspecified. [...] In creating sets, Merge does not determine linear order. So UG does not determine the order of elements -- this is subject to variation" (Holmberg & Roberts 2011:2). It is only in the PF-component of the grammar (cf. the linearization algorithm) that syntactic objects get mapped onto linear strings.

Chomsky (2001) distinguishes between two types of Merge: External Merge and Internal Merge. External Merge – called the 'canonical' type of Merge by Citko (2005:475) – takes two distinct, independent root syntactic objects and joins them into one (cf. (1)).[4] Internal Merge (cf. (2)), on the other hand, takes a (possibly complex) subpart of an existing root as one of the two objects and (re)merges it with that root. That is, Internal Merge applies to a syntactic object that has already been merged into one position in the structure, and (re)merges it into a second position. Internal Merge covers the phenomenon of what is traditionally called movement or displacement. As such, movement becomes an epiphenomenon of Merge.

(2) *Internal Merge*: Merge (α, β) when β contains α

e.g.

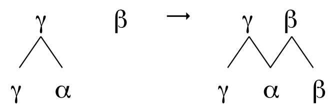


Citko (2005, 2011a) argues that the existence of External and Internal Merge predicts the existence of a third type, which she calls Parallel Merge. Parallel Merge combines the properties of External and Internal Merge. It "is like External Merge in that it involves two distinct rooted objects [...], but it is like Internal Merge in that it combines the two by taking a subpart of one of them" (Citko 2005:476). Similarly, de Vries (2005, 2007, 2009) notes that if 'familiar' Internal Merge is allowed, but the more 'unconventional' Parallel Merge is to be excluded, specific additional

[4] A root syntactic object is a syntactic object that is not dominated by any other syntactic object (see for instance Hornstein et al. 2005:62).

conditions would have to be formulated. In the same vein, van Riemsdijk (2006) argues that if we allow remerge, the application of Parallel Merge can only be excluded by stipulation. Therefore, we expect Parallel Merge to exist in natural language. Parallel Merge is illustrated in (3): α, a subpart of a complex syntactic object γ, is merged with an independent syntactic object β.

(3) *Parallel Merge*



[Citko 2005:476]

Both Internal Merge and Parallel Merge involve 'remerge', i.e. a syntactic object that has been merged before, is merged again. The result is a structure in which a single node (α in (2) and (3)) has two mothers, i.e. in multidominance.[5,6] In the former case, the result is a structure where one of the mothers dominates the other (α dominates β). In the latter case, the result is a multi-rooted structure. That is, in the former case, α and β form a single syntactic object, while they do not in the latter case (they are two independent syntactic objects that share a constituent). As noted by Wilder (2008), and also by Johnson (2009) and de Vries (2007), "two trees 'floating around' as in [(3)] is permissible at non-final stages of the derivation" (Wilder 2008:237). A multi-rooted construct like (3) cannot constitute the final stage of the derivation, as this would violate the Single Root Condition, cf. (4):

(4) *Single Root Condition*
A derivation converges only if (i) the Numeration is exhausted, and (ii) the output consists of a single syntactic object. [Wilder 2008:237]

Hence, a multi-rooted structure like (3) must ultimately be merged into a single syntactic object (for instance by merging γ and β) for reasons of convergence.[7]

Summarizing, there is only one structure-building operation: Merge. *External,*

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[5] Multidominance thus abandons the Single Mother Condition (Sampson 1975), see for instance Wilder (1999, 2008) for discussion.

[6] Internal Merge and Parallel Merge are called 'Internal Remerge' and 'External Remerge', respectively, by de Vries (2007, 2009). Gračanin-Yuksek (2007) takes about 'vertical sharing' and 'horizontal sharing', respectively.

[7] For de Vries (2007), a (temporary) multi-rooted structure needs to be merged into a single object before the structure gets linearized. I crucially diverge from this position in this dissertation (see section 3 of this chapter, section 3 and 4 of chapter 3, and section 3 of chapter 5).

Internal, and *Parallel Merge* are just labels referring to Merge selecting different input objects.[8,9,10]

(5) Merge (α, β) $\rightarrow$ γ constitutes
   a. *External Merge* iff α and β are independent roots before merger
   b. *Internal Merge* iff β is a root and α is included in β (or the other way around) before merger
   c. *Parallel Merge* iff β is included in some root δ, and α is an independent root (or the other way around) before merger

The next section deals with linearization of multidominant phrase markers in a cyclic Spell-Out/linearization model of the grammar.

3 Linearization and Order Preservation

In the Minimalist Program (Chomsky 1993, 1995 *et seq.*), the syntactic objects built by the computational system (narrow syntax, C_{HL}) are handed over (spelled out, transferred) to the phonological component (PF) for pronunciation.[11] A crucial requirement – "following by 'conceptual necessity' from the legibility conditions imposed at the PF interface if language is to be usable at all" (Richards 2004:10) – is that the terminals of a phrase marker are to be assigned a linear ordering (and

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[8] The summarizing overview in (5) is based on de Vries (2007:4).

[9] Apart from the Internal Merge theory of movement (see for instance Epstein et al. 1998 and Gärtner 1999, 2002), multidominant phrase markers have been used to account for various phenomena (such as right node raising, across-the-board WH-questions, coordinated WH-constructions, standard and transparent free relatives, parasitic gaps, parentheticals, sentence amalgamation, etc.). See de Vries (2007, 2009) and Citko (2011a) for an extensive overview.

[10] According to Citko (2005), there is another logical possibility: Parallel Merge that targets subparts of two distinct objects. She does "not see any conceptual reasons to exclude this possibility" (Citko 2005:146, fn.2). See also van Riemsdijk (2006). De Vries (2007), on the other hand, claims that if "α and β are selected as input for Merge, then α or β (or both) must be a root" (his *Root Condition,* de Vries 2007:11), thus excluding this option. As the cases of remerge discussed in this dissertation always involve a root syntactic object, this debate is not my primary concern. For the purposes of this dissertation, I therefore disregard this fourth option.

[11] I gloss over the issue whether the same principles and requirements apply to sign languages. Boeckx (2008:66, fn.2) notes that "the characterization of the syntax-PF interface in sign language studies [...] appears to be isomorphic with the one for spoken languages".

directionality). The question then arises how syntactic structure is mapped onto a linear order at the syntax-PF interface to obtain a legible, i.e. pronounceable, PF-representation. In this subsection, I start out from Kayne's (1994) Linear Correspondence Axiom and then follow Johnson's (2007) reinterpretation of the linearization algorithm to allow for multidominant structures.[12] I take the syntax-to-PF mapping and the linearization algorithm to apply cyclically, as the derivation sends the relevant subparts (phasal complements and complex left branches) to PF (cf. Epstein et al. 1998; Uriagereka 1999; Chomsky 2000 *et seq.*; Epstein & Seely 2002; Fox & Pesetsky 2003, 2004a,b, 2007; Sabbagh 2007). Crucially, linear 'shape' is to be preserved across a derivation: a linearization once fixed cannot be altered later on (cf. Fox & Pesetsky 2003, 2004a,b, 2007; Richards 2004; Johnson 2007; Sabbagh 2007; Engels 2011).

3.1 Kayne's (1994) Linear Correspondence Axiom

As noted by Uriagereka (1998, 1999), the objects created by Merge in narrow syntax are (at least) two-dimensional, whereas speech is one-dimensional. The two-dimensional trees sent to PF (and later to the perceptual-articulatory system) must therefore be mapped onto a one-dimensional phonological representation: they must be given a linear ordering.

In his 1994 monograph, Kayne argues that hierarchical phrase structure completely determines the linear order in which terminal elements (words) are pronounced. His theory is based on the notion of asymmetric c-command (Kayne 1994:4), the definition of which is given in (6).

(6) α asymmetrically c-commands β iff
α c-commands β, and β does not c-command α.

[12] I will not go into other proposals dealing with linearization of multidominant structures, as this would take me too far afield. As Citko (2011a) points out, there are basically four ways to resolve the issue of linearizing multidominant phrase markers: (i) abandon multidominance since it violates the LCA, (ii) abandon the LCA since it disallows multidominance, (iii) modify multidominant structures to make them compatible with the LCA, (iv) modify the LCA to make it compatible with multidominance. Johnson's (2007) proposal can be classified under solution (iv). For alternative proposals, see among others Citko (2005, 2011b), Bachrach & Katzir (2006), Fox & Pesetsky (2007), Gračanin-Yuksek (2007), de Vries (2007, 2009), Wilder (2008). See Citko (2011a) for an overview.

According to Kayne, linearization is sensitive to the asymmetric c-command relation. He proposes the *Linear Correspondence Axiom* (LCA), which maps asymmetric c-command onto a linear ordering of terminals (cf. Kayne 1994:5-6):

(7) *Linear Correspondence Axiom*

d(A) is the linear ordering of T, where

(i) A is the set of all ordered pairs of non-terminals ⟨X, Y⟩ in a given phrase marker P, such that X asymmetrically c-commands Y, and

(ii) T is the set of terminals in P

(iii) d is the non-terminal-to-terminal dominance relation[13]

More specifically, Kayne relates asymmetric c-command to precedence:

(8) Let X, Y be non-terminals and *x*, *y* terminals such that X dominates *x* and Y dominates *y*. Then if X asymmetrically c-commands Y, *x* precedes *y*.

[Kayne 1994:33]

Following (8), if the non-terminals X and Y (the former asymmetrically c-commanding the latter) contain more than one terminal, every terminal in X will precede every terminal in Y.

Note that Kayne's LCA is a formal constraint on the shape of phrase markers, i.e. a property of narrow syntax. Later proposals have limited the place of the LCA in the grammar. The LCA is recast as a PF-mapping strategy: it is a principle of the phonological component, operative only after Spell-Out, because of PF-demands (cf. Chomsky 1995:Ch.4; Uriagereka 1999; Richards 2004). For Kayne, a non-linearizable phrase marker is ill-formed, whereas for the other authors mentioned a non-linearizable phrase marker is ill-formed *only at PF*. Notions of linear ordering play no role in the narrow syntactic component of C_{HL}. I adopt the interpretation of LCA as an interface condition on PF representations.

As noted by Kayne (1994:4), a linear ordering has three defining properties, which he expresses as well-formedness conditions on his LCA. An ordering of

[13] The mapping of asymmetric c-command to linear order is mediated by the concept of *image*, cf. (i). The result of this is that the set of terminals that is the image of one non-terminal, X, is linearized with respect to the set of terminals in the image of another non-terminal, Y.

(i) a. d(X), the image of a non-terminal X, is the set of all terminals dominated by X.

b. d(⟨X, Y⟩), the image of an ordered pair of non-terminals ⟨X,Y⟩, is the set of all ordered pairs of terminals d(X) × d(Y).

terminal elements in a phrase marker is well-formed (linear) if and only if the conditions in (9) are met, where '$<$' stands for 'precedes':[14]

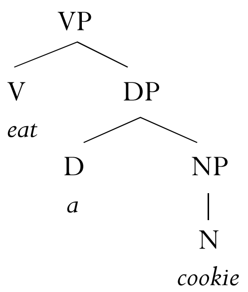
(9) *Well-formedness Conditions on Linearization*

For every distinct terminal x, y, and z in a phrase marker P,

a. either $x < y$ or $y < x$ ⇨ TOTALITY
b. not ($x < y$ and $y < x$) ⇨ ANTISYMMETRY
c. if $x < y$ and $y < z$, then $x < z$ ⇨ TRANSITIVITY

To see how the LCA system works in practice, consider the following example, with a head (V) and a phrasal complement (DP):

(10)



The values for A and d(A) for the phrase marker in (10) are as follows:

(11) a. $A = \{ \langle V, D\rangle, \langle V, NP\rangle, \langle V, N\rangle, \langle D, N\rangle \}$
b. $d(A) = \{ \langle V, D\rangle, \langle V, N\rangle, \langle D, N\rangle \}$

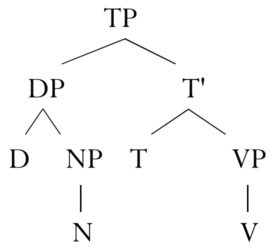
If the ordered pairs in (11)b are taken to represent precedence, this will yield the (expected) linear ordering V $<$ D $<$ N or *eat a cookie*. The ordering in (11)b conforms to the well-formedness conditions on linearization: it is total, antisymmetric and transitive.

As noted by Haumann (2007:45), "[w]hile head-complement relations are straightforwardly captured in terms of asymmetric c-command and the LCA, specifiers and adjuncts [...] appear to fall outside the system." The linearization of

[14] Wilder (2008) adds a fourth well-formedness condition, Irreflexivity (cf. also Stabler 1997 and Nunes & Uriagereka 2000). Irreflexivity requires that for every x and y, if $x < y$, it must be the case that $x \neq y$ (or, in short: not $x < x$) . I follow Wilder (2008:242) that an ordering is linear if and only if it does not violate Totality, Antisymmetry, Transitivity, and Irreflexivity.

subjects (specifiers) and adjuncts (adjoined phrases) – i.e. the linearization of one phrase with respect to another – is indeed problematic. For instance, in (12), the subject DP in [Spec,TP] asymmetrically c-commands the material dominated by T' and T' asymmetrically c-commands the material dominated by the subject DP in [Spec,TP].

(12)



This results in a linear ordering that violates antisymmetry, as shown in the d(A) in (13)b. The d(A) in (13)b contains, for instance, both the statements ⟨T, D⟩ and ⟨D, T⟩, which violates antisymmetry. Thus, the d(A) in (13)b fails to be a linear ordering of the terminals.

(13) a. A = { ⟨D, N⟩, ⟨DP, T⟩, ⟨DP, VP⟩, ⟨DP, V⟩, ⟨T', D⟩, ⟨T', NP⟩, ⟨T', N⟩, ⟨T, V⟩ }

b. d(A) = { ⟨D, N⟩, ⟨D, T⟩, ⟨N, T⟩, ⟨D, V⟩, ⟨N, V⟩, ⟨T, D⟩, ⟨T, N⟩, ⟨V, D⟩, ⟨V, N⟩, ⟨T, V⟩ }

In order to rescue the situation, Kayne (1994:16) has to propose a modification of c-command, complicating the definition by distinguishing between categories and segments (cf. also May 1985, Chomsky 1986). Kayne restricts c-command to categories; a segment cannot enter into a c-command relation.

(14) a. 'traditional' c-command:[15]
α c-commands β iff every γ that dominates α also dominates β, and neither α nor β dominates the other

b. Kaynean c-command:
α c-commands β iff α and β are categories and α excludes β and every category that dominates α dominates β[16]

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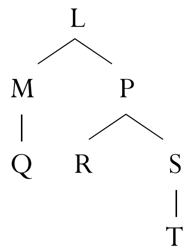
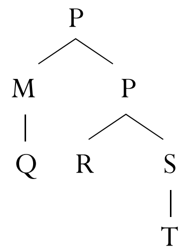
[15] First discussed and defined by Reinhart (1981).

Consider the structures in (15):

(15) a.



b.

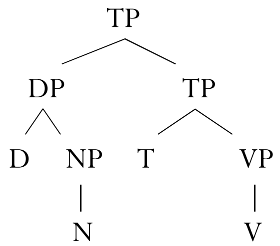


[Kayne 1994:15ff]

In (15)a, P is a category. P asymmetrically c-commands Q and the d(A) of (15)a will contain the pairs ⟨R, Q⟩, ⟨S, Q⟩, and ⟨T, Q⟩. In (15)b, on the other hand, the low P is a segment, not a category. Consequently, P does not asymmetrically c-command Q and the d(A) of (15)b will not contain the pairs ⟨R, Q⟩, ⟨S, Q⟩, and ⟨T, Q⟩.

For the structure in (12)', the result is the A and d(A) in (16), given Kaynean c-command. The linearization in (16)b is total, antisymmetric, and transitive.

(12)'



(16) a. $A = \{ \langle D, N\rangle, \langle DP, T\rangle, \langle DP, VP\rangle, \langle DP, V\rangle, \langle T, V\rangle \}$
b. $d(A) = \{ \langle D, N\rangle, \langle D, T\rangle, \langle N, T\rangle, \langle D, V\rangle, \langle N, V\rangle, \langle T, V\rangle \}$

This modification allows Kayne to ensure that the linearizations of subjects and adjoined phrases are LCA-compliant.[17] For more details, I refer the reader to the original 1994 monograph.

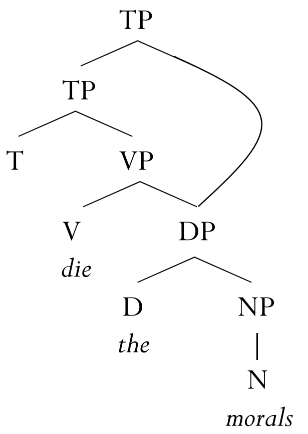
[16] A category α excludes β iff no segment of α dominates β.
α dominates β iff every segment of α contains β. [Kayne 1994:15ff]

[17] Crucial consequences of Kayne's system are (i) specifiers and adjuncts are no longer distinguished and (ii) multiple adjunction is impossible (that is, only one specifier/adjunct per head is allowed).

3.2 Johnson (2007): A modified LCA and multidominance

As noted by Johnson (2007, 2009), Kayne's LCA (including Kaynean c-command) does not allow for multidominance. The linearization algorithm that converts a (multidominant) syntactic structure into a linear string does not tolerate a terminal that both precedes and follows another terminal. Consider the phrase marker in (17), with the values for A and d(A) in (18). This phrase marker is a simplified multidominant representation illustrating Internal Merge (cf. section 2) of the subject of an unaccusative verb.

(17)



(18) a.

$$A = \left\{ \begin{array}{lllll} \langle D, N\rangle & \langle DP, TP\rangle & \langle T, V\rangle & \langle V, D\rangle & \langle D, N\rangle \\ & \langle DP, T\rangle & \langle T, DP\rangle & \langle V, NP\rangle & \\ & \langle DP, VP\rangle & \langle T, D\rangle & \langle V, N\rangle & \\ & \langle DP, V\rangle & \langle T, NP\rangle & & \\ & \langle DP, DP\rangle & \langle T, N\rangle & & \\ & \langle DP, D\rangle & & & \\ & \langle DP, NP\rangle & & & \\ & \langle DP, N\rangle & & & \end{array} \right\}$$

b.

$$
\mathrm{d(A)} = \left\{ \begin{array}{lllll}
\langle D, N\rangle & \langle D, T\rangle & \langle T, V\rangle & \langle V, D\rangle & \langle D, N\rangle \\
 & \langle D, V\rangle & \langle T, D\rangle & \langle V, N\rangle & \\
 & \langle D, D\rangle & \langle T, N\rangle & & \\
 & \langle D, N\rangle & & & \\
 & \langle N, T\rangle & & & \\
 & \langle N, V\rangle & & & \\
 & \langle N, D\rangle & & & \\
 & \langle N, N\rangle & & &
\end{array} \right\}
$$

Apart from ⟨D, D⟩ and ⟨N, N⟩ (reflexive statements, cf. footnote 14), the d(A) in (18)b contains several ordered pairs that violate antisymmetry (e.g. ⟨N, V⟩ and ⟨V, N⟩).[18] Kayne's LCA thus bans multidominant structures, as these do not result in well-formed (total, transitive, antisymmetric) linearization statements.[19]

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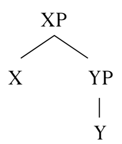
[18] Kayne's well-formedness conditions (cf. (9)) do not exclude reflexive statements. As Johnson (2007:8) puts it, they are "suspicious – but technically allowed". Wilder's (2008) Irreflexivity condition (cf. footnote 14) does prohibit them.

[19] When using (a version of) Kayne's LCA in a framework where Merge is the only structure-building operation, an imperfection arises for a head-complement structure like (i).

(i)



On the one hand, the Merge-based theory does not allow one to start a derivation with a phrase that is made up of one terminal, i.e. Merge simply cannot construct Y(P). On the other hand, the LCA depends on asymmetric c-command to convert hierarchical structure into linear order and can therefore never linearize the merger of two non-branching nodes. Therefore, it is impossible to linearize a head-complement structure with the LCA if the complement contains only one terminal, like in (i). Johnson (2007) and Zwart (2011) argue that the LCA might necessitate positing an empty position. That is, a complement like Y(P) does not consist of a single terminal. Instead, it contains an empty position, which combines with the head Y to form the phrase YP. For Johnson, this empty position is likely to be a phonetically null head. For Zwart, in this case Y merges with the empty set (see also De Belder & van Craenenbroeck 2011).

Another solution is proposed by Guimarães (2000), who admits non-branching projections to avoid symmetric c-command. Guimarães suggests that the language faculty allows *Self-Merge,* where a head X is merged with itself. Self-Merge creates the set {α, α}. Guimarães notes that the set {α, α} is identical to the set {α}, following the Extensionality Axiom of Set Theory (Partee et al. 1993). Allowing for non-branching structures avoids LCA violations. For a related proposal, see Kayne (2009).

In this dissertation, I take it to be possible for Merge to form a phrase made up of only one (visible) terminal (represented as in (i)).

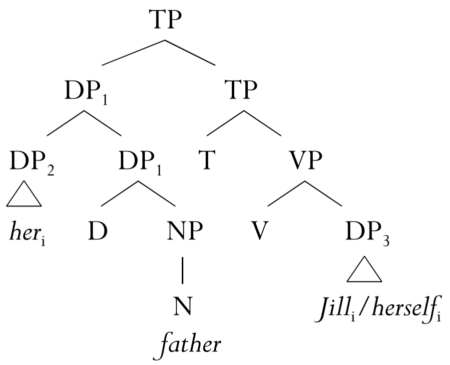
Johnson (2007) modifies Kayne's LCA to make it compatible with multidominant phrase markers. Johnson (2007) discusses several problems with the specifics of Kayne's (1994) LCA. For instance, the idea that the linearizations produced by Kayne's linearization algorithm are interpreted as precedence relations is merely a stipulation of the system. Second, a consequence of the modification of c-command in (14) is that it predicts that specifiers c-command out of their phrase. Johnson (2007:9) maintains that "[t]here are many cases where that seems to be wrong". He gives the examples in (19):

(19) [Johnson 2007:9, (27)]

a. Her$_i$ father likes Jill$_i$.

b. * Her$_i$ father likes herself$_i$.

(19)' [cf. Johnson 2007:9, (27)]



In (19)', there are no categories that dominate *her* (DP$_2$). Thus, "every category that dominates *her* also dominates *Jill* [in (19)'a]. Clearly, *her* also excludes *Jill*" (Johnson 2007:9). Given the Kaynean c-command definition in (14)b, it follows that *her* c-commands *Jill.* Johnson (2007:9) concludes that "[t]his should lead to a disjoint reference effect, but there is none. Similarly, *her* will c-command *herself* in [(19)b] and by doing so satisfy the c-command requirement on reflexives. But [(19)'b] is ungrammatical precisely because this requirement is not satisfied."

Here, I do not wish to focus on a detailed discussion of these problems, but on the modifications Johnson (2007) proposes to overcome the conundrums just mentioned and to allow for multidominance. Johnson (2007) preserves the connection between asymmetric c-command and linear order (cf. (7)) as well as Kayne's well-formedness conditions on linearizations (cf. (9)). He rejects, however, the idea that the linear orderings generated by the LCA should be interpreted as precedence and he abandons the modification of c-command in (14). The result of all this is a much freer linearization scheme than Kayne's. The LCA produces sets of ordered pairs whose interpretation is left open: they are ambiguous between a precedence and a subsequence reading. That is, $\langle\alpha, \beta\rangle$ is no longer taken to map onto $\alpha < \beta$, but $\langle\alpha, \beta\rangle = \alpha < \beta$ or $\beta < \alpha$. Thus, the LCA maps an asymmetric c-command relation to a linear statement, but one that is not fully disambiguated. A schematic comparison between Kayne's original LCA and Johnson's modified LCA is given in the table in (20).[20] I adopt Johnson's (2007) proposal. In the table in (20), '<' indicates precedence as usual, '><' is meant to mark 'precedence *or* subsequence'.

(20) *Overview: Kayne's (1994) LCA vs. Johnson's (2007) modified LCA*

constituency	asymmetric c-command	precedence among terminals (Kayne 1994)	precedence among terminals (Johnson 2007)
$[^{X} c\ [^{Z} d\ e]]$	⟨c,d⟩, ⟨c,e⟩	d<e, c<d, c<e	d><e, c><d, c><e
$[^{Y} b\ [^{X} c\ [^{Z} d\ e]]]$	⟨c,d⟩, ⟨c,e⟩, ⟨b,c⟩, ⟨b,d⟩, ⟨b,e⟩, ⟨b,Z⟩	d<e, c<d, c<e, b<c, b<d, b<e	d><e, c><d, c><e, b><c, b><d, b><e
$[^{W} a\ [^{Y} b\ [^{X} c\ [^{Z} d\ e]]]]$	⟨c,d⟩, ⟨c,e⟩, ⟨b,c⟩, ⟨b,d⟩, ⟨b,e⟩, ⟨b,Z⟩, ⟨a,b⟩, ⟨a,c⟩, ⟨a,d⟩, ⟨a,e⟩, ⟨a, X⟩, ⟨a, Z⟩	d<e, c<d, c<e, b<c, b<d, b<e, a<b, a<c, a<d, a<e	d><e, c><d, c><e, b><c, b><d, b><e, a><b, a><c, a><d, a><e

Clearly, interpreting all ordered pairs as involving both precedence and subsequence will lead to inconsistent and conflicting linearization statements in d(A). Thus, compared to Kayne's proposal, Johnson's system allows the linearization scheme to generate a far greater number of ordering statements, which possibly violate the well-formedness conditions in (9). Johnson calls this property of the linearization algorithm TOLERANCE (Johnson 2007:14).

Johnson proposes that this is allowed, as long as there is a proper subset that results in a total and consistent linear order. The ordered pairs generated thus need to be disambiguated. Johnson (2007:12) "gives to output constraints the work of interpreting as precedence the ordered pairs that the LCA produces". In short, output constraints disambiguate the ordered pairs, selecting a subset that will result in a total linearization. Johnson proposes that next to Kayne's well-formedness

[20] This schematic representation is based on a similar table in Guimarães (2004:218, (30)).

conditions in (9) – conditions on d(A), which has linearization information about terminals – there are also well-formedness conditions that hold of ordered pairs containing phrasal information. The latter well-formedness conditions are language-specific requirements. Languages make a choice to put heads either at the left or at the right of their phrases (e.g. there is a requirement that "verbs precede their complements"). This is reminiscent of the head parameter of *Government & Binding*, but, as noted by Richards (2004:7), in this case it is a PF ordering strategy rather than a syntactic (phrase-structural) constraint. Another example of a similar condition giving a language its particular word order is "specifiers come initially in their phrases". A subset of the ordered pairs is selected that meets the language-particular requirements. As such, language-specific requirements seem to function as what could be called filters, filtering out a subset of the asymmetric c-command relations generated by C_{HL} and the concomitant ordered pairs that did not get an interpretation in terms of precedence or subsequence.[21,22] The resulting subset is the maximally small subset that will lead to a total linearization. Given that the subset has to yield a complete linearization that meets Kayne's well-formedness constraints, inconsistent statements are jettisoned. From this subset, a d(A) is produced, which has to meet the well-formedness conditions in (9). Concluding, instead of rejecting a linearization on the basis of (violations of) the well-formedness conditions (as in Kayne's original (1994) proposal), subsets are selected that meet language-specific requirements and Kayne's well-formedness conditions, in the end resulting in a total, consistent linearization.[23]

The idea of resolving conflicting ordering statements at PF is not only present in Johnson (2007). Epstein et al. (1998) introduce the *Precedence Resolution Principle (PRP)*, which ignores a subset of c-command relations in the narrow syntax.[24]

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[21] Similar ideas can be found in Johnson (2009, 2010a, 2011a). Actually, in his (2007) proposal, Johnson calls the well-formedness conditions on A "alignment constraints". He does not adopt this term in later work, where he focuses on 'language-specific requirements'.

[22] As such, this 'filtering' of asymmetric c-command relations and concomitant ordered pairs is an alternative to Kayne's (1994) proposals for disregarding certain asymmetric c-command relations, such as altering the definition of c-command and waiving the distinction between specifiers and adjuncts.

This is in line with the idea that Merge is free (cf. also chapter 3) and that the only 'filters' for representations are interface conditions. As noted by Krivochen (2011:24), "[t]hese conditions determine the set of what is known as 'convergent derivations', a subset of the possible derivations."

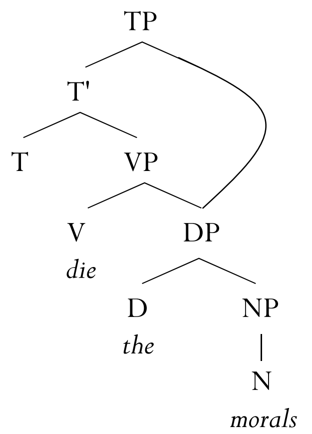
[23] This proposal is illustrated in section 3.4 of this chapter, combined with a cyclic Spell-Out model of the grammar.

[24] Epstein et al. (1998) propose that c-command, rather than asymmetric c-command, translates to precedence at PF (this is also adopted by Richards 2007). In that case, mutual c-command relations result in conflicting ordering statements at PF. I follow Johnson (2007) in adhering to Kayne's original (*continued on the next page*)

According to Epstein et al., the ordering relation in the base must be ignored at PF. Richards (2007) proposes a strong version of the *PRP* that applies throughout the derivation. According to Richards, derivational information is simply deleted and the original order imposed by the *PRP* in the base is preserved (contra Epstein et al.). Thus, although details differ, Johnson's proposal to delete ambiguous information at the interface is comparable to other proposals in the literature.

A consequence of Johnson's (2007) proposal is that the linearization scheme is no longer incompatible with multidominant structures. Let us consider the phrase marker in (21) again. The A in (22) lists all asymmetric c-command relations in (21). Remember that ⟨X, Y⟩ no longer maps onto X < Y.

(21)



(22)

$$A = \left\{ \begin{array}{lllll} \langle D, N\rangle & \langle DP, T\rangle & \langle TP, D\rangle & \langle T, V\rangle & \langle V, D\rangle \\ & \langle DP, VP\rangle & \langle TP, NP\rangle & \langle T, DP\rangle & \langle V, NP\rangle \\ & \langle DP, V\rangle & \langle TP, N\rangle & \langle T, D\rangle & \langle V, N\rangle \\ & \langle DP, DP\rangle & & \langle T, NP\rangle & \\ & \langle DP, D\rangle & & \langle T, N\rangle & \langle D, N\rangle \\ & \langle DP, NP\rangle & & & \\ & \langle DP, N\rangle & & & \end{array} \right\}$$

As proposed by Johnson (2007), the LCA maps a relation of asymmetric c-command

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proposal that it is asymmetric c-command translates to linear order (and I therefore do not discuss Epstein et al.'s and Richards' accounts any further here).

onto an ordered pair, the interpretation of which (in terms of precedence or subsequence) is left open. That is, $\langle\alpha, \beta\rangle$ does not map onto to $\alpha < \beta$: $\langle\alpha, \beta\rangle = \alpha < \beta$ or $\beta < \alpha$. The pairs corresponding to the asymmetric c-command relations in A in (22) are disambiguated on the basis of language-particular requirements. For example, English is head-initial and requires heads to precede their complements. This disambiguates an ordered pair like ⟨D, N⟩ as D < N, given that the D-head of DP has to precede its complement. Similarly, specifiers need to precede the other material in their phrase. This disambiguates an ordered pair like ⟨DP, T⟩ as DP < T, with the DP-specifier preceding the head of the phrase. Finally, given that the subset has to yield a complete linearization that meets Kayne's well-formedness constraints, inconsistent pairs such as ⟨DP, DP⟩ are deleted. A maximally small, disambiguated subset of the ordered pairs is selected that meets the language-specific requirements and will lead to a total linearization of all the terminals. "Maximally small" means that redundant statements are thrown out (although these would have no influence on the linearization). The result is (23).[25] On the basis of (23), the linearization in (24) is produced.

(23)

$$A' = \left\{ \begin{array}{lll} D < N & DP < T & T < V \\ & DP < V & \\ & & \\ & & \end{array} \right\}$$

(24)

$$d(A) = \left\{ \begin{array}{lll} D < N & D < T & T < V \\ & N < T & \\ & D < V & \\ & N < V & \end{array} \right\}$$

The linearization in (24) satisfies the well-formedness constraints: it is total, antisymmetric, and transitive. The structure in (21) is thus spelled out as the

[25] Johnson (2007:13-14) names the set in (23) "A" and calls it "a subset of A that meets the [language-specific] constraints". This is, however, confusing, as A is actually "the set of all ordered pairs of non-terminals ⟨X,Y⟩ in a phrase marker P, such that X c-commands Y" (cf. (7)). That is, A contains information on c-command, not on precedence or subsequence. The set in (23) is therefore not straightforwardly "a subset of A". To avoid confusion, I will name sets such as (23) A'. A' is meant to refer to the maximally small, disambiguated subset of the ordered pairs that correspond to the asymmetric c-command relations in A.

grammatical sentence *the morals die*. As such, Johnson's linearization algorithm allows multidominant structures "by allowing the linearizations to generate inconsistent orderings just so long as there is a proper subset of that linearization that is consistent and total" (Johnson 2007:14).[26]

This subsection presented the basics of Johnson's (2007) proposal for linearizing multidominant phrase markers. The next section introduces cyclic Spell-Out/linearization, which will play a crucial role in this dissertation. As will become clear in section 3.4 of this chapter, some refinements to Johnson's (2007) proposal are required in a system that both allows multi-rooted phrase markers and incorporates cyclic Spell-Out/linearization. The requirement of TOTALITY needs to be rephrased and d(A) is shown to also have the property of TOLERANCE.

3.3 Cyclic linearization and Order Preservation

3.3.1 PHASES AND MULTIPLE SPELL-OUT

In this dissertation, I adopt a derivational system of computation that combines a Chomskyan phase model with Uriagereka's (1999) Multiple-Spell out proposal. I take both phasal domains and complex left branches to undergo Spell-Out, after which they become inaccessible.

Chomsky (2000, 2001 *et seq.*)'s central hypothesis is that syntactic structures are built up one cycle at a time, after which they are spelled out. The rationale behind this is the reduction of computational burden (memory load) via the 'periodic' forgetting of derivational information (cf. Richards 2011:74). The Language Faculty can only process limited amounts of structure at one time and, more specifically, can only hold a limited amount of structure in its 'active memory' (cf. Chomsky 1999:9).

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[26] Johnson (2009, 2010a, 2011a) suggests a different solution for the problem posed by linearizations of multidominant phrase markers. He proposes that the linearization algorithm need not produce linearization statements that will violate the LCA to begin with. The linearization algorithm in Johnson (2009, 2010a, 2011a) does not evaluate all of the positions a terminal occupies in the course of the derivation. A terminal that occupies two (or more) positions is linearized in only one spot in the string (this goes back to Nunes' (2004) *Chain Reduction* for the linearization of non-multidominant structures).

This is, however, based on a representational, non-cyclic view of multidominant structures, where all positions of a remerged phrase are visible 'at once'. When cyclic Spell-Out and linearization enter the picture, it is not clear how the linearization algorithm can simply ignore certain positions occupied by a remerged phrase. Johnson (2011a:31) also explicitly rejects the possibility of linearization statements that violate the LCA. In this dissertation, I adopt the specifics of the linearization scheme proposed in Johnson (2007).

Narrow syntax derives small derivational subparts or chunks of structure, called *Phases*.[27] At any one time, the derivation can access only one phase, limiting the computational load in deriving a sentence (cf. Hicks 2009:43). Phases are made up of the phase head, its domain (i.e. its complement), and its edge (i.e. its specifiers/adjuncts). Chomsky's original (2000) proposal is that upon completion of the phase, the phasal domain is sent off (or transferred) to the interfaces and becomes inaccessible to further syntactic operations. The phase head and the phase edge, on the other hand, are not transferred until the next phase is completed: they remain accessible at the next higher phase, thus making the phase edge available as an escape hatch. This ensures that long-distance movement proceeds phase edge by phase edge, i.e. successive-cyclically. This is formally stated by the *Phase-Impenetrability Condition* (PIC) in (25):[28]

(25) *The Phase-Impenetrability Condition (PIC)*

In a phase α with a head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

[Chomsky 2000:108]

This entails that Spell-Out also applies in a cyclic manner: there are multiple, cyclic applications of Spell-Out in the course of the derivation, applying to specific subparts of the syntactic object. Here, I take 'Spell-Out' to be interpreted as the operation that takes a syntactic object and 'hands it over' to the PF component of the grammar, also called 'Transfer to PF', to be distinguished from 'Interpret'/'Transfer to LF' (cf. Chomsky 2004, Lasnik et al. 2005). Spell-Out thus applies only to PF (cf. Nissenbaum 2000, see also Marušič 2005 who distinguishes

[27] There is quite some debate in the literature about which chunks of the derivation constitute phases. In its original conception, only CP and the vP of transitive and unergative verbs are considered phasal (cf. Chomsky 2000:106). Unaccusative and passive vPs, DPs, and PPs have been taken to qualify for phasehood as well (cf. Legate 1998, 2003; Abels 2003; Richards 2004; Svenonius 2004; Chomsky 2005, 2008; Sabbagh 2007). In what follows, I take CP and vP (whether transitive, unergative, unaccusative, or passive) to constitute phases (cf. Chomsky 2000 *et seq.*; Legate 1998, 2003; Richards 2004).

[28] There are two versions of the *Phase-Impenetrability Condition*, the original from Chomsky (2000) (sometimes called PIC1) and a modified version from Chomsky 2001 (PIC2), cf. (i):

(1) *The Phase-Impenetrability Condition* (alternative) [Chomsky 2001:14]

The domain of H is not accessible to operations at ZP [a phase];
only H and its edge are accessible to such operations.

That is, a phasal domain is only transferred (and rendered inaccessible) when the next phase (ZP) has been completed. In this dissertation, I adopt Chomsky's original (2000) proposal that the phasal domain is transferred upon completion of the phase (see also Nissenbaum 2000; Hiraiwa 2002; Hicks 2009; Richards 2011).

non-simultaneous PF and LF phases). I will adopt this terminology, as this dissertation is mostly concerned with the syntax-PF interface. Hence, when I use the term 'Spell-Out' in the following chapters, it is intended to mean 'Transfer to PF'.

Uriagereka (1999) – picking up ideas first expressed in Bresnan (1971) – considers every branching left branch to be targeted by Spell-Out.[29] In his Multiple Spell-Out model, complex (that is, branching) structures in specifier and adjunct position are separate derivational chunks that undergo Spell-Out before merging with the rest of the tree structure.[30] According to Uriagereka, after Spell-Out the specifier or adjunct is flattened into an ordered sequence and reenters the derivation as a "giant lexical compound" (Uriagereka 1999:256). The computation does not recognize it as syntactically complex element, but treats it as an atom, a word, an X^o. Material inside the specifier or adjunct is therefore no longer accessible to syntactic operations. A consequence of Uriagereka's proposal is that it derives the islandhood of subjects and adjuncts (Ross 1967).[31] Although I do not consider complex left branches to be X^o's (cf. also Johnson 2002:4 for difficulties with this specific implementation), I do, adopt the proposal that they get spelled out upon merging in the 'main' structure and are opaque for further syntactic computation.[32] Thus, complex left branches resemble phasal domains in that they are spelled out (i.e. transferred to PF) and become inaccessible for further operations.

For independent support that integrating Chomsky's and Uriagereka's dynamic models is the desired road to take, see for instance Sato (2006, 2009). Sato proposes that Spelled-Out mid-derivational objects are mapped to prosodic domains at the PF interface (which he calls the *Syntax-Prosody Mapping Hypothesis*). According to Sato, if separate derivational chunks reach the interface, this should have repercussions for the domain of prosodic rule application. He argues that a combination of Uriagereka's Multiple Spell-Out hypothesis and Chomsky's Phase theory is required

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[29] It has even been suggested (cf. Epstein et al. 1998; Epstein & Seely 2002, 2006) that a derivation is dynamically accessed by the interface at every derivational step ("Spell-Out-as-you-Merge"). Nakamura (2009) holds that any projection can in principle be a phase (cf. also Boeckx & Grohmann 2007). I do not adopt these proposals here.

[30] Here, we abstract away from the questions (i) whether the two phrase markers (the left branch and the clausal spine) are assembled simultaneously in separate derivational spaces or sequentially in the same derivational space, and (ii) whether (and if so, how) the Spelled-Out left branch is renumerated (cf. Uriagereka 1999; Johnson 2002; Postma & Rooryck 2009; Krivochen 2011; De Belder & van Craenenbroeck 2011).

[31] Other authors have adopted the idea that islandhood should be subsumed under phasehood, or, more general, that islands are targeted by Spell-Out and therefore become opaque (Johnson 2002, 2007, 2009; Fox & Pesetsky 2003, 2004a; Sabbagh 2007; Krivochen 2011).

[32] The proposal that a Spelled-Out constituent becomes opaque for further syntactic computations is also adhered to by, for instance, Zwart (2009b) and De Belder & van Craenenbroeck (2011).

for the proper access from syntax to phonology. Sato maintains that combining these dynamic models yields empirical predictions about possible structural domains for prosodic rule application and he shows that these are borne out by a variety of phonological alternations across languages. Sato discusses Taiwanese tone sandhi, French liaison, Gilyak lenition, Kinyamboo high deletion, and Welsh consonant mutation.

First of all, according to Sato, Uriagereka's model predicts that a complex specifier/adjunct configuration forms an independent prosodic domain, while a simplex specifier/adjunct configuration forms a prosodic domain that also includes a head/complement.[33] This prediction is for example borne out by Kinyamboo high deletion (Sato 2006:10-11). Kinyamboo has three surface tones: High (á), Low (a), and Falling (áa). In Kinyamboo, a High tone in a word is deleted when it is immediately followed by another word with high tone (see also Bickmore 1990). This is illustrated in (26).

(26) [Sato 2006:10, (37)]

omuk**a**ma mukázi (cf. omuk**á**ma 'chief' (in isolation))
chief old
'old chief' [Kinyamboo]

Sato shows that when a specifier is complex, its High tone is maintained: in (27)a, the complex subject *abakozi bakúru* 'the mature workers' has a High tone on *bakúru* 'mature'. When a specifier is simplex, on the other hand, its High tone is deleted: in (27)b, the simplex subject *abakozi* 'workers' has lost its High tone. This confirms Sato's prediction based on Uriagereka's model.

(27) *complex vs. simplex subject* [cf. Sato 2006:11, (38)]

a. [abakozi bak**ú**ru] bákajúna (cf. bak**ú**ru 'mature' (in isolation))
workers mature they helped
'The mature workers helped.'

b. [abak**o**zi] bákajúna (cf. abak**ó**zi 'workers' (in isolation))
workers they helped
'The workers helped.' [Kinyamboo]

---

[33] Uriagereka (1999:262-265) himself also points out that his model receives empirical support from focus spreading, pauses/parenthetical expressions, phonological association of certain function items to the lexical heads and the cliticization of determiners to their preceding heads in Galician.

Sato argues, however, that Uriagereka's model cannot account for all syntax-prosody mappings; Chomsky's Phase theory has to be incorporated as well. One of his arguments is based on Welsh consonant mutation (Sato 2006:11-12). Consonant mutation in Welsh is the phenomenon that an initial consonant of the citation form of a word undergoes the replacements in (28) in certain syntactic configurations. This is shown in (29) for c → g mutation.

(28) [Sato 2006:11, (40)]

p	→	b	b	→	f	m	→	f
t	→	d	d	→	dd	rh	→	r
c	→	g	g	→	NULL	ll	→	l

(29) *Consonant mutation* [cf. Sato 2006:11, (41)]

Gwenlodd y dyn **g**i. (cf. **c**i 'dog (in isolation)')
see-PAST-3S the man dog.
'The man saw a dog.' [Welsh]

Sato argues that CP clauses, but not TP-clauses, constitute barriers for consonant mutation (see also Harlow 1989; Tallerman 1990; Roberts 1997). This is illustrated in (30). The contrast between (30)b and (30)c shows that, while mutation (b → f) can occur in a TP-clause (cf. (30)b), it cannot in a CP-clause (cf. (30)c)): *fod* 'be' is ungrammatical in a CP-clause.

(30) [cf. Sato 2006:12, (42)-(43)-(44)]

a. Dywedodd [$_{NP}$ hi] [$_{CP}$ (y) [$_{IP}$ **bydd** hi'n prynu car newydd]].
say-PAST-3S she COMP will-be-3S she-PROG buy car new
'She said (that) she will be buying a new car.'

b. Dywedodd [$_{NP}$ yr athro] [$_{IP}$ **fod** Gareth wedi colli'r bws].
say-PAST-3S the teacher be Gareth PERF lose-the bus
'The teacher said Gareth had missed the bus.'

c. * Dydy o ddim yn credu [$_{CP}$ y [$_{IP}$ **fod** Gwyn yn dweud y gwir].
NEG-is-3S he NEG PROP believe COMP be Gwyn PROG say the truth
'He doesn't believe that Gwyn is telling the truth.'
[Welsh]

Sato argues that Uriagereka's model cannot answer the question why CPs, but not TPs, block consonant mutation: Uriagereka's model "does not draw any distinction between CP and TP nodes that would be pertinent to Spell-Out" (Sato 2006:12). Sato proposes that incorporating Chomsky's Phase Theory provides the answer. While C is a phase head, T is not, and only the phasal C-head, not the T-head, creates a boundary for consonant mutation in Welsh. According to Sato, the CP-TP distinction in Welsh consonant mutation provides phonological support for the CP phase under the *Syntax-Prosody Mapping Hypothesis*.[34]

Sato concludes that Spelled-Out derivational chunks are mapped onto prosodic domains at PF. Only a combination of both Uriagereka's and Chomsky's dynamic models can account for all empirical observations.

3.3.2 CYCLIC LINEARIZATION AND ORDER PRESERVATION

We have seen in the previous subsection that at specific points in the derivation, particular phrases (specifically, phasal complements and complex left branches) undergo Spell-Out. Cyclic Spell-Out transfers derivational subparts to PF. It is generally assumed that "the linearization of syntactic structures is [...] part of the Spell-out procedure, that is, the mapping to PF" (Fuß 2005:90). It has been proposed that dynamic, cyclic Spell-Out also implies dynamic linearization (cf. Fox & Pesetsky 2003, 2004a,b; Richards 2004; Müller 2005; Sabbagh 2007; Engels 2011). Each spelled-out chunk constitutes a separate linearization domain and the linearization algorithm also applies cyclically. Each application of Spell-Out thus provides a set of linear ordering statements.

Fox & Pesetsky (2003, 2004a,b), Johnson (2002, 2007, 2011a), Sabbagh (2007), and Engels (2011) push the idea of cyclic linearization even further. These authors argue that for each linearization domain, the linearization algorithm fixes a linear order, once and for all. It immutably assigns a position to each terminal element in the relevant phrase marker. Thus, if a terminal α is set to follow another terminal β ($\beta < \alpha$) in some linearization domain, this ordering cannot be changed later on: the final linearization statement cannot be $\alpha < \beta$. Ordering statements are 'carried over' from lower linearization domains to the higher ones. This is called Linearization Preservation or Order Preservation.

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[34] Sato (2006, 2009) also refers to Bošković (2001) and Bošković & Lasnik (2003) for additional support: these authors argue that the C-head creates an intonational boundary and blocks PF-affixation/merger. Note that Dobashi (2003) also proposes a hypothesis similar to the *Syntax-Prosody Mapping hypothesis* for phonological phrasing within Chomsky's Phase Theory.

(31) *Order Preservation*

Linear order is fixed once and for all at the end of each linearization domain.

[based on Fox & Pesetsky 2003:2]

3.4 Multidominance, modified LCA, cyclicity: Illustration

As I indicated above (subsection 3.3.1), I adopt a derivational system of computation that combines Uriagereka's Multiple Spell-Out proposal with a Chomskyan phase model. Spell-Out is cyclic and the linearization algorithm also applies cyclically (cf. subsection 3.3.2). I follow the proposal of the authors mentioned in the previous subsection that the application of the linearization algorithm fixes an unchangeable linear order for the terminal elements of the relevant phrase marker (i.e. Order Preservation).

In this subsection, I present Johnson's (2007) analysis of Right Node Raising, which brings together a multidominant structure, Johnson's modified LCA, mid-derivational Spell-Out/linearization and Order Preservation. The case of Right Node Raising therefore nicely illustrates how a multi-rooted structure gets linearized in a cyclic Spell-Out/linearization model.

(32) Consumers ask and experts answer questions.

Although the account is not uncontested (cf. Postal 1998; Sabbagh 2007; Ha 2008), Right Node Raising (RNR) examples like (32) have been analyzed as an instance of multidominance by several authors, including McCawley (1982), McCloskey (1986), Phillips (1996, 2003), Wilder (1999, 2008), Chung (2004), Fox & Pesetsky (2007), de Vries (2007), and Bachrach & Katzir (2009).[35] On a multidominant analysis, the shared node in (32), *questions*, has two mothers (one in each conjunct), cf. (33):[36]

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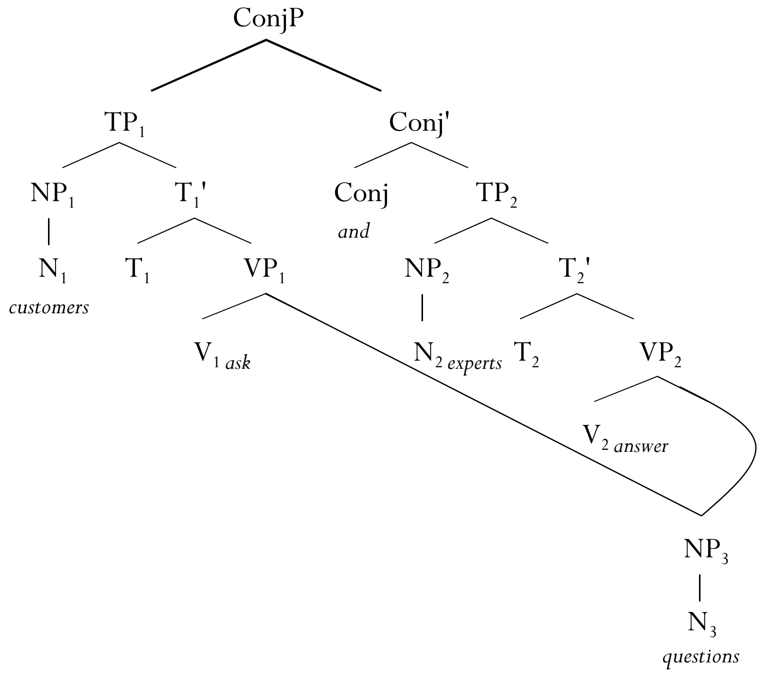
[35] For arguments why a multidominant account is preferable to an analysis in terms of across-the-board rightward movement (cf. Ross 1967; Bresnan 1974; Postal 1974, 1998; Sabbagh 2007) or an ellipsis account (Wexler & Culicover 1980; Kayne 1994; Wilder 1997), I refer to the authors mentioned in the main text.

[36] For ease of exposition, I present *customers, experts* and *questions* as NPs. Given that the functional layers above N are null/empty and have no influence on the linearization statements, I ignore them here. Moreover, I make use of a ConjP (headed by the conjunction *and*) here, while Johnson (2007:18) does not (in his proposal, the two TPs are both part of a larger TP). This does not change the argumentation.

(33)



Johnson (2007) proposes, following Fox & Pesetsky (2003, 2004a) and Sabbagh (2007), that islands are linearization domains (cf. also section 3.3.1), formulating it as in (34).[37] These proposals concern strong islands (cf. subject islands in Johnson 2002 and 2009, adjunct islands in Johnson 2002 and 2009 and Fox & Pesetsky 2003, complex NPs in Johnson 2008, conjuncts in Johnson 2007, 2009, and strong WH-islands in Sabbagh 2007).

(34) *Islands as linearization domains*

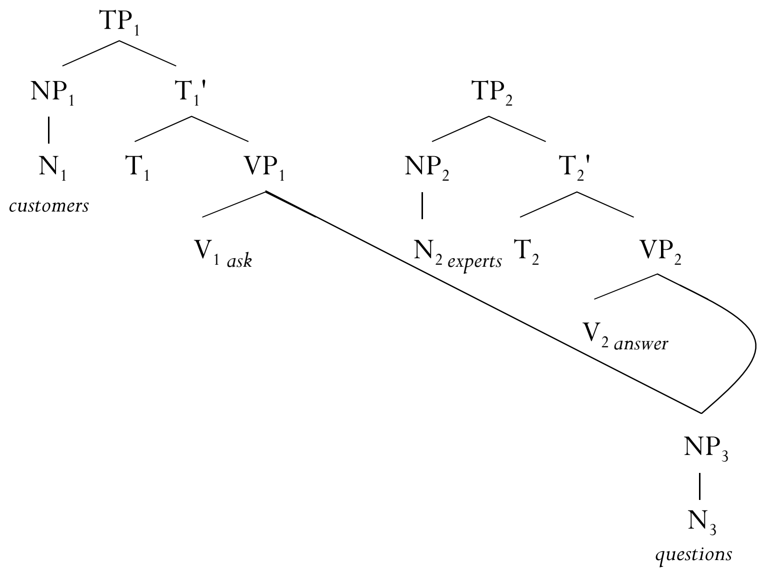
Islands are those phrases, γ , at which the linearization algorithm runs and fixes an unchangeable linearization for γ. [Johnson 2007:19]

[37] The same idea is also present in Johnson (2002, 2009), although it is given a stricter, stronger interpretation there. Order Preservation not only requires preservation of linear ordering, but also of adjacency relations. As put by Sabbagh (2007:fn.30), the idea is that, "if linear order was the only value of the syntax-phonology mapping that mattered, as with Fox & Pesetsky's theory, then string-vacuous [movement] would not be predicted to give rise to (adjunct-)island violations". As islands are not my primary concern here, I leave the correct implementation of islandhood in terms of linearization and order preservation constraints to further research.

Islands are the result of cyclically applying the algorithm that maps structures onto strings. Hence, islands must be spelled out (and cause the linearization algorithm to apply and fix a relative linear ordering among terms) before merging with their host. This is reminiscent of and extends Uriagereka's (1999) proposal to spell out complex left branches, thereby also explaining their islandhood.

According to Johnson (2007), the definition of islands in (34) will require Spell-Out and linearization at the point of the derivation of (33) where the two conjuncts have been constructed. This is because conjuncts are islands (cf. *Coordinate Structure Constraint* (CSC), Ross 1967). That point in the derivation is (35), before the two conjuncts are merged together:

(35)



The A for the TP-conjuncts in (35) is given in (36):

(36)

$$
A = \left\{ \begin{array}{llll}
\langle NP_1, T_1 \rangle & \langle T_1, V_1 \rangle & \langle NP_2, T_2 \rangle & \langle T_2, V_2 \rangle \\
\langle NP_1, VP_1 \rangle & \langle T_1, NP_3 \rangle & \langle NP_2, VP_2 \rangle & \langle T_2, NP_3 \rangle \\
\langle NP_1, V_1 \rangle & \langle T_1, N_3 \rangle & \langle NP_2, V_2 \rangle & \langle T_2, N_3 \rangle \\
\langle NP_1, NP_3 \rangle & & \langle NP_2, NP_3 \rangle & \\
\langle NP_1, N_3 \rangle & \langle V_1, N_3 \rangle & \langle NP_2, N_3 \rangle & \langle V_2, N_3 \rangle \\
 & & & \\
\langle T_1', N_1 \rangle & & \langle T_2', N_2 \rangle &
\end{array} \right\}
$$

There is, however, a problem with (36), which is due to the phrase marker in (35) having two roots. Although eventually it will have only one root (cf. (33)), this is not the case at the point in the derivation depicted in (35), before the merger of the two TPs in a ConjP. Remember that Spell-Out before merger is forced by the islandhood of the two conjuncts. To quote Johnson (2007:19-20) on the issue:

> "There is no way to get a linearization out of [(36)] that meets the requirement of totality [in (9)]. Because nothing of the first conjunct asymmetrically c-commands anything in the second conjunct, the terminals in the two conjuncts are not going to get linearized relative to each other. That's because the present formulation of totality presupposed that phrase markers will have only one root node."

In a system that allows multidominant, multi-rooted phrase markers, the Totality requirement is thus in need of rephrasing. Johnson (2007:20) gives the following formulation:

(37) TOTALITY (new version)
For all distinct x and y dominated by [the same] root node in a phrase marker, either $x < y$ or $y < x$.

Recall (section 3.2) that the ordered pairs corresponding to the asymmetric c-command relations in A in (36) are disambiguated on the basis of language-particular requirements. Specifiers have to precede the material they asymmetrically c-command. Heads are linearized to the left of their complement. A maximally small subset is selected, cf. (38). The resulting linearization d(A) is given in (39). Note that, as the shared node NP_3 in (35) is dominated by two root nodes (TP_1 and TP_2), N_3 it has to be linearized twice (in each conjunct), following (37).

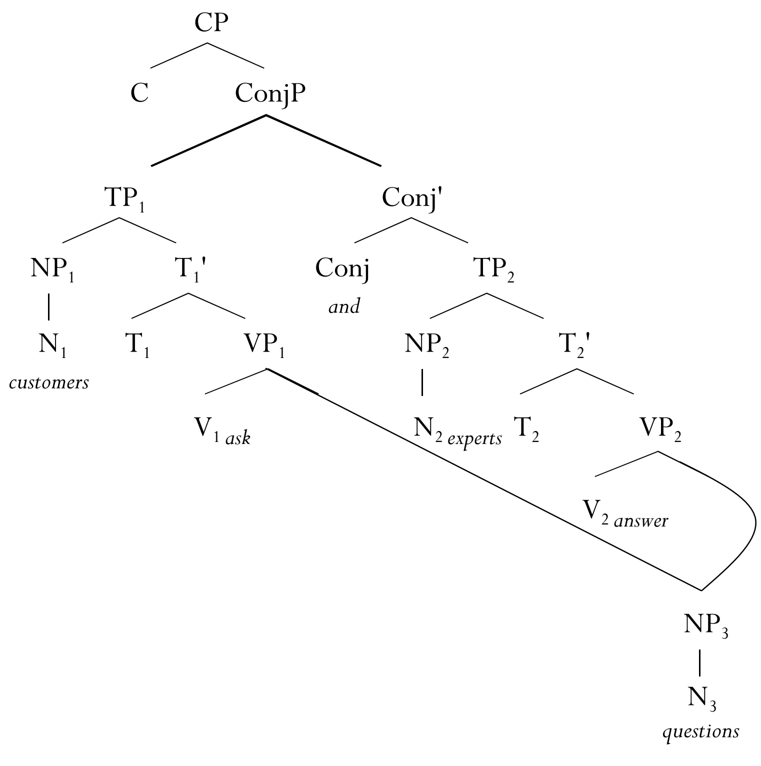
(38)
$$A' = \left\{ \begin{array}{llll} NP_1 < T_1 & T_1 < VP_1 & NP_2 < T_2 & T_2 < VP_2 \\ NP_1 < VP_1 & & NP_2 < VP_2 & \\ & & & \\ V_1 < N_3 & & V_2 < N_3 & \end{array} \right\}$$

(39)

$$d(A) = \left\{ \begin{array}{llll} N_1 < T_1 & T_1 < V_1 & N_2 < T_2 & T_2 < V_2 \\ N_1 < V_1 & T_1 < N_3 & N_2 < V_2 & T_2 < N_3 \\ N_1 < N_3 & & N_2 < N_3 & \\ & & & \\ V_1 < N_3 & & V_2 < N_3 & \end{array} \right\}$$

After this, the two conjuncts are merged together in a ConjP, yielding the phrase marker in (33), The C-head is merged and projects (cf. (40)), after which the root CP is spelled out. The A for (40) is given in (41).

(40)



(41)

$$A = \left\{ \begin{array}{lllll}
\langle C, TP_1\rangle & \langle C, Conj'\rangle & \langle TP_1, Conj\rangle & \langle Conj', NP_1\rangle & \langle Conj, NP_2\rangle \\
\langle C, NP_1\rangle & \langle C, Conj\rangle & \langle TP_1, TP_2\rangle & \langle Conj', N_1\rangle & \langle Conj, N_2\rangle \\
\langle C, N_1\rangle & \langle C, TP_2\rangle & \langle TP_1, NP_2\rangle & \langle Conj', T_1'\rangle & \langle Conj, T_2'\rangle \\
\langle C, T_1'\rangle & \langle C, NP_2\rangle & \langle TP_1, N_2\rangle & \langle Conj', T_1\rangle & \langle Conj, T_2\rangle \\
\langle C, T_1\rangle & \langle C, N_2\rangle & \langle TP_1, T_2'\rangle & \langle Conj', VP_1\rangle & \langle Conj, VP_2\rangle \\
\langle C, VP_1\rangle & \langle C, T_2'\rangle & \langle TP_1, T_2\rangle & \langle Conj', V_1\rangle & \langle Conj, V_2\rangle \\
\langle C, V_1\rangle & \langle C, T_2\rangle & \langle TP_1, VP_2\rangle & \langle Conj', NP_3\rangle & \langle Conj, NP_3\rangle \\
\langle C, NP_3\rangle & \langle C, VP_2\rangle & \langle TP_1, V_2\rangle & \langle Conj', N_3\rangle & \langle Conj, N_3\rangle \\
\langle C, N_3\rangle & \langle C, V_2\rangle & \langle TP_1, NP_3\rangle & & \\
\langle C, NP_3\rangle & & \langle TP_1, N_3\rangle & & \\
\langle C, N_3\rangle & & & &
\end{array} \right\}$$

The asymmetric c-command relations in A in (41) correspond to ordered pairs, the interpretation of which (in terms of precedence or subsequence) is left open. These ordered pairs need to be disambiguated, i.e. a subset has to be selected. This subset has to satisfy language-particular requirements, i.e. heads have to precede their complement and specifiers have to precede the other material in their phrase. The maximally small subset satisfying the language-specific requirements of English is given in (42). The resulting linearization d(A) is given in (43):

(42)

$$A' = \left\{ \begin{array}{lll}
C < TP_1 & TP_1 < Conj & Conj < N_2 \\
C < Conj & TP_1 < TP_2 & Conj < T_2' \\
C < TP_2 & &
\end{array} \right\}$$

(43)

$$d(A) = \left\{ \begin{array}{llll}
C < N_1 & N_1 < Conj & V_1 < Conj & Conj < N_2 \\
C < T_1 & N_1 < N_2 & V_1 < N_2 & Conj < T_2 \\
C < V_1 & N_1 < T_2 & V_1 < T_2 & Conj < V_2 \\
C < N_3 & N_1 < V_2 & V_1 < V_2 & Conj < N_3 \\
C < Conj & N_1 < N_3 & V_1 < N_3 & \\
C < N_2 & & & \\
C < T_2 & T_1 < Conj & N_3 < Conj & \\
C < V_2 & T_1 < N_2 & N_3 < N_2 & \\
C < N_3 & T_1 < T_2 & N_3 < T_2 & \\
 & T_1 < V_2 & N_3 < V_2 & \\
 & T_1 < N_3 & N_3 < N_3 &
\end{array} \right\}$$

Note that the linearization in (43) contains several problematic statements. The orderings N_3 < Conj and Conj < N_3 are antisymmetric. The statement $N_3 < N_3$ is an irreflexivity violation. Moreover, the three other orderings involving N_3 ($N_3 < N_2$, $N_3 < T_2$, $N_3 < V_2$) contradict the linearization statements that were introduced earlier in the derivation, before the two TP-conjuncts were joined in ConjP, i.e. the ones in (39). Recall that conjuncts are islands and that islands are linearization domains: the linearization established for the island cannot be changed later on (Order Preservation). Linearization statements that are introduced later in the derivation have to be both total and consistent with these earlier statements. Johnson (2007) proposes that d(A) also has the property of TOLERANCE (cf. section 3.2). That is, d(A) can contain inconsistent and conflicting linearization statements, as long as a subset of d(A) can be selected that results in a linearization that is total, antisymmetric, transitive, and irreflexive. As such, just like language-specific requirements function as what could be called filters on ordered pairs that did not get an interpretation in terms of subsequence or precedence (cf. section 3.2), the well-formedness conditions seem to function as a filter on the linearization statements in d(A).

As such, the reflexive statement can be ignored, and the three conflicting statements involving N_3 can be deleted. Moreover, one of the antisymmetric orderings can be disposed of: N_3 < Conj will be ignored, as it would otherwise result in conflicting statements and transitivity violations. For instance, the combination N_3 < Conj and Conj < N_2 would give rise to $N_3 < N_2$ (by transitivity), which is in conflict with the linearization statement $N_2 < N_3$, established earlier.[38] The remaining statements are those in (44), which will be added to the orderings established earlier (i.e. the ones in (39)).

[38] Note that, although both Johnson (2007) and Fox & Pesetsky (2003, 2004a,b) crucially adhere to the idea that later linearization statements cannot change the ones already established in previous linearization domains, there is a vital difference between the two analyses. For Fox & Pesetsky, when Spell-Out/linearization applies to a new domain, it may add new ordering statements, but it may not revise previously established ordering statements. Johnson does allow the creation of new inconsistent orderings, provided they are discarded afterwards.

(44)

$$
d(A) = \left\{ \begin{array}{llll}
C < N_1 & N_1 < \mathrm{Conj} & V_1 < \mathrm{Conj} & \mathrm{Conj} < N_2 \\
C < T_1 & N_1 < N_2 & V_1 < N_2 & \mathrm{Conj} < T_2 \\
C < V_1 & N_1 < T_2 & V_1 < T_2 & \mathrm{Conj} < V_2 \\
C < N_3 & N_1 < V_2 & V_1 < V_2 & \mathrm{Conj} < N_3 \\
C < \mathrm{Conj} & N_1 < N_3 & V_1 < N_3 & \\
C < N_2 & & & \\
C < T_2 & T_1 < \mathrm{Conj} & T_1 < T_2 & T_1 < N_3 \\
C < V_2 & T_1 < N_2 & T_1 < V_2 & \\
C < N_3 & & &
\end{array} \right\}
$$

The combination of the ordering statements in (39) and (44) results in a (correct) final linearization where the shared constituent *question* follows all material within the first conjunct and all material within the second conjunct (*Consumers ask and experts answer questions*).

Concluding, Johnson's (2007) modified linearization algorithm and, importantly, its property of TOLERANCE, allows the creation of inconsistent ordering statements provided there is a subset of those orderings that results in a linearization that is total, antisymmetric, transitive, and irreflexive. Moreover, Order Preservation requires that linearization statements that are introduced later in the derivation be both total and consistent with earlier statements. This allows multidominant phrase markers and grammatical linearization statements in a cyclic Spell-Out/linearization model of the grammar.

4 Ellipsis

The term *ellipsis* covers a range of phenomena where, under certain conditions, a part of a clause 'goes missing' (is left unpronounced). The sentence in (45) is an example of *VP-ellipsis*, a process that elides verb phrases. The sentence in (46) illustrates *sluicing*, where ellipsis targets clauses (TPs). Ellipsis is marked by ⟨—⟩.

(45) VP-ellipsis
   a. I prefer to go paperless and apparently Apple does too.[39]
   b. … Apple does ⟨$_{VP}$ ~~prefer to go paperless~~ ⟩ too.

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[39] http://online.worldmag.com/2011/08/05/world-magazine-for-ipad-subscriptions-now-available/

(46) Sluicing
 a. For those that can't see it, Adam just singlehandedly blew the peloton to pieces and all of a sudden Astana and CdE started hammering along. Someone must be missing, but I don't know who.[40]
 b. … but I don't know who ⟨$_{TP}$ ~~is missing~~ ⟩.

In spite of the fact that linguistic material is absent in an elliptical sentence, the meaning of the sentence is perfectly clear. The sluicing example in (46), for instance, is interpreted as containing the full embedded constituent question *but I don't know who is missing*, even though an interrogative clause is not phonetically realized; the only element overtly following the verb *know* is the WH-word *who*. Thus, the interpretation of an elliptical sentence is richer than what is actually pronounced. That is, although ellipsis sites are phonetically empty, they are interpreted at LF.

4.1 Three approaches to ellipsis[41]

The question of how meaning can arise in the absence of form has been answered in different ways in the literature. A first group of proposals (cf. van Riemsdijk 1978; Ginzburg & Sag 2000; Culicover & Jackendoff 2005) adheres to a non-structural approach to ellipsis: unpronounced material is taken to be syntactically absent. It is assumed that the syntax matches the phonology: the structure simply ends with the last element before the ellipsis site. For the sluicing example in (46), the CP-node of the complement of the verb *know* directly dominates (only) the WH-DP *who*, as represented in (47)a. Approaches like these turn to semantic and pragmatic mechanisms to supply the desired meaning.

Structural approaches, on the other hand, take an ellipsis site to contain (unpronounced) syntactic structure. Only phonological information is missing. These proposals can be divided into two classes. A first 'structural' group of proposals posits that the gap in an elliptical sentence is an empty, structureless category (a null proform) that is interpreted at LF (Hardt 1993; Fiengo & May 1994; Lobeck 1995; Chung et al. 1995; Wilder 1997; Depiante 2000). For (46), a null proform of the category TP is merged as part of a CP, the specifier of which is

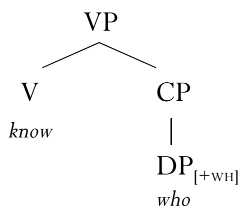
[40] http://fairwheelbikes.com/forum/viewtopic.php?f=127&t=6980&start=15

[41] This subsection is based largely on overviews in Bartos (2001), Merchant (2001, 2005), Winkler (2006), Aelbrecht (2009), and van Craenenbroeck (2010).

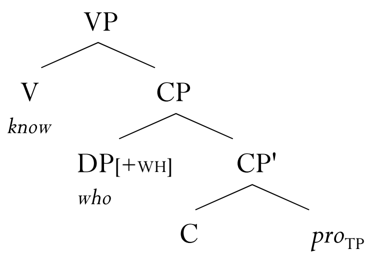
occupied by the base-generated WH-phrase, cf. (47)b. At LF, this null proform is linked to its antecedent. Either the null proform is taken to get its meaning from the antecedent by general mechanisms governing the recovery of meanings from context (the same mechanisms by which pronouns get their meaning from an antecedent), or the LF of the antecedent is posited to be copied into the empty category at LF.

A second 'structural' group takes the elided material to be completely present at the syntactic level: ellipsis targets a full syntactic structure. A fully-fledged sentence is generated in the computational system and handed over to the interfaces, PF and LF. At PF, the phonological component is instructed to delete part of it (i.e. leave part of it unpronounced) (Ross 1969; Sag 1976; Lasnik 1999, 2001; Johnson 2001; Merchant 2001 *et seq.*; Aelbrecht 2009; van Craenenbroeck 2010).[42] These proposals take the verb *know* in (46) to select a fully-fledged complement CP, the TP-complement of which is deleted at PF, cf. (47)c. As noted by van Craenenbroeck (2010:1), under the PF-deletion account, "the interpretation of an elliptical sentence proceeds exactly as that of a nonelliptical one, that is, via a compositional, one-to-one mapping between syntax and semantics."

(47) a. NON-STRUCTURAL

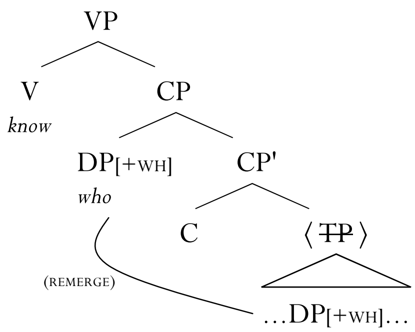


b. STRUCTURAL: NULL PROFORM



[42] A similar approach to ellipsis is the view that ellipsis is radical deaccenting. Phonological deletion is then considered an alternative option to mere deaccenting (cf. Tancredi 1992; Chomsky & Lasnik 1993; Sauerland 1996). For differences between deaccenting and deletion, see e.g. Merchant (2001).

c. STRUCTURAL: PF-DELETION



I adopt the third approach to ellipsis, i.e. a structural approach that takes ellipsis to be a PF-process. In the phonological component, material that is present in the syntactic output is deleted.

In spite of their name, PF-deletion accounts do not necessarily involve actual deletion. That is, they do not always postulate actual deletion rules for the phonological content of an ellipsis site. For instance, under a Late Insertion model of the grammar (cf. Distributed Morphology (DM), Halle & Marantz 1993; Harley & Noyer 1999; Embick & Noyer 20081, 2007), there are no phonological features in syntax. Syntactic terminals are purely abstract, consisting of syntactic/semantic features and feature bundles, and having no phonological shape. Only after syntax, in the mapping to PF, the phonological expression of syntactic terminals is provided through the operation of *Vocabulary Insertion* (cf. Harley & Noyer 1999:3). At Vocabulary Insertion, a list of lexical items (the Vocabulary) is accessed. A Vocabulary item is a relation between a phonological signal and information about where that piece is to be inserted, i.e. about which abstract morphemes it can express. At Vocabulary Insertion, a phonological shape is matched to an insertion point (i.e. a feature (bundle) in a terminal node). Under this framework, it has been proposed that 'deletion' is lack of (late) lexical insertion (cf. Wilder 1997; Bartos 2000, 2001; Kornfeld & Saab 2004; Aelbrecht 2009; Saab 2009; van Craenenbroeck 2010:253,fn.2; Schoorlemmer & Temmerman 2010). That is, Vocabulary Insertion into the terminal nodes contained within an ellipsis site is blocked.[43] Terminal

[43] The proposal that ellipsis blocks lexical insertion rules is also a consequence of (i):

(i) *The Ellipsis-Morphology Generalization* [cf. Saab & Zdrojewski 2010; Lipták & Saab 2012]

For every morphological operation MO that affects the domain of X, where X contains the target of MO, MO cannot apply in X if X is subject to ellipsis.

feature bundles in an ellipsis site are not matched to phonologically interpretable content. In a non-insertion approach, a terminal does not receive phonological contents in the first place; in a deletion approach, a terminal does get phonological contents, but loses it at a subsequent point in the PF-branch. Bartos (2001:8-9) notes that distinguishing between phonological non-insertion and phonological deletion is "far from obvious, i.e. one cannot make any theory-external or empirical difference between the two". The choice of mechanism is dictated by theoretical assumptions (on the relation between lexicon and derivation, on the operations available in the PF-branch, etc.). In this dissertation, I assume a strictly non-lexicalist (DM) model of the syntax-morphology interface and therefore, I take ellipsis to be non-insertion.[44,45]

Specifically, I follow Fox & Pesetsky's (2003, 2004a) interpretation of ellipsis/PF-deletion, given in (48).

(48) *Ellipsis*

Ellipsis of α involves (i) the non-pronunciation of any terminal element dominated by α and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by α.

[cf. Fox & Pesetsky 2003:21]

The notion of 'Ordering Table' in (48) is defined by Fox & Pesetsky (2003:16) as follows: "An *Ordering Table* receives the output of [the linearization algorithm] at various points as the derivation proceeds. The information that the Ordering Table receives from [Linearization] at any given stage is added to the information already present in the "Ordering Table." What sets this definition apart from other 'deletion/non-insertion' proposals is that ellipsis not only affects the pronunciation

[44] Nevertheless, the analysis in this dissertation can be made compatible with an actual deletion-view of ellipsis as well.

[45] According to Andrés Saab (p.c.), there *is* evidence that deletion analyses and non-insertion approaches are empirically distinguishable. The empirical evidence for instance comes from the (in)sensitivity of phonological and (late) morphological features to the identity condition on ellipsis (thus extending and generalizing the more traditional conception of the identity condition on ellipsis that conceives identity as an LF or post-LF condition). This is because under the deletion approach, but not under the non-pronunciation one, there is a point in the derivation in which such features are present (i.e. before deletion). The evidence suggests that phonological and late morphological features are fully insensitive for the identity condition on ellipsis, which favors a non-pronunciation approach over one in terms of deletion. Saab (p.c.) stresses – and I agree – that the right way to proceed, methodologically speaking, is comparing both approaches under every possible formulation of the identity condition (as in Saab 2009). If it turns out that the non-insertion approach is preferable to the deletion approach, this supports the point of view adopted in this dissertation.

of terminal elements, it also targets the linearization statements mentioning these terminals.

Fox & Pesetsky (2003, 2004a) seem to imply that when a node is targeted by ellipsis, ordering statements referring to the terminals dominated by this node are first generated, but deleted later on by ellipsis. In what follows, I will give (ii) in (48) a slightly different interpretation, though. Suppose ellipsis targets a node α. Then, the ordering statements referring to the terminals dominated by α that were generated earlier in the derivation are deleted. New ordering statements are, however, not generated and added to the Ordering Table (only to be deleted just afterwards). Landau (2004) and Kandybowicz (2007) argue that economy principles disfavor pronouncing elements that are unnecessary at the PF interface level. This reasoning can be straightforwardly extended to ordering statements that are unnecessary at the PF interface.

4.2 The timing of ellipsis

4.2.1 BACKGROUND: LICENSING OF ELLIPSIS[46]

Linguistic material cannot always be omitted, even when the interpretation is clear in the context. Examples are given in (49): even though the noun *dress* in (49)a and the verb *arrived* in (49)b are recoverable from the context, they cannot be elided.

(49) [Aelbrecht 2009:15]

a. I bought the red dress and Alice bought the blue *(dress).

b. * Max having arrived and Morgan not having, we decided to wait.

Likewise, the distribution of a particular elliptical phenomenon across languages can be quite limited. Lobeck (1995) and Aelbrecht (2009) note, for instance, that while the auxiliary *have* in English allows its VP-complement to be elided, its equivalent in a language like Italian does not.

(50) [Aelbrecht 2009:15]

a. Monica has paid already, but Alice hasn't.

b. * Antonio ha già pagato, ma Stefano non ha ancora.
Antonio has already paid but Stefano not has yet [Italian]

[46] The discussion in this subsection is based mainly on Johnson (2001) and Aelbrecht (2009).

These examples show that ellipsis can only occur in specific syntactic environments. This is referred to as the *licensing condition* on ellipsis. The specific licensing criteria are dependent on the elliptical phenomena under consideration, and on language particular properties. In English (50)a, a finite auxiliary (*has*) syntactically licenses VP-ellipsis. The Italian finite auxiliary *ha* in (50)b, on the other hand, does not license VP-ellipsis.

Following Zagona (1982, 1988a, 1988b), Lobeck (1992, 1995), Martin (1992, 1996), Johnson (2001), Merchant (2001 *et seq*.), and Aelbrecht (2009), amongst others, I take ellipsis to require a licensing head. That is, only particular heads with a certain feature specification, henceforth licensors, can trigger PF-deletion: their complements constitute the ellipsis site.[47] For VP-ellipsis in English, for instance, the licensing head is generally taken to be the inflectional head T (when it is occupied by a finite auxiliary, a modal, or the infinitival marker *to*), see the discussion in section 4 of chapter 3 (see also sections 2.3 and 3.2 of chapter 4).[48]

4.2.2 DERIVATIONAL ELLIPSIS (AELBRECHT 2009)

As discussed in the previous subsection, ellipsis is licensed by a licensor, a head carrying a certain morpho-syntactic feature specification. The question arises at which point in the derivation this licensor's complement is actually elided. As noted by Aelbrecht (2009:107), there are two possible implementations. Either the effect of merging the licensing head, i.e. ellipsis of its complement, is postponed until the derivation is finished, or ellipsis occurs immediately, as soon as the licensor is merged. Aelbrecht (2009:Ch.3.2) argues in favor of the latter option, i.e. ellipsis is derivational:

(51) Ellipsis occurs in the course of the derivation, as soon as the licensing head is merged. At this point the ellipsis site becomes inaccessible for any further syntactic operations, and vocabulary insertion at PF is blocked.
[Aelbrecht 2009:91, (1b)]

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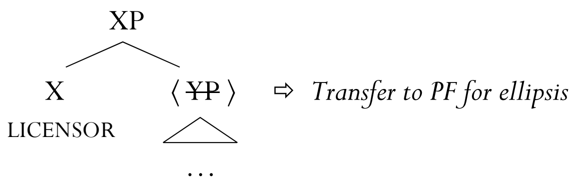
[47] I will not go into the various proposed implementations of the fact that ellipsis needs a licensing head. What matters here is solely that there is a licensing head, which triggers PF-deletion of its complement. See Lobeck (1992, 1995), Merchant (2001 *et seq.*), and Aelbrecht (2009), amongst others, for proposals on how to implement the licensing condition.

[48] See Zagona (1982, 1988a, 1988b), Lobeck (1992, 1995), Martin (1992, 1996), Johnson (2001), Aelbrecht (2009).

Thus, the effect of ellipsis is twofold. First, it marks the ellipsis site – i.e. everything c-commanded by the licensor – for ellipsis at PF. [49] As soon as the licensing head (X in (52)) is merged, its complement (YP in (52)) is immediately sent off to PF, marked for ellipsis. As a result, PF refrains from pronouncing anything inside the ellipsis site. For Aelbrecht (2009), this implies that lexical insertion into the terminal nodes of this part of the structure is blocked.

(52)



Second, at the moment a constituent is marked for ellipsis by a licensing head, the ellipsis site is frozen for any further syntactic operations.[50] This is because the ellipsis site has been sent off to PF, where it is inaccessible to narrow syntax. Aelbrecht (2009:Ch.3) presents supporting evidence concerning extraction data in Dutch modal complement ellipsis: extraction out of the ellipsis site is only possible up until the moment when the licensor is merged.[51] As syntactic freezing of the ellipsis site is not the primary concern here, I refer the reader to Aelbrecht (2009) for details and relevant data.

In this dissertation, I adopt Aelbrecht's (2009) proposal that ellipsis takes place in the course of the derivation.[52] The ellipsis site is sent off to PF as soon as the licensing head is merged. Adopting Fox & Pesetsky's (2003, 2004a) view on ellipsis, given in (48) and repeated here, this means that the terminals in the complement of the licensor are left unpronounced and all linearization statements mentioning them are immediately deleted at PF.

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[49] The details in Aelbrecht (2009:Ch.3.2) are somewhat different. According to Aelbrecht, it is not always the complement of the licensor that is elided. She implements ellipsis licensing via Agree, which is not taken into consideration here. I gloss over these details here. See section 2.2 of chapter 4 for some related discussion, though.

[50] Here, Aelbrecht (2009) deviates from 'traditional' PF-deletion accounts.

[51] Aelbrecht (2009) argues that the licensor itself can attract an element out of the ellipsis site prior to ellipsis, as all operations triggered by the same head take place simultaneously.

[52] To be precise, and as should be clear from the foregoing discussion, it is the *licensing/marking/shipping off of* ellipsis that takes place in the course of the derivation. The reader should keep in mind that this is what I mean when I talk about "ellipsis in the course of the derivation" in the following chapters.

(48) *Ellipsis*
Ellipsis of α involves (i) the non-pronunciation of any terminal element dominated by α and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by α.
[cf. Fox & Pesetsky 2003:21]

This is perfectly in line with the cyclic view of the grammar adopted here. Just like phasal domains and complex left branches (cf. section 3.3.1), ellipsis sites are shipped off to PF in the course of the derivation. There is one crucial difference, however. While phasal domains and complex left branches are linearized during the derivation (i.e. they add ordering statements to the Ordering Table), transfer of an ellipsis site results in the deletion of linearization statements (and non-pronunciation).

CHAPTER 3

NEGATIVE INDEFINITES & ELLIPSIS

1 Introduction[*]

This chapter focuses on the English negative indefinite determiner *no,* cf. (1) and (2):

(1) Vegetarians eat no meat.

(2) [Iatridou & Sichel 2011:611, (43)]
You must do no homework tonight.
Meaning: You are required to go without homework tonight. ($\Box$ > *no*)

In (2), the surface and scope position of the negative indefinite coincide: the universal deontic modal *must* precedes and outscopes *no*. Crucially, however, the interpretation of the negative indefinite does not always correspond to its surface position. In (3), for example, the negative indefinite scopes above the existential deontic modal *may*, even though it surfaces following the modal.[1]

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[*] This chapter is partly based on joint work with Jeroen van Craenenbroeck, cf. van Craenenbroeck & Temmerman (2010, 2011).

[1] The example in (3) is based on Rullmann (1995:195, (1)). For the time being, I abstract away from the distinction between wide scope and split scope readings of negative indefinites. For (3) this distinction could be represented as in (i).

(i) They may fire no nurse.
a. WIDE SCOPE: There is no nurse x such that: they may fire x. ($\neg > \exists > \Diamond$)
b. SPLIT SCOPE: They are not allowed to fire any nurse. ($\neg > \Diamond > \exists$)

What matters at this point is merely the observation that the scope position of (part of) the negative indefinite and its surface position do not always coincide.

(3) They may fire no nurse.
Meaning: There is no nurse x such that: they are allowed to fire x. ($no > \Diamond$)

The analyses of negative indefinites in the literature – discussed in more detail in section 6 of this chapter – can be roughly divided into two types. The traditional view is that negative indefinites are atomic lexical elements; more precisely, they are negative generalized quantifiers. The sentence in (4)a would then be analyzed as sketched in (4)b, where the meaning of *no* is the generalized determiner NO as in (4)c, cf. Sauerland (2000a).

(4) [Sauerland 2000a:416-7, (1)-(2)]
a. Andy has no enemies.
b. NO ($[\![$enemies$]\!]$) (λx Andy has x)
c. NO $(R)(S) = 1$ iff $\forall x : R(x) \Rightarrow \not S(x)$

The second view takes negative indefinites to be complex, decomposable lexical items. That is, while being spelled out as a single word, *no* contains two (syntactically and semantically) distinct ingredients: (sentential) negation and an indefinite (expressing existential quantification). This is sketched for sentence (4)a in (5)a and paraphrased in (5)b.[2,3] Note that the truth conditions of (5)a and (4)b are identical.

(5) [Sauerland 2000a:417, (3)]
a. NOT ($\exists x \in [\![$enemies$]\!]$: Andy has x)
b. 'It's not the case that Andy has an enemy.'
'Andy doesn't have any enemies.'

[2] For the treatment of the quantifier word *any* as an existential (on a par with *a/some*) instead of a universal (on a par with *every*), see Klima (1964), Kamp (1973), and Sag (1976), among others (*pace* e.g. Quine 1960).

[3] As noted by Anikó Lipták (p.c.), the decomposition analysis raises questions with respect to NPI-licensing by negative indefinites: Does the scopal position of the negation-component matter, or the spell-out position of the negative indefinite? The former case would constitute an instance of NPI-licensing in which the scope position of negation is higher than the spell-out point of the negator: It remains to be seen whether there are other contexts in which this is the case. This obviously requires a detailed investigation of the interaction between negative indefinites and NPIs. Moreover, given that answering this question also depends on one's specific implementation of NPI-licensing, I set this issue aside. NPI-licensing is briefly addressed later on in this chapter and chapter 5.

In the latter account, that means that a sentence containing a negative indefinite is equivalent to a sentence containing a combination of a negative marker and an (NPI) indefinite, i.e. that (1) is equivalent to (6).[4]

(6) Vegetarians do not eat any meat.

The analysis in this chapter falls squarely in the 'decomposition camp', as I will take the English negative indefinite *no* to consist of a negative head and an indefinite DP.

The first 'lexical decomposition' analyses, proposed by Jacobs (1980) and Rullmann (1995) for German and Dutch, posit that an amalgamation/incorporation process combines a negative marker and indefinite into a negative indefinite.[5] As noted by Zeijlstra (2011:19), however, their proposals crucially rely on phonological string adjacency between the negation and the indefinite. Such an adjacency configuration is not possible for object negative indefinites in English: the (VP-external) position occupied by negation is never string-adjacent to the (postverbal) position where the indefinite appears. This is clear in (6), where sentential negation and (the determiner of) the postverbal indefinite object are separated by the verb. Thus, at first sight, it seems that a negative indefinite determiner of an English object DP cannot be the result of amalgamation/incorporation. This morphological relation requires a higher degree of locality than seems to exist between the negation and the determiner in English.

Nevertheless, in this chapter, I propose that an English negative indefinite in object position *is* the result of a (fairly superficial) process that morphologically combines a negative head and the indefinite determiner of the object DP. I argue that negative indefinites are the result of a PF-process, which I call Fusion (following Johnson 2010a, 2011a). In particular, I refer to this morphological process as Fusion Under Adjacency (FUA). I propose that the locality/adjacency required for Fusion of the negative head and the determiner is established under multidominance, in combination with cyclic Spell-Out/linearization. The analysis takes as a starting point Johnson's (2010a, 2011a) multidominant account of WH-movement and Quantifier Raising, and was inspired by an informal sketch on negative indefinites in an e-mail sent by Kyle Johnson (referred to here as Johnson 2010b). Throughout this chapter, the similarities and differences with Johnson (2010a,b, 2011a) will become clear.

[4] The choice between a *no*-form and an *any-form* (+negative marker) seems to be determined by the degree of formality in English. Negative indefinites are more formal than analytic forms; they tend to have a high register flavor in English (cf. Tottie 1991; Anderwald 2002; Svenonius 2002; Tubau 2008).

[5] For discussion of these analyses, see section 6.1.

The main topic of this chapter is the interaction between negative indefinites and ellipsis – both verbal and clausal – in English. The empirical basis for the discussion is the two empirical generalizations in (7) and (8):

(7) THE CLAUSAL/VERBAL GENERALIZATION
While in clausal ellipsis *any* can antecede the ellipsis of *no*, in verbal ellipsis this polarity switch is disallowed.

(8) THE VPE/NI GENERALIZATION
A negative indefinite in object position cannot scope out of a VP-ellipsis site.

Importantly, in this chapter, I argue that the PF-process of ellipsis can bleed the formation of negative indefinites. I also show that the generalizations in (7) and (8) are problematic for accounts that do not take negative indefinites to involve a morphological process (but rather QR or Agree/feature checking, cf. section 6).

This chapter is organized as follows. In the next section, I present the Clausal/Verbal Generalization (subsection 2.1) and the VPE/NI generalization (subsection 2.2). The latter generalization receives additional empirical support in subsection 2.3, which presents an extensive overview of the interaction between deontic modals, negative indefinites, and verbal ellipsis. In section 3, I present a multidominant, cyclic analysis of English negative indefinites. Because of remerge and cyclicity, the locality required for FUA is obtained, and a negative head and an indefinite determiner can fuse together. In section 4, I show how the interaction between negative indefinites and ellipsis in English (cf. generalizations (7) and (8)) is handled by this account. I argue that the PF-process of ellipis bleeds FUA. In section 5, the proposal is extended: this section presents a cyclic, multidominant analysis of *not…any* (the 'non-fused version' of *no*). In section 6, I consider previous analyses of negative indefinites and point out which aspects of those accounts are problematic in light of the empirical data under discussion here. Finally, section 7 concludes.

2 Negative indefinites and ellipsis: The data

This section discusses the behavior of English negative indefinites in verbal and clausal ellipsis, that is VP-ellipsis and TP-ellipsis (sluicing, fragment answers, and stripping), respectively.[6] Section 2.1 deals with the interchangeability of *any* and *no* in verbal and clausal ellipsis: *any* can only antecede the ellipsis of *no* in clausal ellipsis. In section 2.2, it is shown that negative indefinites in object position cannot take scope out of VP-ellipsis sites. Section 2.3 presents an extensive overview of the interaction of deontic modals, negative indefinites, and verbal ellipsis. The observations in this third subsection provide additional empirical support for the generalization in section 2.2.

2.1 The Clausal/Verbal Generalization

This section investigates the interchangeability of *any* and *no* in verbal ('low') and clausal ('high') ellipsis. It is shown that while *not…any* can antecede the ellipsis of *no* in clausal ellipsis, this switch is disallowed in verbal ellipsis. Before going through the relevant data (subsection 2.1.2), some background on polarity switches is given in the next subsection.

2.1.1 BACKGROUND: POLARITY SWITCHES UNDER ELLIPSIS

It has been observed in the literature that indefinites and polarity items are interchangeable under ellipsis (cf. Sag 1976; Ladusaw 1979; Hardt 1993; Fiengo & May 1994; Giannakidou 1998; Johnson 2001; Merchant 2011). Consider the VP-ellipsis examples in (9) and (10). In the example in (9), the antecedent VP contains *any*. The elided VP in (9) can, however, not be identical to its antecedent, i.e. it cannot contain the polarity item (cf. (9)a). This would violate the licensing conditions on polarity items, as *any* is not c-commanded by an appropriate licensor. Rather, the elided VP in (9) seems equivalent to (9)b, with the indefinite *some*. The meaning of the clause containing the ellipsis can be given the representation in (9)c,

[6] As pointed out by Iatridou & Sichel (2011:610), some speakers of English do not accept negative indefinites in object position. This is confirmed by some of my informants. Non-elliptical sentences with an object negative indefinite are degraded for these speakers, so questions about the acceptability of *no* in ellipsis sites are irrelevant in their case. The judgments concerning object negative indefinites in this chapter are those of the subset of English speakers for whom *no* in object position is acceptable.

as proposed by Merchant (2011:8). The reverse situation is shown in (10). Here, the antecedent VP includes the indefinite *some*, but the polarity item *any* is required in the ellipsis site (cf. (10)a,b). The meaning of the clause containing the ellipsis is represented by (10)c. As such, (9) and (10) show that the negative polarity item *any* can antecede the ellipsis of the indefinite *some* (and vice versa).

(9) From *any* to *some* in verbal ellipsis
John didn't see **any**one, but Mary did.
a. * … but Mary did ⟨ ~~see anyone~~ ⟩.
b. … but Mary did ⟨ ~~see **some**one~~ ⟩.
c. $\exists x.see(Mary,x)$ [Merchant 2011:8, (15)]

(10) From *some* to *any* in verbal ellipsis
John saw **some**one, but Mary didn't.
a. ≠ … but Mary didn't ⟨ ~~see someone~~ ⟩.
b. … but Mary didn't ⟨ ~~see **any**one~~ ⟩.
c. $\neg\exists x.see(Mary,x)$ [Merchant 2011:8, (16)]

A similar pattern has been observed for the negative indefinite *no*. Johnson (2001) and Merchant (2011) note that the elided VPs in (11) do not have a 'negative' meaning, although their antecedents contain the negative indefinite *no*.[7] The sentences in (11) illustrate that a VP-ellipsis site can include the indefinite *a* or *some* while its antecedent contains *no*. In short, *no* can antecede the ellipsis of *a* or *some* in verbal ellipsis.

(11) From *no* to *a/some* in verbal ellipsis
a. I could find **no** solution, but Holly might ⟨ ~~find *no/**a** solution~~ ⟩. [Johnson 2001:468-9, (103)-(104)]
b. "There will be no Paradise for me. But if there were ⟨ ~~*no/**a** Paradise (for me)~~ ⟩, I wouldn't expect to see you there…" [Merchant 2011:12, (25)]
c. Although John will trust **no**body over 30, Bill will ⟨ ~~trust *nobody/ **some**body over 30~~ ⟩. [Sag 1976:312, (4.1.23)]

According to Merchant (2011), *no* cannot antecede the ellipsis of *a/some* in clausal ellipses, unlike in verbal ellipsis: "clausal ellipses cannot 'ignore' negation"

[7] For Merchant (2011:12), it is not possible "at all" for the ellipsis sites in (11) to contain the negative indefinite *no*. For Johnson (2001:469), the elided VPs "only marginally" have the negative reading.

(Merchant 2011:19). Merchant provides examples such as the fragment answer in (12):

(12) [cf. Merchant 2011:20, (44b)]
Q: When was **no**-one at the shop?
A: Between 5 and 6 o'clock ⟨~~**no**-one was at the shop/*someone was at the shop~~⟩.

It is, however, quite easy to find examples of clausal ellipsis in which *no* antecedes the ellipsis of *a/some*. Example (13), a case of sluicing, shows that a change from *no* to *a/some* in clausal ellipsis is in principle possible. I therefore take Merchant's (12) example to be degraded on other grounds (cf. also footnote 14), which are not the primary concern here.

(13) <u>From *no* to *a/some* in clausal ellipsis:</u>
This is a very serious problem and **no** solution has been posted yet. I wonder when/if ⟨ ~~**a** solution will be posted~~ ⟩?[8]

The examples in (9)-(13) leave us with an incomplete picture of the interchangeability of the indefinite *some/a*, the negative polarity item *any*, and the negative indefinite *no* under verbal and clausal ellipsis, as the table in (14) shows:

[8] http://www.wilderssecurity.com/showthread.php?t=284959
According to Anikó Lipták (p.c.), examples like (13) are actually degraded, because sluicing requires specific WH-remnants and *when* in (13) is non-specific (cf. also Schwabe 2003, who proposes that the antecedent of the remnant must allow for a specific interpretation, which is obviously not the case here). Some speakers do, however, allow for a remnant such as *when* in (13): it might be that "for some speakers you *can* force a specific reading on *when* here," as Anikó Lipták (p.c.) puts it. Note that the specificity requirement probably explains why examples like (i) are more plausible than the one in (13) for some speakers:

(i) a. Thank goodness, there are no pictures circulating out there. Or at least, I don't know where.
b. A: I'm staring at the side table and there are no keys here.
B: Then I don't know where.

But even given these caveats, it is still the case that the negative indefinite *can* antecede the ellipsis of its positive counterpart (and it is only this observation that I am interested in here).

(14)

antecedent	ellipsis site	verbal ellipsis	clausal ellipsis
any	*a/some*	✓	
no	*a/some*	✓	✓
a/some	*any*	✓	
a/some	*no*		
no	*any*		
any	*no*		

This section focuses on the bottom two rows of the table, i.e. on the interchangeability of *any* and *no* in verbal and clausal ellipsis. To make the picture complete, the examples (15)-(18) give illustrations to fill the blank cells in the upper four rows.

(15) From *a/some* to *no* in verbal ellipsis: *

a. The people said, "The servant has made **a** mistake." The servant replied, "The servant has made **no** mistake. It is her mistress who has made the mistake."[9]

a'. * The servant replied, "The servant has ⟨ ~~made **no** mistake~~ ⟩."[10]

(16) From *a/some* to *no* in clausal ellipsis: *

a. Will there be **a** change? "There are two reasons why there will be **no** change," Saul emphasized.[11]

a'. * "There are two reasons why ⟨ ~~there will be **no** change~~ ⟩."[12]

(17) From *a/some* to *any* in clausal ellipsis:

a. Will there be **a** change? "There are two reasons why not ⟨ ~~there will be **any** change~~ ⟩."

b. He might have drawn **some** votes from Clinton, but probably not Obama or McCain ⟨ ~~he might have drawn **any** votes from~~ ⟩.[13]

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[9] http://www.netplaces.com/fairy-tales/princesses-and-princes/the-prince-and-the-fakir.htm

[10] The sentence in (i) is the grammatical counterpart of (15)a'.

(i) The servant replied, "The servant hasn't ⟨ ~~made **a(ny)** mistake~~ ⟩."

[11] http://www.cardiffstudios.com/kmzt-demise.html

[12] The sentence in (17)a is the grammatical counterpart of (16)a'. See Merchant (2011:19, fn.13) on *why (not)*.

[13] http://www.youtube.com/watch?v=dwP6PtjL2-I

(18) <u>From *any* to *a/some* in clausal ellipsis:</u>[14]

a. I also checked a Blockbuster today. They didn't have **any** [keyboards] and don't know when ⟨ ~~they will have (**some**) keyboards~~ ⟩.[15]

b. I still supported Arsenal even though they didn't win any silverware. But I always wonder: When ⟨ ~~will Arsenal win (**some**) silverware~~ ⟩?[16]

Summarizing, the table in (19) shows that a polarity switch from negative to positive polarity is in principle possible in both verbal and clausal ellipsis. Thus, quantificational force can be changed in both low and high ellipsis. The third and fourth row indicate, however, that an element with positive polarity can only antecede the ellipsis of negative polarity when the marker of negation is outside the ellipsis site, both in verbal and in clausal ellipsis. As pointed out to me by Anikó Lipták (p.c.), the fact that *a/some* cannot antecede the ellipsis of *no* (whether it is part of a verbal or clausal ellipsis site) follows straightforwardly from e-GIVENness (Merchant 2001). An expression E can be elided only if this E is e-GIVEN (where 'e' stands for ellipsis). Whether a constituent is e-GIVEN is determined by the presence of a salient antecedent (for a more precise definition, see Merchant 2001:26). *A/some* cannot antecede the ellipsis of *no* because negation cannot be part of the ellipsis site in case the antecedent does not contain negation (in compliance with e-GIVENness).

(19)

antecedent	ellipsis site	verbal ellipsis	clausal ellipsis
any	*a/some*	✓	✓
no	*a/some*	✓	✓
a/some	*any*	✓	✓
a/some	*no*	*	*
no	*any*		
any	*no*		

[14] Note that examples can be found where *any* to *a/some* interchangeability in clausal ellipsis fails, such as (i):

(i) I didn't get **any** result. I wonder why. [http://health.groups.yahoo.com/group/AlternativeAnswers/message/41302]
= I wonder why ⟨ ~~I didn't get **any** result~~ ⟩.
≠ I wonder why ⟨ ~~I got **a/some** result~~ ⟩.

The problem with (i) is that the interpretation with *a/some* in the ellipsis site does not make sense. Something similar might be going on in Merchant's (2011) example (12) discussed above.

[15] http://www.gamefaqs.com/boards/971478-/56986353

[16] http://gunnerockya.blogspot.com/2008_05_01_archive.html

Given this background, the next subsection makes the picture complete: it is investigated whether or not the negative indefinite *no* can antecede the ellipsis of the negative polarity item *any* and vice versa. It is shown that, while *no* can antecede the ellipsis of *any* in both verbal and clausal ellipsis, *any* can only antecede the ellipsis of *no* in clausal ellipsis.

2.1.2 *ANY/NO* INTERCHANGEABILITY UNDER ELLIPSIS

2.1.2.1 No *can antecede the ellipsis of* any *in verbal and clausal ellipsis*

As the examples in (20) and (21) show, clausal and verbal ellipsis sites can include the negative polarity item *any* when the antecedent contains the negative indefinite *no*.

(20) From *no* to *any* in verbal ellipsis

a. The press pulled **no** punches. Leaf didn't ⟨ ~~pull **any** punches~~ ⟩ either.[17]

b. Many people there have no idea who he was but apparently Obama didn't ⟨ ~~have **any** idea who he was~~ ⟩ either.[18]

c. "I have no idea how a hunter would have gotten his hands on it. It makes **no** sense." – "No, it doesn't ⟨ ~~make **any** sense~~ ⟩."[19]

d. The problem of morality for atheism is this: if atheism is true, then nature is all there is; nature has **no** values and as such can provide no grounding for good and evil. – Sure, nature doesn't ⟨ ~~have **any** values~~ ⟩, but human beings do.[20]

e. There was a pause again. Leoni's posture, lying back in the chair, was strained. He asked Starmer: "My authentication, what did you really think about it? You were the only one who made **no** comment." – "Elvira didn't ⟨ ~~make **any** comment~~ ⟩." – "Elvira." He shrugged. "The only one." He came forward in his chair. "Tell me what you thought. Honestly."[21]

f. Who here has **no** identification? – I don't ⟨ ~~have **any** identification~~ ⟩.[22]

[17] http://bleacherreport.com/articles/459031-ryan-leaf-quietly-returns-home-to-build-a-life
[18] http://www.newstatesman.com/blogs/the-staggers/2011/05/special-relationship-visit
[19] http://bleeding-muse.livejournal.com/92002.html
[20] http://www.atheismresource.com/2010/stalin-killed-for-political-reasons
[21] From *A Journey South*, a novelette by John Christopher (1991). Available at http://www.infinityplus.co.uk /stories/ journeysouth.htm
[22] http://www.godlikeproductions.com/forum1/message1124124/pg1

(21) From *no* to *any* in clausal ellipsis

a. If there are **no** bodies, people will wonder why not ⟨ ~~there are **any** bodies~~ ⟩.[23]

b. This is why the target's hardness has **no** importance, and the impactor's hardness neither ⟨ ~~has **any** importance~~ ⟩.[24]

c. There is **no**-one at strawweight, and probably not ⟨ ~~there is **any**one~~⟩ at junior flyweight either, who could live with him.[25]

d. This reversal-of-effect had **no** correspondence in the EEG changes and also not in self-reported hunger and voraciousness ⟨ ~~this reversal-of-effect had **any** correspondence~~ ⟩.[26]

2.1.2.2 Clausal ellipsis: any *can antecede the ellipsis of* no

Consider the example in (22). The antecedent clause of the fragment answer in (22)a includes *any*. The non-elliptical version of (22)b is an appropriate anwer to the question in (22). Based on this example, one might be inclined to conclude that the negative polarity item *any* can antecede the negative indefinite *no* in clausal ellipsis. For this example, it is however, unclear, whether the clausal ellipsis site indeed contains *no*, or whether it actually includes *any*, as the non-elliptical version of (22)c also constitutes an appropriate answer to the question in (22).

(22) Q: Who didn't eat **any** cookies?

A: a. Mary.

b. Mary ⟨ ~~ate **no** cookies~~ ⟩.

c. Mary ⟨ ~~didn't eat **any** cookies~~ ⟩.

In order to establish that *any* can indeed antecede *no* in clausal ellipses, it needs to be proven that the ellipsis site contains *no*. Hence, we need to find a grammatical instance of clausal ellipsis where *any* is excluded inside the clausal ellipsis site. Subject NPIs provide a means of testing if the ellipsis site contains *any* or *no*. Consider the example in (23). (23)a is the fragment answer to the question in (23); (23)b is the same fragment answer, followed by an embedded sluice.

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[23] http://morleyevans.blogspot.com/2011/03/where-did-people-go.html
[24] http://lofi.forum.physorg.com/Nuclear-Power-Plants-As-Dirty-Bombs_27035-100.html
[25] http://www.goldengloves.co.za/boxing-news/berman-takes-aim-at-new-york/
[26] http://www.sciencedirect.com/science/article/pii/0031938479903743

(23) [context: the TV show *American Idol*]
Q: Which song didn't anyone like?
A: a. Katie's song.
b. Katie's song. Guess why!

As the sentences in (24) show, the non-elliptical variants of (23)a and (23)b with the subject *anyone* are ungrammatical: they are ill-formed due to violations of NPI-licensing.

(24) a. * Katie's song anyone didn't like.
b. * Guess why anyone didn't like Katie's song!

Negative polarity items must be c-commanded by negation at S-structure/Spell-Out in English (Giannakidou 1998; den Dikken et al. 2000). In (25)a, the subject NPI *a living soul* is licensed by the c-commanding *n't*. The example in (25)b, on the other hand, where the NPI is not c-commanded by *not*, is ungrammatical. (25)b also shows that this requirement has to be met at S-structure/Spell-Out, i.e. reconstruction of the subject into its vP-internal base position at LF cannot feed NPI-licensing.[27]

(25) a. Which college sports doesn't a living soul here in Seattle care about?
b. * Which college sports does a living soul here in Seattle not care about?

a'. $[_{CP}$ Which sports$_i$ $[_{C'}$ doesn't$_j$ $[_{TP}$ a living soul$_k$ $[_{TP'}$ t_j $[_{vP}$ t_k care about t_i]]]]]?
b'. * $[_{CP}$ Which sports$_i$ $[_{C'}$ does$_j$ $[_{TP}$ a living soul$_k$ $[_{T'}$ t_j $[_{vP}$ not t_k care about t_i]]]]]?

In the ill-formed (24)a and (24)b, the subject NPI *anyone* is not c-commanded by *n't* at S-structure/Spell-Out: these examples are ungrammatical because they constititute violations of NPI-licensing.[28] The negative polarity item *anyone* therefore seems excluded as the subject of the (grammatical) clausal ellipses in (23). It thus

[27] The bracketed structures in this section are simplified representations; see sections 3 and 4 of this chapter for a more detailed discussion of the clausal functional sequence. This does not change the argumentation, though. Note also that I make use of the traditional trace notation here and in the following representations for ease of exposition.

[28] Note that the (ungrammatical) sentences in (i) – with the negative auxiliary (+ negation *n't*) raising to C to license the subject NPI in Spec,TP – cannot be the non-elliptical counterparts of (24)a and (24)b either. Moreover, note that embedded *why*-questions do not license *anyone* either (cf. (ii)).

(i) a. * Katie's song didn't anyone like.
b. * Guess why didn't anyone like Katie's song.

(ii) * Guess why anyone liked Katie's song.

seems that (23) provides evidence that *any* can antecede the ellipsis of *no* in clausal ellipses like fragment answers and sluicing. The clauses containing the ellipsis in (23)a and (23)b would then have the structures in (26)a and (26)b, respectively:

(26) a. [$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP}$ ~~no one$_k$~~ [$_{T'}$ ~~T~~ [$_{vP}$ ~~t_k liked t_i~~]]] ⟩]].
b. Guess [$_{CP}$ why [$_{C'}$ C ⟨ [$_{TP}$ ~~no one$_k$~~ [$_{T'}$ ~~T~~ [$_{vP}$ ~~t_k liked Katie's song~~]]] ⟩]].

As it stands, however, the argument is not yet airtight. Merchant (2001) has argued that clausal ellipsis suspends the requirement that the subject raise to Spec,TP (the *Extended Projection Principle*, EPP), based on the lack of Subject Condition effects under sluicing. In a nutshell, movement out of an elided subject is licit because the extraction proceeds from the base position of the subject in Spec,vP, not from its derived position in Spec,TP. Van Craenenbroeck & den Dikken (2006) present two additional arguments in favor of the hypothesis that EPP-driven subject raising to Spec,TP is bled in clausal ellipsis. One argument is related to pseudoclefts, the other to the absence of subject clitics and complementizer agreement on sluiced WH-phrases (cf. also den Dikken et al. 2000; van Craenenbroeck 2010). This means that the examples in (23) could also be represented as in (27):

(27) a. [$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP}$ __ [$_{T'}$ ~~didn't~~ [$_{vP}$ ~~anyone like t_i~~]]] ⟩]].
b. Guess [$_{CP}$ why [$_{C'}$ C ⟨ [$_{TP}$ __ [$_{T'}$ ~~didn't~~ [$_{vP}$ ~~anyone like Katie's song~~]]] ⟩]].

In these structures, the subject NPI *anyone* would be licensed in its vP-internal base position, as it is c-commanded by the negative auxiliary. Therefore, (23) is not the example that establishes that *any* can antecede the ellipsis of *no*, as there is still the possibility that *any* is licensed in Spec,vP. What we need is an example with an ellipsis site in which an NPI-subject is illicit both in its derived and in its base generated position.

In order to exclude a subject NPI in the clausal ellipsis site, we can resort to the *Immediate Scope Constraint* (cf. Linebarger 1980, 1987; Guerzoni 2006; Lechner 2007), which says that the licensing relation of NPIs and negation is subject to a locality condition. An NPI can only be licensed if it is in the 'immediate' scope of negation: No other 'logical' elements, corresponding roughly to propositional operators (e.g. quantificational NPs and adverbs), can intervene between an NPI and its licensing negation.

(28) *Immediate Scope Constraint (ISC)*

"An NPI is acceptable in a sentence S if in the LF of S […] the NPI is in the Immediate Scope (IS) of [NOT]. [i.e.] […] only if (1) it occurs in […] the scope of NOT, and (2) […] there are no 'logical' elements intervening between it and NOT." [Linebarger 1987:338, cited in Guerzoni 2006:360]

(29) [Lechner 2007:23, (61), referring to Linebarger 1987]

a. He didn't like anything. (¬ > NPI)
b. * He didn't always like anything. (* ¬ > ∀ > NPI)

(30) [Lechner 2007:23, (62), referring to Linebarger 1980]

a. I didn't want her to eat any cheese. (¬ > NPI)
b. * I didn't want every boy to eat any cheese. (* ¬ > ∀ > NPI)

The universal quantifiers *always* and *every boy* intervene between the negation and the NPI in (29)b and (30)b, triggering a violation of the Immediate Scope Constraint. Therefore, in these cases, the NPI is not licensed.

By including a 'logical' element such as *always* in the antecedent of the clausal ellipsis site, the Immediate Scope Constraint can ensure that a subject NPI is illicit in the ellipsis site, regardless of whether it occupies Spec,TP or Spec,vP. Consider the example in (31):

(31) [context: There is a contest to choose which song will represent the UK in the Eurovision Song Contest. There are several qualifying rounds, a semi final, and a final, and several judges choose their favorite song. When there is a tie in the final, the consistency of the votes given to the songs is taken into account. In particular, if a judge has consistently voted for a certain song in every round, this is considered a bonus. Now, we are in the final and there is a tie. We first want to eliminate the weakest song, i.e. we want to know if there is a song that no one consistently voted for. So we ask…]

Q: Which song didn't any judge always vote for?
A: Katie's song.

(31)A is a felicitous answer to the question in (31). It needs to be established then which (licit) structure is underlying this fragment answer. In determining what the syntactic structure underlying the ellipsis site looks like in (31)A, there are (at least) four options:

(32) **option #1**: *any judge* in Spec,TP

[$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP}$ ~~any judge$_k$~~ [$_{T'}$ ~~didn't~~ [$_{vP}$ ~~always~~ [$_{vP}$ ~~t_k vote for t_i~~]]]] ⟩]].

(33) **option #2**: *any judge* in Spec,*v*P

[$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP}$ __ [$_{T'}$ ~~didn't~~ [$_{vP}$ ~~always~~ [$_{vP}$ ~~any judge vote for t_i~~]]]] ⟩]].

(34) **option #3**: *no judge* in Spec,TP

[$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP'}$ ~~no judge$_k$~~ [$_{T'}$ ~~T~~ [$_{vP}$ ~~always~~ [$_{vP}$ ~~t_k voted for t_i~~]]]] ⟩]].

(35) **option #4**: *no judge* in Spec,*v*P

[$_{CP}$ Katie's song$_i$ [$_{C'}$ C ⟨ [$_{TP}$ __ [$_{T'}$ ~~T~~ [$_{vP}$ ~~always~~ [$_{vP}$ ~~no judge voted for t_i~~]]]] ⟩]].

Option #1 in (32) is ruled out due to lack of NPI-licensing (the subject NPI *anyone* is not c-commanded by negation at S-structure/Spell-Out). Option #2 in (33) can be rejected because it violates the Immediate Scope Constraint (* ¬ > ∀ > NPI). Hence, both options containing *any* are excluded. The structure in option #3 in (34), which contains *no*, does not violate any principles and leads to a converging derivation. The same holds for option #4 in (35), if den Dikken et al. (2000), Merchant (2001), van Craenenbroeck & den Dikken (2006), and van Craenenbroeck (2010) are right that the EPP can indeed be suspended under clausal ellipsis.[29] For the present purposes, it does not matter whether the ellipsis site in (31)A has the structure in (34) or (35). What is relevant here is that the clausal ellipsis site cannot contain the NPI-subject *any judge*; only the subject *no judge* is allowed.[30] As such, the ISC-example in (31)A demonstrates quite clearly that in clausal ellipsis, *any* can antecede the ellipsis of *no*.

[29] See Merchant (2001) on covert phrasal A-movement leading to the correct scope inside sluicing sites. Covert A-movement of *no judge* to Spec,TP would explain the (only available) reading ¬ > NPI > ∀ in (35).

[30] Two other options include (i) short Quantifier Raising of the NPI *any judge* to a position in between T and *always*, and (ii) ellipsis 'repairing' the ISC violation or the NPI-licensing violation. The former would falsely predict (29)b and (30)b to be grammatical (with the NPI *anything* undergoing short QR to a position in between *didn't* and *always*). The latter is unlikely in light of the fact that both the ISC and the condition on NPI-licensing have a prominent LF-component (for NPIs, cf. Giannakidou 1998; Moscati 2006); it is well known that ellipsis cannot repair LF-violations (cf. e.g. Sauerland 1996).

2.1.2.3 Verbal ellipsis: any *can<u>not</u> antecede the ellipsis of* no

While it was shown in the previous section that *any* can antecede the ellipsis of *no* in clausal ellipsis, this is not the case in verbal ellipsis. For example, in simple question-answer pairs with VP-ellipsis in the answer, *any* cannot antecede the ellipsis of *no*. This is shown in (36):

(36) [context: the Cannes Film Festival]

Q: Who didn't like **any** movie?

A: a. Quentin Tarantino didn't like **any** movie.

b. Quentin Tarantino liked **no** movie.

c. Quentin Tarantino didn't ⟨ ~~like **any** movie~~ ⟩.

d. * Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.

Although both (36)a and (36)b are licit answers to the question, only the elliptical answer containing *any* in (36)c is allowed. The answer with *no* in the VP-ellipsis site in (36)d is ungrammatical.

One could argue that the ill-formedness of (36)d is due to the presence of a stressed auxiliary *did* (the idea being that a stressed auxiliary is an indication of positive polarity). This is, however, not the case, as the effect persists in infinitival VP-ellipsis with a focused subject, as illustrated in (37):

(37) I know PETER didn't offer **any** help …

a. … and I also don't expect JOHN to offer **any** help.

b. … and I also expect JOHN to offer **no** help.

c. … and I also don't expect JOHN to ⟨ ~~offer **any** help~~ ⟩.

d. * … and I also expect JOHN to ⟨ ~~offer **no** help~~ ⟩.

As such, the data in (36) and (37) show that in verbal ellipsis *any* cannot antecede the ellipsis of *no*.

At this point, we can complete the picture of the interchangeability of the indefinite *some/a*, the negative polarity item *any*, and the negative indefinite *no*:

(38)

antecedent	ellipsis site	verbal ellipsis	clausal ellipsis
any	*a/some*	✓	✓
no	*a/some*	✓	✓
a/some	*any*	✓	✓
a/some	*no*	*	*
no	*any*	✓	✓
any	*no*	*	✓

Based on the bottom row in (38), the Clausal/Verbal Generalization in (39) can be formulated:

(39) THE CLAUSAL/VERBAL GENERALIZATION
While in clausal ellipsis *any* can antecede the ellipsis of *no*,
in verbal ellipsis this switch is disallowed.

2.2 The VPE/NI Generalization

Consider the sentences in (40) and (41), cases of verbal ellipsis:

(40) Q: Who liked **no** movie?
A: ? Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.[31]

(41) I know PETER offered **no** help, and I also expect JOHN to ⟨ ~~offer **no** help~~ ⟩.

The sentences in (40) and (41) show that the negative indefinite *no* can be part of the antecedent of a verbal ellipsis site that contains *no* as well (in short: that *no* can antecede the ellipsis of *no*).

If, however, the negative indefinite outscopes an element outside of the ellipsis site, *no* cannot antecede the ellipsis of *no*. Or, in other words, the ellipsis site cannot include a high-scoping negative indefinite *no*.

A first case in point concerns 'Neg>Mod modals', i.e. modals that typically scope below sentential negation (cf. Cormack & Smith 2002; Butler 2003; Iatridou & Zijlstra 2010; Iatridou & Sichel 2011). As noted by Iatridou & Zeijlstra (2010) and

[31] The mild markedness of this example (cf. the ? judgment) could be due to the fact that some informants prefer a fragment answer to VP-ellipsis as the elliptical answer to the question (see also footnote 41). See footnote 100 for an alternative hypothesis.

Iatridou & Sichel (2011), the existential deontic modal *can* is such a 'Neg>Mod modal'. That is, for most speakers of English, the sentences in (42) only have a reading in which the negation outscopes *can*. Some speakers do, however, allow the modal *can* to scope over the negation (see Cormack & Smith 2002). I indicate this speaker variation with the percentage sign %.

(42) a. [cf. Cormack & Smith 2002:13, (29a)]
John can not eat vegetables.
= It is not the case that John is permitted to eat vegetables. (¬ > ◇)
= It is permitted that John not eat vegetables. (% ◇ > ¬)

b. [cf. Iatridou & Sichel 2011:598,(4b)]
He cannot go to this party.
= It is not the case that he is permitted to go to this party. (¬ > ◇)
= It is permitted that he does not go to this party. (% ◇ > ¬)

Iatridou & Sichel (2011) argue that the scope of a negative indefinite with respect to a modal correlates with the general interpretive position of sentential negation. That is, according to Iatridou & Sichel, the relative scope of a modal and a negative indefinite DP matches the relative scope of a modal and sentential negation.[32] This generalization is confirmed by my informants for the interaction of the deontic modal *can* and an object negative indefinite. Most speakers can only interpret the object negative indefinite DP in (43) as scoping over deontic *can*; a same smaller set of speakers also allows the reverse scope relation. [33]

(43) John can do no homework tonight.
= It is not the case that John is permitted to do homework tonight. (¬ > ◇)
= It is permitted that John does not do homework tonight. (% ◇ > ¬)

Now consider the case of verbal ellipsis in (44), in which both the antecedent and the VP-ellipsis site licensed by *can* contain a negative indefinite *no*. This example is ungrammatical with the reading where negation outscopes the modal (¬ > ◇) for all speakers. It is only grammatical for those speakers who allow the negation to scope below the modal, and only with that reading (i.e. ◇ > ¬).

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[32] This generalization sets aside some complications. See section 2.3.

[33] Like Iatridou & Sichel (2011), I abstract away from split scope readings (¬ > modal > ∃) vs. wide scope readings (¬ > ∃ > modal) of negative indefinites here. See section 2.3 for a more extensive discussion.

(44) Q: Who can offer **no** help?
A: $^{\%}$ Quentin Tarantino can ⟨ ~~offer **no** help~~ ⟩. (* $\neg > \Diamond$, $^{\%}\Diamond > \neg$)

Thus, a negative indefinite inside a VP-ellipsis site cannot scope out of the ellipsis site to scope over the licensing modal *can*.

A second representative pattern can be observed when considering negative indefinite DPs as complements of a preposition. Consider the classic example in (45). The sentence in (45) admits two different readings (cf. Jackendoff 1972, Rochemont 1978):

(45) Mary looks good with no clothes.
= Mary doesn't look good with any clothes. (*the unfortunate dresser reading*)
= Mary looks good naked. (*the nudity reading*)

Haegeman (1995) and Svenonius (2002) propose that these two readings correlate with two different scope positions for the negative indefinite *no*. In the 'unfortunate dresser' reading, the negative indefinite takes high scope and the negation bears on the entire clause. Under the 'nudity' reading, the negation ranges over a smaller domain with a narrower scope (i.e. the negative indefinite takes low scope).[34]

In (46), the PP *with no clothes* is part of an antecedent for VP-ellipsis, and it is contained within the VP-ellipsis site:

(46) You say Mary looks good with **no** clothes, …
… but I say Julie does ⟨ ~~look good with **no** clothes~~ ⟩.
(**unfortunate dresser*, ^{ok}*nudity*)

This example shows that under VP-ellipsis, only the 'nudity' reading survives. Hence, when the negative indefinite is part of a VP-ellipsis site, it can only take low scope (corresponding to the 'nudity' reading). High scope, corresponding to the 'unfortunate dresser' reading, is excluded for a negative indefinite in a VP-ellipsis site. This again leads to the conclusion that the negative indefinite *no* cannot take scope outside of a VP-ellipsis site.

Based on these examples, the following generalization can be established:[35]

[34] Svenonius (2002:14) proposes that the nudity reading involves "a kind of clause-like negation occurring at the level of the PP".

[35] To be precise, *with no clothes* in (45) and (46) is actually not an object. See section 4.1.2 for a more detailed analysis of these examples.

(47) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

The following section offers an extensive empirical overview of the interaction of deontic modals, negative indefinites, and verbal ellipsis. These data provide additional support for the VPE/NI Generalization. It is shown that in all cases of verbal ellipsis licensed by a deontic modal, an object negative indefinite can only take narrow scope with respect to that modal, irrespective of the scopal possibilities in the non-elliptical counterpart.

2.3 Support for the VPE/NI Generalization: Deontic modals

2.3.1 INTRODUCTION: DEONTICS AND NEGATION

The modal verbs in English are *can/could, may/might, shall/should, will/would*, *have to, ought to, need (to), dare (to),* and *want to*. Modal verbs can get three different readings: deontic, epistemic, and dynamic.[36] Most modal verbs can express both deontic and epistemic modality. Dynamic modality can only be expressed by a limited number of modal verbs (for instance, *dare (to)* and *want to*). This section discusses the interaction of deontic modals, negative indefinites, and verbal ellipsis.[37] Deontic modality, discussed in this section, involves the giving of directives (by an external source, mostly the speaker, to another participant, mostly the subject), in terms of notions such as permission and obligation (cf. Platzack 1979; Barbiers 1995; McArthur 1998; Cinque 1999).

When a sentence containing a modal is negated, the negation may scope above or below the modal. For instance, in *He may not be there*, the modal can be negated (meaning, for instance, that he is not allowed to be there), or the sentence can mean that it is possible that he will not be there (in which case the modal outscopes the negation). As noted by Iatridou & Sichel (2011:597), in English, "the relative scope of deontic modals and sentential negation varies with the choice of modal" (cf. also Cormack & Smith 2002; Butler 2003; Iatridou & Zeijlstra 2010). Modals that express deontic possibility (i.e. permission) are the existentials *can* and *may*.

[36] The literature on the different flavors of modality is extensive. See, amongst others, Wright (1951), Lyons (1977), Coates (1983), Palmer (1986, 1990), Lew (1997), Cinque (1999), Papafragou (2002), Wurmbrand (2003), Gergel (2009).

[37] For the interaction of epistemic and dynamic modals, negative indefinites, and verbal ellipsis, see chapter 4.

According to Iatridou & Zeijlstra (2010) and Iatridou & Sichel (2011), these only appear under the scope of sentential negation. Modals that express deontic necessity (i.e. obligation) are the universals *must, ought to, should, have to, need to,* and *need.* Iatridou & Zeijlstra (2010) and Iatridou & Sichel (2011) argue that *must, ought to,* and *should* scope above sentential negation, while *have to, need to,* and *need* scope under negation. Modals scoping below sentential negation are called 'Neg>Mod modals', while modals scoping above negation are called 'Mod>Neg modals'.[38]

(48) [cf. Iatridou & Zeijlstra 2010:315-316, (1)-(2)-(3)]

Existential deontic modals (Neg>Mod)

a. John cannot leave. $\neg > \Diamond$

b. John may not leave. $\neg > \Diamond$

Universal deontic modals (Neg>Mod)

c. John doesn't have to leave. $\neg > \Box$

d. John doesn't need to leave. $\neg > \Box$

e. John needn't leave. $\neg > \Box$

Universal deontic modals (Mod>Neg)

f. John mustn't leave. $\Box > \neg$

g. John oughn't to leave. $\Box > \neg$

h. John shouldn't leave. $\Box > \neg$

It is well known from the literature (cf. Bech 1955/57; Jacobs 1980; Rullmann 1995; Penka 2011; Zeijlstra 2011) that a simple transitive clause with a modal and an object negative indefinite may give rise to three readings. First, the entire negative indefinite may be interpreted below the modal (the *de re* reading). Second, the entire negative indefinite can be interpreted above the modal (the *de dicto* reading). Third, the negative portion of the negative indefinite can scope above the modal while the indefinite part scopes below it (the split reading). According to Iatridou & Sichel (2011), a negative indefinite contains two separate semantic and syntactic ingredients, sentential negation and an indefinite/existential component. These two syntactically independent constituents may scope independently of each other: one may scope above, the other below, a third scopal element (e.g. a modal). Setting some complications aside, Iatridou & Sichel first observe that the scope of (the

[38] As the examples in (48) show, and as also noted by Iatridou & Sichel (2011:598), it is not linear order that determines the relative scope of deontic modals and sentential negation. Among the Neg>Mod modals, *can, may,* and *need* linearly precede negation, while *have to* and *need to* linearly follow negation. Similarly, Cinque (1999:122) mentions that "[w]hat is crucial for determining the scope of sentence negation is not its "surface" position (the one at "Spell-Out")."

negative component of) an object negative indefinite with respect to a modal correlates with the relative scope of sentential negation with respect to this modal. That is, Mod>Neg deontic modals can only scope above (the negative component of) a negative indefinite in object position, as shown in (49):

(49) Mod>Neg modal [Iatridou & Sichel 2011:611, (43)]
You must do no homework tonight.
= You must skip homework tonight. ($\Box > \neg$)
≠ It is not required that you do homework tonight. (* $\neg > \Box$)

The case of Neg>Mod deontic modals turns out to be more complicated, though, as pointed out by den Dikken et al. (1997) and Iatridou & Sichel (2011). Neg>Mod deontic modals (except for the NPI modal *need*) are ambiguous with respect to a negative indefinite in object position: they not only scope under (the negation inside) the object negative indefinite, they can also scope above it. In fact, "for several English speakers, [the latter] is the only reading that object NegDPs receive, including Neg>Mod modals" (Iatridou & Sichel 2011:615-616). Thus, while some speakers allow ambiguous readings for an object negative indefinite in a sentence with a Neg>Mod modal, others only allow for the Mod>Neg reading.[39,40] This is shown in (50). Speaker variation is indicated with the percentage sign %.

(50) Neg>Mod modal [cf. Iatridou & Sichel 2011:611, (44)]
You have to / need to do no homework tonight.
= You must skip homework tonight. ($\Box > \neg$)
= It is not required that you do homework tonight. ($^{\%}\ \neg > \Box$)

A summarizing picture is given in (51):

[39] Iatridou & Sichel (2011) do not distinguish between split and *de dicto* readings.

[40] Note that this is not the case for my informants when it comes to the interaction between the deontic Neg>Mod modal *can* and an object negative indefinite, as discussed in section 2.2. When deontic *can* co-occurs with an object negative indefinite, my informants either allow both a Neg>Mod reading and a Mod>Neg reading or only a Neg>Mod reading. This actually confirms Iatridou & Sichel's (2011) original observation that that the scope of (the negative component of) a negative indefinite with respect to a modal correlates with the relative scope of sentential negation with respect to this modal (which is also either Neg>Mod or both Neg>Mod and Mod>Neg in the case of *can*). See also section 2.3.2 for judgments that contradict Iatridou & Sichel's (2011) claim regarding the relative scope of Neg>Mod modals and object negative indefinites.

(51) [cf. Iatridou & Sichel 2011:613, Table 4]

type of modal with respect to sentential negation	interpretive possibilities of (negative component of) NegDP
Mod>Neg	Mod>Object$_{Neg}$
Neg>Mod	% Object$_{Neg}$>Mod
	Mod>Object$_{Neg}$

2.3.2 DEONTIC MODALS AND NEGATIVE INDEFINITES IN VERBAL ELLIPSIS

In this section, I show how verbal ellipsis licensed by a deontic modal influences the scopal possibilities of sentences containing an object negative indefinite. While in non-elliptical clauses, different scopal relations between modals and object negative indefinites are available (see above), only narrow scope of the negative indefinite (the *de re* reading) is attested in their elliptical counterparts. These observations are compatible with the VPI/NI Generalization of section 2.2, repeated here:

(47) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

Below every (non-elliptical and elliptical) sentence, the three possible interpretations are given. 'Reading 1' corresponds to the *de re* interpretation (Mod > ¬ > ∃), 'reading 2' to the split interpretation (¬ > Mod > ∃), and 'reading 3' to the *de dicto* interpretation (¬ > ∃ > Mod).[41,42]

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[41] Some of my informants do not allow for verbal ellipsis at all in the cases under consideration. Others only accept the elliptical sentence with a positive or contradictory interpretation, as for instance in (i).

(i) Who has to do no homework tonight? John has to.
Reading: John certainly *does* have to do homework tonight.

Moreover, as pointed out by Gary Thoms (p.c.), in the case of question-answer pairs, it could be that a preference for a fragment answer has a non-trivial influence on the acceptability of VP-ellipsis. This is reminiscent of proposals by Takahashi & Fox (2005) and Merchant (2008a) that ellipsis is subject to a constraint 'MaxElide', which prefers a larger elided constituent (e.g. TP) over a smaller one (e.g. VP), in particular environments. See also Hartman (2011).

Dealing with these judgments seems to concern ellipsis licensing. As I am not primarily concerned with the licensing of verbal ellipsis in English, but rather with different scope readings (of object negative indefinites with respect to modals) in *grammatical* verbal ellipsis, I disregard these judgments here.

For the universal deontic modal *have to* (a Neg>Mod modal) and its scope relative to an object negative indefinite in a non-elliptical sentence, the judgments of my informants show a considerable amount of variation. While some only allow narrow scope for the negative indefinite (i.e. only reading 1), others allow only readings 2 and 3, and still others allow all three readings.[43]

(52) John has to do no homework tonight.
Reading 1: John must skip homework tonight.
Reading 2: It is not required that John does homework tonight.
Reading 3: There is no homework that John is required to do.

Interestingly, though, in contrast to the variation found in non-elliptical contexts, VP-ellipsis licensed by *have to* only allows the *de re* reading (confirming the VPE/NI Generalization in (47)).[44] The percentage sign (%) preceding the sentence in (53) and the other elliptical examples in this section is meant to indicate that not all of my

[42] The universal modal *will* has a deontic use, expressing deontic necessity (i.e. obligation). The interaction of deontic *will* and negation is not discussed by Iatridou & Zeijlstra (2010) and Iatridou & Sichel (2011). A sentence with deontic *will* and a negative indefinite object is judged as only having the *de re* reading ($\Box > \neg > \exists$) by my informants. That is, for (i), only reading 1 is available:

(i) You will bring her no flowers.

Reading 1:	You must go without bringing her flowers.	($\Box > \neg > \exists$)	YES
Reading 2:	It is not required that you bring her flowers.	($\neg > \Box > \exists$)	NO
Reading 3:	There are no (specific flowers) that you are required to bring her.	($\neg > \exists > \Box$)	NO

The elliptical counterpart of (i) I tested was generally judged ungrammatical by my informants. As such, the elliptical case of deontic *will* does not give us any information about the scope possibilities of negative indefinites in verbal ellipsis. Therefore, I do not discuss deontic *will* any further here.

[43] Crucially, the paraphrases of reading 3 throughout should be read as 'there is/are no specific X that…'. If the paraphrases of reading 3 are interpreted as 'there is/are no X whatsoever that…', then this reading is indistinguishable from reading 2. Thanks to Jeroen van Craenenbroeck (p.c.) for pointing out this possibly confounding factor to me. In case of doubt, especially for the elliptical cases, informants were recontacted to clarify whether or not the intended (specific) interpretation was available.

[44] It should be noted that Parallelism (cf. (i)) is respected in the elliptical sentences under scrutiny here.

(i) *Parallelism (a consequence of)*
In an ellipsis construction, the scopal relationship among the elements in the antecedent must be identical to the scopal relationship among the parallel elements in the ellipsis site. [Fox 2000:32]

In principle, all scopal possibilities (of the modal and negation) allowed in the antecedent are allowed in the elliptical clause as well, as long as the sentence obeys Parallelism. The fact that the sentences discussed in this section only allow narrow scope of the negative indefinite cannot be due to Parallelism, as the non-elliptical sentence often allows for more scopal possibilities. See section 6.3 of this chapter and section 2 of chapter 5 for more on Parallelism.

informants accept the elliptical sentence with a negative reading (see also footnote 41).[45]

(53) % Who has to do no homework tonight? John has to.

Reading 1:	John must skip homework tonight.	YES
Reading 2:	It is not required that John does homework tonight.	NO
Reading 3:	There is no homework that John is required to do.	NO

Regarding the relative scope of the universal deontic modal *need to* (a Neg>Mod modal) and an object negative indefinite in a non-elliptical clause (cf. (54)), my informants give the exact same judgments as for the universal deontic *have to* (cf. (52)). When an informant allows for a negative reading of the elliptical sentence, he/she again only permits the *de re* interpretation (again supporting the VPE/NI Generalization).[46]

(54) a. The girls need to do no homework tonight.
b. % Mom said that the boys need to do no homework tonight, but dad said the girls need to.

For the existential deontic modal *may* (a Neg>Mod modal) and its scope relative to a negative indefinite in object position, my informants' judgments again show quite some variation. Whereas some only allow the *de re* interpretation (i.e. only reading 1), others allow only readings 2 and 3, only readings 1 and 2, or all three readings.

(55) The teacher may give no clues.
Reading 1: It is permitted that the teacher gives no clues.
Reading 2: It is not permitted that the teacher gives clues.
Reading 3: There are no clues that the teacher is permitted to give.

[45] As also pointed out by Anikó Lipták (p.c.), an example like (53) is only relevant if the question (*Who has to do no homework tonight?*) itself is not disambiguated for the narrow scope reading. This was taken into account.

[46] For the majority of my informants, the elliptical sentence can only get a positive/contradictory reading (i.e. the girls *do* need to do some homework), which seems to be forced by the presence of the conjunction *but*.

Those speakers who find the elliptical variant of (55) in (56) grammatical on a negative reading only permit permit the narrow scope *de re* interpretation (once again substantiating the VPE/NI Generalization in (47)).[47]

(56) % The TA may give no clues and the teacher may, too.

Reading 1:	It is permitted that the teacher gives no clues.	YES
Reading 2:	It is not permitted that the teacher gives clues.	NO
Reading 3:	There are no clues that the teacher is permitted to give.	NO

The judgments regarding the relative scope of an object negative indefinite and the universal deontic modal *must* (a Mod>Neg modal), as in (57)a, are the same for all of my informants: only narrow scope for the negative indefinite is allowed. Those informants that allow the elliptical variant in (57)b, also only permit the *de re* interpretation for this sentence.

(57) a. John must do no homework tonight.
b. % Who must do no homework tonight? John must.

Reading 1:	John must skip homework tonight.	YES
Reading 2:	It is not required that John does homework tonight.	NO
Reading 3:	There is no homework that John is required to do.	NO

The judgments for the other two universal deontic Mod>Neg modals, *should* and *ought to* and their scope relative to an object negative indefinite are identical, both in the non-elliptical and elliptical variant (cf. (58) and (59)).[48,49] That is, all my informants only allow for the *de re* interpretation of these two sentences, both in the elliptical and the non-elliptical variant (if they accept the latter in the first place).[50]

[47] Some of my informants note that they find the sentence (56) degraded and that this could be due to interference of (a preference for) the epistemic reading for the modal. As will be discussed in section 2 of chapter 4, epistemic modals do not easily license ellipsis.

[48] Only one of my informants allowed for *ought* instead of *ought to*. Therefore, only *ought to* is discussed here.

[49] Reading 2 of the sentences in (58) and (59) has a NEG-raising interpretation that is irrelevant for my purposes and that was controlled for.

[50] (58)b is degraded for some of my informants, which is probably due to the fact that …*and Mary should too* is a more standard rendering of this sentence. Thanks to Rachel Nye (p.c.) for pointing this out to me.

(58) a. John should read no books about witchcraft.
b. % John should read no books about witchcraft and Mary also should.
Reading 1: It is recommended that John go without reading books about witchcraft. YES
Reading 2: It is not recommended that John read books about witchcraft. NO
Reading 3: There are no books about witchcraft that J. is recommended to read. NO

(59) a. Saudi Arabia ought to buy no American planes.
b. % Who ought to buy no American planes? Saudi Arabia ought to.
c. % Yemen ought to buy no American planes and S.A. ought to, too.
Reading 1: It is recommended that S.A. go without buying American planes. YES
Reading 2: It is not recommended that S.A. buy American planes. NO
Reading 3: There are no American planes that S.A. is recommended to buy. NO

Summarizing, whatever the relative scope of a deontic modal with respect to an object negative indefinite in a non-elliptical clause, only the *de re* interpretation (where the modal outscopes the negative indefinite) is allowed in verbal ellipsis. It does not matter which deontic modal licenses verbal ellipsis. The modal can be a Mod>Neg universal deontic modal, only allowing for the *de re* reading, or a Neg>Mod universal or existential deontic modal, allowing for a range of possible readings – depending on the speaker – when combined with an object negative indefinite in a non-elliptical clause.[51] In all cases, the object negative indefinite can only get a narrow scope reading with respect to the modal in verbal ellipsis. All this is schematically represented in the table in (60), where 'full clause' stands for 'non-elliptical clause'.

[51] Note that the fact that the Mod>Neg modals *must, should,* and *ought to* can only outscope (the negative component of) an object negative indefinite (i.e. only the *de re* interpretation is allowed) confirms the generalization of Iatridou & Sichel (2011) regarding Mod>Neg deontic modals and negative indefinites (see section 2.3.1).

Similary, the fact that some of my informants only allow the *de re* interpretation with all deontic modals (whether Mod>Neg or Neg>Mod) also confirms one of Iatridou & Sichel's (2011) observations in section 2.3.1.

Not all my data confirm Iatridou & Sichel's (2011) generalizations concerning deontic modals and object negative indefinites, however. According to Iatridou & Sichel (2011), narrow scope of an object negative indefinite with respect to a Neg>Mod modal is always available (see section 2.3.1). Some of my informants, though, do not allow for narrow scope of an object negative indefinite in the case of Neg>Mod modals (as discussed in the main text). That is, some speakers only permit the Neg>Mod reading (whether wide or split) of an object negative indefinite, just as in sentences with regular sentential negation.

(60)

	Mod>Neg deontic modal		Neg>Mod deontic modal	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	NO	NO	YES	NO
de dicto allowed	NO	NO	YES	NO

Concluding, the observations in this section substantiate the VPE/NI Generalization that a negative indefinite in object position cannot scope out of a VPE-site (cf. (47)).

2.4 Summary

This section investigated the behavior of English object negative indefinites in verbal and clausal ellipsis, that is VP-ellipsis and TP-ellipsis (sluicing, fragment answers, and stripping), respectively. Based on the data discussed in sections 2.1 and 2.2, the following two generalizations were introduced, respectively:

(39) THE CLAUSAL/VERBAL GENERALIZATION
While in clausal ellipsis, *any* can antecede the ellipsis of *no*, in verbal ellipsis this polarity switch is disallowed.

(47) THE VPE/NI GENERALIZATION
A negative indefinite in object position cannot scope out of a VP-ellipsis site.

Section 2.3 gave an empirical overview of the interaction of deontic modals, negative indefinites, and verbal ellipsis, providing additional support for the VPE/NI Generalization.

This chapter provides an account for these generalizations: in short, I argue that negative indefinites are the result of a morphological process (called Fusion Under Adjacency) that is bled by verbal ellipsis (a PF-process). It is also argued (cf. section 6) that syntactic analyses (such as Agree or Quantifier Raising) of negative indefinites cannot account for the generalizations in (39) and (47).

Section 4.1 of this chapter accounts for the VPE/NI Generalization; section 4.2 derives the Clausal/Verbal Generalization. First, however, I present an analysis of negative indefinites in the multidominant, cyclic framework developed in chapter 2.

3 A cyclic, multidominant analysis of negative indefinites

3.1 Introduction

In this section, I develop an analysis of English negative indefinites that has the following key components: decomposition of the negative indefinitive, multidominant phrase markers, cyclic Spell-Out and linearization, and Fusion under Adjacency.

Following the majority of proposals in the literature,[52] I take a negative indefinite to decompose into two independent elements. Although a negative indefinite is realized as a single lexical item, it consists of two parts, with each component representing part of the meaning. The negative indefinite *no* consists of a component with the meaning of negation (*not*) and a component with the meaning of an indefinite expressing existential quantification (*any* or *a*). Negative indefinites are neither syntactically nor semantically atomic: the two components enter the derivation as separate entities and occupy two different structural positions in narrow syntax and at LF. According to Klima (1964), Jacobs (1980), Rullmann (1995), Iatridou & Sichel (2011), and Zeijlstra (2011), these independent components amalgamate at PF into a single unit.

Iatridou & Sichel (2011) argue that the scope position of (the negative part of) a negative indefinite correlates with the general interpretive position of sentential negation. They take this to be an indication that the negative indefinite contains or is associated with sentential negation: the negation within the negative indefinite is formally identical to ordinary sentential negation.[53] That is, the negative indefinite has sentential scope (cf. also Cornilescu 2004, Tubau 2008, Penka 2011, Zeijlstra 2011, among many others).

Before presenting the derivation of some relevant examples containing object negative indefinites, I would like to make more precise my assumptions about the structural position of modals in the clause (3.1.1), the structural position of negation in the clause (3.1.2), and the status of English negative markers (*not* and *n't*) as specifiers or heads (3.1.3).

[52] See Klima (1964), Jacobs (1980), Ladusaw (1992), Rullmann (1995), den Dikken et al. (1997), Sauerland (2000a), Penka & Zeijlstra (2005, 2010), Tubau (2008), Iatridou & Sichel (2011), Penka (2011), and Zeijlstra (2011), among many others. See section 6 of this chapter for more details.

[53] To be more precise, they argue that the scope position of the negative ingredient of the negative indefinite is identical to the scope position of sentential negation.

3.1.1 MODALS ARE BASE GENERATED IN T

It is standardly assumed in the literature that in English, "the main modal position is fixed" (Gergel 2009:174). English modals are traditionally considered instantiations the inflectional head, i.e. they are base generated in I/T (cf. Chomsky 1957; Jackendoff 1972; Fiengo 1974; Akmaijan et al. 1979; Gergel 2009). English modals differ from regular verbs and auxiliaries in a number of ways. First, English modals cannot be inflected: they can, for instance, not occur in the past tense (cf. (61)a) or with present tense inflection (cf. (61)b).[54] This property is accounted for in the literature by positing that English modals are base generated in the inflectional head I/T, blocking the insertion of inflectional affixes. Moreover, English modals cannot occur as participles or infinitives (cf. (61)c and (61)d). Considering modals to be inflectional heads also accounts for this observation: as the modal is base generated in the head I/T, it is merged in a position higher than the base position of the verb, and higher than functional projections such as VoiceP, PassP or AuxP (positions occupied by participles and infinitives).

(61) a. * Chandler {mayed/might} not pick up the phone.
INTENDED: 'Chandler was not allowed to pick up the phone.'
b. Joey {*musts/must} keep his cool.
c. * Rachel has never {could/canned} that.
INTENDED: 'Rachel has never been able to do that.'
d. * Monica will not must cook.
INTENDED: 'Monica will not have to cook.'

The structure for English modals (based on Wurmbrand 2003:240; Aelbrecht 2009:42; Gergel 2009:174) is given in (62). Note that there is only one functional head (T) that represents three properties (modality, tense, inflection).[55]

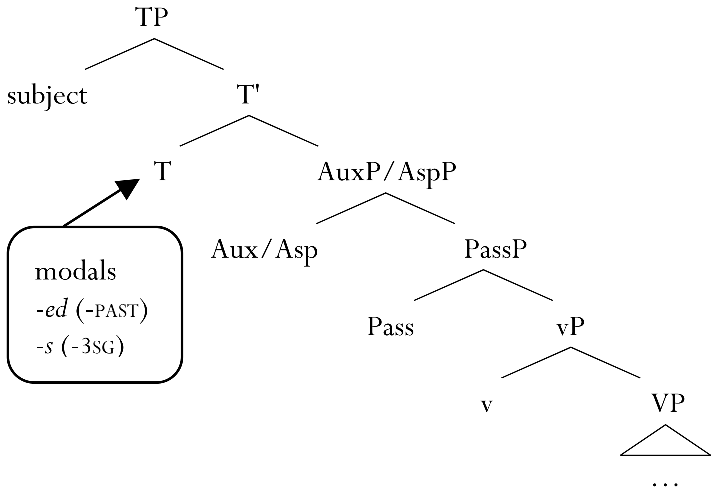
[54] See Gergel (2009), who argues that although English modals can occur with past tense morphology (cf. *could, should, might* vs. *can, shall, may*), these modals do not usually get a past tense interpretation.

[55] In more recent proposals, (different types of) modals are considered to head their own functional projection (see Cinque 1999; Wurmbrand 2003; Barbiers 2005; Gergel 2009). It has been argued that different modal interpretations are realized in dedicated functional heads. An example is given in (i):

(i) [cf. Cinque 1999:130]
$\ldots \mathrm{Mod}_{epistemic} > \mathrm{T}_{past} > \mathrm{T}_{future} \ldots > \mathrm{Mod}_{volition} > \mathrm{Mod}_{obligation} > \mathrm{Mod}_{ability/permission} \ldots > \mathrm{T}_{anterior} \ldots$

In this dissertation, I take deontic and epistemic modals to be base generated in T. Epistemic modals move further on to a higher functional head, Mod. See chapter 4 for discussion. Given that the current chapter only deals with deontic modals, this is not a vital issue at this point.

(62)



3.1.2 NEGATION IN THE CLAUSE STRUCTURE

I adopt the proposal that negative indefinite DPs are decomposed into two separate semantic and syntactic entities, an indefinite DP and a negative marker, and that the negation within the negative indefinite is formally identical to sentential negation (cf. Iatridou & Sichel 2011). Therefore, I need to make my assumptions regarding the status and structural position of negation in the clause explicit.

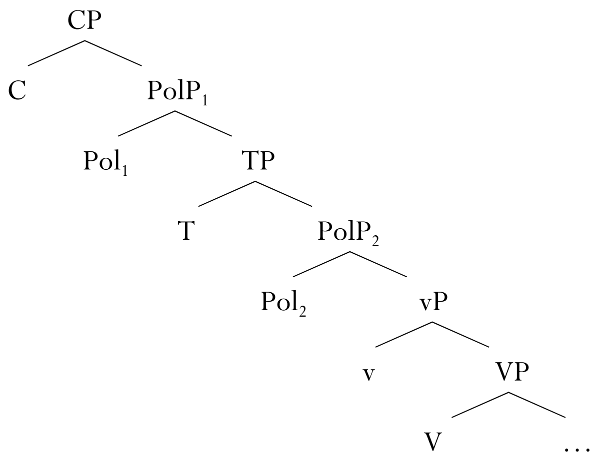
Semantically, negation is a logical operator, a scope-taking element. As Butler (2003:983) notes, a fairly large portion of the literature is devoted to the proper characterization of sentential negation as a propositional or a predicate operator (cf. Horn 1989:Ch.2 and Ch.7). Butler (2003:983) illustrates this issue on the basis of a sentence like the one in (63)a, which has two possible logical interpretations. The interpretation in (63)b negates a proposition *my Blackberry is working* (the propositional reading); the interpretation in (63)c affirmatively relates the subject *my Blackberry* to a negated predicate *not working* (the predicate reading).

(63) a. My Blackberry is not working.[56]
b. ¬ [my Blackberry is working]
c. my Blackberry is [¬working]

[56] http://www.youtube.com/watch?v=kAG39jKi0lI

For Butler, this shows that clauses contain two scope positions dedicated to the semantic interpretation of negation. Lasnik (1972) was the first to suggest that negative markers can occupy more than one position in the clause structure. This idea was later adopted and extended by quite a number of researchers (cf. Robbers 1992; Zanuttini 1997; Van Kemenade 2000; Barbiers 2002; Cormack & Smith 2002; Haegeman 2002; Butler 2003; Holmberg 2003; Schwarz & Bhatt 2006; Tubau 2008; van Craenenbroeck 2010). The proposal can be implemented by means of two functional projections dedicated to negation (e.g. NegPs) in the clausal structure, i.e. the sentential negative marker is analyzed as a functional category. Since Laka (1990), negation has often been assumed to be just one of the possible values of a broader syntactic category, labeled here as Pol(arity)P. PolP is an independent functional projection where polarity is expressed (with negative or affirmative value), and which has gone by a variety of names in the literature (NegP, PolP, ΣP, AstP, etc., cf. Pollock 1989; Laka 1990; Culicover 1991; Zanuttini 1997; Holmberg 2003; Zeijlstra 2003; Tubau 2008). The tree structure in (64) is an abstract, schematic representation of the clause structure I adopt. It comprises two PolPs, one dominating and one dominated by TP.[57,58]

(64)



[57] As noted by van Craenenbroeck (2010:157), in simple sentences like the one in (63), the different contribution of the two separate scope positions (two PolPs) is not very prominent, as the representations in (63)a and (63)b have identical truth conditions. For discussion on when the difference between the two PolPs becomes vital, I refer the reader to van Craenenbroeck (2010:Ch.12.3) and the other aforementioned authors.

[58] The tree structure in (64) is a schematic representation in that it it pays no heed to the possibile existence of projections like AgrSP, AgrOP, AspP, ModP, AuxP, etc. Similarly, it abstracts away from the possibility of further splitting up TP and/or CP.

For the semantic characterization of these two PolPs, I follow Butler's (2003) proposal, also adopted by van Craenenbroeck (2010): the low $PolP_2$ (NegP in Butler's terminology) operates on the predicate, whereas the high $PolP_1$ negates the entire proposition. My syntactic implementation is closer to van Craenenbroeck's (2010) proposal than to the one in Butler (2003). Butler (2003) links the two scope positions of negation to the vP-phase and the CP-phase, identifying the high position as Rizzi's (1997) FocP. Van Craenenbroeck (2010), on the other hand, takes the high PolP to be part of the IP-domain (in particular, dominated by AgrSP and dominating TP). Holmberg (2003) also proposes that a high PolP is dominated by CP and dominates TP.[59]

As the negative part of a negative indefinite is to be identified with sentential negation, the presence of two positions for negation in the clausal structure entails that this negative component can be formally identical to either of these positions. Hence, the negative entity inside a negative indefinite will be either part of $PolP_1$ or of $PolP_2$.

As noted by Iatridou & Sichel (2010:62, fn.17), an account "allowing multiple interpretive positions for negation has to "ensure that some of the positions are (de)activated in the presence of certain modals." I take the different scopal relations between modals and sentential negation (and, thus, between modals and (negation inside) negative indefinites) to correlate with different syntactic base-generated positions for sentential negation, either below or above the merge position of the modal, that is, either in $PolP_2$ below T (Mod>Neg) or $PolP_1$ above T (Neg>Mod).[60] I assume that in general, only one of the two PolPs is filled (or activated), the choice depending on the scopal relation of the negation with respect to quantificational

[59] Other proposals linking the high position of negation to the CP-domain are, for instance, Lasnik (1972) (expanding on Klima 1964), Rizzi (1997), and Haegeman (2000). As noted by van Craenenbroeck (2010:158), the proposal that a high PolP is situated above TP and below CP (maybe even below AgrSP) is compatible with Belletti (1990), Holmberg et al. (1993), López (1995), Haegeman (1995), and Zanuttini (1997), who propose identical or highly similar configurations. For my present purposes, the choice of positioning $PolP_1$ in the TP- or the CP-domain is not crucial, as these two positions would play no different role in the formation of negative indefinites in the framework proposed here. In this dissertation, I take $PolP_1$ to be inside the TP-domain.

[60] Other proposals also take the scopal possibilities to derive from a universal syntactic template, but take the different relative scopes to correlate with different syntactic base-generated positions for modals, with the interpretive position of sentential negation in between them (cf. Cormack & Smith 2002; Butler 2003). Iatridou & Zeijlstra (2010), on the other hand, consider the scopal behavior of modals to result from their lexical semantic properties. They take modals to be polarity-sensitive items, and the relative scope of modals and sentential negation derives from the polarity status of the modal. Negative polarity items (*need*) must scope below negation, while positive polarity items (*must, should, ought*) must scope above negation. Polarity-neutral modals (*have to, need to, can, may*) are argued to scope below negation because they are base-generated (and interpreted at LF) in a position below sentential negation. For similar ideas, see Homer (2009) and Israel (2011).

operators such as modals.[61] In a modal-less sentence, I take the choice for $PolP_2$ or $PolP_1$ to be free (as the different interpretive contibution of the two scope positions is not very prominent (van Craenenbroeck 2010), cf. footnote 57).

3.1.3 ENGLISH *NOT* AND *N'T*: SPECIFIER AND HEAD

The status of the English negative markers *not* and *n't* needs to be established with respect to the two polarity projections that were assumed in the previous section.

English sentential negation emerges in two distinct shapes: the full form *not* and the contracted form *n't*. It is generally assumed that both forms spell out the content of PolP (or NegP, ΣP, … cf. supra). In particular, the mainstream view in the literature is that *n't* is an instantiation of the functional head (Pol), while it is often proposed that *not* is a phrasal (adverb-like) element, merged in the specifier of a PolP with a null head (cf. Belletti 1990, Zanuttini 1991, Haegeman 1995, Haegeman & Gueron 1999; Cornilescu 2004, Zeijlstra 2004).[62,63,64]

The syntax of *n't* and *not* has been argued to be considerably different (cf. Haegeman 1995; Cornilescu 2004:13-16; Zeijlstra 2004:164; Haumann 2007). First, unlike *not*, *n't* is affixed or cliticized to auxiliaries. When auxiliaries move to C past the subject, *n't* raises along with the auxiliary as a complex head, while *not* is left behind (cf. (65)-(66)) This is a clear indication in favor of the head status of *n't*, and of the phrasal status of *not*.

(65) a. Couldn't you stay awake with me for one hour?
b. * Could you n't stay awake with me for one hour?

---

[61] But see the next subsection (3.1.3) for some cases where both PolPs are overtly realized.

[62] Languages differ with respect to the realization of sentential negation as the head and/or the specifier of PolP, cf. Pollock (1989), Belletti (1990), Ouhalla (1990), Zanuttini & Haegeman (1991, 1996), Haegeman (1995, 2002), Schafer (1995), Vikner (1995), Błaszczak (2001), Barbiers (2002), Zeijlstra (2004), Haumann (2007), van Craenenbroeck (2010) for discussion.

[63] *Pace* Laka (1990), Ouhalla (1990), Chomsky (1991), Zanuttini (1991), Williams (1994a), Potsdam (1997), and Tubau (2008), who take *not* to occupy a head position. So does Pollock (1989), but he also hypothesizes that a "possibly preferable solution would be to analyze these adverbs as specifiers of a NegP with an empty head" (Pollock 1989:405, fn.36).

[64] The negative adverb *not* has also been considered to be a purely adverbial element, occupying adverb positions (cf. Baker 1991, Ernst 1991, Williams 1994a, Zanuttini 1996). That is, *not* has been taken to be a negative adverb such as *hardly, scarcely, barely,* etc. As noted by Cornilescu (2004:15), however, the analysis of *not* as a pure negative adverb such as *hardly* is undermined by the fact that *not* triggers *do*-support, whereas other negative adverbs do not. Therefore, I follow the mainstream view in the literature in considering *not* as a phrasal element occupying the specifier of PolP. Having said that, the analysis in the next sections can be made compatible with an account that takes *not* to be a true adverbial phrase.

(66) a. Could you not stay awake with me for one hour?
b. * Could not you stay awake with me for one hour?

Note, moreover, that if *not* is a specifier, it is expected that head movement of auxiliaries can skip it, as in (66)a, without violating the Head Movement Constraint (Travis 1984). More data showing that verb movement across the negative marker *not* is not blocked in English can be found in Zeijlstra (2004):

(67) [Zeijlstra 2004:164, (30)]
a. John has not been ill.
b. John is not ill.

The example in (67)a shows that copular *be(en)* is base generated in a position to the right of *not*, presumably inside VP. In (67)b, the form of the verb *be* surfaces to the left of *not*, showing that *not* does not block head movement of the verb across it.

Another piece of evidence is provided by Merchant (2001) (cf. also Zeijlstra 2004). In the *why not* construction, *why* is analyzed as a form of phrasal adjunction to *not,* cf. (68). It is predicted that this construction is only allowed in languages in which the negative marker is not a syntactic head. Hence, English *not* cannot be analyzed as a head.

(68) a. [$_{YP}$ [$_{XP}$ why] [$_{YP}$ *not*]]
b. *Morpheus*: Do you believe in fate, Neo?
Neo: No.
Morpheus: Why not? [*The Matrix*, 1999]

As argued by Cormack & Smith (2002) and by Holmberg (2003, 2011) and largely also by Tubau (2008), the low PolP ($PolP_2$) can only be realized by the negative marker *not*; *n't* can never be associated with the low PolP. For the realization of the contents of the high PolP ($PolP_1$), *not* alternates with *n't*. Holmberg (2011:8, (33)) supports this claim with the following data:

(69) a. You ca*n't*/can*not* *not* go to church and call yourself a good Christian.
b. You must*n't*/must *not* ever *not* address him as 'Sir'.
c. The moments of insight and literary grace that could*n't* *not* occur in Funder's writing will be a very welcome pleasure.

The sentences in (69), with two negation markers co-occurring in one clause, show that English has two negations *not*. The low negation is considered to be associated with a low projection (for Holmberg (2011), it is an adjunct to vP/VP). This low negation can only be realized as *not*. For the realization of the high negation (associated with PolP above TP in Homberg (2011)), *not* can alternate with *n't*.

Cormack & Smith (2002:13) discuss the scopal interaction between negation (realized by *not* and *n't*) and the deontic modal *can.*

(70) John can not eat vegetables.
= 'It is not the case that John is permitted to eat vegetables.' ($\neg > \Diamond$)
= 'It is permitted that John not eat vegetables.' ($^{\%}\Diamond > \neg$)

(71) John can't eat vegetables.
= 'It is not the case that John is permitted to eat vegetables.' ($\neg > \Diamond$)
≠ 'It is permitted that John not eat vegetables.' ($*\Diamond > \neg$)

As also discussed in section 2.2, the sentence in (70), with *can* and the full negative marker *not*, is ambiguous: the negation may outscope the modal, or vice versa.[65] The sentence in (71), on the other hand, with *can* and the contracted negative marker *n't*, is unambiguous: the negation necessarily outscopes the modal *can*. Cormack & Smith (2002) take these data to indicate that the modal *can* is merged in a position that is 'sandwiched' between two positions for negation. The high negation, which results in the reading $\neg > \Diamond$, can be realized by *not* or *n't*.[66] The low negation, which results in the reading $\Diamond > \neg$, cannot be instantiated by *n't*, only by *not.* Cormack & Smith (2002:14-15) also report the same set of data for deontic *may*.

(72) Cyril may not go to the party.
= 'It is not the case that Cyril is permitted to go to the party.' ($\neg > \Diamond$)
= 'It is permitted that Cyril not go to the party.' ($\Diamond > \neg$)

[65] According to Iatridou & Zeijlstra (2010) and Iatridou & Sichel (2011), the interpretation $\Diamond > \neg$ is, however, not available when deontic *can* or *may* co-occurs with negation (*not* or *n't*). Therefore, I added the percentage sign % to the reading $\Diamond > \neg$ to indicate that not all English speakers allow deontic *can* and *may* to outscope the negation (cf. also section 2.2).

[66] Note that while the deontic modal *can* is inside the scope of negation (*not* or *n't*), it surfaces to the left of the negative marker. Cormack & Smith (2002) therefore take the modal to be displaced over the negation at PF, at least in the case of *not*. For details, I refer the reader to the original paper. For arguments in favor of PF head movement, see Chomsky (1995, 2001), Boeckx & Stjepanović (2001), Hale & Keyser (2002), Harley (2004), Schoorlemmer & Temmerman (2012), and Platzack (to appear). See also footnote 38.

(73) Cyril mayn't go to the party.
= 'It is not the case that Cyril is permitted to go to the party.' ($\neg > \Diamond$)
≠ 'It is permitted that Cyril not go to the party.' ($* \Diamond > \neg$)

When deontic *may* is combined with a contracted negative marker (73), this modal can only be inside the scope of negation. For those speakers who reject *mayn't*, and allow only *may not*, the modal can be inside or outside the scope of negation. This again shows that *not* realizes both PolP_1 and PolP_2, while *n't* is only associated with PolP_1.

Summarizing, the two English negative markers *not* and *n't* show differences both in their syntactic status and their distribution. While the former realizes a maximal projection occupying the specifier of either PolP_1 or PolP_2, the latter realizes a syntactic head (only Pol_1).

3.2 Deriving negative indefinites

In this section, I discuss and illustrate the analysis of the English negative indefinite *no* on the basis of two sample derivations, i.e. the derivations of the modal-less sentence in (74) and the sentence in (75), with the existential deontic modal *can*.

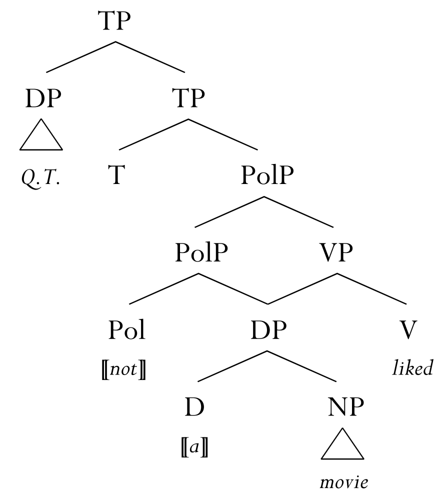
(74) Quentin Tarantino liked no movie.

(75) Quentin Tarantino can offer no help.

The analysis is inspired by Johnson (2010b), who proposed to include negative indefinites in the general multidominance approach he developed for Quantifier Raising and WH-movement in Johnson (2010a, 2011a). His analysis contains two crucial ingredients. First, in line with the decomposition approach discussed above, determiners can spread across distant syntactic positions but are mapped onto one word. The single lexical item *no* is thus syntactically composed of an element with the meaning of *not* and one with the meaning of *a(ny)*. Second, the analysis of negative indefinites involves remerge (giving rise to multidominant phrase markers): the indefinite DP merges with the verb and later remerges with sentential negation. The multidominant phrase marker proposed by Johnson (2010b) for a sentence like (74) is (76):[67]

[67] Johnson (2010b) gives a phrase marker for the sentence *She likes no spiders,* which is almost identical to sentence (74) discussed here.

(76) [cf. Johnson 2010b:1, (1)]



The gist of Johnson's (2010b) proposal (that is, the two crucial ingredients of decomposition and multidominance) is adopted here, but the implementation is substantially different. For discussion and comparison of my proposal with Johnson's account of negative indefinites (Johnson 2010b), see section 6.4 of this chapter.

3.2.1 THE DERIVATION OF A MODAL-LESS SENTENCE WITH *NO*

Recall (see chapter 2) that in the minimalist program (Chomsky 1993, 1995 *et seq.*), the computational system C_{HL} executes a derivation and hands over that derivation to the PF- and LF-components. The syntactic derivation starts out with a collection of terminals in a numeration N. The primitive, recursive structure building operation Merge constructs phrase markers (in a bottom-up fashion) by taking two (possibly complex) syntactic objects and combining them into a new complex syntactic object. Merge applies until one single phrase marker is constructed from the terminals in the Numeration. Merge is External, Internal or Parallel Merge, depending on the objects it combines. Internal and Parallel Merge give rise to structures in which a single node has two mothers, i.e. to multidominant phrase markers. Let us consider the derivation that arises from cyclic applications of Merge in forming the sentence in (74), repeated here.

(74) Quentin Tarantino liked no movie.

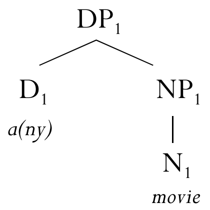
The derivation starts out from the numeration in (77), which contains the necessary grammatical formatives (terminals).[68] Recursively applying Merge will eventually produce one syntactic representation for the sentence in (74).

(77) N = {D_1, N_1, Neg, V, D_2, N_2, v, Pol_2, T, C}

I use the label Neg for the terminal that is usually lexicalized as the negative adverb *not* in English. The reader should be careful not to confuse this terminal with the polarity head Pol (which is often labeled Neg in the literature). As *not* occupies the specifier of PolP (cf. section 3.1.3), Neg wil project (NegP) and have phrasal status.

The first applications of Merge form the object DP in (78):[69]

(78)



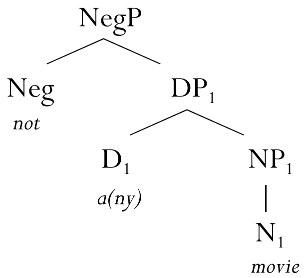
I then take Neg to Merge with DP_1.[70]

[68] Actually, for the sentence in (74), either Pol_2 or Pol_1 could be chosen, as the different contribution of these two scope positions in a modal-less sentence is not very prominent (cf. section 3.1.2). For the derivation here, I have chosen Pol_2.

[69] Recall (section 4 of chapter 2) that I adopt Late Insertion, i.e. lexical items are only inserted in the PF-branch of the grammer (cf. Distributed Morphology, Halle & Marantz 1993). Thus, there is actually no lexical/morphophonological information available in the narrow syntax, only formal features are. Nevertheless, for clarity's sake, in the tree structures discussed here, I indicate the lexical content of the various nodes.

[70] Similar ideas regarding the ordering of the applications of Merge are present in Johnson (2008) and Johnson (2009) for a (to be QR'ed) phrase containing the quantifier *every* and a (to be WH-moved) WH-phrase, respectively. See section 6.4 of this chapter for Johnson's analysis of WH-movement and chapter 5 for his proposal for QR.

(79)



I follow Penka & Zeijlstra (2005) and Zeijlstra (2011), who take sentential negation and the indefinite to enter the derivation as a single constituent. According to these authors, there is some syntactic device, "some grammatical mechanism that *forces* [my italics, TT] [negation] to enter the derivation along with the indefinite" (Zeijlstra 2011:118), see also Penka & Zeijlstra (2005:5).[71] I do, however, not adopt the – rather vague – proposal that merger of Neg and DP$_1$ is *forced* at the stage of the derivation in (79).

Merging Neg with DP might seem strange, as negation must semantically combine with a clause or a predicate (cf. the discussion in section 3.1.2). Merging Neg with D(P) is not unprecedented, though. It has been argued in the literature (beside Penka & Zeijlstra 2005 and Zeijlstra 2011) that negation/NegP can be merged with (or as part of) DP. Leu (2008) argues that negation originates as part of DP in the case of negative indefinites (in particular, in the case of German negative indefinite DPs with *kein*).[72] Importantly (contra Penka & Zeijlstra 2005 and Zeijlstra 2011), he argues that the negation and the indefinite determiner do not form a constituent together. Leu also takes negation to start out as part of DP in the case of West-Flemish negation doubling (partly adopting Haegeman's (2001) proposal) and adopts Troseth's (2009) 'Neg in DP' account for English negative intensifiers. Troseth (2009) argues that negation can be base generated in DP, more specifically, as the head of a DP-internal NegP. Moreover, the negation can extract out of the DP and travel up into the clause to become sentential negation (its landing site being a clausal NegP between TP and VP). Aelbrecht (to appear) discusses how data from the Belgian Dutch dialect Asse Dutch show that there is a NegP inside the DP (with

[71] I diverge from Penka & Zeijlstra (2005) and Zeijlstra (2011), however, in taking the negation to merge with the DP (following Johnson 2010b) instead of the D-head. Penka & Zeijlstra (2005) and Zeijlstra (2011) take negative indefinite determiners to be syntactically complex lexical items, a proposal which I do not adopt. See section 6.3 for a brief discussion of Zeijlstra's (2011) proposal.

[72] Specifically, Leu (2008) argues that (abstract, silent) negation starts out as part of an adjectival constituent inside the negative indefinite DP to license the negative indefinite determiner and can possibly move out of the DP (see Postal 2000 and Troseth 2009).

the negative marker *nie* 'not' as its head). Finally, Wiltschko (2006) argues that the German negative marker *nicht* 'not' can select for a DP. For Wiltschko (2006:448), German *nicht* 'not' does not function as a functional category NEG, but rather as a modificational particle (which does not project its category label). Although (parts of) these proposals are more compatible with my account than others, it should be clear that merging Neg(P) with or inside DP can hardely be called controversial. It has even been proposed in the literature that negation can merge with any category (see, for instance, Williams 1994a,b; Wiltschko 2006). Thus, it might be that there is no restriction whatsoever on the merger of the negative marker with another element. This is perfectly in line with the idea that Merge is free and that syntax is blind with respect to the interfaces (whether semantics or phonology), see for instance Krivochen (2011). If Merge is free, merger of Neg and DP is simply allowed in narrow syntax. If this is the case, the question is not "why should the negation and the indefinite form a syntactic unit to begin with," but rather, "why shouldn't they?".

Note, however, that although the sentential negation merges with the indefinite object DP to form a syntactic constituent, they do not form a semantic constituent (Penka & Zeijlstra 2005; Johnson 2010b; Zeijlstra 2011).[73] It was established in section 3.1.2 that negation semantically combines with a clause or a predicate (only propositions and predicates can be negated, cf. also Williams 1994a,b). The DP with which Neg merges is neither of these. Thus, there can be no semantic connection between the two (Neg and DP). The negative component of the negative indefinite can only combine semantically with the clause (or the predicate), not with the indefinite DP.[74]

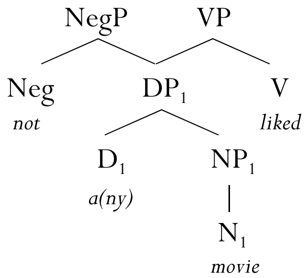
Hence, the semantics will require the phrase in (79) to be merged in the functional sequence of the clause to form a negative sentence. The clause, in turn, will have to include the object DP, which is selected by the verb. Note that verbs are generally not taken to select NegPs. The merger in (80), combining V and its DP-complement, is thus the next step in creating the clausal phrase marker.

---

[73] The proposal here is in line with Williams' (1994b:198) claim that "there is no intrinsic connection between where the negation is generated and what scope it ultimately has. The negation in [(79)] is what might be ordinarily termed *constituent negation* in Klima's (1964) terms; however, the configuration determines that it has sentential scope."

[74] As a result, the phrase that is the outcome of merger of the negation and the indefinite will have the same meaning as negation does: NegP will have "the same meaning as *not*" (Johnson 2010b:1).

(80)



Note that this is a case of Parallel Merge (cf. section 2 of chapter 2), i.e. a syntactic object (the DP) that is a subpart of one root object (NegP) is remerged as a subpart of another root object (VP). The result is a structure in which a single node (DP) has two mothers (NegP and VP). As such, the phrase marker transits through a representation in which the tree has more than one root. This is necessary because of the double requirement of creating a VP that consists of the verb and its object DP, and making that DP part of a NegP that has to Merge with a phrase that is larger than VP (which will be PolP_2 in this case).

Next, v merges with the VP. After this, the subject DP is merged to form Spec,vP.[75] Recall from section 3.3 in chapter 2 that complex (i.e. branching) left branches (specifiers and adjuncts) need to be spelled out (and hence linearized) before merging to the phrase marker under construction (following Uriagereka 1999). That implies that the subject DP needs to be constructed as an independent phrase, which will undergo Spell-Out. After this, Merge will bring the two independent phrases (the subject DP and the vP) together, placing the DP within the vP (i.e. a case of External Merge).[76] In this dissertation, I mark spelled out phrases in a box, e.g. $\boxed{\text{XP}}$.[77]

---

[75] The internal structure of phrases containing proper names is orthogonal to my purposes. On proper names, see for instance Partee (1987), Zwarts (1992), and Matushansky (2008).

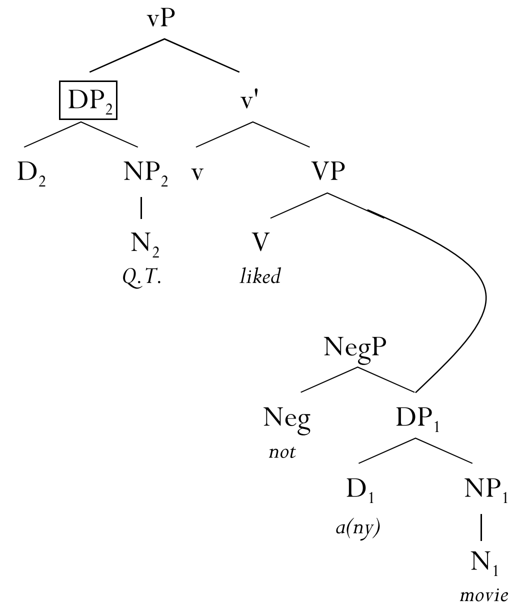
[76] As already mentioned in section 3.3.1 of chapter 2, I abstract away from the questions of whether (i) the two phrase markers (the subject and the vP) are assembled simultaneously in separate derivational spaces or sequentially in the same derivational space and (ii) whether (and if so, how) the Spelled-Out subject is renumerated.

[77] The A, the maximally small disambiguated subset (A'), and d(A) for the spelled-out subject DP are:

(i) A $= \{ \langle D_2, N_2 \rangle \}$

(ii) a. A' $= \{ D_2 < N_2 \}$
b. d(A) $= \{ D_2 < N_2 \}$

(81)



As vP is a phase, the PIC requires that the domain of the phase head v be spelled out, i.e. transferred to PF (cf. chapter 2, section 3.3.1). Importantly, NegP is not spelled out at this point. Spell-Out targets the VP-complement of the phase head v, that is, VP and all the material dominated by this node. Neg(P) is not dominated by VP and hence will not be spelled out. Note that DP_1 *is* part of the material dominated by VP. As discussed in section 3.3.2 of chapter 2, each phasal domain targeted by Spell-Out constitutes a linearization domain and forces the linearization scheme to apply. Hence, the linearization algorithm will produce ordering statements for the terminal elements dominated by the VP node (but not for NegP). Recall that the ordered pairs that correspond to the asymmetric c-command relations in the A in (82) need to be disambiguated (in terms of precendence and subsequence). That is, a disambiguated subset has to be selected, which meets the language-particular requirements of English and which will result in a total linearization (i.e. one that puts all of the terminals in a relative ordering with respect to each other). In this case, the heads will be linearized preceding their complement. After this, a linearization d(A) is produced that has to meet Kayne's (1994) well-formedness conditions. The (maximally small) disambiguated subset is given in (83)a, and the linearization in (83)b.

(82) $A = \{ \langle V, D_1 \rangle, \langle V, NP_1 \rangle, \langle V, N_1 \rangle, \langle D_1, N_1 \rangle \}$

(83) a. A' $= \{ V < D_1, V < N_1, D_1 < N_1 \}$
b. d(A) $= \{ V < D_1, V < N_1, D_1 < N_1 \}$

After this, Pol_2 is merged with vP and NegP is merged as the specifier of $PolP_2$. Recall that the sentential negation usually realized by *not* occupies the specifier of one of the two PolPs (as discussed in section 3.1.3). As there is no scopal element such as a modal that needs to be outscoped by negation, I take the negative element to merge with the low PolP, i.e. $PolP_2$ (although $PolP_1$ is in principle possible as well, cf. section 3.1.3 and footnote 68). From this position, NegP can semantically combine with the clause and take sentential scope.

As NegP will merge as a complex specifier (i.e. a complex left branch) in the clausal spine, it has to undergo Spell-Out before merging with $PolP_2$ (following Uriagereka 1999). Hence, NegP is transferred to PF. The linearization scheme applies to the linearization domain NegP. The ordered pairs corresponding to the asymmetric c-command relations in the A in (84) are disambiguated by language-specific requirements for English. A maximally small disambiguated subset is given in (85)a and the linearization in (85)b.

(84) A $= \{ \langle Neg, D_1\rangle, \langle Neg, NP_1\rangle, \langle Neg, N_1\rangle, \langle D_1, N_1\rangle \}$

(85) a. A' $= \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. d(A) $= \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$

At this point, the PF-branch contains three spelled-out phrases and their linearizations: those of the phasal domain VP and two complex left branches, the subject DP_2 and NegP. These relevant d(A)s are listed in (86):

(86) a. $d(A)_{NegP} = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$
c. $d(A)_{DP_2} = \{ D_2 < N_2 \}$

I argue that this is the point in the derivation where the negative indefinite *no* is created. Morphological processes can combine two terminals into one terminal, which is realized as a single lexical item. The relevant process here is the one that Johnson (2010a, 2011a) labels 'Fusion'. According to Johnson (2010a, 2011a), Fusion imposes a locality condition on the two terminals that are to be combined: the two terminals must be adjacent. Johnson (2011a:23) takes this to be a well-formedness condition on Fusion:

(87) *The Adjacency condition on Fusion*
X and Y can fuse only if the linearization algorithm assigns them adjacent positions.

Importantly, Johnson (2011a) has a specific definition of 'Adjacency' (cf. (88)), which I adopt here, adding (89) (in which '<' again indicates (linear) precedence):

(88) *Adjacency*
Two terminal items α and β are adjacent if the linearization algorithm puts nothing in between them. [cf. Johnson 2011a:25,fn.22]

(89) $\neg\exists x.(\ \alpha < x \ \&\ x < \beta\ )$ (and vice versa)

To avoid possible confusion with different (Distributed Morphology and non-DM) approaches to 'Fusion', I will refer to 'Johnson-type' Fusion as *Fusion Under Adjacency* (FUA).[78]

Let us take a look at the derivation under consideration. The linearization in (86) puts nothing in between Neg and D_1. That is, there is no element that precedes D_1 and follows Neg (or vice versa) in these linearizations. Following Johnson's (2011a) definition of Adjacency in (88), this means that Neg and D_1 are adjacent at this point in the derivation. Hence, the terminals Neg and D_1 can fuse under adjacency: they can be brought together in a single terminal. Once Neg and D_1 have fused, the terminal onto which Neg and D_1 are jointly mapped will occupy the positions assigned to Neg and D_1 in the linearization in (86). The result of FUA applying to the terminals Neg and D_1 in (86), repeated here, is given in (90). Note that the result of FUA, the joint mapping of Neg and D_1 (represented as Neg = D_1), will ultimately be spelled out as the negative indefinite *no*.

(86) a. $d(A)_{NegP} = \{\ Neg < D_1,\ Neg < N_1,\ D_1 < N_1\ \}$
b. $d(A)_{VP} = \{\ V < D_1,\ V < N_1,\ D_1 < N_1\ \}$
c. $d(A)_{DP_2} = \{\ D_2 < N_2\ \}$

[78] Johnson's (2010a, 2011a) proposal is inspired by processes described in, amongst others, Pranka (1983), Marantz (1988, 1984), Halle and Marantz (1993), Bobaljik (1995), Embick & Noyer (2001), and Matushansky (2006). For comparison of 'Johnson-type' Fusion under Adjacency with other (DM) morphological processes, see section 6.1.

(90) a.

$$d(A)_{\text{NegP}} = \left\{ \begin{array}{rcl} \text{Neg} = D_1 & < & \text{Neg} = D_1 \\ \text{Neg} = D_1 & < & N_1 \\ \text{Neg} = D_1 & < & \text{Neg} = D_1 \end{array} \right\}$$

b.

$$d(A)_{\text{VP}} = \left\{ \begin{array}{rcl} V & < & \text{Neg} = D_1 \\ V & < & N_1 \\ \text{Neg} = D_1 & < & N_1 \end{array} \right\}$$

c. $d(A)_{\text{DP}_2} = \{ D_2 < N_2 \}$

Recall (chapter 2, section 3.4) that d(A) is tolerant: superfluous, inconsistent ordering statements can be discarded. As such, on the basis of Kayne's (1994) well-formedness conditions (cf. chapter 2, section 3.1), $d(A)_{\text{NegP}}$ is 'filtered' and the result is (91):[79]

(91) $d(A)_{\text{NegP}} = \{ \text{Neg} = D_1 < N_1 \}$

After all this, the (spelled-out) NegP is merged as the specifier of PolP_2, yielding the structure in (92):

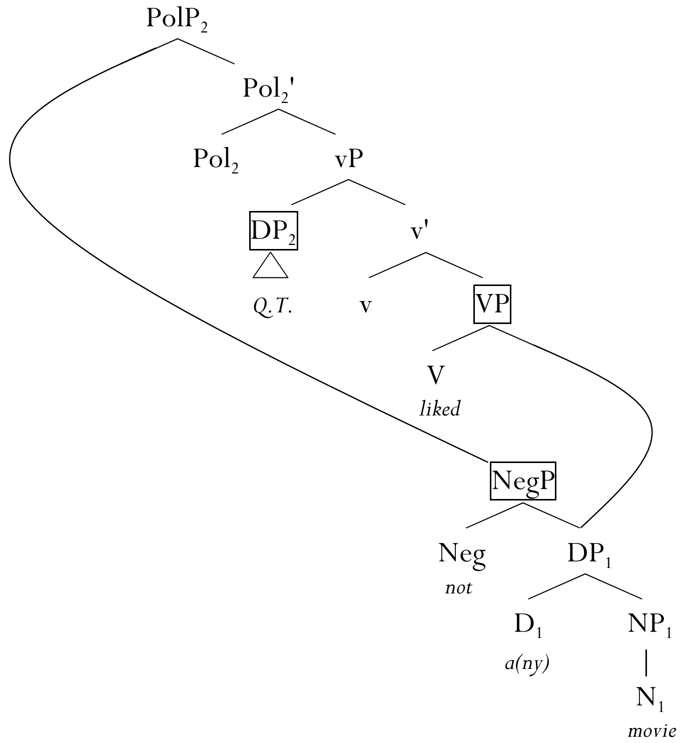
[79] For Kayne's (1994) well-formedness conditions on linearizations (see chapter 2, section 3.1), it is crucial that, after FUA (between Neg and D_1), Neg and D_1 are no longer considered 'distinct' terminals. Otherwise, the d(A) in (91) would violate Totality as neither Neg < D_1 nor D_1 < Neg. That is, Neg and D_1 are 'looked at' as one terminal by the well-formedness conditions. Therefore, I chose the notation Neg = D_1, to indicate that Neg and D are to be considered 'one position' for (the well-formedness conditions on) linearization.

In dealing with similar issues, Nunes (1999, 2000) and Johnson (2010a, 2011a) suggest a slight modification of Kayne's well-formedness constraints. They propose that the well-formedness conditions do not operate on terminals, but on the vocabulary items the terminals map onto, as in (i):

(i) For every lexical item x, y, and z in a phrase marker P,
a. either $x < y$ or $y < x$ ⇨ TOTALITY
b. not ($x < y$ and $y < x$) ⇨ ANTISYMMETRY
c. if $x < y$ and $y < z$, then $x < z$ ⇨ TRANSITIVITY

In this dissertation, I maintain Kayne's original well-formedness conditions, with the caveat just mentioned.

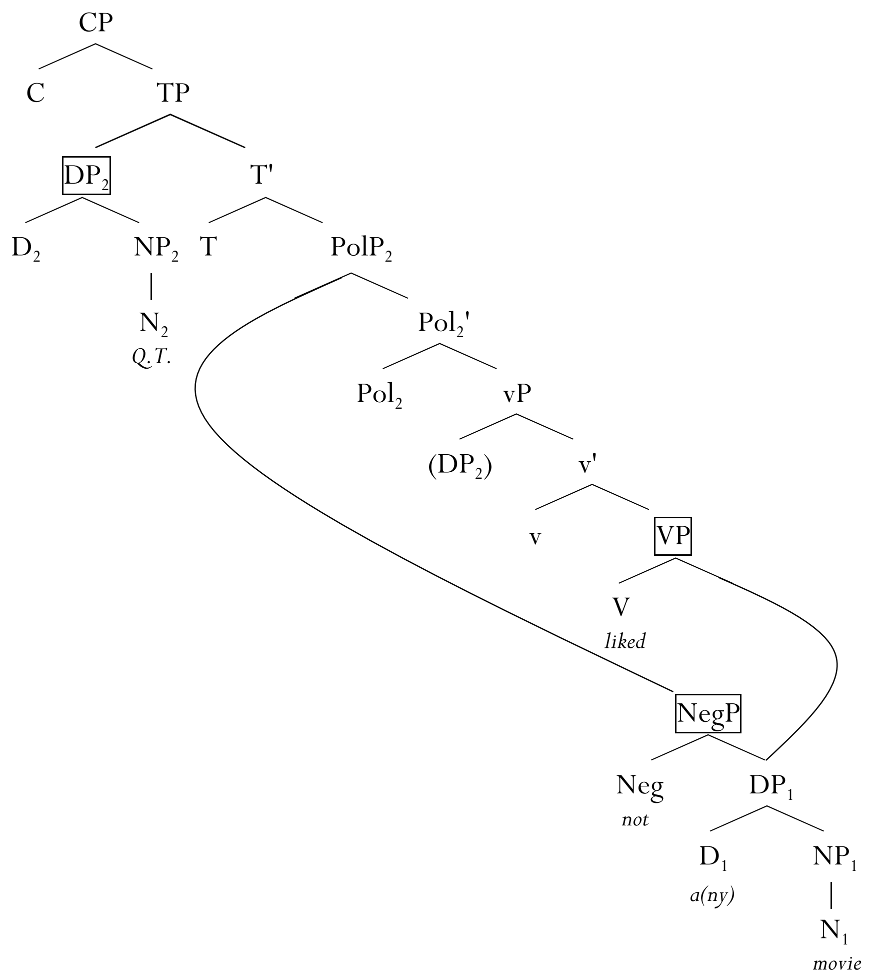
(92)



Then, the rest of the structure is built: T is merged with PolP$_2$, the subject DP$_2$ is remerged to become the specifier of TP and C is merged with TP, cf. (93).[80]

[80] Here I disregard the question of whether or not movement of the subject to Spec,TP takes place in narrow syntax or at PF (for discussion, see e.g. Merchant 2001, Lasnik & Park 2003, Brattico & Huhmarniemi 2006, and van Craenenbroeck & den Dikken 2006). This issue is not vital for my present purposes.

(93)



After merger of the phase head C, its complement TP is transferred to PF. The phasal domain undergoes Spell-Out and the linearization algorithm applies.

(94)

$$
A = \left\{
\begin{array}{llll}
\langle DP_2, T\rangle & \langle T', D_2\rangle & \langle NegP, Pol_2\rangle & \langle Pol_2, DP_2\rangle \\
\langle DP_2, PolP_2\rangle & \langle T', NP_2\rangle & \langle NegP, vP\rangle & \langle Pol_2, D_2\rangle \\
\langle DP_2, NegP\rangle & \langle T', N_2\rangle & \langle NegP, DP_2\rangle & \langle Pol_2, NP_2\rangle \\
\langle DP_2, Neg\rangle & & \langle NegP, D_2\rangle & \langle Pol_2, N_2\rangle \\
\langle DP_2, DP_1\rangle & \langle T, Pol_2'\rangle & \langle NegP, NP_2\rangle & \langle Pol_2, v'\rangle \\
\langle DP_2, D_1\rangle & \langle T, NegP\rangle & \langle NegP, N_2\rangle & \langle Pol_2, v\rangle \\
\langle DP_2, NP_1\rangle & \langle T, Neg\rangle & \langle NegP, v'\rangle & \langle Pol_2, VP\rangle \\
\langle DP_2, N_1\rangle & \langle T, DP_1\rangle & \langle NegP, v\rangle & \langle Pol_2, V\rangle \\
\langle DP_2, Pol_2'\rangle & \langle T, D_1\rangle & \langle NegP, VP\rangle & \langle Pol_2, DP_1\rangle \\
\langle DP_2, Pol_2\rangle & \langle T, NP_1\rangle & \langle NegP, V\rangle & \langle Pol_2, D_1\rangle \\
\langle DP_2, vP\rangle & \langle T, N_1\rangle & \langle NegP, DP_1\rangle & \langle Pol_2, NP_1\rangle \\
\langle DP_2, DP_2\rangle & \langle T, Pol_2\rangle & \langle NegP, D_1\rangle & \langle Pol_2, N_1\rangle \\
\langle DP_2, D_2\rangle & \langle T, vP\rangle & \langle NegP, NP_1\rangle & \\
\langle DP_2, NP_2\rangle & \langle T, DP_2\rangle & \langle NegP, N_1\rangle & \langle v, V\rangle \\
\langle DP_2, N_2\rangle & \langle T, D_2\rangle & & \langle v, DP_1\rangle \\
\langle DP_2, v'\rangle & \langle T, NP_2\rangle & \langle Pol_2', Neg\rangle & \langle v, D_1\rangle \\
\langle DP_2, v\rangle & \langle T, N_2\rangle & \langle Pol_2', DP_1\rangle & \langle v, NP_1\rangle \\
\langle DP_2, VP\rangle & \langle T, v'\rangle & \langle Pol_2', D_1\rangle & \langle v, N_1\rangle \\
\langle DP_2, V\rangle & \langle T, v\rangle & \langle Pol_2', NP_1\rangle & \\
\langle DP_2, DP_1\rangle & \langle T, VP\rangle & \langle Pol_2', N_1\rangle & \\
\langle DP_2, D_1\rangle & \langle T, V\rangle & & \\
\langle DP_2, NP_1\rangle & \langle T, DP_1\rangle & & \\
\langle DP_2, N_1\rangle & \langle T, D_1\rangle & & \\
 & \langle T, NP_1\rangle & & \\
 & \langle T, N_1\rangle & &
\end{array}
\right\}
$$

Now, the ordered pairs corresponding the the asymmetric c-command relations in the A in (94) need to be disambiguated. A disambiguated subset is selected that has to satisfy English-particular requirements. Heads have to precede their complement. Specifiers have to precede the material they asymmetrically c-command. Note that the subject DP_2 is actually linearized twice, once in Spec,TP and once in Spec,vP. Because of Tolerance, the ordering statements referring to the subject DP_2 in Spec,vP will be jettisoned as English-particular requirements will choose to linearize subjects in Spec,TP. The (maximally small) disambiguated subset is given in (95). The resulting linearization is (96).

(95)

$$
A' = \left\{ \begin{array}{lll}
DP_2 < T & NegP < Pol_2 & v < V \\
DP_2 < PolP_2 & NegP < vP & v < DP_1 \\
 & & \\
T < NegP & Pol_2 < v' & \\
T < Pol_2' & &
\end{array} \right\}
$$

(96)

$$
d(A) = \left\{ \begin{array}{lllll}
N_2 < T & T < Neg & Neg < Pol_2 & D_1 < Pol_2 & Pol_2 < v \\
N_2 < Neg & T < D_1 & Neg < v & D_1 < v & Pol_2 < V \\
N_2 < D_1 & T < N_1 & Neg < V & D_1 < V & Pol_2 < D_1 \\
N_2 < N_1 & T < Pol_2 & Neg < D_1 & D_1 < D_1 & Pol_2 < N_1 \\
N_2 < Pol_2 & T < v & Neg < N_1 & D_1 < N_1 & \\
N_2 < v & T < V & & & v < V \\
N_2 < V & T < D_1 & & N_1 < Pol_2 & v < D_1 \\
N_2 < D_1 & T < N_1 & & N_1 < v & v < N_1 \\
N_2 < N_1 & & & N_1 < V & \\
 & & & N_1 < D_1 & \\
D_2 < N_2 & D_2 < Pol_2 & & N_1 < N_1 & \\
D_2 < T & D_2 < v & & & \\
D_2 < Neg & D_2 < V & & & \\
D_2 < D_1 & D_2 < D_1 & & & \\
D_2 < N_1 & D_2 < N_1 & & &
\end{array} \right\}
$$

Note that the linearization in (96) contains several problematic statements. The statements $D_1 < D_1$ and $N_1 < N_1$ are violations of Irreflexivity. Moreover, the d(A) in (96) contains antisymmetric statements such as $N_1 < v$ and $v < N_1$ or $D_1 < Pol_2$ and $Pol_2 < D_1$. Furthermore, the orderings $Neg < V$, $Neg < D_1$, $Neg < N_1$, $D_1 < V$, $N_1 < D_1$, and $N_1 < V$ clash with linearization statements that were introduced earlier in the derivation. That is, they are inconsistent with the orderings that were calculated before the NegP was merged as a specifier in the functional sequence of the clause and after Fusion Under Adjacency between Neg and D_1 (cf. (90)). Recall that the linearizations established for linearization domains earlier in the derivation cannot be changed later on. Linearization statements that are introduced later in the derivation have to be both total and consistent with the earlier statements.

Recall (section 3.4 in chapter 2) that Johnson (2007) proposes that d(A) is tolerant, just as the linearization algorithm is: inconsistent and conflicting pairs can be disposed of. As such, the reflexive statements can be deleted and the conflicting statements can be discarded. Moreover, the antisymmetric orderings can be disposed of. $N_1 < Pol_2$, $D_1 < Pol_2$, $N_1 < v$, and $D_1 < v$ will be ignored, as these would otherwise result in conflicting statements and transitivity violations. For instance, the combination $N_1 < Pol_2$ and $Pol_2 < V$ would give rise to $N_1 < V$ (by Transitivity), which is in conflict with the linearization statement $V < N_1$, collected earlier.

Certain statements in (96) need to obey Transitivity when combining with statements collected earlier (cf. (90)). Relevant examples are given in (97). These statements in (97) are, however, contradicted by other statements in (96), namely $Neg < Pol_2$ and $Neg < v$. As the statements in (90) were collected earlier in the derivation, these cannot be altered, and the two statements in (96) under discussion need to be disposed of.

(97) TRANSITIVITY

a.	$Pol_2 < V$	(96)	+	$V < Neg = D_1$	(90)	$\rightarrow$	$Pol_2 < Neg = D_1$
b.	$v < V$	(96)	+	$V < Neg = D_1$	(90)	$\rightarrow$	$v < Neg = D_1$

The remaining statements are those in (98), which will be added to the orderings collected earlier (i.e. the ones in (90)).

(98)

$$d(A) = \left\{ \begin{array}{lllll} D_2 < N_2 & N_2 < T & T < Neg & Pol_2 < v & \\ D_2 < T & N_2 < Neg & T < D_1 & Pol_2 < V & \\ D_2 < Neg & N_2 < D_1 & T < N_1 & Pol_2 < D_1 & \\ D_2 < D_1 & N_2 < N_1 & T < Pol_2 & Pol_2 < N_1 & \\ D_2 < N_1 & N_2 < Pol_2 & T < v & & \\ D_2 < Pol_2 & N_2 < v & T < V & v < V & D_1 < N_1 \\ & & & v < D_1 & \\ D_2 < v & N_2 < V & & v < N_1 & \\ D_2 < V & & & & \end{array} \right\}$$

Note that, in the d(A) in (98), not all terminals seem to be ordered with respect to each other (because of Tolerance in d(A)). For instance, there is no statement $Pol_2 <$ Neg or $Neg < Pol_2$. Nevertheless, Pol_2 and Neg are ordered with respect to one another by virtue of Fusion Under Adjacency between Neg and D_1 earlier in the derivation: $Pol_2 < D_1$ and $Neg = D_1$, hence $Pol_2 < Neg = D_1$. Similarly, Pol_2 and Neg are also ordered with respect to each other as a result of Transitivity: $Pol_2 < V$ and V

< Neg = D1, hence Pol_2 < Neg = D1 (cf. (97)). The result of adding the ordering statements in (98) to the ones in (90) is a total, consistent ordering, which will eventually be realized as *Quentin Tarantino liked no movie.*

Summarizing, the order of V and the indefinite determiner D_1 of the DP_1-object is determined when VP is spelled out and linearized (as a consequence of the PIC). At this point, the order of Neg relative to V and D_1 has not yet been determined, as Neg is not dominated by VP and hence, not spelled out as part of VP. Upon merger of NegP as a (complex) specifier into the clausal spine, it is spelled out and linearized (Uriagereka 1999). When NegP is spelled out and linearized, Neg and D_1 become adjacent: Fusion Under Adjacency can apply. Because of FUA, Neg and D_1 become one terminal element, which needs to obey all the ordering statements referring to both Neg and D_1. As a consequence of this, the new element (Neg = D_1) needs to surface following (i.e. to the right of) V. As positions assigned by the linearization scheme at an early stage in the derivation cannot be changed, an object negative indefinite will always surface in its *in situ* position.

As such, the multidominant, cyclic analysis proposed here is able to derive a modal-less English sentence like *Quentin Tarantino liked no movie*. In the following section, I show how a very similar analysis, with the same key components, derives an English sentence that contains an object negative indefinite and the existential deontic modal *can*.

3.2.2 THE DERIVATION OF A SENTENCE WITH *NO* AND MODAL *CAN*

In this section, I consider the derivation of the sentence in (75), repeated here, a sentence with a negative indefinite DP in object position and the existential deontic modal *can*.

(75) Quentin Tarantino can offer no help.

As noted by Iatridou & Zeijlstra (2010) and Iatridou & Sichel (2011), the existential deontic modal *can* is a 'Neg>Mod modal', i.e. a modal that typically only appears under the scope of sentential negation. For most speakers of English, the sentences in (42), repeated here as (99), can only get a reading whereby the negation outscopes *can*. For a limited number of speakers, *can* may outscope the negation, as indicated by the percentage sign % (see Cormack & Smith 2002, see also sections 2.2 and 3.1).

(99) a. [cf. Cormack & Smith 2002:13, (29a)]
John can not eat vegetables.
= 'It is not the case that John is permitted to eat vegetables.' ($\neg$ > $\Diamond$)
= 'It is permitted that John not eat vegetables.' ($^{\%}$ $\Diamond$ > $\neg$)

b. [cf. Iatridou & Sichel 2011:598,(4b)]
He cannot go to this party.
= 'It is not the case that he is permitted to go to this party.' ($\neg$ > $\Diamond$)
= 'It is permitted that he does not go to this party.' ($^{\%}$ $\Diamond$ > $\neg$)

Adopting the proposal that a clause can contain one or more polarity phrases PolP (cf. section 3.1.2), the observation that deontic *can* is a Neg>Modal can be implemented as follows (in line with Cormack & Smith 2002). The standard assumption is that modal verbs are base generated in T (cf. section 3.1.1). TP is dominated by the high $PolP_1$, and dominates the low $PolP_2$. As such, the deontic modal *can*, base generated in T, will occupy a position above $PolP_2$, but below $PolP_1$. The low PolP ($PolP_2$) is not available for sentential negation in sentences with the deontic modal *can*. The fact that the modal is base generated below $PolP_1$, combined with the unavailability of $PolP_2$, derives why it is always outscoped by negation (cf. also section 3.1.2).[81]

The same goes for sentences containing a negative indefinite and the modal *can* (as discussed by Iatridou & Sichel 2011). Recall that the relative scope of a modal and a negative indefinite DP matches the relative scope of a modal and sentential negation (Iatridou & Sichel 2011, see also sections 2.2 and 3.1.2).

Most of my informants only interpret the object negative indefinite DP in (43) (repeated here in (100)) as scoping above deontic *can*; a smaller set of speakers also allows the reverse scope relation.

(100) John can do no homework tonight.
= 'It is not the case that John is permitted to do homework tonight.'
($\neg$ > $\Diamond$)
= 'It is permitted that John does not do homework tonight.' ($^{\%}$ $\Diamond$ > $\neg$)

[81] For those speakers allowing deontic *can* to outscope negation, this means that they have $PolP_2$ available for merging the negation in a sentence with deontic *can*, unlike the majority of English speakers. See Cormack & Smith (2002).

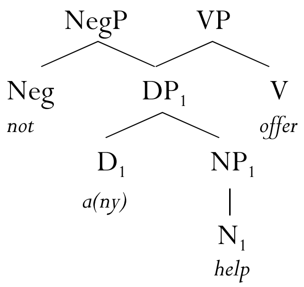
Therefore, I take the Merge site of the (negative component of the) negative indefinite to be part of PolP_1 in case the sentence contains the existential deontic modal *can*.

Let us take a look at the derivation for (75). Again, the syntactic derivation starts out with a collection of terminals in a numeration N. The recursive structure building operation Merge will again create complex syntactic objects, until all the terminals in the Numeration have been selected, starting out from the numeration in (101). (Recall that I use the label Neg for the terminal that is usually lexicalized as the negative adverb *not* in English, not to be confused with the polarity head Pol.)

(101) $N = \{D_1, N_1, \text{Neg}, V, D_2, N_2, v, T, \text{Pol}_1, C\}$

The first applications of Merge are identical to those discussed in the previous section (section 3.2.1). First, the indefinite object DP_1 is merged, after which Neg is merged with DP_1. Then, the verb selects the DP as its complement (recall that verbs do not select NegPs).[82] This yields the phrase marker in (102), in which a single node (DP_1) has two mothers (NegP and VP).

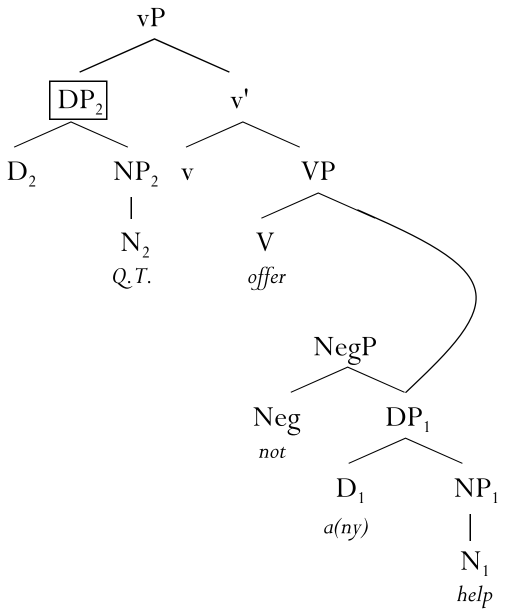
(102)



Subsequently, v merges with the VP, and the subject DP_2 is merged as Spec,vP. As a complex left branch, this subject DP is spelled out before merging as a specifier to the clausal spine. The resulting phrase marker is shown in (103).

[82] The semantics will require the phrase NegP to be merged in the clausal functional sequence to form a negative sentence later on, see below.

(103)



Given that vP is a phase, the PIC requires that the complement of the phase head is spelled out, i.e. VP is transferred to PF and linearized. Recall that NegP is not spelled out when VP is. Spell-Out targets VP and all the material dominated by it; that is, V and DP_1, but not Neg(P). As such, the linearization scheme produces orderings for VP, but not for NegP. The ordered pairs corresponding to the asymmetric c-command relations in the A in (104) have to be disambiguated. A subset that meets English-specific requirements is selected. After this, a linearization d(A) is produced that has to meet Kayne's (1994) well-formedness conditions. The (maximally small) disambiguated subset is given in (105)a and the linearization in (105)b.

(104) $A = \{ \langle V, D_1 \rangle, \langle V, NP_1 \rangle, \langle V, N_1 \rangle, \langle D_1, N_1 \rangle \}$

(105) a. $A' = \{ V < D_1, V < N_1, D_1 < N_1 \}$
b. $d(A) = \{ V < D_1, V < N_1, D_1 < N_1 \}$

After this stage of the derivation, T is merged with vP (recall that $PolP_2$ is not activated in a sentence that contains the deontic Neg>Mod modal *can*) and the subject DP_2 is remerged to become the specifier of TP.

Then, Pol_1 is merged with TP, after which NegP will be merged as the specifier of $PolP_1$. As (at least the negative part of) the negative indefinite has to outscope the modal *can*, NegP has to be merged in the specifier of the high PolP ($PolP_1$). In this position, NegP semantically combines with the clause and takes sentential scope, scoping above the modal. Given that NegP now merges as a complex specifier, it has to be spelled out before it is merged with $PolP_1$. Hence, NegP is spelled out and the linearization algorithm appplies. The result is the maximally small subset in (107)a (disambiguated ordered pairs corresponding to the A in (106)), and the linearization in (107)b.

(106) $A = \{ \langle Neg, D_1 \rangle, \langle Neg, NP_1 \rangle, \langle Neg, N_1 \rangle, \langle D_1, N_1 \rangle \}$

(107) a. $A' = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. $d(A) = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$

At this point, the PF-branch contains three spelled-out XPs and their linearizations, presented in (108):

(108) a. $d(A)_{NegP} = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$
c. $d(A)_{DP_2} = \{ D_2 < N_2 \}$

This is the point in the derivation where the negative indefinite *no* is created. As the linearization scheme has put nothing in between the terminals Neg and D_1, these can undergo Fusion Under Adjacency. Once Neg and D_1 have fused, the terminal onto which Neg and D_1 are jointly mapped will occupy the positions assigned to Neg and D_1 in the linearization in (108). The result of Fusion applying to the terminals Neg and D_1 in (108) is given in (109).

(109) a.

$$d(A)_{NegP} = \left\{ \begin{array}{rcl} Neg = D_1 & < & Neg = D_1 \\ Neg = D_1 & < & N_1 \\ Neg = D_1 & < & Neg = D_1 \end{array} \right\}$$

b.

$$d(A)_{VP} = \left\{ \begin{array}{rcl} V & < & Neg = D_1 \\ V & < & N_1 \\ Neg = D_1 & < & N_1 \end{array} \right\}$$

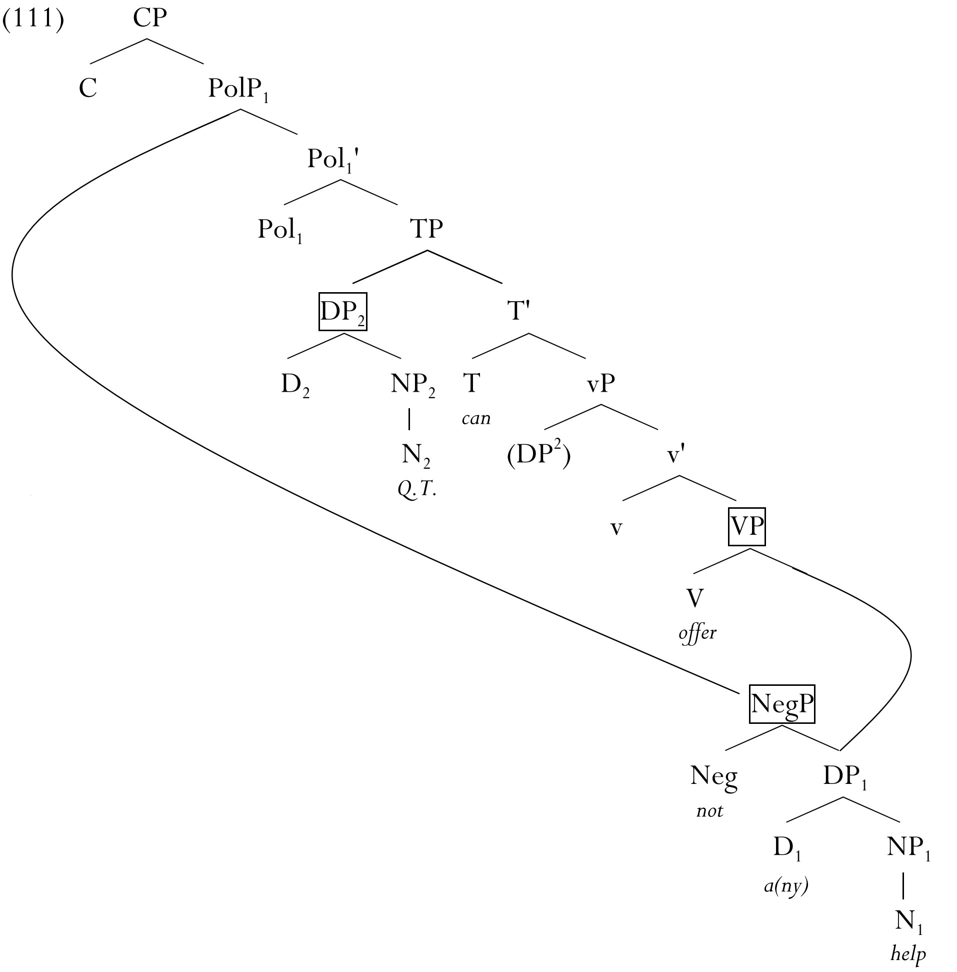
c. $d(A)_{DP_2} = \{ D_2 < N_2 \}$

As d(A) is tolerant, superfluous, inconsistent ordering statements can be disposed of:

(110) $d(A)_{NegP} = \{ Neg = D_1 < N_1 \}$

Then, the (spelled-out) NegP is merged as the specifier of $PolP_1$. After this, C is merged with $PolP_1$. The resulting structure is (111):

(111)



After completing the CP-phase, the phasal domain (i.e. the complement of C, here $PolP_1$) undergoes Spell-Out and the linearization algorithm applies.

(112)

$$
A = \left\{
\begin{array}{lllll}
\langle \mathrm{NegP}, \mathrm{Pol}_1 \rangle & \langle \mathrm{Pol}_1', \mathrm{Neg} \rangle & \langle \mathrm{Pol}_1, \mathrm{DP}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{T} \rangle & \langle \mathrm{T}', \mathrm{D}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{TP} \rangle & \langle \mathrm{Pol}_1', \mathrm{DP}_1 \rangle & \langle \mathrm{Pol}_1, \mathrm{D}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{vP} \rangle & \langle \mathrm{T}', \mathrm{NP}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{DP}_2 \rangle & \langle \mathrm{Pol}_1', \mathrm{D}_1 \rangle & \langle \mathrm{Pol}_1, \mathrm{NP}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{DP}_2 \rangle & \langle \mathrm{T}', \mathrm{N}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{D}_2 \rangle & \langle \mathrm{Pol}_1', \mathrm{NP}_1 \rangle & \langle \mathrm{Pol}_1, \mathrm{N}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{D}_2 \rangle & \\
\langle \mathrm{NegP}, \mathrm{NP}_2 \rangle & \langle \mathrm{Pol}_1', \mathrm{N}_1 \rangle & \langle \mathrm{Pol}_1, \mathrm{T}' \rangle & \langle \mathrm{DP}_2, \mathrm{NP}_2 \rangle & \langle \mathrm{T}, \mathrm{DP}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{N}_2 \rangle & & \langle \mathrm{Pol}_1, \mathrm{T} \rangle & \langle \mathrm{DP}_2, \mathrm{N}_2 \rangle & \langle \mathrm{T}, \mathrm{D}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{T}' \rangle & & \langle \mathrm{Pol}_1, \mathrm{vP} \rangle & \langle \mathrm{DP}_2, \mathrm{v}' \rangle & \langle \mathrm{T}, \mathrm{NP}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{T} \rangle & & \langle \mathrm{Pol}_1, \mathrm{DP}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{v} \rangle & \langle \mathrm{T}, \mathrm{N}_2 \rangle \\
\langle \mathrm{NegP}, \mathrm{vP} \rangle & & \langle \mathrm{Pol}_1, \mathrm{D}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{VP} \rangle & \langle \mathrm{T}, \mathrm{v}' \rangle \\
\langle \mathrm{NegP}, \mathrm{DP}_2 \rangle & & \langle \mathrm{Pol}_1, \mathrm{NP}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{V} \rangle & \langle \mathrm{T}, \mathrm{v} \rangle \\
\langle \mathrm{NegP}, \mathrm{D}_2 \rangle & & \langle \mathrm{Pol}_1, \mathrm{N}_2 \rangle & \langle \mathrm{DP}_2, \mathrm{DP}_1 \rangle & \langle \mathrm{T}, \mathrm{VP} \rangle \\
\langle \mathrm{NegP}, \mathrm{NP}_2 \rangle & & \langle \mathrm{Pol}_1, \mathrm{v}' \rangle & \langle \mathrm{DP}_2, \mathrm{D}_1 \rangle & \langle \mathrm{T}, \mathrm{V} \rangle \\
\langle \mathrm{NegP}, \mathrm{N}_2 \rangle & & \langle \mathrm{Pol}_1, \mathrm{v} \rangle & \langle \mathrm{DP}_2, \mathrm{NP}_1 \rangle & \langle \mathrm{T}, \mathrm{DP}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{v}' \rangle & & \langle \mathrm{Pol}_1, \mathrm{VP} \rangle & \langle \mathrm{DP}_2, \mathrm{N}_1 \rangle & \langle \mathrm{T}, \mathrm{D}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{v} \rangle & & \langle \mathrm{Pol}_1, \mathrm{V} \rangle & & \langle \mathrm{T}, \mathrm{NP}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{VP} \rangle & & \langle \mathrm{Pol}_1, \mathrm{DP}_1 \rangle & & \langle \mathrm{T}, \mathrm{N}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{V} \rangle & & \langle \mathrm{Pol}_1, \mathrm{D}_1 \rangle & & \\
\langle \mathrm{NegP}, \mathrm{DP}_1 \rangle & & \langle \mathrm{Pol}_1, \mathrm{NP}_1 \rangle & & \langle \mathrm{v}, \mathrm{V} \rangle \\
\langle \mathrm{NegP}, \mathrm{D}_1 \rangle & & \langle \mathrm{Pol}_1, \mathrm{N}_1 \rangle & & \langle \mathrm{v}, \mathrm{DP}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{NP}_1 \rangle & & & & \langle \mathrm{v}, \mathrm{D}_1 \rangle \\
\langle \mathrm{NegP}, \mathrm{N}_1 \rangle & & & & \langle \mathrm{v}, \mathrm{NP}_1 \rangle \\
 & & & & \langle \mathrm{v}, \mathrm{N}_1 \rangle
\end{array}
\right\}
$$

The ordered pairs corresponding to the asymmetric c-command relations in the A in (112) need to be disambiguated. The selected subset has to satisfy English-specific requirements The (maximally small) disambiguated subset is given in (113). The resulting linearization d(A) is the one in (114).

(113)

$$
A' = \left\{
\begin{array}{lll}
\mathrm{DP}_2 < \mathrm{T} & \mathrm{NegP} < \mathrm{Pol}_1 & \mathrm{v} < \mathrm{V} \\
\mathrm{DP}_2 < \mathrm{vP} & \mathrm{NegP} < \mathrm{TP} & \mathrm{v} < \mathrm{DP}_1 \\
 & & \\
\mathrm{T} < \mathrm{vP}' & \mathrm{Pol}_1 < \mathrm{DP}_2 & \\
 & \mathrm{Pol}_1 < \mathrm{TP}' &
\end{array}
\right\}
$$

(114)

$$
d(A) = \left\{
\begin{array}{lllll}
N_2 < T & Neg < Pol_1 & D_1 < Pol_1 & N_1 < Pol_1 & Pol_1 < N_2 \\
N_2 < v & Neg < N_2 & D_1 < N_2 & N_1 < N_2 & Pol_1 < T \\
N_2 < V & Neg < T & D_1 < T & N_1 < T & Pol_1 < v \\
N_2 < D_1 & Neg < v & D_1 < v & N_1 < v & Pol_1 < V \\
N_2 < N_1 & Neg < V & D_1 < V & N_1 < V & Pol_1 < D_1 \\
 & Neg < D_1 & D_1 < D_1 & N_1 < D_1 & Pol_1 < N_1 \\
D_2 < N_2 & Neg < N_1 & D_1 < N_1 & N_1 < N_1 & \\
D_2 < T & & & & \\
D_2 < v & T < v & v < V & & \\
D_2 < V & T < V & v < D_1 & & \\
D_2 < D_1 & T < D_1 & v < N_1 & & \\
D_2 < N_1 & T < N_1 & & &
\end{array}
\right\}
$$

The linearization in (114) again contains several problematic statements. The statements $D_1 < D_1$ and $N_1 < N_1$ violate Irreflexivity, and statements like $N_1 < v$ and $v < N_1$ or $D_1 < N_2$ and $N_2 < D_1$ are antisymmetric. Moreover, the statements $Neg < V$, $Neg < D_1$, $Neg < N_1$, $D_1 < V$, $N_1 < D_1$, and $N_1 < V$ are inconsistent with the orderings that were fixed earlier in the derivation. Linearizations established for linearization domains earlier in the derivation cannot be changed later on.

As d(A) is tolerant, however, inconsistent and conflicting pairs can be disposed of. Therefore, the reflexive statements can be disposed of and the conflicting statements can be jettisoned. Moreover, the antisymmetric orderings can be discarded. $N_1 < v$, $D_1 < v$, $N_1 < T$, $D_1 < T$, $N_1 < N_2$, $D_1 < N_2$, $N_1 < Pol_1$, and $D_1 < Pol_1$ will be ignored, as these would otherwise result in conflicting statements and transitivity violations. For instance, the combination $N_1 < v$ and $v < V$ would result in $N_1 < V$ (by Transitivity), which contradicts with the linearization statement $V < N_1$, collected earlier.

Furthermore, certain statements in (114) need to obey Transitivity when combining with statements collected earlier (cf. (109)). Relevant examples are given in (115). These statements in (115) are, however, contradicted by other statements in (114), namely $Neg < Pol_1$, $Neg < N_2$, $Neg < T$, and $Neg < v$. As the statements in (109) were collected earlier in the derivation, these cannot be altered, and the four statements in (114) under discussion need to be disposed of.

(115) TRANSITIVITY

a. $Pol_1 < V$ (114) + $V < Neg = D_1$ (109) → $Pol_1 < Neg = D_1$
b. $N_2 < V$ (114) + $V < Neg = D_1$ (109) → $N_2 < Neg = D_1$
c. $T < V$ (114) + $V < Neg = D_1$ (109) → $T < Neg = D_1$
d. $v < V$ (114) + $V < Neg = D_1$ (109) → $v < Neg = D_1$

In the end, the remaining ordering statements are those in the d(A) in (116). These statements will be added to the orderings collected earlier (i.e. the ones in (109)).

(116)

$$d(A) = \left\{ \begin{array}{llllll} D_2 < N_2 & N_2 < T & T < v & Pol_1 < N_2 & v < V & D_1 < N_1 \\ D_2 < T & N_2 < v & T < V & Pol_1 < T & v < D_1 & \\ D_2 < v & N_2 < V & T < D_1 & Pol_1 < v & v < N_1 & \\ D_2 < V & N_2 < D_1 & T < N_1 & Pol_1 < V & & \\ D_2 < D_1 & N_2 < N_1 & & Pol_1 < D_1 & & \\ D_2 < N_2 & & & Pol_1 < N_1 & & \end{array} \right\}$$

At first sight, it seems that not all terminals are ordered with respect to each other in (116) – for instance, there is no statement T < Neg (or vice versa). Nevertheless, all terms will be ordered with respect to one another, by virtue of Fusion Under Adjacency between Neg and D_1 earlier in the derivation (cf. the orderings in (109)): $T < D_1$ and $Neg = D_1$, hence $T < Neg = D_1$. Similarly, T and Neg are also ordered with respect to each other as a result of Transitivity: T < V and V < Neg = D1, hence T < Neg = D1 (cf. (115)), The result of adding the ordering statements in (116) to the ones in (109) is a total, consistent ordering, which will eventually be realized as *Quentin Tarantino can offer no help*.

Again, the order of V and the indefinite determiner of the object DP_1 is fixed when VP is transferred to PF. At this point, the order of Neg relative to V and D_1 is not yet determined. When NegP merges as a complex left branch, it is spelled out and linearized. At this point, Neg and D_1 are adjacent and FUA can apply, resulting in Neg and D_1 becoming one terminal element. This element obeys all the ordering statements referring to both Neg and D_1. The fused element therefore has to follow V, because positions assigned by the linearization algorithm at an early stage in the derivation cannot be altered later on. As such, the multidominant, cyclic analysis developed here derives an English sentence containing a modal and an object negative indefinite, such as *Quentin Tarantino can offer no help*.

3.3 Summary and discussion

In this section I have developed an analysis of English negative indefinites with the following key components: decomposition of the negative indefinitive, remerge (multidominance), cyclic Spell-Out and linearization, and Fusion under Adjacency. This multidominant, cyclic analysis ensures that the two components of an English negative indefinite DP, sentential negation and an indefinite determiner, can fuse together even though they are not string adjacent at first sight. Moreover, the cyclicity of Spell-Out and linearization and the requirement of Order Preservation ensure that the negative indefinite object is realized in its base position, although it can be interpreted in its remerge position (e.g. outscoping a deontic modal such as *can*).[83]

Note that the structures in (93) and (111), with negation + indefinite DP (i.e. the negative indefinite) occupying the specifier of a polarity phrase seems reminiscent of the analyses in Haegeman & Zanuttini (1991, 1996), Rizzi (1991/96), Zanuttini (1991), DeGraff (1993), Haegeman (1995), and Cornilescu (2004) in terms of the NEG-criterion. The NEG-criterion (in line with Rizzi's (1991/96) WH-criterion) posits that negative indefinite DPs have to move to the specifier of a clausal polarity phrase (Spec,NegP in the original wording). According to Zanuttini (1991) and Haegeman & Zanuttini (1991), the NEG-criterion can be satisfied at LF in some languages, while in others it has to be satisfied in overt syntax. For Haegeman (1995), on the other hand, the NEG-criterion universally has to apply in overt syntax.[84] The analysis proposed here could be said to follow (Haegeman's (1995) version of) the NEG-criterion in that a negative indefinite DP always occupies a Spec,PolP in overt syntax. However, unlike in the NEG-criterion proposals, this does not imply that the negative indefinite is overtly realized in that position.[85]

In case a negative indefinite has a high scope reading, although it is realized in its base position, its scope (i.e. *no* > *can*) corresponds to its merger as the specifier of

[83] In the beginning of this chapter, it was mentioned (cf. footnote 6) that some speakers of English do not accept negative indefinites in object position. As pointed out by Anikó Lipták (p.c.), the question now arises whether these speakers might not allow for FUA. It should be noted that these speakers do allow for negative indefinites in subject position. If these are also the result of FUA (which seems desirable, see also chapter 6, section 2.4 for some discussion), it cannot be the case that FUA is lacking from their grammars altogether. It might be the case that formality plays an important role, as also mentioned in footnote 4 of this chapter.

[84] This forces Haegeman (1995) to posit the base generation of an empty operator in the specifier of the polarity head in order to deal with object negative indefinites. See also Cornilescu (2004).

[85] My account also differs from NEG-criterion analyses in that they (i) take negative indefinites to be negative quantifiers and (ii) posit that the negative indefinite moves to the specifier because it has to enter into a checking relation with the negative/polarity head in order to check its negative features. These two aspects are not present in my account.

$PolP_1$. As such, this multidominant, cyclic analysis of negative indefinites derives "covert raising" of the negative indefinite to a position outscoping the modal *can*. The account proposed here only relies on a single recursive structure-building operation (Merge) in narrow syntax, and on Order Preservation in a cyclic Spell-Out model of the grammar. This is reminiscent of Bobaljik's (1995, 2002) *Single Output Syntax*. He proposes that all movement, both overt and covert, takes place in narrow syntax. At the end of the derivation, PF decides which copy to spell out and LF decides which copy to interpret. Spell-Out of the high copy at PF yields traditional overt movement; Spell-Out of the low copy results in traditional covert movement. At LF too, a choice is made as to which copy is interpreted, resulting in reconstruction when the low copy is chosen. I do not adhere to the copy theory of movement. 'Move' is Internal (Re)Merge: one syntactic object is merged in several positions. Whether the remerged element will be spelled out in its original position or its remerge position depends on whether or not its original position is part of a spelled out node and how it is linearized there. Order Preservation can block linearization in the remerge position if this would contradict the ordering statements established in a previous linearization domain (cf. Fox & Pesetsky 2003, 2004a,b, 2007; Johnson 2007; Sabbagh 2007; among many others). Hence, PF is not exactly 'free' to choose in which position an object is linearized. Nevertheless, the gist of the proposal here is identical to Bobaljik's (1995, 2002) account: remerge happens in narrow syntax and where a syntactic object is linearized depends on PF-considerations. As such, the analysis developed here does not have to resort to mechanisms such as traditional "movement at LF" (cf. the LF-satisfaction of the NEG-criterion in e.g. Haegeman & Zanuttini 1991). Furthermore, the account proposed here does not subscribe to (counter-cyclic) "movement in a Spell-Out domain D after linearization of D" (cf. Fox & Pesetsky 2003).

Thus, in this section I have derived the equivalent of (or alternative to) "covert raising" of negative indefinites. It should be stressed, though, that an LF-raising account and my proposal are not equivalent. The next section focuses on the interaction between negative indefinites and ellipsis in English. I argue that the empirical generalizations discussed in section 2 are elegantly accounted for under the analysis of English negative indefinites developed in this section. A "covert raising" analysis of negative indefinites makes different predictions (cf. section 6 of this chapter for related discussion). As such, the decisive evidence for the analysis presented in this section (and against covert LF-movement) is presented in section 4 (and section 6).[86]

4 Negative indefinites and ellipsis: The analysis

This section discusses the behavior of English negative indefinites in verbal and clausal ellipsis. In section 2.2, it was shown that negative indefinites in object position cannot take scope out of VP-ellipsis sites. Section 4.1 presents an account of this observation based on the analysis of negative indefinites developed in section 3 of this chapter; that is, negative indefinites involve Fusion Under Adjacency between sentential negation Neg and an indefinite determiner, and this adjacency comes about under multidominance and cyclic Spell-Out. Section 2.1 discussed the interchangeability of *any* and *no* in verbal and clausal ellipsis. While *not…any* can antecede the ellipsis of *no* in clausal ellipsis, this switch is disallowed in verbal ellipsis. In section 4.2, this is again analyzed on the basis of the account presented in section 3. Crucially, for both observations (in section 2.1 and 2.2), it is argued that, given that ellipsis is a PF-process, it can block Fusion Under Adjacency (at PF) between sentential negation Neg and the indefinite determiner D of the object DP.

---

[86] As Anikó Lipták (p.c.) notes, at first sight, the LF-raising account might seem better suited to deal with data such as the sentence in (i).

(i) You bought no book, didn't you?

Klima (1964) introduced the question tag test: while a negative sentence combines with a positive question tag, an affirmative sentence combines with a negative question tag, as illustrated in (ii):

(ii) a. You did not buy a book, did/*didn't you?
b. You bought a book, didn't/*did you?

This question tag test seems to indicate that the sentence with the object negative indefinite *no book* in (i) is affirmative – in other words, that PolP is specified for positive polarity in (i), see also De Clercq (2011). It is therefore not obvious in which sense PolP is negative in the syntax in (i) (as proposed in my analysis of object negative indefinites).

However, as also noted by De Clercq (2011: fn.3), there are native speakers of English who report that they have positive tags with a negative indefinite in object position. Moreover, De Clercq stresses that "it is definitely the case that *no/nothing* in object position gives rise to positive tags with certain modal verbs, e.g. with *could*" (cf. (iii)).

(iii) [De Clercq 2011: fn.3, (1)]
He could use no credit cards in that shop, ??could he/ ?couldn't he?

Thus, it might well be the case that sentences like (i) and (iii) with positive tags confirm that sentences with object negative indefinites *are* (or at least *can be*) negative.

De Clercq (2011: fn.3) wonders whether positive tags in (i) and (iii) show that the speakers who allow these "are mixing up the two kinds of tags, or whether there is genuine variation with respect to tagging." It should also be noted that according to Tubau (2008:78), Klima's tests "have been reported to run into some problems" (see Tubau 2008 for relevant references). I take the data discussed in this chapter to show convincingly that the analysis developed in this dissertation is to be preferred over an LF-raising account and I leave the issue of question tags to further research.

The interaction between ellipsis and negative indefinites shows that the derivation of negative indefinites crucially involves a PF-ingredient. Because ellipsis, a PF-process, blocks negative indefinites, it can be concluded that the formation of negative indefinites (in particular, Fusion Under Adjacency), is also a PF-process. The idea that ellipsis can bleed morphological processes is also adopted by Fuß 2008, Saab & Zdrojewski 2010, Schoorlemmer & Temmerman 2010, 2012, Boone 2011, Stjepanović 2011, and Lipták & Saab 2012.

4.1 Deriving the VPE/NI Generalization

Sections 2.2 and 2.3 introduced the VPE/NI Generalization in (117):

(117) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

This section presents an analysis for this generalization. It is argued that the PF-process of ellipsis blocks the PF-process Fusion Under Adjacency. The analysis of (117) presented in this section has the following central ingredients:

(118) *Ingredients for the analysis*

(i) Negative indefinites are the result of Fusion Under Adjacency between sentential negation and an indefinite determiner. The required adjacency comes about under multidominance and cyclic Spell-Out/linearization. (this chapter, section 3.2)

(ii) The clausal structure contains 2 PolPs, one dominating and one dominated by TP. (this chapter, sections 3.1.2 and 3.2)

(iii) Ellipsis of α involves (i) the non-pronunciation of any terminal element dominated by α and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by α. (chapter 2, section 4)

(iv) Ellipsis takes place in the course of the derivation. (chapter 2, section 4)

(v) VP-ellipsis is ellipsis of the complement of T (this chapter, next subsection)

Before I go through the analysis of two relevant example sentences, I discuss the fifth ingredient (i.e. VP-ellipsis is ellipsis of the complement of T) in the next subsection.

4.1.1. VP-ELLIPSIS IS ELLIPSIS OF T'S COMPLEMENT

As discussed in section 4.2.1 of chapter 2, I take ellipsis to require a licensing head, following Zagona (1982, 1988a, 1988b), Lobeck (1992, 1995), Martin (1992, 1996), Johnson (2001), Merchant (2001 *et seq*.), and Aelbrecht (2009), amongst others. That is, only particular heads with a certain feature specification, the licensors, can trigger PF-deletion; their complements constitute the ellipsis site. For VP-ellipsis in English, the licensing head is generally taken to be the inflectional head T (when T is occupied by a finite auxiliary, a modal, or the infinitival marker *to*).[87] Grammatical instances of English VP-ellipsis have a modal, an auxiliary *have, be,* or *do*, or the infinitival marker *to* filling the T-head, as illustrated in (119).[88] When there is no licensor overtly occupying T, VP-ellipsis is impossible, as indicated by the contrast between (120)a and (120)b. Verbal elements other than the aforementioned ones do not license ellipsis of their complements, cf. (121). The examples in (122) show that non-finite auxiliaries cannot license VP-ellipsis.

(119) [Johnson 2001:440, (5) & Johnson 2001:442, (13)]

a. José Ybarra-Jaegger likes rutabagas, and Holly does too.
b. José Ybarra-Jaegger ate rutabagas, and Holly has too.
c. José Ybarra-Jaegger is eating rutabagas, and Holly is too.
d. Mag Wildwood wants to read Fred's story, and I also want to.
e. Sally might have eaten rutabagas, but Holly shouldn't.

(120) [Johnson 2001:439, (4)]

I can't believe Holly Golightly won't eat rutabagas.
a. I can't believe Fred won't, either.
b. * I can't believe Fred, either.

---

[87] See Zagona (1982, 1988a, 1988b), Martin (1992, 1996), Lobeck (1992, 1995), Johnson (2001), Aelbrecht (2009).

[88] I take the modals and dummy *do* to be base generated in T and aspectual auxiliaries (merged in Aux/Asp, cf. chapter 4) to move to T when there is no modal present, which are fairly standard assumptions (cf. Chomsky 1957; Jackendoff 1972; Fiengo 1974; Bobaljik 1995; Wurmbrand 2003; Gergel 2009). That the infinitival marker *to* originates in T has been proposed by Akmajian et al. (1979), Stowell (1982), den Besten (1989), and van Gelderen (1996, 1997).

(121) [Johnson 2001:440, (7)]

a. * Sally Tomato started running down the street, but only after José started.

b. * Sally Tomato made Mag laugh, and then José made.

(122) [Aelbrecht 2009:180-181, (19)]

a. * I hadn't been thinking about it, but I recall Morgan having been.

b. * I hadn't thought about it, but I recall Morgan having.

As T has been established as the licensing head, 'VP-ellipsis' is actually ellipsis of the complement of T.[89] That the elliptical constituent in 'VP-ellipsis' is, despite its name, actually larger than the verb phrase has been argued by Johnson (2001, 2004), Merchant (2001, 2007, 2008b), and Aelbrecht (2009), for instance. One of the arguments is that in sentences with a *there*-expletive subject, the associate of *there* is elided, showing that vP is targeted by elision as well. This is true for *there*-sentences involving unaccusative verbs and copular *be* (with the correlate of *there* base-generated inside VP), as in (123)a, but importantly also for *there*-sentences involving unergative and transitive verbs, as in the example in (123)b. In these cases, the elided *there*-expletive associate has been base generated in Spec,vP, showing that 'VP-ellipsis' targets (at least) vP.[90]

(123) [Aelbrecht 2009:186, (32)-(33)]

a. At first I didn't believe there was an elephant in the garden, but there was ⟨ ~~an elephant in the garden~~ ⟩.

b. I didn't know there was someone talking to Rebecca, but there was ⟨ ~~someone talking to Rebecca~~ ⟩.

In section 3.1.2 of this chapter, it was argued that the clausal spine contains two PolPs, one dominating and one dominated by TP. A schematic representation was given in (64), repeated here in (124)a. The effect of 'VP-ellipsis' in this clausal

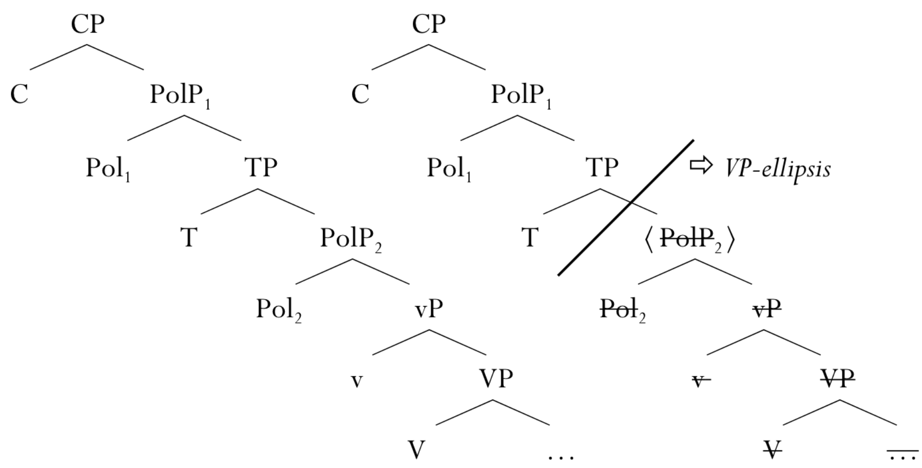
[89] But see chapter 4 for some modifications.

[90] The claim that 'VP-ellipsis' targets the complement of the licensor T is complicated by two factors. First, aspectual and voice auxiliaries can survive the ellipsis (Aelbrecht 2009:184-186). Second, Merchant (2007, 2008b) accounts for the possibility of Voice mismatches in VP-ellipsis by positing that VP-ellipsis does not elide the head Voice. See Aelbrecht (2009) for a possible implementation. As this would take us too far afield, I stick to the more 'traditional' account that T is the licensor of 'VP-ellipsis' and that its complement is subject to elision. It should be noted, though, that an Aelbrecht (2009)-style account, where ellipsis does not target the complement of T, but a smaller constituent, is compatible with my analysis, as long as the low PolP_2 is part of the verbal ellipsis site.

structure is given in (124)b: as VP-ellipsis is ellipsis of the complement of T, everything c-commanded by T is elided. Hence, the 'VP-ellipsis' site includes $PolP_2$.

(124)

a. CLAUSAL ELLIPSIS b. VP-ELLIPSIS = ELLIPSIS OF THE COMPLEMENT OF T



4.1.2. THE VPE/NI GENERALIZATION: TWO SAMPLE DERIVATIONS

This section shows how the VPE/NI Generalization, repeated here, can be derived based on the ingredients presented at the beginning of this section in (118). The main claim of this section is that ellipsis, a PF-process (cf. section 4 of chapter 2), blocks another PF-process, Fusion Under Adjacency. It is shown that, because ellipsis blocks FUA, negative indefinites cannot take scope out of a VP-ellipsis site.

(117) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

Two relevant examples are the ones in (40) and (44), repeated here. The antecedent of the VP-ellipsis example in (44) is an English sentence that contains both a negative indefinite in object position and the existential deontic modal *can*. VP-ellipsis is only grammatical for those speakers allowing the modal to outscope negation, and only under that reading. The antecedent of the example in (40) is a modal-lesss English sentence with a negative indefinite in object position. VP-ellipsis in this example is grammatical.

(44) Q: Who can offer **no** help?
A: % Quentin Tarantino can ⟨ ~~offer **no** help~~ ⟩. (* $\neg > \Diamond$, % $\Diamond > \neg$)

(40) Q: Who liked **no** movie?
A: ? Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.

Let us first consider the derivation of the VP-ellipsis example in (44).

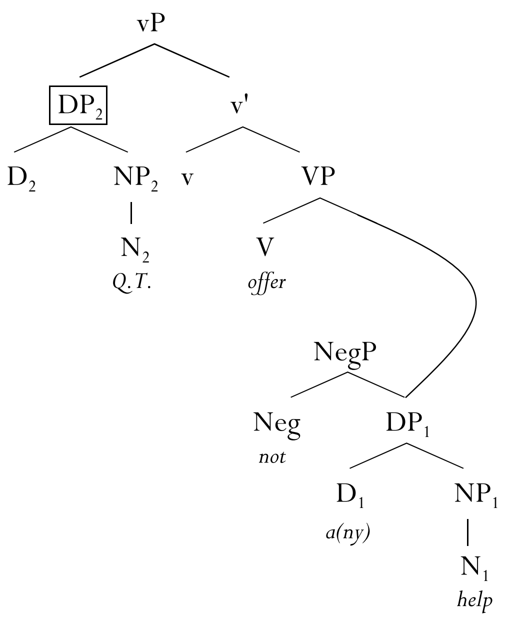
4.1.2.1 Sample derivation 1: VP-ellipsis blocks high scope of no

For the VP-ellipsis example in (44), the syntactic derivation starts out with a collection of terminals in a numeration N, given in (125).

(125) N = {D_1, N_1, Neg, V, D_2, N_2, v, T, Pol_1, C}

The first applications of the structure building operation Merge are identical to those discussed in section 3.2.2. First, the indefinite object DP_1 is merged, after which Neg is merged with DP_1. Then, the verb selects the object DP_1 as its complement, resulting in a single node (DP_1) having two mothers (NegP and VP). After this, v merges with VP, and the subject DP_2 is merged as Spec,vP. Given that it is a complex left branch, this subject DP is spelled out before merging as a specifier of vP. The resulting phrase marker is the one in (126).

(126)

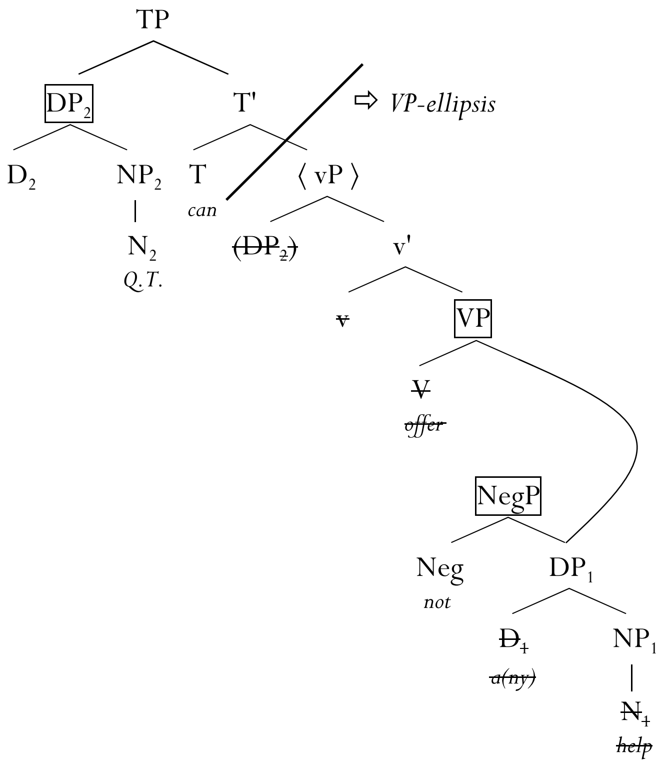


Since vP is a phase, the complement of the phase head, VP, is shipped off to PF (cf. the *Phase Impenetrability Condition* (PIC)). Recall that NegP is not spelled out when VP is. Spell-Out targets VP and all the material it dominates; that is, V and DP_1, but not Neg(P). At PF, the linearization algorithm applies to the transferred phasal domain (VP, but not NegP). The result is the linearization d(A) in (127):

(127) d(A) = $\{ V < D_1, V < N_1, D_1 < N_1 \}$

After this, T is merged with vP (recall that $PolP_2$ is not available when the sentence contains the deontic Neg>Mod modal *can*, cf. sections 3.1.2 and 3.2.2). T is the licensor of VP-ellipsis, i.e. it triggers ellipsis of its complement (here vP). As ellipsis takes place in the course of the derivation (Aelbrecht 2009), the ellipsis site is sent off to PF (marked for ellipsis) as soon as the licensing head is merged (cf. chapter 2, section 4.2). Importantly, the licensor itself can attract an element out of the ellipsis site prior to ellipsis, as all operations triggered by the same head take place simultaneously (Aelbrecht 2009, see section 4.2.2 of chapter 2). Therefore, the subject DP_2 can be remerged to become the specifier of TP before T's complement (vP) is transferred to PF for ellipsis.

(128)



Following Fox & Pesetsky (2003, 2004a), ellipsis of vP involves (i) the non-pronunciation of any terminal element dominated by vP and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by vP (chapter 2, section 4.2.2). Crucially, this entails that ellipsis targets (the ordering statements referring to) the terminals v, V, D_1, and N_1 (all dominated by vP) but not Neg, as it is not dominated by vP.[91] The terminals V, D_1 and N_1 had already been ordered with respect to one another when VP was sent off to PF as a consequence of the PIC (cf. (127)). These ordering statements are deleted (cf. (129)a). New ordering statements referring to v are simply not generated, cf. (129)b.

(129) a. $d(A)_{VP} = \{ \cancel{V < D_1, V < N_1, D_1 < N_1} \}$
b. $d(A)_{vP} = \{ \ \}$

[91] I disregard the subject DP_2 in Spec,vP, which will be linearized in its remerged position Spec,TP (cf. section 3.2 for more details on the linearization of the subject).

Subsequently, Pol_1 is merged with TP. As the negative indefinite scopes above *can*, NegP is merged as the specifier the high PolP ($PolP_1$), where it will take sentential scope, outscoping the modal in T. NegP is a complex left branch. Therefore, it has to be spelled out before it merges with $PolP_1$. NegP is transferred to PF and the linearization algorithm applies. Recall (section 3.2.2) that this is the point in the derivation where Neg and D_1 normally become adjacent and can therefore undergo Fusion Under Adjacency. DP_1 was – as part of the vP-ellipsis site – subject to ellipsis, however. This means that the terminals in DP_1 (D_1 and N_1) have been elided: these terms are not pronounced and linearization statements referring to them are ignored. As DP_1 has already been elided at this point, there Neg cannot fuse with D_1. Fusion Under Adjacency between Neg and D_1 is thus blocked because of ellipsis. Only Neg remains and, consequently, Neg can only be spelled out as an independent lexical item (i.e. as *not*). The result of the linearization algorithm applying to the linearization domain NegP is simply the linearization d(A) in (131):[92]

(130) A = $\{ \langle \text{Neg}, \cancel{D_1} \rangle, \langle \text{Neg}, \cancel{NP_1} \rangle, \langle \text{Neg}, \cancel{N_1} \rangle, \langle \cancel{D_1}, \cancel{N_1} \rangle \}$[93]

(131) a. A' = { Neg }[94]

b. d(A) = { Neg }

After merger of NegP as specifier of $PolP_1$, the phase head C is merged with $PolP_1$.[95] The resulting structure is (132).

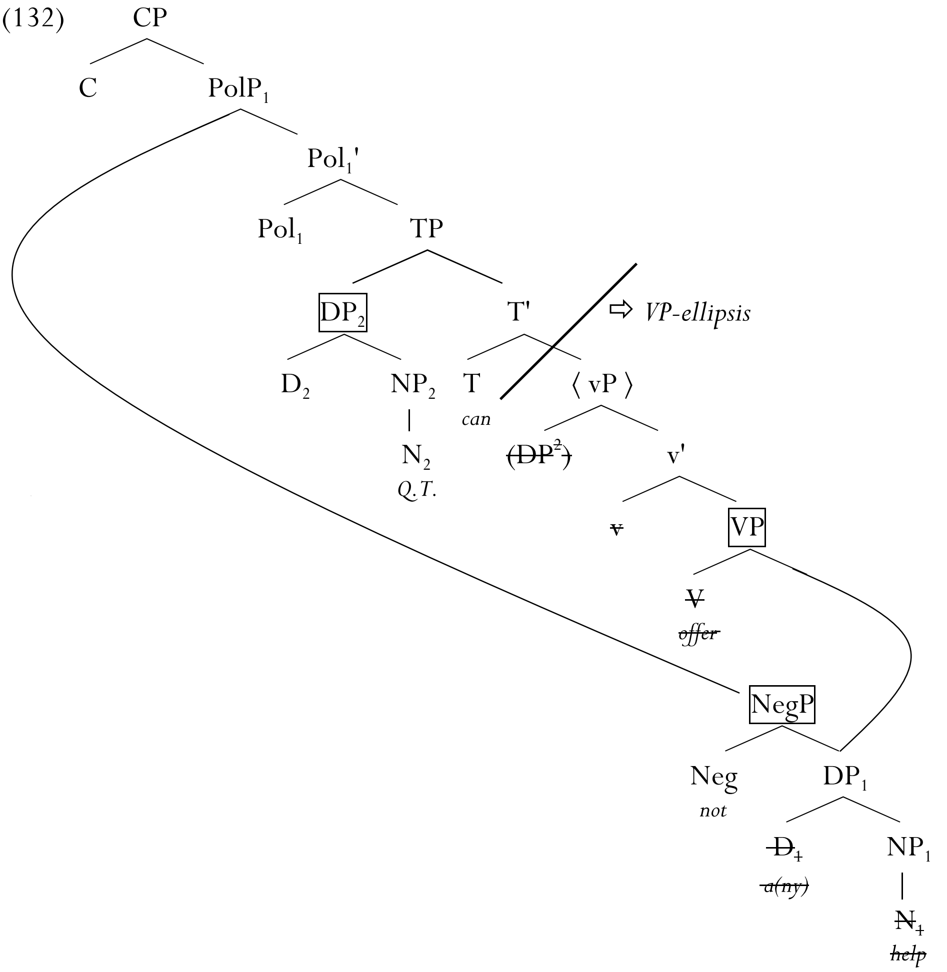
[92] Note that, although DP_1 is part of the vP-ellipsis site, NegP is still a complex specifier syntactically: it consists of Neg and DP_1. Following Uriagereka (1999), NegP is therefore still required to be spelled-out before merging to the clausal spine. The result of Spell-Out/linearization is, however, not complex, as a part of NegP (DP_1) remains unpronounced as a consequence of its being part of an ellipsis site.

[93] The representation of ellipsis in (130) is not 100% accurate, as only linearization statements mentioning terminal elements are deleted, i.e. not linearization statements referring to phrases (such as NP_1). In the end, however, the d(A) produced on the basis of the A in (130) will only contain statements referring to terminals and 'the contents of' NP_1, i.e. the terminals inside NP_1, will be ignored. I strike through NP_1 here and similar phrases throughout this chapter for ease of exposition.

[94] To be precise, A' and d(A) in (131) are actually not the singleton {Neg}, but an empty set { }, as A' and d(A) are collections of ordering statements and 'Neg' is not an ordering statement. This will not pose problems for the linearization of Neg, as it will be linearized once again when the domain of the CP-phase is spelled out and linearized.

[95] Note that merger of NegP containing an elided DP does not contradict the second consequence of derivational ellipsis discussed by Aelbrecht (2009), i.e. that "the ellipsis site becomes inaccessible for any further syntactic operations" (p.91), cf. chapter 2. Crucially, for Aelbrecht (2009), an element inside an ellipsis site cannot be targeted for movement/remerge once the ellipsis site has been sent off to PF. This does not mean, though, than a constituent that contains (part of) an ellipsis site is not accessible for syntactic operations. DPs containing an elided NP and CPs containing a sluiced TP, for instance, can be remerged. In the sluicing examples in (i) and (ii) for instance, a CP with a sluiced TP is fronted, as shown in (i')b and (ii')b. (*continued on the next page*)

(132)



When the CP-phase is completed, the phasal domain (i.e. the complement of the

(i) “You are so beautiful,” he said as he stared at her. “Standing there in the light like that.”
She glanced at her Gap black pants and her two year old knit turtleneck. “You must be blind.”
“Why?” he asked, coming over to her. [*Lover Avenged,* by J.R. Ward, 2009]

(i') a. He asked: “ [Why ⟨ ~~must I be blind~~ ⟩] ?”
b. “ [Why ⟨ ~~must I be blind~~ ⟩]$_i$?” he asked t_i.

(ii) “You must not say these things to Lucy. It could never be.”
Lord Vane laughed. “Why?” asked he.
“Your father and mother would not approve of it.” [*East Lynne*, by Mrs. Henry (Ellen) Wood, 1861]

(ii') a. He asked “[why ⟨ ~~could it never be~~ ⟩] ?”
b. “ [Why ⟨ ~~could it never be~~ ⟩]$_i$?” asked he t_i.

phase head C, here $PolP_1$) undergoes Spell-Out. The derivation in (125)-(132) will ultimately be spelled out as (133)a; the example in (133)b can – in the intended reading – not be derived by the system proposed here.[96]

(133) Who can offer no help?
a. Quentin Tarantino can not ⟨ ~~offer (any) help~~ ⟩. ($\neg > \Diamond$)
b. * Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. ($* \neg > \Diamond$)

As such, the system developed here derives the VPE/NI Generalization in (117), i.e. the fact that a negative indefinite in object position cannot scope out of a VP-ellipsis site, on the basis of the ingredients in (118). The PF-process ellipsis blocks another PF-process, Fusion Under Adjacency. As a consequence, negative indefinites cannot scope out of a VP-ellipsis site.

In the next subsection, I consider how the system proposed here derives that a VP-ellipsis site may contain a negative indefinite, as long as it does not take scope out of the ellipsis site.

4.1.2.2 Sample derivation 2: Low-scoping no *in a VP-ellipsis site*

A relevant example of a grammatical case of VP-ellipsis containing a negative indefinite is the one in (40), repeated here. The antecedent of the example in (40) is a modal-less English sentence with a negative indefinite in object position. There are no indications that the negative indefinite takes high scope, as there is no other scopal element in this sentence.

(40) Q: Who liked **no** movie?
A: ? Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.

For this example, the syntactic derivation starts out with the numeration N given in (134):

[96] Although the deontic modal *can* is inside the scope of negation (cf. T is c-commanded by Neg(P) in (132)), it surfaces higher than the negative marker (cf. *can not* in (133)a). Recall the discussion in footnote 66 that Cormack & Smith (2002) take the modal to be displaced over the negation at PF. Note that the subject DP_2 will also need to be displaced to obtain the correct word order, for instance to Spec,CP (although this seems odd for a non-V2 language like English). Another option is to have the tolerant linearization algorithm of Johnson (2007) do the work, e.g. linearizing Neg(P) or $PolP_1$ following T. This would require a reconsideration of the English-specific linearization requirements regarding the specifier occupied by NegP.

(134) $N = \{D_1, N_1, Neg, V, D_2, N_2, v, Pol_2, T, C\}$

Upon the completion of the vP phase after multiple instances of merge (cf. the previous subsection and section 3.2 for details), the phasal complement VP and all the material dominated by it is targeted by Spell-Out and linearization (because of the PIC), resulting in the d(A) in (135).

(135) $d(A) = \{ V < D_1, V < N_1, D_1 < N_1 \}$

Next, Pol_2 is merged with vP, after which NegP will be merged as the specifier of $PolP_2$ to take sentential scope. Recall that, as there is no scopal element such as a modal that needs to be outscoped by negation, I take the negative element to merge with the low PolP, i.e. $PolP_2$ (cf. sections 3.1.2 and section 3.2.1).[97] As NegP forms a complex left branch, it is transferred to PF before merging with $PolP_2$. As such, NegP is spelled out and the linearization scheme applies. The linearization produced is (136):

(136) $d(A) = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$

At this point, the PF-branch contains the linearizations of three spelled out phrases:

(137) a. $d(A)_{NegP} = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$
c. $d(A)_{DP_2} = \{ D_2 < N_2 \}$

As the linearization algorithm has put no element in between the two terminals Neg and D_1, they are adjacent at this point in the derivation. Because the linearization scheme has assigned Neg and D_1 adjacent positions, they can undergo Fusion Under Adjacency. Once Neg and D_1 have fused, the terminal onto which Neg and D_1 are jointly mapped will occupy the positions assigned to Neg and D_1 in the linearization in (137). The result of Fusion Under Adjacency of Neg and D_1 is given in (138).[98]

[97] In principle, merging NegP as the specifier of $PolP_1$ to gain sentential scope is possible as well. Ellipsis will in that case, however, block Fusion Under Adjacency (as discussed in the previous subsection), and hence, formation of a negative indefinite.

[98] The d(A) for NegP was originally more elaborate, but as d(A) is tolerant, superfluous and inconsistent statements can be discarded (see section 3.4 of chapter 2 and section 3.2 of this chapter).

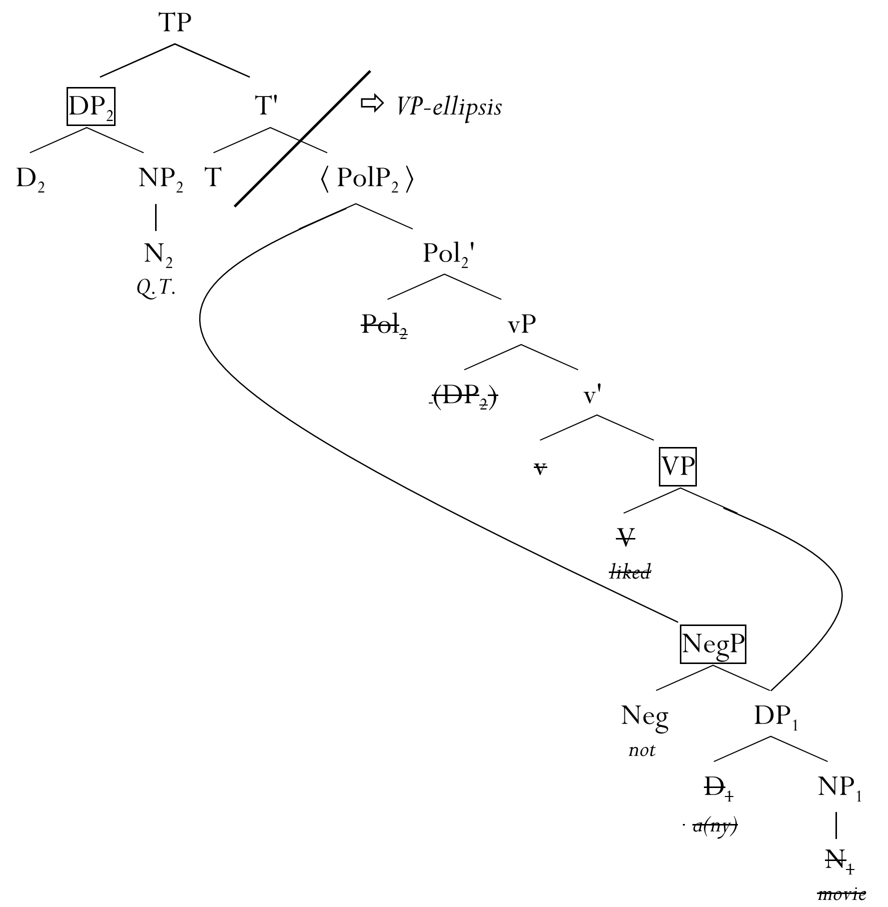
(138) a. $d(A)_{NegP} = \{ Neg = D_1 < N_1 \}$

b.
$$d(A)_{VP} = \left\{ \begin{array}{rcl} V & < & Neg = D_1 \\ V & < & N_1 \\ Neg = D_1 & < & N_1 \end{array} \right\}$$

c. $d(A)_{DP_2} = \{ D_2 < N_2 \}$

After this stage in the derivation, the (spelled-out) NegP is merged as the specifier of $PolP_2$. Then, T is merged with $PolP_2$. As T is the licensor of VP-ellipsis, it triggers deletion of its complement (here $PolP_2$). Because ellipsis is derivational, the ellipsis site is transferred to PF as soon as the licensing head T is merged. Recall that the subject DP_2 can be remerged to become the specifier of TP before T's complement is sent off to PF.

(139)



Ellipsis of $PolP_2$ involves (i) the non-pronunciation of any terminal element dominated by $PolP_2$ and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by $PolP_2$ (Fox & Pesetsky 2003, 2004a). This entails that ellipsis targets all terminals dominated by $PolP_2$, including D_1, N_1 and, crucially, also Neg. The terminals V, Neg, D_1 and N_1 had already been ordered with respect to one another when VP was sent off to PF as a consequence of the PIC and when NegP was spelled out because it constituted a complex left branch. Neg and D_1 became jointly mapped through Fusion Under Adjacency. These ordering statements are ignored because of ellipsis (cf. (140)a,b). Note that new linearization statements for $PolP_2$ are not created ((140)c).[99]

[99] I again disregard the subject DP_2 in Spec,vP, which will be linearized in its remerged position Spec,TP.

(140) a. $d(A)_{NegP} = \{ \cancel{Neg = D_1 < N_1} \}$

b. $$d(A)_{VP} = \left\{ \begin{array}{c} \cancel{V < Neg = D_1} \\ \cancel{V < N_1} \\ \cancel{Neg = D_1 < N_1} \end{array} \right\}$$

c. $d(A)_{PolP_2} = \{ \quad \}$

After all this, the rest of the structure is merged and, finally, the derivation is spelled out as in (141). Recall that VP-ellipsis can only be licensed by a filled T-head (cf. subsection 4.1.1). As English main verbs (such as *like*) do not undergo V-to-T movement (cf. Emonds 1976, 1978; Pollock 1989; Lasnik 1995; among many others), VP-ellipsis without a modal or aspectual auxiliary would leave T's inflectional morphemes without a host. As a rescue strategy, dummy *do* is inserted (cf. e.g. Aelbrecht 2009; see also Lipták & Saab 2012).[100,101]

(141) Who liked no movie?
? Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.

Crucially, Fusion Under Adjacency between Neg and D_1, i.e. the formation of the negative indefinite, had already occurred *before* ellipsis targeted the complement of T. If Fusion takes place prior to ellipsis (i.e. if NegP merges as the specifier of $PolP_2$ rather than the one of $PolP_1$), the derivation converges and the VP-ellipsis site can contain an object negative indefinite.

Recall (cf. section 2.2) that there are English speakers who accept the reading $\Diamond > \neg$ in sentences with the existential deontic modal *can* and a negative indefinite.

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[100] The mild markedness (cf. the ?-judgment) of (141) could indicate that, although both $PolP_1$ and $PolP_2$ are in principle available in a modal-less sentence, selecting $PolP_2$ is the dispreferred option compared to $PolP_1$ (but the only one available here).

[101] The account developed in this dissertation implies that, for the derivation of the example in (i), NegP has to merge as the specifier of $PolP_1$ (technically possible, as discussed before). This is because merger of NegP in $PolP_2$ will always result in ellipsis of the negative marker (*not*) when there is VP-ellipsis. Recall that *n't* in (ii) always realizes the Pol_1-head, (section 3.1.3).

(i) Who liked no movie?
Quentin Tarantino did not.

(ii) Who liked no movie?
Quentin Tarantino didn't.

This is also the case in verbal ellipsis with *no* legitimately contained in the ellipsis site, where they allow a narrow scope reading for the negative indefinite. For these speakers, the same derivation as the one developed in this section for a modal-less sentence is available for a sentence containing the modal *can*. The negative indefinite (that is, Neg merged with DP_1, forming NegP) will merge as the specifier of $PolP_2$, a position c-commanded by (and hence in the scope of) the modal base generated in T, resulting in the $\Diamond > \neg$ reading. As FUA takes place when NegP gets merged into the clausal spine (in $PolP_2$), the negative indefinite will be formed before ellipsis takes place, that is, before T deletes its complement. This derives the formation of *no* as part of a verbal ellipsis site when it is outscoped by the modal in T.

4.1.2.3 Extension: unfortunate dresser vs. nudity

The analysis developed in the previous subsections is extendable to the case of the 'unfortunate dresser' vs. 'nudity reading' of *with no clothes,* discussed in section 2.2. Recall that the sentence in (45), repeated here as (142), admits two different readings. The example in (46), repeated here as (143), shows that under verbal ellipsis, only the 'nudity' reading survives.

(142) Mary looks good with no clothes.
= Mary doesn't look good with any clothes. (*the unfortunate dresser reading*)
= Mary looks good naked. (*the nudity reading*)

(143) You say Mary looks good with **no** clothes, …
… but I say Julie does ⟨ ~~look good with **no** clothes~~ ⟩.
(**unfortunate dresser*, ^{ok}*nudity*)

Haegeman (1995) and Svenonius (2002) propose that the two readings of (142) correlate with two different scope positions for the negative indefinite *no*. In the 'unfortunate dresser' reading, the negative indefinite takes high scope. Under the 'nudity' reading, the negation ranges over a smaller domain with a narrower scope. Specifically, they claim that the negative indefinite *no* expresses sentential negation in the 'unfortunate dresser' reading, while it ranges over PP in the case of the 'nudity' interpretation – although Svenonius (2002:14) talks about "*clause-like* [my italics, TT] negation occurring at the level of PP".

Incorporating the analysis developed in the previous subsections, I propose that the 'nudity' reading of *with no clothes* corresponds to $PolP_2$, while the 'unfortunate dresser' reading corresponds to $PolP_1$. Verbal ellipsis will block FUA between Neg and D when NegP is the specifier of $PolP_1$, but not when it is merged in $PolP_2$, as discussed extensively in the previous subsections.

According to Ernst (2002:16), certain adverbs/adjuncts can "show two readings (clausal and manner readings), corresponding to higher and lower parts of clausal structure." One interpretation of the adverb/adjunct is subject-oriented (clausal), while the other corresponds to manner. The adverb/adjunct takes a proposition or event, respectively, as its semantic argument. A relevant example is (144):

(144) [cf. Kim 2000:461; Ernst 2002:42]

a. John has *cleverly* answered their questions. → subject-oriented / manner

b. John *cleverly* has answered their questions.
'It was clever of John to have answered their questions.'
→ subject-oriented

c. John has answered their questions *cleverly*.
'John has answered their questions in a clever manner.'
→ manner

The sentence in (144)a is ambiguous, its reading corresponding to both (144)b and (144)c. The sentence in (144)c shows a manner reading, with the adverb modifying the verb (paraphrasable as 'in an ADJ manner'), while sentence in (144)b takes "some sort of clausal entity as an argument" (Ernst 2002:43). Note that the adverb in (144)b scopes above the subject. Manner adjuncts scope over VP (the event), while subject-oriented adjuncts scope over TP (the proposition). Wenger (2009:8) argues that adverbs must have "more than one Merge-position to account for cases like this."

Let us return to the case under scrutiny here, the PP-adjunct *with no clothes*. The 'nudity' reading corresponds to the interpretation "Mary looks good naked, i.e. in a naked (ADJ) manner". According to Ernst (2002:54), agent-oriented adjuncts (a subclass of the subject-oriented ones) "indicate that an event is such as to judge its agent as ADJ with respect to the event". For the 'unfortunate dresser' reading, this would correspond to something like "Mary is judged as [always infelicitous/unsuccessful, irrespective of clothes] with respect to looking good". Given that in the 'unfortunate dresser' reading, i.e. "there are no clothes such that Mary looks good in them", the negative indefinite outscopes the subject and following Ernst's (2002) and Wenger's (2009) reasoning, I take (the negative indefinite in) the 'unfortunate dresser' reading to correspond to $PolP_1$, from where it takes scope over the proposition and the subject in Spec,TP. The 'nudity' reading corresponds to a lower scopal position, $PolP_2$.

Finally, note also that the related sentence *Mary looks good without clothes* – despite being negative – can never have the 'unfortunate dresser' reading (thanks to Johan Rooryck, p.c., for pointing this out). This means that the PP [*without* XP] can only get a manner reading, and thus can only be associated with the VP (event). It cannot be associated with ($PolP_1$ above) the TP-domain. *Without* differs from *with no* in not containing a negative indefinite. Here, it was proposed that negative indefinites have (Neg in) either one of the PolPs as one of their building blocks. *Without*, on the other hand, is simply a prepositional head, heading a VP-associated PP. This contrast confirms the analysis of negative indefinites as being associated with (Neg inside) the PolPs.

4.1.2.4 Conclusion

The VPE/NI Generalization, repeated below, follows straightforwardly from the system proposed here. The main contribution of this section is the idea that the PF-process of ellipsis blocks another PF-process, Fusion Under Adjacency. Because ellipsis blocks FUA of Neg and a D-head, negative indefinites cannot scope out of a VP-ellipsis site.

(117) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

If, however, FUA happens before ellipsis targets a phrase marker containing the fused terminals, the ellipsis site can contain a (low-scoping) negative indefinite.

As such, the interaction between VP-ellipsis and negative indefinites shows that the derivation of negative indefinites crucially has to involve a PF-ingredient, as was proposed in section 3.2 of this chapter. The fact that ellipsis blocks Fusion Under Adjacency, a PF-process, is completely expected as ellipsis is a PF-process itself, interfering with other PF-processes. That ellipsis can bleed morphological processes has been proposed by Fuß (2008), Saab & Zdrojewski (2010), Schoorlemmer & Temmerman (2010, 2012), Boone (2011), Stjepanović (2011), and Lipták & Saab (2012). For example, it has been argued that English has T-to-V lowering at PF, a process that is blocked by ellipsis (cf. Embick & Noyer 2001:586; Lipták & Saab 2012). *Do*-insertion is necessary to rescue a stranded affix violation.

(145) LOWERING
John $[_{TP}\ t_{ed}\ [_{VP}$ [destroy+*ed* the opposition]]

(146) a. * John destroyed the opposition and Pete t_{ed}
⟨ ~~destroy+*ed* the opposition~~ ⟩ too.
b. John destroyed the opposition and Pete *did*
⟨ ~~destroy the opposition~~ ⟩ too.

The observation that ellipsis blocks morphological processes confirms an analysis of negative indefinites as involving a morphological operation. I have proposed that this morphological operation is Fusion Under Adjacency (between sentential negation and the indefinite determiner of a DP), which comes about in a multidominant, cyclic model of the grammar.

4.2 Deriving the Clausal/Verbal Generalization

This section focuses on the Clausal/Verbal Generalization in (147):

(147) THE CLAUSAL/VERBAL GENERALIZATION
While in clausal ellipsis *any* can antecede the ellipsis of *no*,
in verbal ellipsis this switch is disallowed.

This generalization is analyzed on the basis of the multidominant, cyclic Spell-Out/linearization account of negative indefinites developed in section 3.2. The central ingredient of the analysis is again the idea that the PF-process of ellipsis blocks Fusion Under Adjacency at PF (cf. section 4.1). Clausal ellipsis is shown to differ from verbal ellipsis in not blocking FUA.

Two relevant examples illustrating the difference for *any*-*no* interchangeability under clausal and verbal ellipsis are (23) and (36), repeated here as (148) and (149), respectively:

(148) Q: Which song didn't any judge always vote for?
A: Katie's song ⟨ ~~**no** judge always voted for~~ ⟩.

(149) Q: Who didn't like any movie?
A: * Quentin Tarantino did ⟨ ~~like **no** movie~~ ⟩.

The analysis of the Clausal/Verbal Generalization has the following central ingredients:

(150) *Ingredients for the analysis*

(i) Negative indefinites are the result of Fusion Under Adjacency between sentential negation and an indefinite determiner. The required adjacency comes about under multidominance and cyclic Spell-Out/linearization (this chapter, section 3.2).

(ii) The clausal structure contains 2 PolPs, one dominating and one dominated by TP (this chapter, sections 3.1.2 and 3.2).

(iii) Ellipsis takes place in the course of the derivation (chapter 2, section 4 and this chapter, section 4.1).

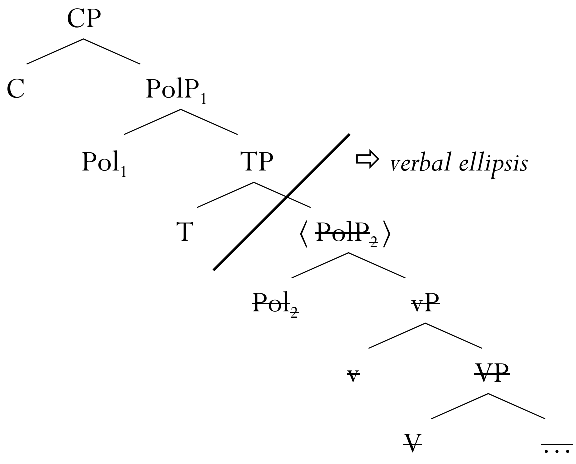
(iv) Ellipsis blocks Fusion Under Adjacency (this chapter, section 4.1).

(v) Verbal ellipsis is ellipsis of the complement of T (this chapter, section 4.1.1).

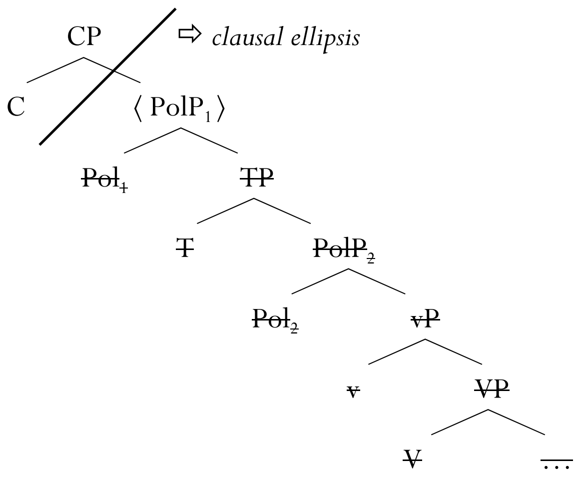
(vi) Clausal ellipsis (in fragment answers, sluicing, stripping) is ellipsis of the complement of C.

The structures in (151)a and (151)b illustrate the relevant configurations for verbal and clausal ellipsis, respectively:

(151) a. VERBAL ELLIPSIS = ELLIPSIS OF THE COMPLEMENT OF T



b. CLAUSAL ELLIPSIS = ELLIPSIS OF THE COMPLEMENT OF C[102]



Recall that a negative indefinite is the result of Fusion Under Adjacency between sentential negation and an indefinite determiner (cf. section 3). In a nutshell: Merge of a Neg-head and an indefinite DP forms a NegP. This NegP is merged as the

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[102] See Lobeck (1995) and Merchant (2001), amongst others. I abstract away here from studies on clausal ellipsis assuming a split CP-domain, such as van Craenenbroeck & Lipták (2006), Aelbrecht (2009), van Craenenbroeck (2010), Kluck (2011), and Temmerman (to appear). It should be noted that these are not incompatible with the general idea of my proposal. What matters is that $PolP_1$ is included in the clausal ellipsis site.

specifier of a polarity phrase, either $PolP_1$ or $PolP_2$. Before merger of the NegP as a complex specifier in the clausal spine, the NegP is spelled out. FUA between Neg and D takes place as soon as NegP is spelled out. And at this point, nothing intervenes between Neg and D (i.e. they are adjacent), and they can undergo FUA.

The PF-process of ellipsis blocks Fusion Under Adjacency (cf. section 4.1). Therefore, for an ellipsis site to contain a negative indefinite, FUA between sentential negation and an indefinite determiner has to take place before ellipsis occurs. In clausal ellipsis, the ellipsis site (the complement of C) properly contains both polarity phrases (i.e. both $PolP_1$ and $PolP_2$), as is clear in (151)b. Therefore, FUA between sentential negation and an indefinite determiner (merged as part of either $PolP_1$ or $PolP_2$) will always have taken place before the licensing head C is merged. Because FUA always precedes ellipsis, negative indefinites are allowed in clausal ellipsis sites, regardless of whether the negative indefinite merges as part of $PolP_1$ or $PolP_2$. The verbal ellipsis site (the complement of the licensing head T), on the other hand, only properly contains the low polarity phrase ($PolP_2$), as can be seen in (151)a. The high polarity phrase ($PolP_1$) is never part of the VP-ellipsis site. Only when NegP is the specifier of $PolP_2$ will FUA precede ellipsis. Therefore, negative indefinites are allowed in verbal ellipsis sites only if they merge as part of $PolP_2$, i.e. if they are low-scoping (below T).

Based on this, it should be clear why the clausal ellipsis example in (148) is grammatical. The negative indefinite in subject position is the result of FUA between sentential negation Neg and an indefinite determiner D. FUA between Neg and D takes place as soon as NegP is spelled out, that is, before it is merged as the specifier of a polarity phrase. The relevant polarity phrase is presumably Pol_1, because the antecedent contains the negative marker *n't* (see below). Ellipsis of the complement of C (i.e. $PolP_1$ or some higher projection) yields the fragment answer in (148).

Although this reasoning explains the grammaticality of the negative indefinite in the clausal ellipsis site in (148), it does not yet establish why the verbal ellipsis example in (149) is ill-formed: why couldn't the negative indefinite in the ellipsis site in (149) merge as part of $PolP_2$, resulting in a grammatical instance of verbal ellipsis?

In the example in (149), the antecedent for the verbal ellipsis contains the contracted negation *n't*. The negative marker *n't* is the realization of the high polarity head, i.e. of Pol_1 (as proposed by, for instance Cormack & Smith 2002, cf. section 3.1.3 of this chapter), as shown in (152):[103]

[103] Although I represent raising of the heads T (*did*) and Pol_1 (*n't*) to C as a narrow syntactic phenomenon here, it could just as well be one that takes place at PF. See also footnote 66. As this is not the primary concern here, I abstract away from it. What matters here is that *n't* is merged in the high polarity head Pol_1.

(152) a. Who didn't like any movie?

b. $[_{CP}$ Who$_i$ $[_{C'}$ C $[_{PolP1}$ $[_{Pol1'}$ n't $[_{TP}$ t_i $[_{T'}$ did $[_{vP}$ t_i like any movie]]]]]]] ?

c. $[_{CP}$ Who$_i$ $[_{C'}$ did$_j$ + n't$_k$ $[_{PolP1}$ $[_{Pol1'}$ t_j+t_k $[_{TP}$ t_i $[_{T'}$ t_j $[_{vP}$ t_i like any movie]]]]]]] ?

Scope Parallelism – cf. (153) – now requires that the negation in the ellipsis site also be of the Pol_1-type.

(153) *Parallelism* (*a consequence of*)

In an ellipsis construction, the scopal relationship among the elements in the antecedent must be identical to the scopal relationship among the parallel elements in the ellipsis site. [Fox 2000:32]

As the negation in the antecedent is Pol_1, i.e. scoping above TP, (the negation that is part of) the negative indefinite also has to outscope TP to obey Scope Parallelism in (153). Therefore, the NegP that contains sentential negation and the indefinite has to be merged as the specifier of PolP_1. Merging as part of PolP_2, i.e. scoping below T, would violate Scope Parallellism.[104] As discussed at length in section 4.1 of this chapter, verbal ellipsis (ellipsis of the complement of T) blocks Fusion Under Adjacency between sentential negation and an indefinite determiner if NegP is merged as the specifier of PolP_1, i.e. if the negative indefinite has to be part of the high polarity phrase. This is the case in (149) because of Scope Parallelism. Therefore, the (ungrammatical) example in (149) cannot be derived.[105]

To conclude, an ellipsis site can contain a negative indefinite only if it properly contains the polarity phrase responsible for assigning a scope position to that negative indefinite. For clausal ellipsis, this is always the case. For verbal ellipsis, however, this only holds for the lower polarity projection PolP_2. Negative indefinites involve Fusion Under Adjacency between sentential negation and an indefinite determiner. Both elements are part of a NegP that is spelled out before it is merged as the specifier of one of two polarity phrases in the clausal spine. FUA has to precede

[104] For a lengthier discussion of Parallelism, I refer the reader to section 6.3 of this chapter and to chapter 5.

[105] This line of reasoning suggests that if *any* were licensed by Pol_2 instead of Pol_1, *any* should be able to antecede the ellipsis of *no* even in VP-ellipsis contexts. A relevant example would be the one in (i).

(i) [context: There's an eating contest and both John and Mary want to end last in the contest. Peter and Julie are discussing this.]

Peter: So can John forfeit the game?
Julie: Well, he COULD not eat anything, I guess.
Peter: But then, Mary could ⟨ ~~eat nothing~~ ⟩ too.

The problem with these kinds of examples, though, is that there is no way of telling if the ellipsis site contains a (fused) negative indefinite or the NPI and its licensor Pol_2.

ellipsis, because otherwise, ellipsis will block this process at PF. FUA always precedes ellipsis in cases of clausal ellipsis, but this operation only precedes ellipsis in cases of verbal ellipsis when the scopal position of the negative indefinite is part of the low polarity phrase $PolP_2$.

4.3. Summary

The interaction between ellipsis and negative indefinites shows that the derivation of negative indefinites crucially has to involve a PF-ingredient. The fact that ellipsis blocks Fusion Under Adjacency, a PF-process, is expected as ellipsis itself is a PF-process, interfering with other PF-processes. The timing of FUA plays a crucial role: it has to happen before the ellipsis licensing head is merged (as ellipsis is derivational, cf. Aelbrecht (2009), discussed in section 4.2 of chapter 2). Recall that the PF-ingredient of FUA could only be established in a multidominant, cyclic framework (section 3 of this chapter). Sentential negation and (the indefinite determiner of) the object are not superficially adjacent in English, as the verb intervenes (given that English is an SVO languages). Under the analysis proposed here, incorporating remerge and cyclic Spell-Out/linearization, the Neg- and D-head become adjacent in the course of the derivation, allowing for FUA.[106]

Section 6 of this chapter discusses existing analyses of negative indefinites. These, however, fail to explain the interactions between ellipsis and negative indefinites analyzed in this section. But before running through these, the next section extends the analysis of negative indefinites to the 'non-fused' counterpart of *no*, i.e. *not…any*.

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[106] Other English negative indefinites, such as *never*, are also likely to be decomposable into sentential negation and an indefinite (*not* + *ever* in the case of *never*). The question then arises whether the data and analysis discussed in this chapter carry over to a negative indefinite such as *never*, i.e. what the grammaticality and scopal judgments for (i) and (ii) are.

(i) John could never offer help.

(ii) Q: Who could never offer help?
A: i. John could.
ii. John could not / couldn'

I leave this to future research.

5 Extending the proposal: A cyclic, multidominant analysis of *not…a(ny)*

The previous sections of this chapter developed a cyclic, multidominant decomposition account of negative indefinites. In this section, I propose that *not…a(ny)* and *no* have an identical syntactic derivation. That is, the overtly 'decomposed' or discontinous counterpart of a negative indefinite, i.e. *not…a(ny)*, can be derived in exactly the same way as a negative indefinite in the narrow syntax. Examples (all attested) are given in (154):

(154)

negative indefinite	decomposed counterpart	examples
no	*not … any*	Vegetarians eat no meat. (1) Vegetarians do not eat any meat. (6)
nobody	*not … anybody*	My cat likes nobody but me. My cat does not like anybody but me.
no one	*not … anyone*	The blame game helps no one. The blame game does not help anyone.
nothing	*not … anything*	Googling has given me nothing. Googling has not given me anything.

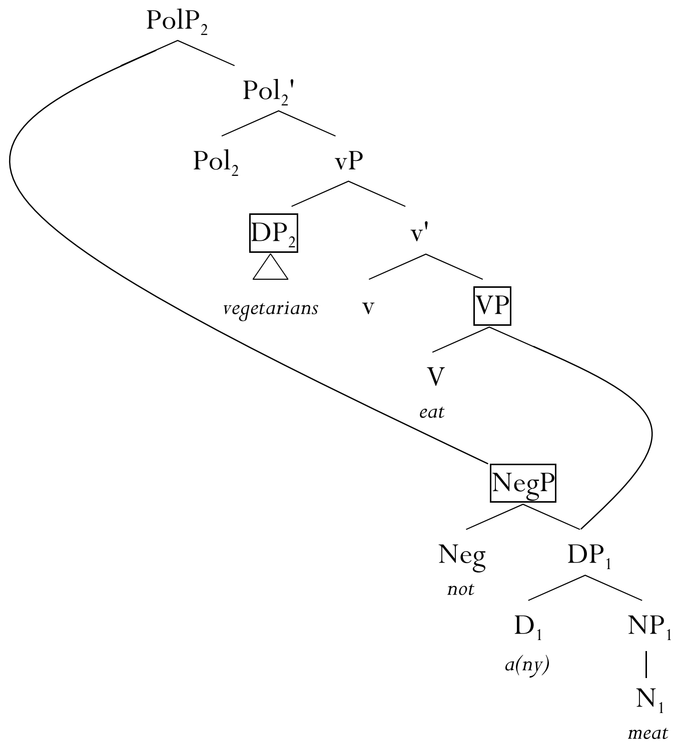
I propose that it is only in the mapping to PF that *no* and *not…a(ny)* are different: while the former is the result of Fusion Under Adjacency (at PF) between sentential negation and an indefinite determiner, this process simply does not occur in the case of *not…a(ny)*.

As already mentioned in footnote 4 of this chapter, the choice between a *no*-form and its 'decomposed' counterpart *not* + *a(ny)* seems to be driven by degree of formality in English. Negative indefinites are considered more formal than analytic forms; they tend to have a high register flavor in English (Tottie 1991; Anderwald 2002; Svenonius 2002; Tubau 2008). There are no differences between the two regarding their semantics or their syntactic properties and distribution. This observation follows straightforwardly if negative indefinites and their analytic counterparts are simply the result of the same derivational steps in narrow syntax, differing only at PF.

Recall that, in the derivation of negative indefinites, the indefinite object DP is merged both as the sister of Neg and the sister of V, resulting in its being dominated by two mother nodes, NegP and VP, respectively. The phase head v selects VP as its complement, and the subject merges as its specifier. When the phase is completed, the phasal domain (the complement of the phase head) VP is transferred to PF, where it is linearized. After this, a low polarity head Pol_2 merges with vP and the NegP merges as its specifier.

(1) Vegetarians eat no meat.
(6) Vegetarians do not eat any meat.

(155)



Given that NegP constitutes a complex left branch, it is spelled out and linearized before it merges as Spec,$PolP_2$ (following Uriagereka 1999). At this point in the derivation, the PF-component contains the linearizations d(A) of both VP and NegP (cf. (156)).

(156) a. $d(A)_{NegP} = \{ Neg < D_1, Neg < N_1, D_1 < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$

As the linearization algorithm has put nothing in between the terminals Neg and D_1 (i.e. there is no element that follows Neg and precedes D_1 or vice versa), the two are adjacent (adopting Johnson's (2011a) definition of Adjacency). As the two terminal nodes have been assigned adjacent positions by the linearization algorithm, they can undergo Fusion Under Adjacency, combining the two terminals into one, realized by the lexical item *no*. Note, however, that just because two adjacent terminals in English *can* undergo FUA, this does not mean that they *must*. NegP might just as well be spelled out without Neg and D_1 fusing under adjacency. The derivation then simply proceeds as usual. Just as in the linearization of a derivation with a negative indefinite, this derivation will result in conflicting ordering statements, which need to be resolved. Let us consider the relevant linearizations. After merger of the phase head C, its complement TP is transferred to PF. The phasal domain undergoes Spell-Out and the linearization algorithm applies. This results in a new linearization d(A). The ordering statements for the terminals in (155) are given in (157) (ignoring the subject DP_2 in Spec,vP for convenience).

(157)
$$d(A) = \left\{ \begin{array}{lllll} Neg < Pol_2 & D_1 < Pol_2 & N_1 < Pol_2 & Pol_2 < v & v < V \\ Neg < v & D_1 < v & N_1 < v & Pol_2 < V & v < D_1 \\ Neg < V & D_1 < V & N_1 < V & Pol_2 < D_1 & v < N_1 \\ Neg < D_1 & D_1 < D_1 & N_1 < D_1 & Pol_2 < N_1 & \\ Neg < N_1 & D_1 < N_1 & N_1 < N_1 & & \end{array} \right\}$$

Note that the linearization in (157) contains several problematic statements. The statements $D_1 < D_1$ and $N_1 < N_1$ are violations of Irreflexivity. Moreover, the d(A) in (157) contains antisymmetric statements such as $N_1 < v$ and $v < N_1$ or $D_1 < Pol_2$ and $Pol_2 < D_1$. Furthermore, the orderings $D_1 < V$, $N_1 < D_1$, and $N_1 < V$ clash with linearization statements that were introduced earlier in the derivation (see (156)). That is, they are inconsistent with the orderings that were calculated before NegP was merged as a specifier in the functional sequence of the clause. Recall that the linearizations established for linearization domains earlier in the derivation cannot be changed later on. Linearization statements that are introduced later in the derivation have to be both total and consistent with the earlier statements. Given that d(A) is tolerant (Johnson 2007), however, inconsistent and conflicting pairs can be disposed of. As such, the reflexive and conflicting statements can be deleted. Moreover, antisymmetric orderings can be discarded. $N_1 < Pol_2$, $D_1 < Pol_2$, $N_1 < v$, and $D_1 < v$

will be ignored, as these would otherwise result in conflicting statements and transitivity violations. For instance, the combination $D_1 < Pol_2$ and $Pol_2 < V$ would give rise to $D_1 < V$ (by Transitivity), which is in conflict with the linearization statement $V < D_1$ collected earlier. The remaining statements are those in (158), which will be added to the orderings collected earlier (i.e. the ones in (156)).

(158)

$$d(A) = \left\{ \begin{array}{llll} \mathrm{Neg} < \mathrm{Pol}_2 & D_1 < N_1 & \mathrm{Pol}_2 < v & v < V \\ \mathrm{Neg} < v & & \mathrm{Pol}_2 < V & v < D_1 \\ \mathrm{Neg} < V & & \mathrm{Pol}_2 < D_1 & v < N_1 \\ \mathrm{Neg} < D_1 & & \mathrm{Pol}_2 < N_1 & \\ \mathrm{Neg} < N_1 & & & \end{array} \right\}$$

The result of adding the ordering statements in (158) to the ones in (156) is a total, consistent ordering, which will eventually be realized as *(Vegetarians do) not eat any meat,* with sentential negation *not* preceding the verb and the indefinite *any* following the verb.

As such, the analysis presented here elegantly allows the negative indefinite *no* and its 'decomposed' counterpart *not…a(ny)* to have the same syntactic analysis, differing only in that there is Fusion Under Adjacency at PF between the negation Neg and the indefinite D in the formation of the negative indefinite, but not in the case of *not…a(ny)*. Note that this explains why the English sentential negative marker *not* behaves like a specifier even though it looks like a head (cf. section 3.1.3 of this chapter): underlyingly, the NegP with Neg *not* as its head is actually always syntactically complex, selecting a DP as its complement. It is only because of cyclic Spell-Out/linearization and Order Preservation that it looks as if the specifier is occupied by a head (*not*) instead of a phrase (*not any meat*).[107]

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[107] The question arises whether the sentence in (i) has an identical syntactic derivation as sentences (1) and (6).

(i) Vegetarians don't eat any meat.

As discussed in section 3.1.3 of this chapter, *n't* is to be analyzed as the spell-out of the high polarity head Pol_1. Merging this head Pol_1 with the object DP is problematic, though. If the clausal polarity head Pol_1 merges directly with the indefinite DP, it forms a polarity phrase $PolP_1$. If this $PolP_1$ merges with TP, again projecting as $PolP_1$, the resulting structure is problematic: in this case, TP seems to be the specifier (or an adjunct) of $PolP_1$, rather than the complement of Pol_1 (thanks to Marcel den Dikken (p.c.) for pointing this out).

(ii) $[_{PolP1}\ [_{PolP1}\ Pol_1\ [_{DP}\ D\ NP]]\ TP\ \dots\ ]$

(*continued on the next page*)

6 Previous analyses of negative indefinites

Recall (cf. section 1) that existing analyses of negative indefinites can be roughly divided into two types. The traditional view is that they are atomic lexical items, in particular, negative generalized quantifiers.[108] A second group of proposals takes negative indefinites to be complex, decomposable lexical items. That is, while being spelled out as a single word, *no* contains two separate (syntactic and semantic) building blocks: (sentential) negation and an indefinite (expressing existential quantification).[109] The analysis presented in this chapter clearly belongs to the latter class. Negation and the indefinite determiner become a single lexical item through Fusion Under Adjacency, under a multidominant, cyclic view of the grammar (cf. section 3).

In my proposal, a negative indefinite in object position takes sentential scope simply because sentential negation is a subpart of the object negative indefinite: the negation merges with an indefinite DP, forming a (complex) NegP. Like the (simple) negative marker *not*, the negative indefinite obtains sentence-wide scope because it is merged as the specifier of a polarity phrase in the functional sequence of the clause. This is close in spirit to the amalgamation/incorporation analyses proposed by Jacobs (1980) and Rullmann (1995), in which an object negative indefinite is the result of a fairly superficial process of amalgamation or incorporation between a clausal polarity head and the determiner of the object DP. There are some

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This might seem to suggest that the structure for a sentence like (i) should simply be a non-multidominant one, with Pol_1 merging only with TP and not with DP.

(iii) $[_{\text{PolP1}}\ \text{Pol}_1\ \text{TP} \ldots]$

I would like to propose, though, that the sentence in (i) has a similar syntactic derivation as the sentences in (1) and (6). (i) differs syntactically from (1) and (6) only in that for the latter two, both PolP_2 and PolP_1 are in principle available, while only PolP_1 is for the former (cf. section 3.1.3). The spec-head distinction between *not* on the one hand and *n't* on the other (discussed in section 3.1.3) corresponds to a difference in how lexical insertion takes place. In the former case, (the head Neg of) the specifier in PolP_2 or PolP_1 is lexicalized as *not* (or as part of a negative indefinite *no*). In the latter case, the head of the specifier (Neg) of PolP_1 is not lexicalized, while the head of the projection Pol_1 gets a lexical realization, *n't*.

[108] See among others Zanuttini (1991), Haegeman & Zanuttini (1991, 1996), Haegeman (1995), Geurts (1996), de Swart (2000), and Iatridou & Zeijlstra (2010).

[109] See among others Jacobs (1980), Rullmann (1995), Giannakidou (1997), Sauerland (2000a), Weiß (2002), Tubau (2008), Haegeman & Lohndahl (2010), Iatridou & Zeijlstra (2010), Johnson (2010b), Penka & Zeijlstra (2010), Iatridou & Sichel (2011), Merchant (2011), Penka (2011), and Zeijlstra (2011). Note that some of these proposals do not involve actual decomposition. Some take the negative indefinite to be a plain indefinite, which gets a negative interpretation because a covert negative operator licenses it in its scope (via Agree or feature checking). These proposals are discussed in section 6.2. As noted by Iatridou & Sichel (2011:609, fn.12), they can nonetheless be grouped in the 'decomposition camp' because "on these analyses too negation and the existential are syntactically separate."

important differences, though, which are discussed in section 6.1. This section also considers alternative morphological analyses in the framework of Distributed Morphology (DM) and shows that none of the existing DM operations can handle the VPE/NI Generalization (section 2.2).

Apart from the morphological accounts of Jacobs (1980) and Rullmann (1995), there are two common syntactic analyses in the literature that allow a negative indefinite in object position to take clausal scope. First, it has been proposed that a sentential polarity head undergoes Agree or feature checking with the negative indefinite in object position (cf. Giannakidou 1997; Weiß 2002; Tubau 2008; Haegeman & Lohndahl 2010; Penka & Zeijlstra 2010; Merchant 2011; Penka 2011). This is discussed in section 6.2. Second, it has been suggested that a negative indefinite undergoes Quantifier Raising to take clausal scope (cf. Geurts 1996; De Swart 2000; Iatridou & Zeijlstra 2010). The accounts proposed in Iatridou & Sichel (2011) and Zeijlstra (2011) combine a QR-analysis with an amalgamation/incorporation component.[110] QR-analyses are considered in section 6.3. As it turns out, a syntactic analysis of object negative indefinites based on Agree/feature checking or QR cannot account for the interaction between ellipsis and negative indefinites discussed in section 2 of this chapter. Finally, section 6.4 considers Johnson's (2010b) proposal for negative indefinites, which is to be situated in the multidominant framework he adopts to deal with WH-movement and Quantifier Raising in Johnson (2010a, 2011a).

6.1 Morphological analyses: Amalgamation/Incorporation

6.1.1 AMALGAMATION / INCORPORATION

The first 'lexical decomposition' analyses of negative indefinites (Jacobs 1980; Rullmann 1995) involve an (obligatory) amalgamation or incorporation process. This process combines a superficially adjacent negative marker and indefinite

[110] There is another alternative analysis, proposed in for instance den Dikken et al. (1997). Under this account, the negative indefinite *no* is assumed to decompose into two syntactic parts, an abstract sentence negation NEG and an indefinite *no*, the latter having the force of *any*. NEG is assumed to raise to the position of sentential negation at LF, as illustrated in (i).

(i) [cf. Larson et al. 1996:23, (55)]
   a. Max had no bananas.
   b. Max NEG_i had [t_i no] bananas.

I will not discuss this analysis here, as Iatridou & Sichel (2011) convincingly argue that negation scopes in a fixed position (it cannot undergo additional scope adjustment operations). See also Iatridou & Zeijlstra (2010).

determiner into a negative indefinite.[111] Rullman's rule for Dutch negative indefinites is given in (159) (Rullmann 1995:197, (8)), where *geen* is the negative indefinite ('no'), *niet* ('niet') is the sentential negation marker and $\text{Det}_{\text{indef}}$ is either an overt indefinite *een* ('a') or a zero determiner (ø).

(159) *niet* $\text{Det}_{\text{indef}} \Rightarrow$ *geen*

As noted by Iatridou & Sichel (2011) and Zeijlstra (2011), while neither Jacobs nor Rullmann uses the term 'PF' to describe the component of the grammar where this process takes place, "the prose implies that this is what was intended" (Iatridou & Sichel 2011:626, fn.27): Rullmann (1995:197) talks about "a relatively superficial level of representation".

Importantly, Jacobs and Rullman focused on German and Dutch, respectively. These are SOV languages, which means that the object and the sentential negation marker are superficially adjacent (i.e. the verb does not intervene between them). As shown in (160), in Dutch, the sentential negation marker (*niet* 'not') and the object (*de doodstraf* 'the death penalty') surface adjacent to each other, followed by the main verb (*uitvoeren* 'execute'). Example (161) shows that the co-occurrence of *niet* 'not' and an indefinite object is ungrammatical: instead, a negative indefinite has to be used, as in (162).[112]

(160) EU-landen mogen niet de doodstraf uitvoeren.
EU-countries may not the death-penalty execute
'EU-countries may not execute the death penalty.' [Dutch]

(161) *EU-landen mogen niet (een) doodstraf uitvoeren.
EU-countries may not a death-penalty execute
INTENDED: 'EU countries may not execute a death penalty.' [Dutch]

(162) EU-landen mogen geen doodstraf uitvoeren.
EU-countries may no death-penalty execute
'EU countries may not execute a death penalty.' [Dutch]

Although this seems to deal nicely with negative indefinites in SOV languages such as Dutch and German, it poses a problem for English, an SVO language. As noted by

[111] Rullmann (1995) attributes particular observations to Bech (1955/57) and bases his proposal on Klima's (1964) rules of incorporation.

[112] Rullmann (1995:197) notes for Dutch that "when incorporation is possible, it is also obligatory" (translation TT). See section 2.3 of chapter 6 for some further discussion.

Zeijlstra (2011:19), the amalgamation/incorporation analyses of Jacobs and Rullman crucially rely on phonological string-adjacency of the negation and the indefinite. In SOV languages, object negative indefinites mainly occur when sentential negation and an object indefinite are indeed adjacent. Incorporation/amalgamation seems to be blocked when lexical material (e.g. a preposition) intervenes between the negation and the indefinite determiner. This is illustrated in (163) with the preposition *naar* 'to, for': if the preposition intervenes between the negation and the indefinite (cf. (163)a), a negative indefinite cannot be formed (cf. (163)b).

(163) [cf. Rullmann 1995:197, (10)]

a. Zij mogen niet naar een eenhoorn zoeken.
they may not for a unicorn search
'They are not allowed to look for a unicorn.'

b. ?* Zij mogen naar geen eenhoorn zoeken.
they may for no unicorn search [Dutch]

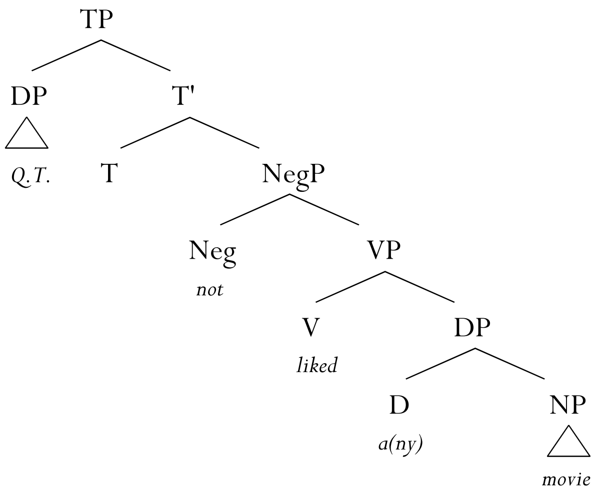
Such a configuration does not arise in an SVO language like English, though: the (VP-external) position occupied by negation in narrow syntax and at LF is never string-adjacent to the (postverbal) position where an indefinite object appears at PF. This is obvious in the English translation of (162), where sentential negation *not* and (the indefinite determiner of) the postverbal object *a death penalty* are separated by the verb *execute*. As Rullmann (1995:197) contends that "incorporation is blocked by lexical material that lies between *not* and $\text{Det}_{\text{indef}}$ at the surface" (translation TT), the amalgamation/incorporation accounts of Jacobs (1980) and Rullmann (1995) are not well suited to deal with object negative indefinites in English. The analysis of English negative indefinites in object position cannot rely on phonological string-adjacency.

In this chapter, I proposed that a cyclic, multidominant framework allows Fusion Under Adjacency at a particular point in the derivation. The local morphological relationship required for amalgamation/incorporation of negation and an indefinite determiner is established throughout the derivation. As such, I maintained the early insight that a negative indefinite should be decomposed into two components, while avoiding the problems encountered by solely relying on superficial phonological string-adjacency as the triggering configuration for this amalgamation process.

6.1.2 DM OPERATIONS DO NOT PROVIDE THE REQUIRED LOCALITY

In this chapter, I pursued an analysis of negative indefinites that crucially involves a PF-ingredient, FUA. This morphological relation requires a higher degree of locality than seems to exist between the negation and the indefinite determiner in English at first sight. I argued that this locality is established through multidominance and cyclic Spell-Out/linearization. The reader might wonder whether this multidominant, cyclic view of the grammar is the only way of establishing the required locality between sentential negation and the indefinite determiner. Couldn't mechanisms proposed in Distributed Morphology (DM, Halle & Marantz 1993) obtain a sufficiently local configuration for constructing an English object negative indefinite on the basis of a clausal negative head and an indefinite determiner? It turns out, though, that none of the existing DM operations fit the bill because all of them are too local. Consider the simple structure in (164) for *Quentin Tarantino liked no movie*:

(164)



Possible DM-candidates for creating a local relation between Neg and D, allowing them to morphologically combine, are: (i) Lowering (Marantz 1988; Halle & Marantz 1993; Embick & Noyer 2001), (ii) Fusion[113] (Halle & Marantz 1993; Halle 1997; Kandybowicz 2006, 2007; Parrott 2007), and (iii) Local Dislocation (Embick & Noyer 2001, 2007; Embick 2007).

[113] Not to be confused with *Fusion Under Adjacency*, cf. section 3 of this chapter.

Lowering is head-to-head adjunction under immediate locality: it establishes a relation between a head and the head of its complement, as schematically represented in (165):

(165) *Lowering of X to Y*

$[_{XP}$ X … $[_{YP}$ …Y…]] → $[_{XP}$ … $[_{YP}$ … $[_{Y}$ Y+X] …]]

[Embick & Noyer 2001:561, (6)]

In (164), however, DP is not the complement of Neg. As a result, an English object negative indefinite cannot be the result of lowering Neg to D.

Fusion takes two discrete terminal nodes that are sisters under a single category node and collapses them into a single terminal node (cf. Halle & Marantz 1993:116). Fusion combines two sets of morpho-syntactic features (cf. Cable 2005:73). The result of Fusion to two feature sets A and B is the union of A and B. As shown in (166), Fusion of a node A containing features (a,b,c,d) and a node B containing features (e,f,g,h) produces a node C containing all eight features (a,b,c,d,e,f,g). As noted by Halle & Marantz (1993:136), the node A can for instance be Agreement Agr, and the node B Tense T.

(166) *Fusion of X and Y*

$[a,b,c,d]_{A} + [e,f,g,h]_{B} \rightarrow [a,b,c,d,e,f,g,h]_{C}$ [Cable 2005:73, (4)]

In (164), Neg and D are not sisters under a single category node. Moreover, head movement from D to Neg is disallowed, so they cannot *become* sisters either. Thus, an English object negative indefinite cannot be the result of fusing Neg and D.

Local Dislocation affects a head that is linearly adjacent to (the head of) a following constituent, cf. (167). The head X is adjoined to the peripheral head Y of that adjacent constituent (cf. Harley & Noyer 1999:6; Embick & Noyer 2001:270-1). The result of Local Dislocation is affixation.

(167) *Local Dislocation of X to Y*

[X * [Y * Z]] → [$[Y+X]_{Y}$ * Z] *or* [$[X+Y]_{Y}$ * Z]

In English, however, *not* (the vocabulary item inserted in Neg) and *any* (the vocabulary item inserted in D) are not linearly adjacent, cf. *Quentin * Tarantino * not * liked * any * movie*. Hence, an English object negative indefinite cannot be the result of Local Dislocation of *not* to *any*.

The interaction between negative indefinites and ellipsis provides evidence that negative indefinites are the result of a morphological operation (rather than a syntactic one, cf. also the next two sections). Just like Jacob's (1980) and Rullmann's (1995) amalgamation and incorporation under phonological string adjacency, however, existing DM-operations cannot provide a morphological analysis of English negative indefinites in a non-cyclic, non-multidominant view of the grammar, as these operations are all too local. Therefore, the cyclic, multidominant analysis proposed in this chapter is superior to the ones discussed in this section.[114]

6.2 Syntactic analyses I: Agree / Feature checking

A common syntactic analysis of negative indefinites is the proposal that they are the result of feature checking or Agree between an abstract negative operator, which takes clausal scope, and a non-negative indefinite in object position (cf. Giannakidou 1997; Tubau 2008; Haegeman & Lohndahl 2010; Penka & Zeijlstra 2010; Penka 2011). The presence of an abstract negative marker is needed to license the indefinite. The semantically non-negative indefinite carries an uninterpretable negative feature [uNEG] that has to be checked against a (covert) semantic negation, i.e. against an interpretable negative feature [iNEG] on a semantically negative element.[115] The negative indefinite is therefore the visible result of syntactic agreement, similar to phenomena such as subject-verb agreement or multiple gender marking on e.g. nouns and adjectives (cf. Penka & Zeijlstra 2010:781).

In a feature checking approach (e.g. Weiß 2002), the checking of the [uNEG] feature on the indefinite happens in a specifier-head relation in a designated functional projection (for instance, NegP). The indefinite object DP is taken to move to the specifier of this functional projection, attracted by a head (e.g. Neg) carrying the same (interpretable) formal feature [iNEG]. The result of feature checking is the deletion of the [uNEG] feature on the indefinite.

[114] It seems that the introduction of Fusion under (multidominant, cyclic) adjacency in the PF-branch of the grammar has the potential of replacing several DM-operations (such as DM-Lowering, DM-Fusion, and DM-Local Dislocation) by a single operation. This would lead to increased theoretical parsimony, which is the preferable state of affairs (cf. also Siddiqi 2006 and Caha 2009, who try to eliminate several Morphology specific devices by replacing them by a single operation).

[115] This proposal actually goes back to the analyses in, for instance, Ladusaw (1992) and Zeijlstra (2004) for negative indefinites in negative concord languages (or n-words, Laka's (1990) term for negative indefinites in negative concord languages). A variety of languages exhibit negative concord, such as Czech and Italian (cf. Haspelmath 2005). The authors mentioned here extend the proposal to languages that do not exhibit negative concord, such as English, German, and Dutch.

In an Agree account, the operation Agree (Chomsky 2000, 2001; Pesetsky & Torrego 2001) establishes a relation between a Probe and a Goal, which carry (a) feature(s) of the same kind. An element is identified as a suitable Goal when (i) it has an uninterpretable but valued feature that matches an interpretable but unvalued feature of the Probe, and (ii) when it is sufficiently local. Tubau (2008) proposes, for instance, that a sentential polarity head Pol is endowed with an interpretable polarity feature that is unvalued, i.e. [iPOL: __]. This head can therefore act as a Probe, and scans its c-command domain for a local Goal that has a matching feature that can value the relevant unvalued feature. This Goal (the indefinite D) carries an uninterpretable, but valued, polarity feature [uPOL: Neg].

This Agree/feature checking analysis of negative indefinites again turns out to be problematic, though, when considering the interaction between negative indefinites and verbal ellipsis discussed in section 2 of this chapter. Recall that VP-ellipsis prohibits a negative indefinite in object position to take scope out of a VP-ellipsis site (the VPE/NI Generalization). The relevant example, (44), is repeated here:

(44) Q: Who can offer no help?
A: * Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. (* ¬ > ◇, % ◇ > ¬)

It is well known that VP-ellipsis does not block Agree/feature checking. For example, T can agree with the elided associate of a *there*-expletive. In *there*-expletive constructions, the expletive occupies the subject position Spec,TP, while the thematic subject (the associate) remains in the base position inside the vP. When there is VP-ellipsis, the associate is part of the ellipsis site. As is shown in (168), the auxiliary outside of the ellipsis site, occupying the T-head and licensing the ellipsis, agrees with the associate inside the ellipsis site.

(168) [van Craenenbroeck 2007:3, (13)]
a. Jim said there wouldn't be many people at the party, but there **were** ⟨ ~~many people at the party~~ ⟩.
b. Jim said there wouldn't be a linguist at the party, but there **was** ⟨ ~~a linguist at the party~~ ⟩.

If VP-ellipsis does not interact with Agree/feature checking, it remains unexplained why it blocks the presence of negative indefinites in a VP-ellipsis site if these negative indefinites are the result of Agree/feature checking. Therefore, I conclude that an Agree/feature checking analysis of object negative indefinites cannot account for the blocking effect of VP-ellipsis. As the analysis developed in this chapter does provide an analysis for this blocking effect, I take it to be the preferred option.

6.3 Syntactic analyses II: Quantifier Raising

The traditional analysis of negative indefinites is that they are generalized quantifiers that are semantically negative (cf. Zanuttini 1991; Haegeman & Zanuttini 1991, 1996; Dahl 1993; Haegeman 1995; Geurts 1996; De Swart 2000; von Fintel & Iatridou 2003; Iatridou & Zeijlstra 2010). Under this view, negative indefinites are considered to be atomic lexical items. The sentence in (169)a is analyzed as sketched in (169)b, where the meaning of *no* is the generalized determiner NO as in (169)c, cf. Sauerland (2000a).[116]

(169) [Sauerland 2000a:416-7]

a. Andy has no enemies.
b. NO ([[enemies]]) (λx Andy has x)
c. NO $(R)(S) = 1$ iff $\forall x : R(x) \Rightarrow \not S(x)$

Negative quantifiers are interpreted just like other, non-negative generalized quantifiers. In order to obtain sentence-wide scope, the negative indefinite undergoes Quantifier Raising (QR), targeting the same position as QR of other generalized quantifiers. Iatridou & Sichel (2011:610) also hint at the possibility of QR moving the negative quantifier to the scope position of sentential negation.

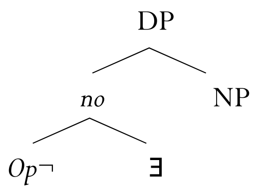
Some decompositional analyses of negative indefinites also take (part of) the negative indefinite to undergo QR. These accounts submit that a negative indefinite consists of two (syntactically and semantically) separate components, negation and an existential indefinite. Iatridou & Sichel (2011) take the latter to undergo QR to the position of the former. They propose that clauses contain a fixed scope position dedicated to the interpretation of sentential negation, which can be realized as a sentential negative marker or within a negative indefinite. As such, the scope position of the negative ingredient of a negative indefinite is identical to the scope

[116] Here, I will not go into the details of accounts that take negative indefinites to be negative generalized quantifiers (cf. Geurts 1996; De Swart 2000; Iatridou & Zeijlstra 2010). For critiques of this approach independent of the ellipsis critique developed here, see, for amongst others, Sauerland (2000a), Weiß (2002), Iatridou & Sichel (2011), Penka (2011), and Zeijlstra (2011). Tubau (2008:76) even maintains that "negative quantifiers do not exist in natural languages." The same idea can be found in Sauerland (2000a) and Penka (2011).

position of sentential negation. The existential component can undergo QR to scope in the position of sentential negation.

Zeijlstra (2011) proposes that an abstract negative operator and a non-negative indefinite determiner are sisters in the syntactic structure. That is, first there is merger of the negative operator and the indefinite determiner, thus creating the negative indefinite. This syntactic constituent is subject to a spell-out rule, which morphophonologically realizes [$Op\neg$ ∃] a single morphological word /*no*/. The negative indefinite merges with an NP, forming a negative DP, cf. (170):

(170) [cf. Zeijlstra 2011:121, (25)]



This syntactic constituent DP, "being quantificational in nature, can undergo QR (raising across another scope-taking element)" to a higher position (Zeijlstra 2011:120). The target of QR of the negative indefinite DP is an IP-adjoined position.

This Quantifier Raising analysis of negative indefinites turns out to be problematic, however, when considering the interaction between negative indefinites and verbal ellipsis discussed in section 2 of this chapter. In sections 2.2 and 2.3 it was shown that a negative indefinite in object position cannot take scope out of a VP-ellipsis site (the VPE/NI-Generalization in (117), repeated here).

(117) THE VPE/NI-GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

Relevant examples were those in (43) and (44), repeated here:

(43) John can do no homework tonight.
= 'It is not the case that John is permitted to do homework tonight.' $(\neg > \Diamond)$
≠ 'It is permitted that John does not do homework tonight.' $(^{\%}\Diamond > \neg)$

(44) Q: Who can offer no help?
A: * Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. (* $\neg > \diamond$, $^{\%}\diamond > \neg$)

It is well known, however, that VP-ellipsis does not block Quantifier Raising (cf. Fox 2000). More specifically, VP-ellipsis does not block QR, provided *Parallelism* (cf. (171)) and *Scope Economy* (cf. (172), (173)) are respected.[117]

(171) *Parallelism (a consequence of)*
In an ellipsis construction, the scopal relationship among the elements in the antecedent must be identical to the scopal relationship among the parallel elements in the ellipsis site.[118] [cf. Fox 2000:32]

(172) *Economy condition on scope shifting (Scope Economy)*
An operation *OP* can apply only if it affects semantic interpretation (i.e., only if inverse scope and surface scope are semantically distinct). [cf. Fox 2000:21]

(173) *The Ellipsis Scope Generalization*
In an ellipsis construction, inverse scope is possible only if it is semantically distinct from surface scope both in the sentence that includes the ellipsis site and in the sentence that includes the antecedent. [cf. Fox 2000:83]

Parallelism (cf. (171)) ensures that in ellipsis environments, the antecedent and the elliptical clause receive isomorphic representations at LF. Even if sentences are potentially scopally ambiguous, the scopal relationships in the antecedent cannot be different from the those in the ellipsis site. That is, either both the antecedent and the ellipsis site have surface scope or they both have inverse scope. The latter option is only available if it obeys Scope Economy (cf. (172), (173)). The sentences in (174) and (175) illustrate how Parallelism and Scope Economy operate in VP-ellipsis. The sentences in (175) are restricted to surface scope, whereas the sentences in (174) are not.

[117] Chapter 5 provides an analysis of the interaction between QR and verbal ellipsis in the multidominant, cyclic framework developed here.

[118] Fox (2000) adjusts the principle of Parallelism somewhat in Chapter 3 of his monograph. For present purposes, the form in (171) suffices.

(174) a. A boy admires every teacher. A girl does, too ⟨ ~~admire every teacher~~ ⟩.
[Fox 2000:33, (22e)]

b. Some girl watched every movie, and some boy did ⟨ ~~watch every movie~~ ⟩ too.
[Ha 2007:160, (10)]

(i)		$\exists > \forall$ & $\exists > \forall$	(both conjuncts take surface scope)
(ii)		$\forall > \exists$ & $\forall > \exists$	(both conjuncts take inverse scope)
(iii)	*	$\exists > \forall$ & $\forall > \exists$	(*Parallelism)
(iv)	*	$\forall > \exists$ & $\exists > \forall$	(*Parallelism)

(175) A boy admires every teacher. Mary does, too ⟨ ~~admire every teacher~~ ⟩.
[Fox 2000:32, (21)]

(i)		$\exists > \forall$ & $\exists > \forall$	(both conjuncts take surface scope)
(ii)	*	$\forall > \exists$ & $\forall > \exists$	(*Scope Economy)
(iii)	*	$\exists > \forall$ & $\forall > \exists$	(*Parallelism)
(iv)	*	$\forall > \exists$ & $\exists > \forall$	(*Parallelism)

In both (174) and (175), the interpretations in (iii) and (iv) are unavailable because they violate Parallelism. In order to explain why the sentences in (174) have the interpretation in (ii) available, while those in (175) do not, Fox (2000) resorts to Scope Economy (and Parallelism):

(176) "The relevant difference between the two constructions, I propose, is that in [(175)] the ellipsis sentence is scopally uninformative. Therefore, Scope Economy restricts the ellipsis site to surface scope, and Parallelism blocks inverse scope in the antecedent sentence. In [(174)a and (174)b] the ellipsis sentence is scopally informative and is therefore unrestricted by Scope Economy. Both the ellipsis sentence and the antecedent sentence can receive inverse scope as long as Parallelism is maintained." [Fox 2000:34]

Similarly, in (175), the antecedent is scopally uninformative and, therefore, Scope Economy restricts the ellipsis site to surface scope. Parallelism blocks inverse scope in the ellipsis sentence.

Note that in the illicit example in (44), both Parallelism and Scope Economy would be respected. In particular, 'inverse scope' (i.e. the negative indefinite outscoping the modal) is scopally informative, as it is different from 'surface scope' (i.e. the modal outscoping the negative indefinite). In other words, Scope Economy is respected. This 'inverse scope' is available in the antecedent, so following Parallelism, it should also be available in the ellipsis site. This is corroborated by the fact that in its non-elliptical counterpart, inverse scope is freely available:

(44)' Q: Who can offer no help? ($\neg > \Diamond$, $^{\%}\Diamond > \neg$)
A: Quentin Tarantino can offer no help. ($\neg > \Diamond$, $^{\%}\Diamond > \neg$)

As both Parallelism and Scope Economy are respected, QR of the negative indefinite out of the VP-ellipsis site should be allowed. This is, however, not the case.

(44) Q: Who can offer no help? ($\neg > \Diamond$, $^{\%}\Diamond > \neg$)
A: * Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. ($\neg > \Diamond$, $^{\%}\Diamond > \neg$)

Given that an analysis of object negative indefinites based on Quantifier Raising cannot account for the blocking effect of VP-ellipsis, I conclude that negative indefinites do not undergo QR.[119,120]

6.4 Johnson (2010a,b, 2011a)

In this chapter, I have developed an analysis of English negative indefinites with the following key components: decomposition of the negative indefinite, multidominance, cyclic Spell-Out and linearization, and Fusion Under Adjacency. English negative indefinites are the result of a (fairly superficial) PF-process (Fusion Under Adjacency) that combines sentential negation and the determiner of an indefinite DP. I have argued that the locality required for morphologically combining the negative head and the indefinite determiner is established under multidominance and cyclic Spell-Out/linearization. The analysis takes as a starting point Johnson's

[119] Note that in Zeijlstra's (2011) account, it cannot be the case that verbal ellipsis blocks the Spell-Out of the constituent [*Op*¬ ∃] in (170): as */no/*. Op¬ and ∃ are merged as sisters at the beginning of the derivation in Zeijlstra's proposal. If VP-ellipsis were to block them being spelled out as one morphological word, this would be the case in all instances of ellipsis, i.e. also in VP-ellipsis sites out of which the negative indefinite does not scope or in clausal ellipsis sites. In section 2.1, however, I have shown that clausal ellipsis sites can contain a negative indefinite, which shows that the formation of a negative indefinite inside an ellipsis site is not categorically blocked. Similarly, VP-ellipsis sites can contain a negative indefinite as long as it does not take scope out ouf the ellipsis site (cf. sections 2.2 and 2.3).

[120] In this section, it is shown that Quantifier Raising is not blocked by verbal ellipsis. Johnson (2010a, 2011a), however, proposes that QR involves Fusion (under adjacency). I argued in this chapter that ellipsis can block FUA. If this is the case, and if Johnson (2010a, 2011) is right in taking QR to involve Fusion, then why can QR escape a VP-ellipsis site? This is the topic of chapter 5.

(2010a,b, 2011a) multidominant account of WH-movement, Quantifier Raising, and negative indefinites.

Johnson (2010b) proposes that negative indefinites involve multidominant phrase markers. He wants to include the analysis of negative indefinites in the general approach he developed for WH-movement and QR in Johnson (2010a, 2011a). His analysis contains two crucial ingredients: (i) movement is remerge (giving rise to multidominant phrase markers), (ii) determiners can spread across distant syntactic positions but are mapped onto one word. According to Johnson (2010a,b, 2011a), the locality required for morphologically combining the two components of determiners (in QR, WH-movement and negative indefinites) is established by remerge. Before discussing Johnson's (2010b) proposal for negative indefinites (in subsection 6.4.2), I briefly consider his (2010a, 2011a) remerge analysis of WH-movement in the next subsection (6.4.1). This section is not intended to present every single detail of Johnson's (2010a, 2011a) proposal: I select and discuss those components that are most relevant to the discussion in this chapter. For details, especially concerning the semantics of the proposal, I refer the reader to the original papers.[121]

6.4.1 BACKGROUND: A MULTIDOMINANT ANALYSIS FOR WH-MOVEMENT

Johnson (2010a, 2011a) proposes to model WH-movement with the operation of remerge (i.e. Internal Merge, cf. section 2 of chapter 2). He argues that remerge resolves conflicting requirements of the semantics and the morphology of constituent questions. Remerge results in a phrase having two mothers, i.e. in multidominance.

Johnson adopts the idea that constituent questions involve two components: (i) a DP that introduces a variable in a lower position and (ii) a question morpheme Q in a higher position that semantically combines with the clause (marking the scope of the question) and that binds off the variable introduced by the DP (cf. Reinhart 1998; Hagstrom 1998, 2000; Kishimoto 2005; Cable 2007, 2010). In English, the Q-component is phonologically silent; only the variable component (the WH-phrase) is visible. In other languages (e.g. Japanese), however, both components are overtly recognizable. In the Japanese example in (177), an interrogative phrase (*dono gakusei*) occupies the position of the variable and a question morpheme (*ka*) on the verb marks the scope of the question.

[121] For discussion of Johnson's (2010a, 2011a) remerge analysis of QR, see sections 3.1 and 4 in chapter 5.

(177) [Johnson 2011a:16, (33)]

(Kimi-wa) dono-gakusei-ga nattoo-o tabe-tagatte-iru-to omoimasu-**ka**?
(you-TOP) which-student-NOM natto-ACC eat-desirous-be-C think-Q
'Which student do you think wants to eat natto?' [Japanese]

For Japanese, "we might imagine that the question morpheme and the interrogative phrase are independently merged into the positions that they are pronounced in" (Johnson 2011a:16). For English, however, Johnson adopts Cable's (2007, 2010) analysis of WH-questions in Tlingit. A WH-phrase in Tlingit occupies the left edge of the constituent question, like in English. But like in Japanese, the question contains both a WH-determiner and another morpheme, called Q by Johnson.[122] Unlike the Japanese Q, the Q-morpheme in Tlingit is part of the WH-phrase. This is illustrated in (178): the Q-particle *sá* has merged with the DP that contains the WH-word *aadóo*.

(178) [Johnson 2011a:16, (34), referring to Cable 2010:44, (67)]

[Aadóo yaagú **sá**]$_i$ ysiteen t_i?
whose boat Q you-saw
'Whose boat did you see?' [Tlingit]

Cable (2007, 2010) follows Kratzer & Shimoyama (2002) and Adger & Ramchand (2005) in proposing that there is an Agree relation between the Q-particle and the WH-word. This Agree relation is subject to locality conditions, which determine where the Q-morpheme can be merged (see Cable (2007, 2008, 2010) for details). This locality condition forces the Q-morpheme to merge not with the clause, but instead with the interrogative phrase. Johnson (2010a, 2011a) follows Cable's proposal that in English too, there is a Q-morpheme that is merged to the WH-phrase, and that this Q is in an Agree-relation with the determiner of the interrogative DP (see the structure in (180)).

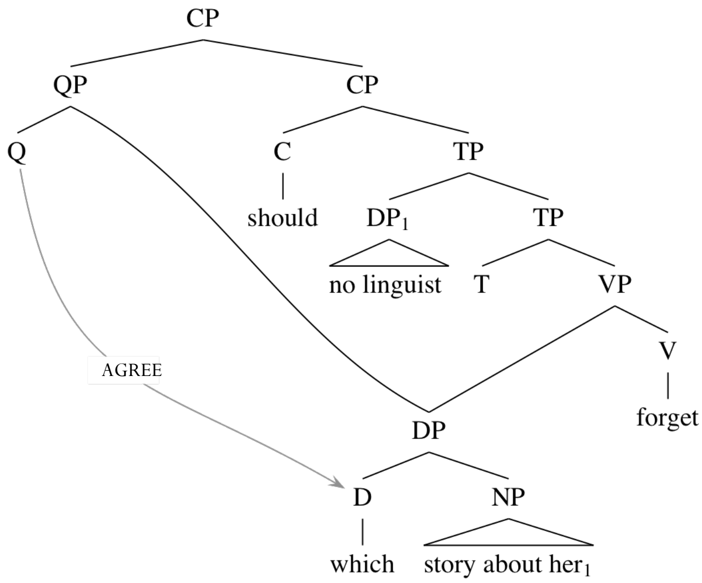
The form of the interrogative phrase in English depends on the presence of the Q-morpheme, because of the Agree-relation that holds between them. As a result of the Agree-relation between Q and the D of the interrogative DP, this D is spelled out in an agreeing form (i.e. as *which*). Thus, the Q-morpheme expresses itself by

[122] Johnson (2011a:18, fn.12) notes that the Q-particle in Tlingit cannot have the meaning that he associates with the Q-morpheme in Japanese and English. The morpheme under consideration for Tlingit not only surfaces in questions, but also in declarative sentences. Cable analyzes the Tlingit Q-particle as a choice function (which can be bound by other operators, determining whether the result is a declarative or a question). Johnson therefore suggests that "English has something akin to the Japanese question morpheme, but that it is deployed syntactically like the Tlingit Q particle".

determining how the determiner in the WH-phase gets pronounced. As such, an English WH-question such as (179) gets the representation in (180):

(179) [Johnson 2011a:17, (40)]
Which story about her should no linguist forget?

(180) [Johnson 2011a:17, (41)]



Importantly, Q does not combine semantically with the DP that it has merged with. Therefore, the QP it heads will have the same denotation as Q. The QP has the CP as its sister, and these combine semantically, forming the question. The WH-DP, however, is not interpreted semantically in the higher position; only the Q-morpheme is. In other words, the semantics require that the Q-morpheme and the interrogative DP be more distant than the locality conditions on the Agree-relation (cf. supra) tolerate. These (conflicting) semantic and syntactic/morphological requirements are met thanks to remerge (resulting in the multidominant representation). Although the question morpheme only combines semantically with CP (marking the scope of the question), it morphologically combines with DP through very local Agree.

When the linearization applies to the structure in (180), the remerged DP, which is now related to two positions, can only be linearized in one of these positions.[123] For the representation in (180), the interrogative DP can either be linearized in the position assigned to Spec,CP or in the position assigned to the direct object. In a simple constituent question like (179), English chooses the former option, linearizing the interrogative phrase in clause-initial position (i.e. it is mapped to the left of its original position in the linearized string). Crucially, though, the multiply dominated WH-phrase can in principle be spelled out either in the high (remerged) or the low (in situ) position. It is only because of English-specific requirements that the former option is chosen. As such, in theory nothing prevents a WH-phrase from being spelled out in its lower position. As Johnson (2011a:23) notes: "To the extent that WH-in-situ questions, like that in [(181)], involve 'covert' movement of the WH-phrase, this is a good result." Under the semantics sketched by Johnson, both WH-phrases have moved in (181). Still, the WH-phrase *which woman* gets linearized in its remerge position, while the WH-phrase *which magazine* gets linearized in its base position. The analysis provided here allows for precisely this type of flexibility.

(181) [Johnson 2011a:23, (52)]
Which woman bought which magazine?

6.4.2 JOHNSON'S (2010b) MULTIDOMINANT ANALYSIS OF NEGATIVE INDEFINITES

Johnson (2010b) wants to include negative indefinites in the general multidominant approach he developed for WH-movement (and QR) in Johnson (2010a, 2011a). His analysis contains two crucial ingredients. First, although the negative indefinite is

[123] Johnson (2010a, 2011a) adopts Kayne's well-formedness constraints on linearizations as well as the idea that linearizations have to obey certain language-specific requirements (section 3 of chapter 2). Recall that *Totality* requires that the linearization algoritm evaluate each terminal in a phrase marker so that they emerge in at least one of their positions. The requirement of *Antisymmetry*, on the other hand, prevents the linearization algorithm from evaluating a remerged phrase in both of its positions. See Johnson (2011a:12).

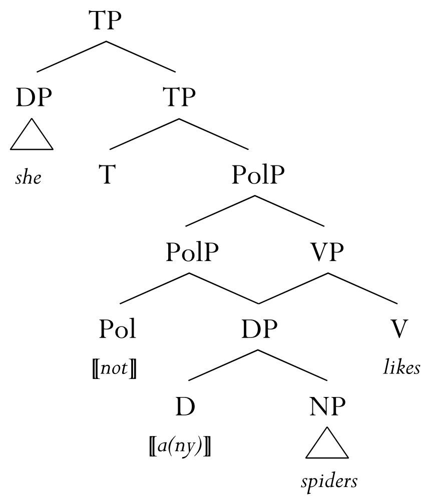
Johnson (2011a:12-13) also introduces a constraint to ensure that when a choice is made about how to resolve *Antisymmetry* for one of the terms in a remerged phrase, that choice spreads to all the other terminals in that remerged phrase. This constraint is *Contiguity*:

(i) CONTIGUITY
Let δ be all the lexical items in the phrase D. Contiguity holds for D iff for every α that is not in δ, α precedes everything in δ or α follows everything in δ. [Johnson 2011a:13, (28)]

Contiguity is violated when multidominance arises, though. Therefore, Johnson proposes that there is a restriction that says that "more violations of Contuigity are worse than fewer violations of Contiguity". See also Johnson (2011b).

mapped onto one word, it spreads across distant syntactic positions. *No* is composed of sentential negation (*not*) and an existential indefinite (*a(ny)*). Second, the analysis of negative indefinites involves remerge (giving rise to multidominant phrase markers): the indefinite merges with the verb and later (re)merges with sentential negation.[124] The multidominant phrase marker proposed by Johnson (2010b) for *She likes no spiders* is given in (182):

(182)



The specifics of Johnson's analysis of negative indefinites resemble those of WH-movement (discussed in the previous subsection). The main reason for this is that the negation ⟦*not*⟧ semantically combines with clauses, not NPs or DPs (see also section 3). Therefore, the phrase resulting from merger of the Pol-head and DP (PolP in (182)) has the same meaning as the Pol-head. As such, the properties of negative indefinites are like those of WH-movement, as the question morpheme in constituent questions only semantically combines with CP, not with its DP-sister. Although the Pol-head in (182) only semantically combines with VP, not with NP or DP, it does combine morphologically with DP. Johnson proposes that, in (182), an Agree relation is established between the Pol-head and the determiner of DP Pol merges with. This is possible as Pol c-commands D. Agreement fixes the appropriate morphological form for the determiner, i.e. *no*. As such, the polarity head expresses

[124] It is not that clear why negation merges with the indefinite DP. For WH-movement, Johnson (2010a, 2011a) proposes that this is necessary because of locality conditions on the Agree-relation between the determiner of the WH-phrase and the Q-morpheme. It is unclear to me whether such a locality condition also holds for the indefinite and the negation in the analysis of negative indefinites. On the merger of the indefinite DP and sentential negation, see section 3 of this chapter.

itself by determining (via Agree) how the indefinite determiner in the DP gets pronounced.

I have argued, however, that the analysis of negative indefinites involves a PF-component (Fusion Under Adjacency), given their interaction with the PF-process of ellipsis (cf. section 4 of this chapter). Recall that ellipsis does not block Agree (cf. section 6.2), so in the analysis in (182), the interaction between negative indefinites and ellipsis remains unexplained. Moreover, there are other reasons to take sentential negation and the indefinite determiner to undergo Fusion Under Adjacency instead of Agree.

First, an Agree analysis of negative indefinites would predict the negation (the head Neg) and the agreeing indefinite (the head D) to be able to be spelled out simultaneously. Recall that in Tlingit – the language on which Johnson (2010a, 2011a) bases his multidominant Agree analysis for WH-movement – the WH-form of D (= the Goal) and the Q-particle (= the Probe) overtly co-occur (cf. Cable 2007, 2008, 2010, discussed in section 6.4.1). A relevant example is (178):

(178) [Johnson 2011a:16, (34), referring to Cable 2010:44, (67)]

[Aadóo yaagú **sá**]$_i$ ysiteen t_i?
whose boat Q you-saw
'Whose boat did you see?' [Tlingit]

Negation and an agreeing D-head can, however, not be spelled out simultaneously, as is shown in (183).[125] An analysis in terms of Fusion Under Adjacency thus correctly predicts overt sentential negation and negative indefinites to be in complementary distribution.[126]

(183) a. * John did not buy nothing. (* under the single negation reading)
b. * John does not read no novels. (* under the single negation reading)

[125] This suggests that the analysis of negative concord in languages such as Italian should be different from the account developed for negative indefinites in this section. The same goes for varieties of English in which the sentences in (183) are grammatical under the single negation reading. See section 2.1 in chapter 6 for some discussion.

[126] I agree with Andrés Saab (p.c.) that a more detailed and precise investigation of the vast amount of extremely complex agreement/concord patterns across languages is required to really substantiate this reasoning. Obviously, however, this is not my primary concern here.

Secondly, negative indefinites transparently consist of two morphemes (negation + indefinite), as discussed at length in Sauerland (2000a). [127] For instance, Sauerland discusses negative indefinites in Mohawk, based on Baker (1995, 1996). A relevant example is *yahuhka* 'nobody' in (184):

(184) [Sauerland 2000a:421, (10)]
Shawatis yahuhka to-shako-ka-0.
John nobody NEG-AGR-see-STAT.
'John saw nobody.' [Mohawk]

Baker and Sauerland argue that *yahuhka* consists of *yah* and *uhka(k)*, *yah* being the morpheme of sentential negation and *uhkak* an indefinite with existential meaning.[128] These components are exemplified in (185)a and (185)b, respectively. *Yahuhka* can also be split in *yah* and *uhka* in overt syntax, as shown in (186), expressing the same meaning as in (184).

(185) [Sauerland 2000a:422, (13b)-(14)]
a. Sak yah kanusha' te-ho-hninu-0.
Sak not house NEG-AGR-buy-STAT
'Sak didn't buy a/the house.'

b. Uhkak wa-shako-kv-'.
someone FACT-AGR-see-PUNC
'He saw somebody.' [Mohawk]

(186) [Sauerland 2000a:422, (15)]
Yah to-shako-ka-0 uhka.
not neg-agr-see-stat somebody
'He didn't see anybody.' [Mohawk]

Similarly, in Norwegian, the negative indefinite *ingen* 'no' transparently consists of the negation *ikke* and the indefinite *noen* 'any' (Christensen 1986; Kayne 1998; Sauerland 2000a), cf. (187). In Dutch as well, the negative indefinite *niets* 'nothing'

[127] Johnson (2011a:22, fn.20) also sees corroborating evidence for his Fusion analysis of quantifiers in the fact that some quantificational determiners are transparently composed of two separate parts (cf. section 3.1 in chapter 5).

[128] Note that *yahuhka* and the overt splitting *yah-uhka* surface without the final /k/ of the existential indefinite *uhkak*. See Baker (1995, 1996) for discussion.

can be transparently decomposed into negation *niet* and the indefinite *iets* 'something', as shown in (188).

(187) [Sauerland 2000a:423, (17)-(18)]

a. Jon leser inger romaner.
John reads no novels
'John reads no novels.'

b. Jon leser ikke noen romaner.
John reads not any novels
'John does not read any novels.' [Norwegian]

(188) a. Jan heeft niets gekocht.
John has nothing bought
'John has bought nothing.'

b. Dat is niet iets wat Jan gekocht heeft.
that is not something what John bought has
'That is not something John has bought.' [Dutch]

Concluding, unlike Johnson (2010b), I do not take the multidominant analysis of negative indefinites to include an Agree-component. Instead, I maintain that sentential negation and the indefinite undergo Fusion Under Adjacency.

Another difference between the analysis proposed here and Johnson's (2010b) account is that in the latter, the clausal polarity head merges directly with the indefinite DP, forming a PolP (cf. (182)). I proposed that a negative head merges with the indefinite DP, and the result of this merger (NegP) is merged as the specifier of the clausal polarity head. See section 3.2 of this chapter for this analysis. One problem with the structure proposed by Johnson (2010b) for negative indefinites is that the VP in (182) seems to be the specifier of (or an adjunct to) the PolP. This is surprising, given that the polarity head is one of the heads in the clausal functional structure, normally considered to select VP (or a bigger chunk such as vP or TP) as its complement. My remerge analysis of negative indefinites does not face this problem.[129]

[129] Thanks to Marcel den Dikken (p.c.) for pointing out this problematic aspect. See also footnote 107.

7 Conclusion

This chapter discussed the interaction of English negative indefinites and (verbal and clausal) ellipsis, summarized in the following two generalizations:

(189) THE CLAUSAL/VERBAL GENERALIZATION
While in clausal ellipsis *any* can antecede the ellipsis of *no*, in verbal ellipsis this polarity switch is disallowed.

(190) THE VPE/NI GENERALIZATION
A negative indefinite in object position cannot scope out of a VP-ellipsis site.

English negative indefinites and quantificational phrases decompose into two independent elements. In this chapter, I proposed that their formation is the result of a (fairly superficial) process that morphologically combines a negative head and the determiner of the object DP. I referred to this process as Fusion Under Adjacency (FUA). Fusion between negation and an indefinite can come about through remerge/multidominance, in combination with cyclic Spell-Out/linearization. I argued that the PF-process of ellipsis can block the formation of negative indefinites, by bleeding the PF-process of FUA. As ellipsis is derivational, the timing of both FUA and ellipsis is vital. FUA has to occur before the ellipsis licensor is merged. In verbal ellipsis, FUA only takes place before merger of the licensor if the negative indefinite has narrow scope. High scope of a negative indefinite is, however, blocked in verbal ellipsis. In clausal ellipsis, on the other hand, FUA always takes place before the ellipsis licensor is merged.

Concluding, this chapter accounted for the interaction between English negative indefinites and ellipsis by allowing for multidominant phrase markers and adopting a cyclic view on the syntax-to-PF-mapping (cf. cyclic Spell-Out/linearization and derivational ellipsis).[130]

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[130] In this chapter, I proposed that negative indefinites are the result of the morphological operation FUA, an operation defined over multidominant phrase markers. Ellipsis, a PF-operation, can bleed this morphological process.

Andrés Saab (p.c.) wonders whether an LF-copy analysis of ellipsis (cf. section 4 in chapter 2) could also account for both *The VPE/NI Generalization* and *The Clausal/Verbal Generalization* discussed in this chapter. In an LF-copy analysis (cf. Fiengo & May 1994; Chung et al 1995; Wilder 1997), an empty category is generated in the elliptical phrase. This empty proform has the category corresponding to the elliptical gap (vP in verbal ellipsis, TP in clausal ellipsis). The antecedent is copied into the ellipsis site at LF, providing the elliptical constituent with the right interpretation. For the example in (i)a, the syntactic structure would be the one in (ii). (*continued on the next page*)

(i) Who can offer no help?
a. * Quentin Tarantino can ⟨ offer no help ⟩.
b. Quentin Tarantino can not ⟨ offer (any) help ⟩.

(ii) Quentin Tarantino can ⟨ pro_{vP} ⟩.

Saab (p.c.) reasons that a high polarity head Pol_1, which is not part of the elliptical constituent, could not establish a (syntactic or morphological) dependency with an indefinite object DP in (ii), as there simply is no syntactic representation of an indefinite DP in object position in the elliptical gap. The unavailability of this dependency would explain the ungrammaticality of (i)a. The only option for the negative Pol_1 is then to be realized independently as *not*, as in (i)b. In this case, the antecedent (containing a non-negative indefinite object DP) is successfully copied in the null pro-form at LF. Unlike in the verbal ellipsis example in (i)a, an elliptical constituent can contain a negative indefinite object in clausal ellipsis, cf. (iii)a. According to Saab (p.c.), this follows from this LF-copy analysis if the antecedent that is copied into the null pro-form ⟨ pro_{TP} ⟩ contains a negative Pol_1: in this case, the dependency between Pol_1 and the indefinite object can be established straightforwardly.

(iii) Q: Which song didn't any judge always vote for?
A: a. Katie's song ⟨ no judge always voted for ⟩.
b. Katie's song ⟨ pro_{TP} ⟩.

I take an LF-copy analysis to be undesirable for several reasons, however. First, if a verbal ellipsis site should be analyzed as a null pro-form, blocking dependencies between a head outside the ellipsis site and a DP inside an elliptical gap, it is mysterious how Agree between T and the elided associate of a *there*-expletive construction is possible. In *there*-expletive constructions, the expletive occupies the subject position Spec,TP, while the thematic subject (the associate) is part of the verbal ellipsis site. As is shown in (iv), the auxiliary outside of the ellipsis site (occupying the T-head) agrees with the associate inside the ellipsis site (see also section 6.2 of this chapter). As there is no syntactic representation of the associate in the ellipsis site in an LF-copy theory, it is unclear how Agree can take place.

(iv) [van Craenenbroeck 2007:3, (13)]
a. Jim said there wouldn't be many people at the party, but there were ⟨ many people at the party ⟩.
b. Jim said there wouldn't be a linguist at the party, but there was ⟨ a linguist at the party ⟩.

Second, if a null pro-form (i.e. absence of internal structure in the ellipsis site) blocks a dependency between the high Pol_1-head outside the ellipsis site and an indefinite object DP inside the elliptical gap, it is predicted that high scope of a negative indefinite in verbal ellipsis is *never* allowed. It is discussed at length in chapter 4, however, that for instance in cases of *co-licensing* of verbal ellipsis by an epistemic modal and an aspectual auxiliary, an object negative indefinite (inside the verbal ellipsis site) has more scopal possibilities. In these cases, high scope of the object negative indefinite is allowed, i.e. a dependency between the high polarity head and the object negative indefinite inside the ellipsis site *can* be established. It is unclear to me how this state of affairs could follow if the LF-copy analysis of ellipsis introduced above is adopted.

Third, there is abundant evidence in the literature (e.g. from preposition stranding, case marking, extraction) that the ellipsis site in verbal ellipsis and clausal ellipses like sluicing and fragment answers contains more syntactic structure than a pronoun (cf. e.g. Merchant 2001 *et seq.*; Aelbrecht 2009; Temmerman to appear). Moreover, as pointed out by Aelbrecht (2009: section 1.2.2.1), if ellipsis sites are like pronouns, it is not expected that Antecedent-Contained Deletion (ACD) should be allowed: interpreting the antecedent in the ellipsis site would lead to infinite regress. ACD does exist however (see section 3.3.2 of chapter 5 for discussion). Given all this, I take a PF-deletion approach to ellipsis to be preferred to an LF-copy account. I leave a more detailed comparison of the proposal developed in this dissertation with an LF-copy analysis to future research.

CHAPTER 4

EPISTEMIC/DYNAMIC MODALS, NEGATIVE INDEFINITES & ELLIPSIS

1 Introduction

In sections 2.2 and 2.3 of chapter 3, I discussed the interaction of deontic modals, negative indefinites, and verbal ellipsis. I showed that only the *de re* interpretation (where the deontic modal outscopes the negative indefinite) is allowed in verbal ellipsis – irrespective of the relative scope of the modal and the object negative indefinite in a non-elliptical clause. The table in (1) gives a schematic overview:

(1) *Overview: deontic modals licensing VPE*

	Mod>Neg deontic modal		Neg>Mod deontic modal	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	NO	NO	YES	NO
de dicto allowed	NO	NO	YES	NO

The observations regarding deontic modals substantiated the VPE/NI Generalization in chapter 3, repeated here in (2):

(2) THE VPE/NI GENERALIZATION
A negative indefinite (NI) in object position cannot scope out of a VP-ellipsis (VPE) site.

This chapter presents an extensive empirical overview of the interaction of epistemic/dynamic modals, negative indefinites, and verbal ellipsis. It is shown that only a narrow scope reading is available for an object negative indefinite in verbal ellipsis licensed by an epistemic or dynamic modal, irrespective of its scopal possibilities in a non-elliptical clause.[1] This confirms the VPE/NI Generalization in (2). In section 4.1 of chapter 3, the VPE/NI Generalization was accounted for as follows: negative indefinites result from a PF-process, Fusion Under Adjacency, and ellipsis (a PF-process as well) can block the morphological process of FUA in the formation of a negative indefinite. The timing of FUA and ellipsis plays a crucial role. FUA can occur before the ellipsis licensor is merged. After the licensing head has been merged and the ellipsis site has been shipped off to PF, FUA with the D-head of the object DP can no longer take place. This explains why negative indefinites cannot scope out of a verbal ellipsis site. This account straightforwardly carries over to verbal ellipsis licensed by epistemic and dynamic modals.

When an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis, however, the elliptical sentence can not only have a *de re* reading, but also a *split* and/or *de re* interpretation. Similarly, when a dynamic modal does not license ellipsis, but is part of a VPE-site licensed by dummy *do,* all scopal possibilities become available. I argue that the former state of affairs is accounted for if there is co-licensing of VPE (by the epistemic modal and aspectual auxiliary) and co-licensing only happens after movement of the epistemic modal to a higher functional head, Mod. The latter observation (regarding dynamic modals and dummy *do*) follows straightforwardly from the account presented in chapter 3 if the dynamic modals under scrutiny involve a biclausal structure.

This chapter is organized as follows. Section 2 focuses on epistemic modals. After an introductory subsection (2.1), subsection 2.2 presents the empirical observations concerning the relative scope of an object negative indefinite and an epistemic modal. First, scopal behavior under licensing by the epistemic modal itself is considered. Second, it is shown that scopal possibilities differ when the epistemic modal co-occurs with an aspectual auxiliary. Subsection 2.3 presents the analysis of the data described in subsection 2.2. The topic of section 3 is dynamic modals. Subsection 3.1 describes the empirical facts regarding the scope of negative

[1] Note, as in section 2.3 of chapter 3, that Parallelism (cf. (i)) is respected in the sentences under scrutiny in this chapter.

(i) *Parallelism (A consequence of)* [Fox 2000:32]
In an ellipsis construction, the scopal relationship among the elements in the antecedent must be identical to the scopal relationship among the parallel elements in the ellipsis site.

In principle, all scopal possibilities (of the modal and negation) allowed in the antecedent are allowed in the elliptical clause as well, as long as the sentence obeys Parallelism. The fact that the sentences discussed in this section only allow narrow scope of the negative indefinite cannot be due to Parallelism. See section 6.3 of chapter 3 and section 2 of chapter 5 for more on Parallelism.

indefinites and dynamic modals in verbal ellipsis; subsection 3.2 provides an account. Section 4 concludes.

2 Epistemic modals and negative indefinites in ellipsis

2.1 Background

Epistemic modality expresses the speaker's judgment (i.e. his/her confidence or lack of confidence) about the truth of a proposition (i.e. whether it is possible, probable, or necessarily true), based on the kind of information (s)he has (cf. Coates 1983; McArthur 1998; Cinque 1999).

It is standardly assumed that epistemic modals always outscope sentential negation (cf. Cinque 1999; Drubig 2001; Cormack & Smith 2002). Relevant examples are given in (3):

(3) [von Fintel & Iatridou 2003:184, (43)]

a. John must not be at home. ($\Box > \neg$)

b. John may not leave. ($\Diamond > \neg$)

However, Butler (2003) argues that there is a difference between epistemic possibility and epistemic necessity: while epistemic necessity modals (e.g. *must*) always scope above negation, epistemic possibility modals (e.g. *can*) may also scope below negation (see also the discussion in Gergel 2009). According to von Fintel & Iatridou (2003:184), the epistemic necessity modal *have to* can either scope above or below sentential negation. Moreover, "there appear to be perfectly epistemic modals that are almost specialized as narrow scope epistemic modals", such as *need* and *can* (von Fintel & Iatridou 2003:184). Note that both narrow scope *have to* and *need* contradict Butler's generalization that only possibility epistemic modals can scope below negation.

(4) [von Fintel & Iatridou 2003:184, (44)-(45)]

a. John does not have to be at home. ($\neg > \Box$) He might be at work.

b. John need not be home. ($\neg > \Box$) He might be at work.

c. John can't be at home. ($\neg > \Diamond$) He must be at work.

Epistemic modals do not generally license verbal ellipsis, unlike deontic ones (cf. Gergel 2009:200). When verbal ellipsis occurs in the context of a modal, the epistemic reading of this modal becomes considerably degraded, even if it is fully acceptable in a non-elliptical clause (cf. McDowell 1987; Drubig 1998, 2001; Depiante 2000; López & Winkler 2000; Gergel 2003, 2009; Winkler 2003). For instance, the non-elliptical sentence in (5)a has both a deontic and an epistemic reading. In the elliptical counterpart in (5)b, however, this ambiguity is not preserved: only the deontic reading is available.

(5) [Drubig 2001:30]

a. John must wash his care every day. (✓deontic, ✓epistemic)
b. John must wash his car every day and Peter must too. (✓deontic, *epistemic)

According to Gergel (2009), however, some epistemic modals – in particular, the existential (possibility) ones (*could, may, might*) – do license verbal ellipsis. These modals contrast with universal (necessity) epistemic modals such as *must* and *will*, which do not license VP-ellipsis. This contrast is illustrated in (6) and (7).

(6) [Gergel 2009:196-7, (93)-(96)-(98)]

a. John will fly to London and Mary may too. (✓epistemic)
b. Jane may wash her car and Mary may/might/could too. (✓epistemic)
c. "You have to be a real masochist to want to direct," he says with a smile. But Fearheiley does, and Smith might, too. (✓epistemic)

(7) [Gergel 2009:196-7, (93)-(96)-(98)]

a. She might have been watching television more often than he might. (✓epistemic)
b. * She might have been watching television more often than he must. (*epistemic)
c. ? Mary may be a successful student, and they say Frances may too. (✓epistemic)
d. * Mary must be a successful student, and they say Frances must too. (*epistemic)

Moreover, it has been noted by Winkler (2003) and Gergel (2009) that adding an (aspectual) auxiliary to the elliptical clause makes an epistemic reading possible for all modals. This is called "co-licensing" (vs. "direct licensing") in Gergel (2009). This is shown in the examples in (8), which allow for epistemic interpretations.

(8) [Gergel 2009:190, (77)]

a. Ben could have answered the question, but John couldn't have. (✓epistemic)

b. John shouldn't have been being blackmailed, but George should have (been). (✓epistemic)

In short, regarding the interaction of epistemic modality and negation, the literature presents a diverse picture. Moreover, when it comes to epistemic modality and ellipsis licensing, it is not that clear from the literature whether or not (or which) epistemics directly license verbal ellipsis. In what follows, I present the judgments of my informants regarding the scope interactions between epistemic modals and object negative indefinites, both in non-elliptical clauses and in verbal ellipsis. It is not my intention to present an analysis for all the different judgments given by my informants. Rather, I wish to discuss the general picture emerging from the judgments, for which I will present an analysis in section 2.3.

2.2 The data

The judgments of my informants confirm the observation that most epistemic modals do not directly license verbal ellipsis. In a few instances, though, the epistemic modal can occur to the immediate left of a verbal ellipsis site. As shown in subsection 2.2.1, if this is the case, the elliptical clause only gets a *de re* interpretation (with the epistemic modal scoping above the object negative indefinite), irrespective of the scopal possibilities in the non-elliptical counterpart. This confirms the VPE/NI Generalization in (2) that an object negative indefinite cannot scope out of a VPE-site. The account of the VPE/NI Generalization developed in chapter 3 can thus trivially be extended to epistemic modals.

Although most epistemic modals do not directly license ellipsis, verbal ellipsis is possible if these modals co-occur with an (aspectual) auxiliary. In this case, we get a mixed picture regarding the scopal possibilities with respect to an object negative indefinite: all relative scopes in principle seem to be available.[2,3] The data are

[2] This is not to say that all scopal relations are available in all elliptical sentences. The three scopal possibilities (narrow, split, and wide) are, however, attested, which suggests that none of the readings is blocked in principle. I gloss over this here, as this section aims to derive the difference between one possible reading (*de re*) in the case of (only) an epistemic modal vs. multiple possible readings in the case of an epistemic modal accompanied by an auxiliary. Why some readings are not allowed for some informants is not my primary concern here.

presented in subsection 2.2.2. In light of the account developed in chapter 3, the observations in 2.2.2 might seem puzzling at first sight. In section 2.3, I present an analysis that handles all observations regarding epistemic modals introduced in this section.

2.2.1 THREE EPISTEMIC MODALS LICENSING VPE

The three epistemic modals that license verbal ellipsis without an extra auxiliary present are *can, may,* and *need to*.[4] Note that the fact that *need to* (which expresses epistemic necessity) licenses verbal ellipsis contradicts Gergel's (2009) claim that only epistemic possibility modals directly license VP-ellipsis.

When it comes to the epistemic possibility modal *may* and its scope relative to an object negative indefinite, most of my informants only allow the *de re* interpretation (i.e. only reading 1), while a minority allows both the *de re* and the *split* interpretation (i.e. both reading 1 and reading 2).[5]

(9) John may sell no cars this month.
Reading 1: It is possible that John won't sell cars this month.
Reading 2: It is not possible that John will sell cars this month.
Reading 3: There are no cars for which it is possible that John will sell them this month.

Although most of my informants do not allow epistemic *may* to license verbal ellipsis (or only permit a positive/contradictory reading for the elliptical clause, due to the presence of the conjunction *but*), a minority does allow for (10) with a negative reading.[6] In that case, (10) can only get a *de re* interpretation, with the modal scoping

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[3] As was also the case for elliptical clauses with a deontic modal (see section 2.3 of chapter 3) some of my informants only allow a positive/contradictory interpretation for elliptical clauses with an epistemic modal:

(i) Who must have read no history books? John must (have).
Reading: John must have read history books.

[4] For my informants, an epistemic reading for the NPI modal *need* is in general degraded or unacceptable. This is the case in both elliptical and non-elliptical clauses. Therefore, *need* will not be discussed here.

[5] Recall that the paraphrases of reading should be read as 'there is/are no specific X that…'. If the paraphrases of reading 3 are interpreted as 'there is/are no X whatsoever that…', then this reading is indistinguishable from reading 2.

[6] The percentage sign (%) preceding the sentence in (10) and the other elliptical examples in this chapter is meant to indicate that not all of my informants accept the elliptical sentence with a negative reading.

above the object negative indefinite. Importantly, this is also true for the second group of informants, who allow a split interpretation in the non-elliptical counterpart. This observation confirms the VPE/NI Generalization in (2).

(10) % Mary said Peter may sell no cars this month, but I think John may.

Reading 1:	It is possible that John won't sell cars this month.	YES
Reading 2:	It is not possible that John will sell cars this month.	NO
Reading 3:	There are no cars for which it is possible that John will sell them this month.	NO

For a sentence containing the modal *can* and an object negative indefinite, only some of my informants can get an epistemic reading (indicated by %).[7] Gergel (2009:217,fn.8) notes that the modal *can* "does not generally express epistemic meaning. However, on its negated form, it can arguably have an epistemically flavored reading." The informants who judge (11) as perfectly grammatical on an epistemic interpretation get all three readings, only *split* and *de re* (i.e. readings 2 and 1), or only *split* (i.e. reading 2).

(11) % Stephen Hawking can have made no serious claims about God.

Reading 1: It is possible that S.H. made no serious claims about God.
Reading 2: It is not possible that S.H. made serious claims about God.
Reading 3: There are no serious claims about God for which it is possible that S.H. made them.

Only a very small portion of my informants allows epistemic *can* to license verbal ellipsis with a negative reading, as in (12). Importantly, only the *de re* interpretation is available in that case (again supporting the VPE/NI Generalization).

(12) % Who can have made no serious claims about God? Stephen Hawking can.

Reading 1:	It is possible that Stephen Hawking made no serious claims about God.	YES
Reading 2:	It is not possible that Stephen Hawking made serious claims about God.	NO
Reading 3:	There are no serious claims about God for which it is possible that Stephen Hawking made them.	NO

[7] Some of my informants point out that they can only get an epistemic reading with *could* instead of *can*.

For a sentence containing epistemic *need to* and an object negative indefinite, the judgments of my informants again show quite some variation. Some only get a *de re* interpretation (i.e. only reading 1) for the sentence in (13), while others get readings 1 and 2.

(13) % John needs to have played no video games.[8]
Reading 1: It is necessarily the case that John played no video games.
Reading 2: It is not necessarily the case that John played video games.
Reading 3: There are no video games for which it is necessarily the case that John played them.

A minority of my informants permits the epistemic necessity modal *need to* to license verbal ellipsis, and again, only the *de re* reading (with the modal outscoping the negative indefinite) is allowed. Crucially, this judgment was also obtained from informants allowing readings other then the *de re* interpretation in the non-elliptical sentence. This again corroborates the VPI/NI-Generalization.

(14) % Mary needs to have played no video games and John also needs to.
Reading 1: It is necessarily the case that John played no video games. YES
Reading 2: It is not necessarily the case that John played video games. NO
Reading 3: There are no video games for which it is necessarily the case that John played them. NO

Summarizing, my informants' judgments regarding the scopal possibilities in non-elliptical sentences containing an epistemic modal and an object negative show a considerable amount of variation, and only a small minority of the informants allows epistemic *may, can,* and/or *need to* to license verbal ellipsis with a negative reading. Nevertheless, even from this very limited data set, it is clear that when an epistemic modal licenses verbal ellipsis, only the *de re* interpretation – with the epistemic modal outscoping the object negative indefinite – is allowed (as summarized in the table in (15)). This was also observed in the case of verbal ellipsis licensed by a deontic modal (discussed in sections 2.2 and 2.3 in chapter 3, cf. the overview in table (16)). As such, verbal ellipsis licensed by an epistemic modal substantiates the VPE/NI Generalization established in section 2 of chapter 3. In section 4.1 of chapter 3, the VPE/NI Generalization was accounted for based on the interaction

[8] The percentage sign in (13) is due to the fact that some of my informants can only get a deontic interpretation for *need to*.

between the PF-processes of ellipsis and Fusion Under Adjacency. It was argued at length in chapter 3 that the formation of negative indefinites involves a PF-process, FUA. Ellipsis, which is also a PF-process, blocks the formation of a negative indefinite, accounting for the observation that high scope for a negative indefinite is blocked in verbal ellipsis. The account developed in chapter 3 can be straightforwardly extended to verbal ellipsis licensed by an epistemic modal.

(15) *Overview: epistemic modals licensing VPE*

	epistemic *may, can, need to*	
	full clause	VP-ellipsis
de re allowed	YES	YES
split allowed	YES	NO
de dicto allowed	YES	NO

(16) *Overview: deontic & epistemic modals licensing VPE*

	deontic modal		epistemic modal	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	YES/NO	NO	YES	NO
de dicto allowed	YES/NO	NO	YES	NO

2.2.2 ASPECTUAL AUXILIARIES

For the other epistemic modals, none of my informants allows them to license ellipsis on their own. Verbal ellipsis is possible, though, when not only the epistemic modal precedes the ellipsis site, but also an (aspectual) auxiliary, *have* or *be*. The judgments given by my informants regarding the scopal possibilities in verbal ellipsis result in a very mixed picture. All scope options seem to be possible. Or, more precisely, none of the scopal possibilities seems to be excluded on principled grounds. In what follows, I present my informants' judgments (an analysis is developed in section 2.3).

The epistemic necessity modal *have to* can only scope above an object negative indefinite (i.e. only reading 1 is available). Informants permitting the elliptical counterpart of (17) only allow epistemic *have to* to occur in an ellipsis context when combined with an extra auxiliary (*be* in this case). Only a *de re* interpretation is available for VPE in (17)b. This is unsurprising as the non-elliptical sentence also only has the *de re* reading.

(17) a. % John has to be watching no TV show.[9]
b. % John has to be watching no TV show and Mary also has to be.
Reading 1: In view of the evidence available, it is necessarily the case that John is not watching a TV show. YES
Reading 2: In view of the evidence available, it is not necessarily the case that John is watching a TV show. NO
Reading 3: In view of the evidence available, there is no TV show for which it is necessarily the case that John is watching it. NO

For the relative scope of the epistemic necessity modal *must* and an object negative indefinite, most of my informants only allow the *de re* interpretation (i.e. only reading 1), but some allow both the *de re* and the *split* interpretation (i.e. both reading 1 and reading 2), and still others both the *de re* and the *de dicto* interpretation (i.e. both reading 1 and reading 3).

(18) John must have read no history books.
Reading 1: In view of the evidence available, it is necessarily the case that John did not read history books.
Reading 2: In view of the evidence available, it is not necessarily the case that John read history books.
Reading 3: In view of the evidence available, there are no history books for which it is necessarily the case that John read them.

Epistemic *must* does not license ellipsis by itself: an auxiliary (*have* in this case) also has to precede the ellipsis site. For the speakers who allow (19) with a negative reading, judgments vary. Those speakers only allowing the *de re* interpretation in the non-elliptical clause, also only allow the *de re* reading in the elliptical variant (which is unsurprising). For those speakers permitting both the *de re* and another reading (*split* or *de dicto*), the latter is always allowed in the elliptical clause as well, while the former is only for some speakers.[10]

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[9] Not all informants allow (17)a to have an epistemic reading, which is indicated by the percentage sign.

[10] 'YES' for the three readings in (19), and also in (20) and (21), represents the cumulative judgments of my informants.

(19) % Who must have read no history books? John must have.
Reading 1: In view of the evidence available, it is necessarily the case that John did not read history books. YES
Reading 2: In view of the evidence available, it is not necessarily the case that John read history books. YES
Reading 3: In view of the evidence available, there are no history books for which it is necessarily the case that John read them. YES

The judgments for the relative scope of the epistemic probability modal *should* and an object negative indefinite fall into two groups: either the speakers permit only the *de re* interpretation (i.e. only reading 1), or they allow for all three readings.[11,12] This is the case for both the non-elliptical and the elliptical variants in (20). Epistemic *should* on its own, i.e. unaccompanied by an aspectual auxiliary, does not license VP-ellipsis.

(20) a. USAF customers should have noticed no changes to aircraft quality.[13]
b. % The army should have noticed no changes to aircraft quality and USAF customers also should have.
Reading 1: It is assumed that USAF customers did not notice changes to aircraft quality. YES
Reading 2: It is not assumed that USAF customers noticed changes to aircraft quality. YES
Reading 3: There are no changes to aircraft quality for which it is assumed that USAF customers noticed them. YES

Finally, the universal modal *will* can also get an epistemic probability reading. For the judgments regarding the relative scope of this modal and an object negative indefinite, my informants can once again be divided into two groups. The first only allows for the *de re* reading; the second permits all three readings – both for the non-elliptical sentence and its elliptical counterpart. Direct VPE-licensing by epistemic *will*, not co-occurring with an aspectual auxiliary, is degraded according to most of my informants.

[11] Reading 2 of the sentences in (20) and (21) has a NEG-raising interpretation that is irrelevant for my purposes and that was controlled for.

[12] For the majority of my informants, the other probability modal, *ought to*, can only get a deontic interpretation. Therefore, it is not discussed here.

[13] USAF = United States Air Force. This example is based on an attested sentence, see http://www.flightglobal.com/news/articles/boeing-alenia-part-ways-on-c-27j-final-assembly-talks-323148/

(21) a. John will have given no clues.
b. Who will have given no clues? John will have.
Reading 1: In view of the evidence available, it is probably the case that John did not give clues. YES
Reading 2: In view of the evidence available, it is not probable that John gave clues. YES
Reading 3: In view of the evidence available, there are no clues for which it is probably the case that John gave them. YES

Summarizing, it seems that when an epistemic modal is combined with an extra (aspectual) auxiliary in verbal ellipsis, speakers allow for more scopal possibilities.[14] In the case of an epistemic modal licensing ellipsis on its own, only the *de re* interpretation is allowed (as was the case for deontic modals licensing verbal ellipsis, cf. chapter 3, and here summarized once more in (16)). The *split* and *de dicto* readings become available when an extra aspectual auxiliary (*have* or *be*) accompanies the epistemic modal. A schematic overview of epistemic modals in verbal ellipsis is given in (22).

(16) *Overview: deontic & epistemic modals licensing VPE*

	deontic modal		epistemic modal	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	YES/NO	NO	YES	NO
de dicto allowed	YES/NO	NO	YES	NO

[14] It should be noted that this also applies to the epistemic modals discussed in the previous subsection (2.2.1). If the epistemic modal co-occurs with an aspectual auxiliary, more scope options become available.

(12)' % Who can have made no serious claims about God? Stephen Hawking can have.
(13)' % Mary needs to have played no video games and John also needs to have.

For (12)' and (13)', some of my informants also permit the *de dicto* reading (with the negative indefinite outscoping the modal) next to the *de re* reading (with the modal outscoping the negative indefinite).

(22) *Overview: epistemic modals and VPE*

	epistemic modal		epistemic modal + *have/be*	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	YES	NO	YES	YES
de dicto allowed	YES	NO	YES	YES

It is clear that the scopal possibilities of an object negative indefinite with respect to a modal are different in case ellipsis is directly licensed by the modal (deontic or epistemic) or when the (epistemic) modal co-occurs with an aspectual auxiliary in verbal ellipsis. The next section provides an analysis for this contrast.

2.3 The analysis

When a (deontic or epistemic) modal licenses verbal ellipsis, an object negative indefinite can only get a narrow scope reading with respect to that modal. When an epistemic modal is followed by an aspectual auxiliary (*have/be*) in verbal ellipsis, however, all scopal possibilities (*de re, split,* and *de dicto*) are in principle available. In this section, I show that this follows from the analysis of the VPE/NI Generalization presented in chapter 3, combined with insights from Gergel (2009). I therefore first briefly present some of Gergel's proposals.

2.3.1 GERGEL (2009) ON EPISTEMIC AND DEONTIC MODALS AND VPE

According to Gergel (2009), and as also discussed in McDowell (1987), Cinque (1999), Drubig (2001), and Stowell (2004), epistemic modals generally outscope tense, while tenses can take deontic modals in their scope. For instance, as shown in (23)-(24), the deontic interpretation of *can* allows greater freedom with respect to tense than the epistemic reading. The (epistemic) sentences in (23) only allow "a default interpretation for the time of modal evaluation" (Gergel 2009:60): epistemic modals strongly tend to "anchor to the utterance time rather than falling under the scope of specified temporal operators" (Gergel 2009:172). The deontic modal *can/could* in (24), on the other hand, can anchor to the utterance time (as in (24)a), or it can fall under the scope of the (past) temporal operator (cf. (24)b).

(23) [Gergel 2009:61, (153)]
  a. Jack's wife can't be very rich.
  'It is not possible that Jack's wife is very rich.'
  b. Jack's wife couldn't be very rich.
  'It is not possible that Jack's wife is very rich.'
  * 'It was not possible that Jack's wife was very rich.'

(24) [Gergel 2009:61, (152c-d)]
  a. Max can't go out after dark. (permission at utterance time)
  b. Max couldn't go out after dark. (permission at a past time)

Moreover, Gergel assumes that epistemic modals are always semantically situated above sentential negation, whereas deontic modals tend to scope below negation. An exception to this generalization is deontic *must*, which must take wide scope over negation. Gergel concludes that, in general, epistemic modals scope higher than deontic ones.

Cinque (1999), Drubig (2001), Cormack & Smith (2002), Butler (2003), and Gergel (2003, 2009) attribute these different scopal properties to configurational syntactic properties. That is, the interpretive distinction between epistemic and deontic modals correlates with a structural distinction (Cinque 1999:78). Different functional projections for epistemic and deontic modals are distinguished. Hence, scopal properties are derived from a universal basic syntactic template, in which epistemic modals are located higher than deontic ones. Moreover, epistemic modals (and deontic *must* according to Gergel 2009) occupy a position higher than the syntactic position dedicated to sentential negation and higher than the functional head representing tense. As a result, epistemic modals outscope tense and sentential negation. Cormack & Smith (2002), for instance, take there to be two positions for modals, Modal1 and Modal2, with sentential negation scoping in between them. According to Cormack & Smith, it is lexically specified (and thus idiosyncratic) which modals are merged in Modal1 and which ones in Modal2.[15]

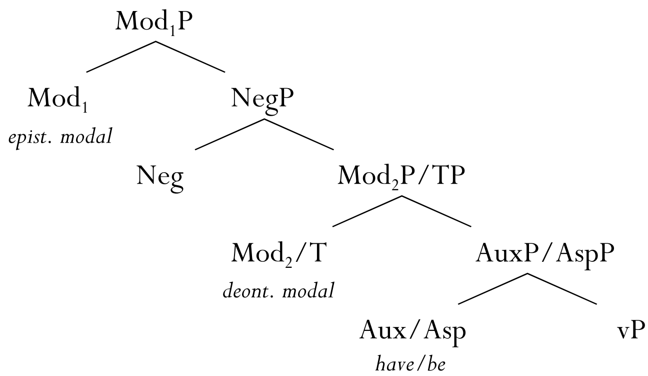
For Gergel (2009:174), "the main modal position is fixed", i.e. I/T, as standardly assumed (cf. section 3.1.1 in chapter 3). He proposes that there are two types of modal projections in English, Mod_1 and Mod_2 (the latter corresponding to T).[16]

[15] For a critical discussion of Cormack & Smith (2002) and Butler (2003), see Iatridou & Zeijlstra (2010).

[16] Gergel (2009) also distinguishes two separate syntactic positions for necessity and possibility modals, with necessity occupying a structurally higher position than possibility (cf. also Cinque 1999; Hollander 1999, Cormack & Smith 2002; Butler 2003). As this distinction is not relevant for my purposes, I gloss over it here.

Epistemic modals occupy Mod$_1$, while deontic ones occupy Mod$_2$/T. Gergel's proposal is schematically represented in (25):

(25)



The scope position of epistemic modals is Mod$_1$, c-commanding and therefore taking scope over TP and NegP. Gergel stresses that the Mod$_1$ position for epistemic modals, although c-commanding TP, is not as high as the CP-domain.[17] Deontic modals are merged in Mod$_2$, which corresponds to T, below the functional projection dedicated to sentential negation. In between Mod$_2$P/TP and vP, other interpretable material, such as aspectual auxiliaries, can be merged.

When it comes to VP-ellipsis, Gergel proposes that the licensor of ellipsis is defined within C_{HL}. Unlike Merchant (2001), who posits that there is an uninterpretable [E]-feature licensing ellipsis, Gergel proposes that ellipsis is licensed by an interpretable and projecting formal feature. In particular, temporality is a formal licensing element: English VP-ellipsis is licensed through the interpretable formal temporal feature [T]. This feature directly c-commands the ellipsis site. Mod$_2$/T, in which deontic modals are merged, is a licensing position. Gergel proposes that there is a [T]-feature in the feature matrix of deontic modals (as well as some epistemic modals, see below), which licenses ellipsis.

Asp (e.g. *have* or *be*) can also license VP-ellipsis. Gergel incorporates a proposal by Demirdache & Uribe-Etxebarria's (2000) and argues that aspectual heads/auxiliaries "accomplish a similar syntactic task as temporal elements [...]. In a simplified account, aspect orders time intervals relative to one another" (Gergel 2009:191). In particular, aspectual auxiliaries carry a [T]-feature in their feature

[17] Gergel's (2009) proposal that ModP, which c-commands a high NegP/PolP, is not part of the CP-domain is in line with the proposal that the high PolP is part of the TP-domain, not the CP-domain (Holmberg 2003, van Craenenbroeck 2010), as discussed in section 3.1.2 of chapter 3.

matrix. Therefore, aspectual heads can also license ellipsis of their sister, vP. Summing up, the licensor for verbal ellipsis is merged either in the functional Aux/Asp-domain or in the Infl/T-domain.

The fact that epistemic modals do not generally license verbal ellipsis is captured as follows. Epistemic modals are merged in Mod_1, a high scopal position. Mod_1 cannot license ellipsis of its sister, as it does not have formal [T]. Some epistemic modals, however, do license ellipsis (in particular, the existential/possibility ones). Gergel proposes that these epistemic modals may be merged lower down (i.e. in Mod_2/T), where they license ellipsis, after which they move on to their scopal position in Mod_1. Similarly, deontic *must* (merged in Mod_2/T) moves on to Mod_1 as it always scopes high, above sentential negation.

2.3.2 The analysis

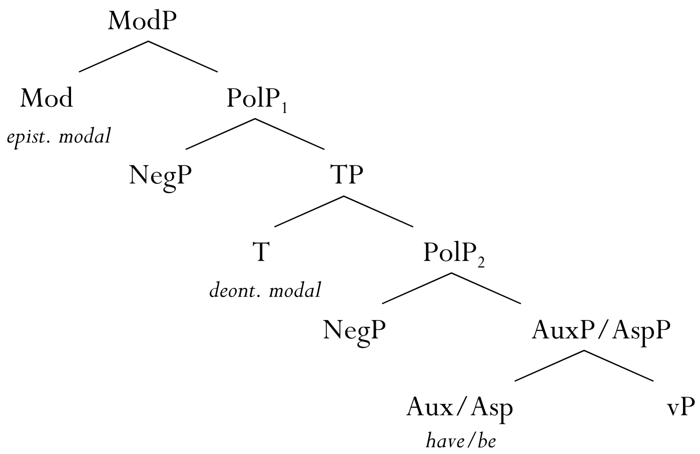
In this section, I first present the account of the relative scope of an object negative indefinite and an epistemic modal in verbal ellipsis licensed by that modal (subsection 2.3.2.1). In particular, I discuss why the negative indefinite only has a narrow scope reading in verbal ellipsis licensed by an epistemic modal. Then, in subsection 2.3.2.2, I provide a proposal for the scopal possibilities of negative indefinites in verbal ellipsis when the epistemic modal co-occurs with an aspectual auxiliary. At the end of that subsection, the analysis is extended to deontic modals co-occurring with an auxiliary in verbal ellipsis.

2.3.2.1 Epistemic modals licensing VPE

As discussed in subsection 2.3.1, it is widely assumed that epistemic modals occupy a position higher than deontic modals in the clausal structure. Gergel (2009) proposes that epistemic modals that do not license VP-ellipsis are merged in Mod_1, while those that do are merged in Mod_2/T. The epistemic modals merged in Mod_2/T move to Mod_1 later on. Gergel's proposal is problematic in light of the data discussed in section 2.2. If he is right that epistemic modals that do not license ellipsis on their own are merged in Mod_1, this predicts that these modals should always outscope negation. According to Gergel, epistemic modals indeed always scope above negation. It was observed in section 2.2, however, that when epistemic modals combine with an object negative indefinite, they do not always outscope (the negative component of) the negative indefinite.[18] This was the case both in non-elliptical clauses and in verbal ellipsis licensed by an epistemic modal + *have/be*.

I propose to combine Gergel's structure (cf. (25)) with the structure suggested in chapter 3: there are two PolPs, one above and one below TP (cf. (26)).

(26)



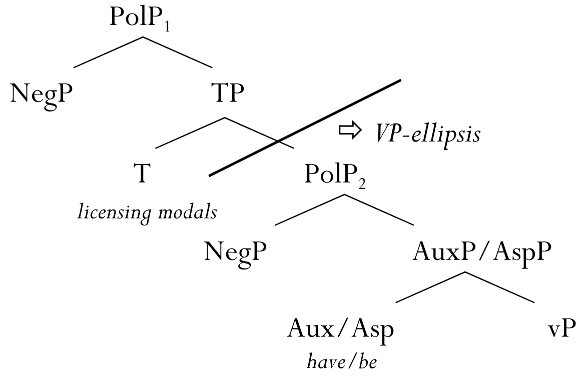
I propose that all modals are merged in T, that is, both deontic and epistemic ones. Verbal ellipsis licensing by a modal (whether deontic or epistemic) only happens in T: in this case, verbal ellipsis is ellipsis of the complement of T (see also section 4 of chapter 3). Mod>Neg epistemic modals, i.e. epistemic modals that always outscope sentential negation and (the negative component of) negative indefinites are an exception to the rule that all modals are merged in T. Instead, they are merged directly in the high projection dedicated for epistemic modals, Mod_1. Here, they can only scope above negation. If this is indeed the case, it is predicted that these Mod>Neg epistemic modals never license ellipsis by themselves (as ellipsis licensing by modals always happens in T). This prediction is borne out.

If a modal (whether deontic or epistemic) merged in T is an ellipsis licensor, it licenses ellipsis of the complement of T, $PolP_2$. It was discussed at length in section 4 of chapter 3 that the formation of an object negative indefinite with high scope is blocked in this case. As (the D-head of) the object DP is sent off as part of the verbal ellipsis site, Fusion Under Adjacency between D and a high Neg head cannot occur. Narrow scope of the negative indefinite is allowed, though, because FUA occurred before ellipsis of the complement of T. Therefore, an object negative indefinite can

[18] Also recall that von Fintel & Iatridou (2003) contest the claim that epistemic modals scope above sentential negation.

only scope below the modal in verbal ellipsis licensed by a modal in T. Indeed, verbal ellipsis licensed by an epistemic modal only allows for the *de re* interpretation (cf. section 2.2.1 of this chapter), as was the case for verbal ellipsis licensed by a deontic modal (cf. sections 2.2 and 2.3 of chapter 3).

(27)



Thus, the account presented in chapter 3 for the VPE/NI Generalization (which was originally mainly based on observations regarding deontic modals), straigtforwardly carries over to epistemic modals. As such, the analysis also captures the limited scopal possibilities of an object negative indefinite with respect to an epistemic modal in verbal ellipsis.

2.3.2.2 Aspectual auxiliaries

In section 2.2.2, it was shown that when an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis, speakers allow for more scopal possibilities. When a (deontic or epistemic) modal directly licenses ellipsis, only the *de re* interpretation is allowed. The *split* and *de dicto* readings become available when an extra aspectual auxiliary (*have* or *be*) accompanies the epistemic modal.

As argued in the previous subsection, epistemic modals are merged in T. When merged in T, the epistemic modal either licenses ellipsis of the complement of T, or not (for the former case, see the previous subsection). I discussed in section 2.2.2 that verbal ellipsis is also possible when both an epistemic modal and an aspectual auxiliary immediately precede the ellipsis site. In this case, verbal ellipsis targets the complement of the Aux/Asp head (vP in (27)). If, however, it is Aux/Asp itself that directly licenses ellipsis (immediately sending off its complement vP to PF), it is predicted that high scope of an object negative indefinite will be unattested, contrary to fact (cf. section 2.2.2). This is because the D-head of the indefinite object will be sent off to PF as part of the verbal ellipsis site before NegP is merged as the specifier of $PolP_1$. Recall (cf. chapter 3) that it is only when NegP is merged as the specifier of a polarity phrase that the Neg-head is spelled out and Neg and D can undergo Fusion Under Adjacency. When NegP is merged in $PolP_1$, however, the indefinite head D has already been shipped off to PF. Fusion Under Adjacency between Neg and D is not impossible: high scope of the negative indefinite over the modal is blocked. This is, however, not the case. Given all this, note also that if the low polarity phrase $PolP_2$ is situated above AuxP/AspP, as indicated in the structure in (27), the D-head and Neg will *never* be able to undergo FUA, thus blocking even the narrow scope reading of the object negative indefinite, again contrary to fact. Therefore, I conclude that the Aux/Asp does not license ellipsis of its complement on its own.[19]

I incorporate Gergel's (2009) proposal that – after merger in T – all epistemic modals have to move to a higher position, Mod (where they for instance outscope tense, cf. subsection 2.3.1).[20] I propose that is only after the movement of the epistemic modal to Mod that the aspectual head Aux/Asp elides its complement. This is illustrated in (28). The dashed line is meant to indicate the timing of ellipsis, i.e. the complement of Aux/Asp is elided after movement of the epistemic modal to Mod.

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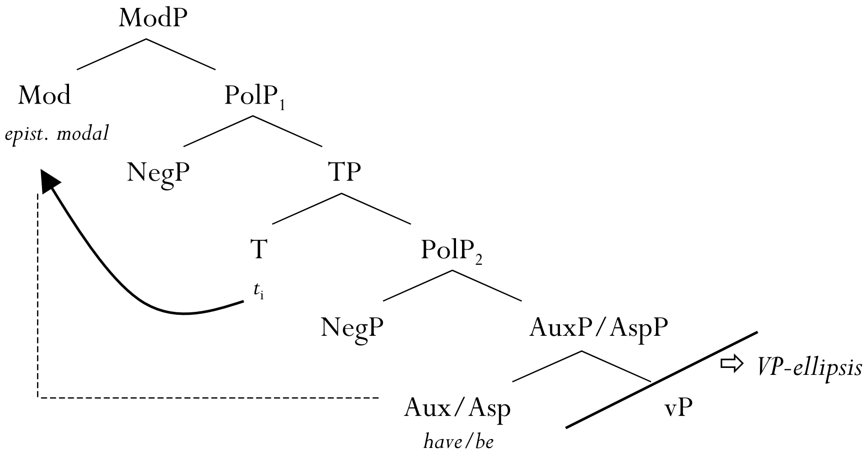
[19] In my analysis, the aspectual auxiliary (*have/be*) is not itself the licensor of ellipsis (unlike in Gergel's 2009 account). Like Gergel, Thoms (2011) also proposes that (aspectual) auxiliaries are ellipsis licensors. More precisely, Thoms argues that VP-ellipsis is licensed by overt movement of modals and (aspectual) auxiliaries. Modals move to their surface position T and ellipsis deletes the complement of T. An aspectual auxiliary moves to an aspectual head, and this overt movement licenses ellipsis of the complement of that head. As such, verbal ellipsis targets the complement of (the surface position of) the aspectual auxiliary.

As discussed in the main text, however, these analyses are incompatible with the data presented in section 2.2.2. See also Aelbrecht (2009), who argues that a vP-ellipsis site in English is not directly licensed (i.e. not immediately sent to off PF) by low functional heads such as Voice and Asp on the basis of extraction data.

[20] Note that if all epistemic modals have to move from T to Mod (across $PolP_1$), Neg>Mod epistemic modals should not exist, as the epistemic modal will always be able to outscope negation in a functional projection PolP below Mod. This is confirmed in my research regarding epistemic modals and negative indefinites. My informants either allow a narrow scope reading for the negative indefinite (Mod>Neg), or ambiguity (narrow, split, and/or wide). Only Neg>Mod readings (split and/or de dicto) were not attested for any of the epistemic modals.

(28)



If this is the case, NegP is always merged into the structure (either as the specifier of $PolP_2$ or $PolP_1$) – and therefore always spelled out – before verbal ellipsis sends off the complement of Aux/Asp to PF. That is, the head Neg and the D-head of the indefinite object can always undergo Fusion Under Adjacency before verbal ellipsis occurs. Verbal ellipsis does not bleed the formation of a negative indefinite. Therefore, an object negative indefinite should be able to scope either below or above an epistemic modal in a verbal ellipsis site that is immediately preceded by an epistemic modal and an aspectual auxiliary. It was shown in section 2.2.2 that all scopal possibilities are indeed allowed in this case.[21]

[21] Andrés Saab (p.c.) wonders whether the idea that 'ellipsis bleeds FUA' in the formation of negative indefinites could be rephrased in terms of 'ellipsis blocks lexical insertion' along the following lines. Saab's reasoning starts out from the *Ellipsis-Morphology Generalization* in (i):

(i) *Ellipsis-Morphology Generalization* [cf. Saab & Zdrojewski 2010; Lipták & Saab 2012]

For every morphological operation MO that affects the domain of X, where X contains the target of MO, MO cannot apply in X if X is subject to ellipsis.

Moreover, he supposes the abstract situation in (ii), where X and Y form a syntactic dependency (a chain) and the lexical insertion rules realizing that dependency *must* apply on X *or* Y. (ii) is assumed to underly the state of affairs in (iii), e.g. X would be (negative) Pol and Y would be (indefinite) D.

(ii) $\{X, Y\} \rightarrow \{X_{/x/}, Y\}$ or $\{X, Y_{/y/}\}$

(iii) a. John can *not* offer help.
b. John can offer *no* help.
c. * John can *not* offer *no* help.
d. * John can ~~*not*~~ offer ~~*no*~~ help.

Given (i), lexical insertion of the indefinite object is not allowed in verbal ellipsis; the only remaining option then (given (ii)) is that the polarity head outside the ellipsis site is phonetically realized. (*continued on the next page*)

2.3.2.3 Extending the proposal: deontic modals and aspectual auxiliaries

In the previous subsection, incorporated Gergel's (2009) proposal that – after merger in T – all epistemic modals have to move to a higher position (Mod). Gergel does not argue, however, that deontic modals have to move to a higher position. Deontic modals are merged in T and stay there. I argued that deontic modals in T license ellipsis of their complement (cf. section 4 in chapter 3 and section 2.3.2.2 of this chapter). Deontic modals can, however, also co-occur with an aspectual auxiliary in verbal ellipsis. An example is given in (29), where the deontic universal modal *should* (expression deontic necessity, i.e. obligation) and an aspectual auxiliary (*have*) precede the verbal ellipsis site. In this case, the complement of an Aux/Asp head (*have*) is elided.

(29) a. Saying Weiner should resign is saying that Clinton should have too.[22]
b. Saying Weiner should resign is saying that Clinton should have ⟨~~resigned~~⟩ too.

In the previous subsection, I proposed that the complement of Aux/Asp is only elided after movement of the epistemic modal to Mod. This explained the availability of more scopal possibilities when an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis.

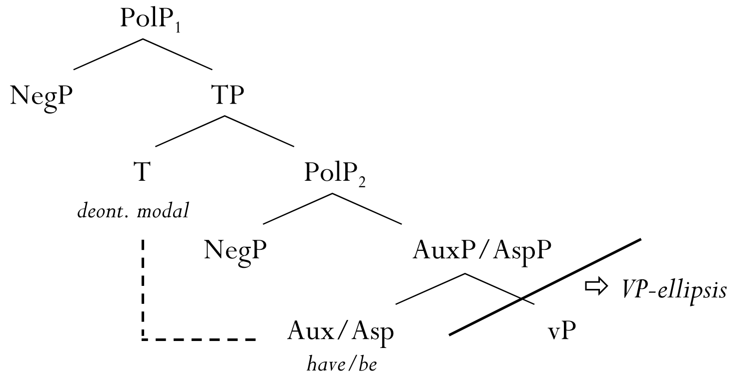
Deontic modals, however, do not move to a higher position: they are merged in T and stay there (unlike epistemic modals). Deontic modals may license ellipsis of their complement in T, or not. If they do not, the complement of Aux/Asp may be elided. As deontic modals do not move, I propose that the complement of Aux/Asp is elided after merger of the deontic modal in T, cf. the structure in (30).

This would explain the lack of high-scoping negative indefinites in verbal ellipsis: only the *not*-option is available. If, on the other hand, the polarity head is also subject to ellipsis, then there is simply no lexical realization of Pol at all (as e.g. in the clausal cases).

The reasoning here supposes that in English, the dependency Pol-D *must* be realized, either as *not* (lexically realizing Pol) or *no* (lexically realizing D) (at least, when the polarity head is not itself part of the ellipsis site). The cases of co-licensing of verbal ellipsis (by an epistemic modal and an aspectual auxiliary) discussed in this section present a problem for this proposal. In these cases, high scope of the object negative indefinite (related to Pol_1) is possible. D is not lexically realized (there is no lexical insertion in DP, which is part of the ellipsis site), but neither is Pol_1. This violates the condition in (ii), but nevertheless, grammatical cases are attested. At first sight, it thus seems that there is more going on than merely 'lack of lexical insertion'. I leave a precise exploration of this issue to further research.

[22] http://www.democraticunderground.com/discuss/duboard.php?az=view_all&address=433x686207

(30)



If this is the case, we make a prediction regarding the interaction of deontic modals and object negative indefinites in verbal ellipsis. As shown in (30), verbal ellipsis in the case of deontic modals, even when in combination with an aspectual auxiliary, always happens before the high polarity head Pol_1 is merged. That is, verbal ellipsis in the case of deontic modals always happens before a NegP can be merged as the specifier of $PolP_1$ (and, hence, before NegP is spelled out). Therefore, if NegP is the specifier of $PolP_1$, the D-head of an indefinite object and Neg can never undergo Fusion Under Adjacency in verbal ellipsis. This is because the D-head has already been shipped off to PF as part of the verbal ellipsis site before NegP is merged into the clausal structure. If NegP is the specifier of $PolP_2$, on the other hand, NegP is merged (and spelled out) before verbal ellipsis takes place. In that case, the D-head and Neg can undergo FUA before the D- head is sent off as part of the ellipsis site. Thus, it is predicted that, even if verbal ellipsis is licensed by a deontic modal in combination with an aspectual auxiliary *have/be* (i.e. if verbal ellipsis targets the complement of Aux/Asp), only a narrow scope interpretation for the negative indefinite should be available. This prediction is borne out. As I show in the examples below, only a *de re* reading is allowed in verbal ellipsis licensed by a deontic modal in combination with an aspectual auxiliary.

For both the non-elliptical and the elliptical sentence in (31), my informants only permit the *de re* interpretation.[23]

[23] Reading 2 is only allowed with a NEG-raising interpretation.

(31) a. The candidate ought to have read no history books.
b. Who ought to have read no history books? The candidate ought to have.
Reading 1: The desirable situation is one in which the candidate has read no history books (e.g. to apply for the position). YES
Reading 2: It is not desirable/recommended for the candidate to have read history books. NO
Reading 3: There are no history books that the candidate should have read. NO

For the non-elliptical sentence in (32), my informants allow the *de re* and the *split* interpretation (i.e. reading 1 and 2). In the elliptical variant (33), however, only the *de re* reading is available.

(32) John needs to have played no video games.
Reading 1: It needs to be the case that John has played no video games (…or he'll be in big trouble).
Reading 2: It's not required for John to have played any video games.
Reading 3: There are no video games that John is required to have played.

(33) Who needs to have played no video games? John needs to have.
Reading 1: It needs to be the case that John has played no video games (…or he'll be in big trouble). YES
Reading 2: It's not required for John to have played any video games. NO
Reading 3: There are no video games that John is required to have played. NO

For the non-elliptical sentence in (34), my informants allow either only the *de re* interpretation (i.e. only reading 1) or both the *de re* and the *split* interpretation (i.e. reading 1 and 2). In the elliptical variant (35), again only the *de re* interpretation is available.

(34) The candidate may have had no academic qualifications.
Reading 1: It is permitted that the candidate has had no academic qualifications.
Reading 2: It is not permitted that the candidate has had any academic qualifications.
Reading 3: There are no academic qualifications that the candidate is permitted to have had.

(35) Who may have had no academic qualifications? The candidate may have.
Reading 1: It is permitted that the candidate has had no academic qualifications. YES
Reading 2: It is not permitted that the candidate has had any academic qualifications. NO
Reading 3: There are no academic qualifications that the candidate is permitted to have had. NO

These observations confirm that the analysis proposed in this section is on the right track. When epistemic and deontic modals license ellipsis on their own (in T), ellipsis of the complement of T only allows a narrow scope reading for a negative indefinite. When the modals are accompanied by an aspectual auxiliary in verbal ellipsis, the scopal possibilities vary with the type of modal. In the case of epistemic modals, all scopal readings are in principle available; in the case of deontic modals, only the *de re* interpretation remains allowed. This is explained if the ellipsis site (the complement of Aux/Asp) is sent off before merger of Pol_1 in the case of deontic modals, but only after completion of $PolP_1$ in the case of epistemic modals.

To conclude, an empirical overview of deontic and epistemic modals (with and without *have/be*) and the available scope possibilities is given in (36):

(36) *Overview: epistemic & deontic modals and VPE*

	epistemic modal		epistemic modal + *have/be*	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	YES	NO	YES	YES
de dicto allowed	YES	NO	YES	YES

	deontic modal		deontic modal + *have/be*	
	full clause	VP-ellipsis	full clause	VP-ellipsis
de re allowed	YES	YES	YES	YES
split allowed	YES/NO	NO	YES	NO
de dicto allowed	YES/NO	NO	YES?	NO

3 Dynamic modals and negative indefinites in ellipsis

This section presents an empirical overview of the interaction between two dynamic modals (*want to* and *dare to*), negative indefinites, and verbal ellipsis. The facts concerning dynamic modals are presented in section 3.1. It is shown that only a narrow scope reading is available for an object negative indefinite in verbal ellipsis licensed by a dynamic modal, irrespective of its scopal possibilities in a non-elliptical clause. This observation again confirms the VPE/NI Generalization in (2) that an object negative indefinite cannot scope out of a VPE-site. When a dynamic modal is part of a VPE-site licensed by dummy *do,* however, all scopal possibilities become available. In section 3.2, I propose that these observations follow straightforwardly from the account developed in this dissertation if the dynamic modals under scrutiny involve a biclausal structure.

3.1 The data

It has been proposed that there is third class of modals, the dynamic ones, that cannot be subsumed under the deontic/epistemic distinction. Dynamic modality ascribes properties such as (physical or mental) ability, volition/willingness, and desire to the subject of the sentence (cf. Palmer 1986; Brennan 1993; Warner 1993; Wurmbrand 2003). As such, unlike deontic or epistemic modality, dynamic modality is "participant-internal" (Ziegeler 2006). Traditionally, the modal *want* is considered dynamic: it "always expresses the subject's inherent desire" (Aelbrecht 2009:22).

In this section, I discuss two dynamic modals, *want to* and *dare to*.[24,25] As it turns out, the scopal possibilities in verbal ellipsis differ when the ellipsis is licensed by the modal (*want to* or *dare to*) or by the dummy auxiliary *do*.

When it comes to the dynamic modal *want to* and its scope relative to an object negative indefinite, the judgments of my informants show a considerable amount of variation. Some informants allow all three readings, others only allow the *split* reading (i.e. reading 2), and others only allow the *de re* interpretation (i.e. reading 1).

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[24] As most of my informants prefer *dare to* to *dare*, and only *dare to* licenses ellipsis, I only consider *dare to* here.

[25] In the case of *want to*, I again controlled for the NEG-raising reading in the paraphrase of reading 2.

(37) John wants to buy no Japanese cars.
Reading 1: John has the desire to buy no Japanese cars.
Reading 2: There's a lack of desire on John's part to buy Japanese cars.
Reading 3: There are no Japanese cars for which John has the desire to buy them.

Consider verbal ellipsis now. Two different cases were tested: VP-ellipsis licensed by *want to* and by dummy *do* (cf. (38) and (39), respectively). The results are not identical. For the elliptical sentence in (38), my informants only allow the *de re* interpretation (i.e. reading 1). This observation confirms the VPE/NI Generalization in (2). When it comes to the elliptical sentence in (39), the judgments of my informants can be divided into two groups: either they only allow the *de re* reading, or they allow all three interpretations.

(38) % Who wants to buy no Japanese cars? John wants to.
Reading 1: John has the desire to buy no Japanese cars. YES
Reading 2: There's a lack of desire on John's part to buy Japanese cars. NO
Reading 3: There are no Japanese cars for which John has the desire to buy them. NO

(39) Who wants to buy no Japanese cars? John does.
Reading 1: John has the desire to buy no Japanese cars. YES
Reading 2: There's a lack of desire on John's part to buy Japanese cars. YES/NO
Reading 3: There are no Japanese cars for which John has the desire to buy them. YES/NO

Exactly the same pattern can be found in the case of *dare to*. For the non-elliptical sentence in (40), some informants allow all three readings, while others only allow the *split* interpretation (i.e. only reading 2).

(40) John dares to watch no horror movies.
Reading 1: John is courageous enough to watch no horror movies.
Reading 2: John is not courageous enough to watch horror movies.
Reading 3: There are no horror movies such that John is courageous enough to watch them.

Again, for verbal ellipsis, two different cases were tested: VP-ellipsis licensed by *dare to* and by dummy *do* (cf. (41) and (42), respectively). The results are once again not identical. For the elliptical sentence containing *dare to*, the informants only allow the *de re* interpretation (i.e. reading 1). This supports the VPE/NI Generalization (2). For the elliptical sentence with licensor *do,* the judgments can once more be divided into two groups: either only the *de re* reading is permitted, or all three interpretations are.

(41) % Who dares to watch no horror movies? John dares to.
Reading 1: John is courageous enough to watch no horror movies. YES
Reading 2: John is not courageous enough to watch horror movies. NO
Reading 3: There are no horror movies such that John is courageous enough to watch them. NO

(42) % Who dares to watch no horror movies? John does.
Reading 1: John is courageous enough to watch no horror movies. YES
Reading 2: John is not courageous enough to watch horror movies. YES/NO
Reading 3: There are no horror movies such that John is courageous enough to watch them. YES/NO

An overview for the two dynamic modals under scrutiny is given in (43):

(43) *Overview: dynamic modals and VPE*

	full clause	VPE licensed by dyn. mod.	VPE licensed by *do*
de re allowed	YES	YES	YES
split allowed	YES	NO	YES/NO
de dicto allowed	YES	NO	YES/NO

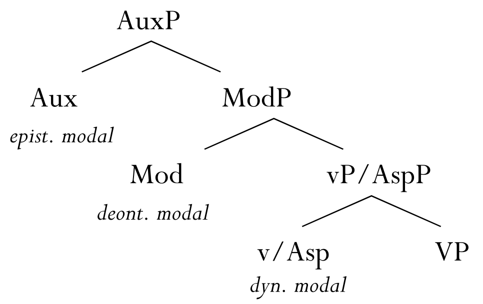
Thus, more scopal possibilities are attested when *want to* and *dare to* are part of the ellipsis site than when these two modals are the licensor of ellipsis, cf. (44). This observation strengthens the idea that the size of the ellipsis site plays a role in determining which scopal relationships are allowed (cf. the Clausal/Verbal Generalization in chapter 3). If the ellipsis site is larger, more scopal options are available.

(44) a. John wants to / dares to ⟨ ~~...~~ ⟩.
b. John does ⟨ ~~want to / dare to ...~~ ⟩.[26]

3.2 The analysis

Like Gergel (2009) and many others (cf. section 2.3.1), Wurmbrand (2003) takes epistemic modals to occupy a position that is structurally higher than the position in which deontic modals are merged. She also proposes that dynamic modals are generated in a projection below those hosting epistemic and deontic modals: in the voice/aspect head of the clause (v/Asp). This is shown in the tree structure in (45). One of Wurmbrand's motivations for this connection between dynamic modals and voice is certain competition effects between these modals and other voice elements (e.g. the passive auxiliary, in that dynamic modals are incompatible with the passive).

(45)



[cf. Wurmbrand 2003:183, (139)]

Wurmbrand (2003:169) considers dynamic modals to be "semi-functional categories which [...] assign a θ-role to the subject" (as well as a θ-role to the infinitival complement).[27] She takes dynamic modals to involve a control structure (cf. also Aelbrecht (2009) for Dutch *willen* 'want'). In this biclausal structure, the matrix head V combines with an infinitival complement and the PRO-subject of the infinitive is coindexed with the subject that gets its theta role from the dynamic modal.[28,29]

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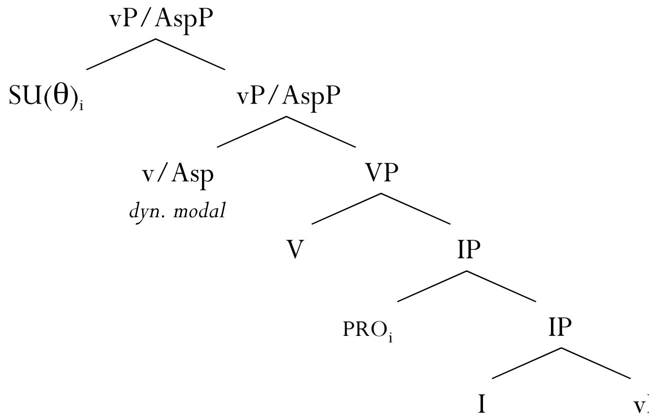
[26] As such, many of the data in this dissertation fit into a broader set of distinctions between 'high' (clausal) and 'low' (verbal) ellipses (cf. Merchant 2007, 2011).

[27] Ijbema (2002) considers Dutch *willen* 'want' to be a lexical head (V) rather than a (semi-)functional one.

[28] Note that the dynamic modals *want* and *dare* are followed by the infinitival marker *to*. It has been proposed that this infinitival marker is the phonological realization of the infinitival T head (cf. Akmajian et al. 1979; Stowell 1982; den Besten 1989; van Gelderen 1996, 1997).

(46)



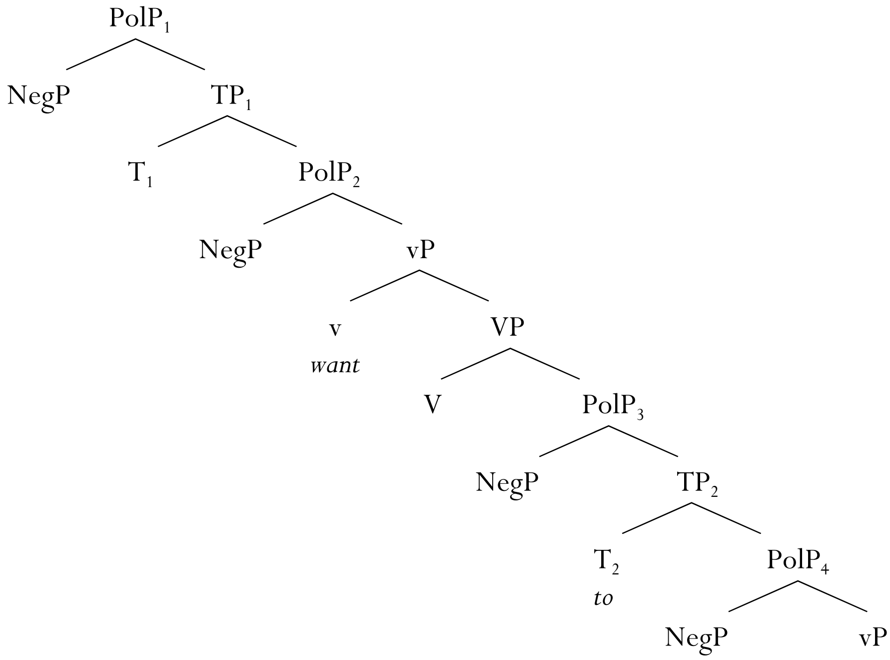
[cf. Wurmbrand 2003:183, (139) and 2003:193, (152a)]

If dynamic modals involve a biclausal structure, i.e. if more than one sentence/clause is present, there are more potential locations for sentential negation (as also noted by den Dikken et al. 1997 and Iatridou & Sichel 2011). I take there to be two PolPs, one above and one below TP, in both the main and the embedded clause. The biclausal structure for *want to* and *dare to* is given in (47): the structure consists of a matrix clause and an embedded clause, both hosting their own polarity projections. [30]

[29] Den Dikken et al. (1997) also argue for a biclausal analysis of *want (to)*-type verbs, whereby *want* takes a clausal CP-complement. Whatever the exact structure for *want to* and other dynamic modals, it seems safe to conclude that these modals involve a biclausal structure, i.e. the dynamic modal combines with a clausal complement (whether CP or IP/TP). Here – following Wurmbrand (2003) – I take the embedded clause to be an IP/TP, with a polarity projection c-commanding the TP.

[30] In (47), *want* is merged in *v*. It is not very crucial for my purposes whether this is Wurmbrand's (2003) voice/aspect head, or whether it is a little *v* head below aspect and voice (cf. for instance Thoms 2011). It could even be the case that *want* is base generated in V as a lexical head (instead of a semi-functional or functional one, cf. also footnote 27).

(47)



The idea that there are two positions for negation in the embedded clause as well, is confirmed by the data in (48)-(49): these sentences show that negation can occur on either side of the infinitival marker *to*, the realization of T.

(48) [Aelbrecht 2009:182, fn.137, (ia)]
She wanted to not miss her train for once.

(49) [den Dikken et al. 1997:26, (64b)]
Max wants not to have any visitors.

The sentences in (48)-(49) have a low scope reading for negation: the sentence in (49) is "read as asserting Max's desire to have no visitors" (den Dikken et al. 1997:26), and the sentence in (48) is understood as asserting her desire to catch her train. These data confirm that the infinitival clause, c-commanded by the dynamic modal, contains two positions for sentential negation.

Apart from (48)-(49), with negation linearly following *want*, a sentence like (50) is available as well, with negation linearly preceding *want*:

(50) [cf. den Dikken et al. 1997:27, (65)]
Max doesn't / does not want to have any visitors.

Although the sentence in (50) can also get a NEG-raising reading (i.e. the one also associated with the sentence in (49)), there is an alternative reading available as well, with negation scoping above the modal. In this case, the sentence is understood "as asserting a lack of desire on Max's part to have visitors" (den Dikken et al. 1997:26).

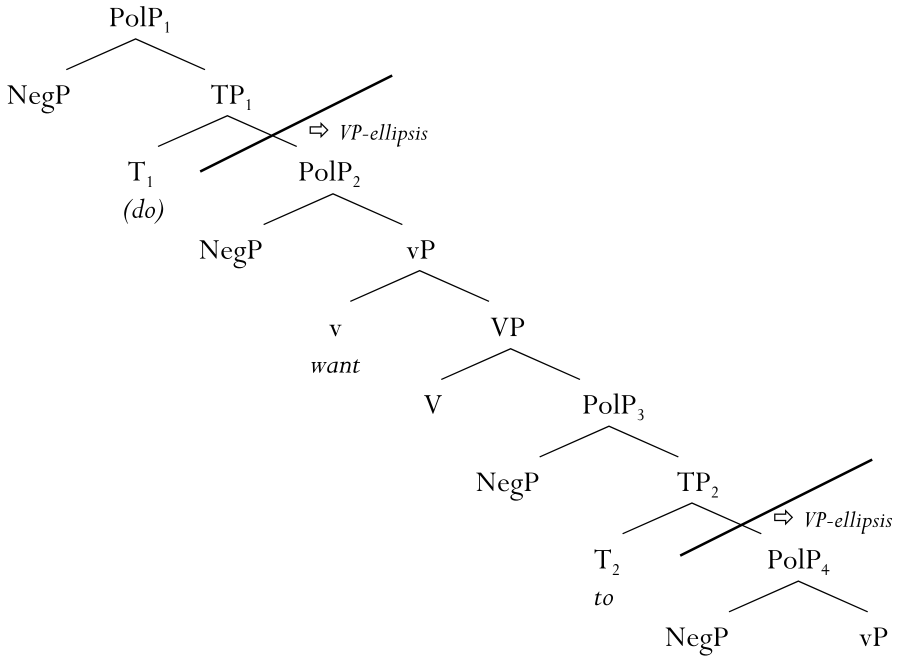
Recall (cf. earlier in this chapter and chapter 3) that I take the difference between a narrow scope reading and a high scope reading (whether split or wide) for a negative indefinite to correspond to the functional projections available to the interpretation of sentential negation. In the case of a narrow scope reading of the negative indefinite, PolP is situated below the modal, in the case of a high scope reading of the negative indefinite, PolP is situated above the modal. Also recall that the formation of negative indefinites involves a PF-process, Fusion Under Adjacency between the indefinite D-head and a Neg-head.

In the biclausal structure in (51), both T_2 and T_1 can license ellipsis.[31] If T_2 triggers ellipsis of its complement ($PolP_4$), only narrow scope of the negative indefinite is possible, because (the D-head) of the object DP is elided before it can be fused with Neg in a polarity phrase above the dynamic modal in matrix *v*. If ellipsis is licensed by (dummy *do* in) T_1, on the other hand, all scopal relations are predicted to be possible: D and Neg can fuse in $PolP_4$, $PolP_3$, and $PolP_2$ before ellipsis occurs. The first two instances of Fusion Under Adjacency will result in narrow scope of the negative indefinite, but Fusion in $PolP_2$ will result in high scope (whether split or wide) of (the negative part of) the negative indefinite with respect to modal *want*.[32]

[31] It has been argued that the infinitival marker *to* (here in T_2) is a licensor of English verbal ellipsis by Zagona (1982, 1988a,b), Johnson (2001), and Aelbrecht (2009), amongst others.

[32] Note that the fact that *want to* and *dare to* can be part of a verbal ellipsis site, with ellipsis licensed by dummy *do*, can be considered support for the idea that these modals are actually merged lower in the structure than 'true' (deontic and epistemic) modals.

(51)



This analysis, however, only deals with the judgments of the group of speakers allowing for all scopal possibilities when ellipsis is licensed by *do*. There was a second group of speakers, though, who only allowed the *de re* reading in this case. It could be that these speakers do not have PolP_2 available in the matrix clause, but only PolP_1. If this is the case, high scope of the negative indefinite (outscoping the modal *want*) will be blocked in verbal ellipsis licensed by *do* in T_1, as Fusion cannot occur after the D-head has been sent off as part of the ellipsis site (the complement of T_1). When NegP is merged in PolP_1, the D-head is no longer available for Fusion Under Adjacency with Neg (as it has been elided).[33,34]

[33] Alternatively, one could abandon the analysis of *do*-support as a Last Resort insertion in T (cf. e.g. Chomsky 1957; Pollock 1989). Thoms (2011), for instance, proposes that *do*-support is raising of little *v*. Suppose *do* is merged in (or can occupy) a head below T and Pol_2, but above *want* (e.g. Aux/Asp above *v*). If the second group of speakers requires *do* to license ellipsis in this position, high scope of the negative indefinite (outscoping *want*) will again be blocked.

[34] If this analysis for dynamic modals and their scope relative to object negative indefinites is on the right track, it seems that Fusion Under Adjacency between a Neg-head and a D-head can extend across clausal boundaries. The D-head of the object DP is part of the embedded infinitival clause, while the NegP headed by the Neg-head can be merged as the specifier of one of the PolPs of the matrix clause, from where it outscopes the dynamic modal. That is, (the structure responsible for) Fusion Under Adjacency is not subject to a (clausal) locality condition. This seems to contradict Iatridou & Sichel's (2011:617) claim that an object negative (*continued on the next page*)

4 Conclusion

In this chapter, it was shown that an object negative indefinite in a verbal ellipsis site only has a narrow scope interpretation if the ellipsis is licensed by a modal, whether deontic, epistemic, or dynamic. It was argued that the analysis developed in chapter 3 can be extended to all types of modals.

When an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis and when a dynamic modal is part of a verbal ellipsis site licensed by *do,* however, all scopal options become available. In this chapter, I argued that co-licensing (by the epistemic modal and aspectual auxiliary) of verbal ellipsis after movement of the epistemic (from T to Mod) accounts for the former observation. Co-licensing by a deontic modal and an aspectual auxiliary only allows for narrow scope of a negative indefinite, however, given that, unlike epistemic modals, deontic modals do not move (they remain in their merge position, T). The scopal facts regarding dynamic modals were accounted by considering *want to* and *dare to* to involve a biclausal structure.

indefinite "is licensed by negation (or a negation position) within its clause" (although they only consider *that*-clauses, while the clauses under scrutiny here are infinitival, a non-trivial distinction).

Johnson (2011a:25, fn.22) also notes that the proposal that 'adjacent elements' should be defined as 'the linearization algorithm puts nothing in between these elements' might "allow fusion across great distances: as long as there is a derivation which, at some point, allows the two terms which are fused to be part of independent roots in the way that multidominant structures are, those terms could fuse. [...] There may be a real problem here". It might, however, be the case that the observations regarding dynamic modals, negative indefinites, and verbal ellipsis show that nothing in principle prevents Fusion Under Adjacency to span great distances.

CHAPTER 5

QUANTIFIER RAISING & ELLIPSIS

1 Introduction

1.1 Scope-shifting operations

It is well known that simplex clauses with more than one quantificational expression can receive an ambiguous interpretation.[1] For instance, the sentence in (1) has two readings. According to Bruening (2001:233), *a different boy* can be interpreted contextually (i.e. *different* with respect to some contextually salient boy or set of boys), in which case this boy has been seen by Jill in all houses. Alternatively, boys can vary with houses. In the former interpretation, the existential quantifier *a* outscopes the universal quantifier *each*. In the latter, the universal takes scope over the existential.

(1) [cf. Bruening 2001:233, (1a)]
Jill saw a different boy in each house. $(\exists > \forall)$, $(\forall > \exists)$

Based on such scope interactions of quantified expressions, it has been proposed that the hierarchical order of quantifiers can be changed through a Quantifier Raising operation (QR, cf. Chomsky 1977; May 1977, 1985).[2] QR creates a new scope

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[1] This section presents a brief sketch of sentences that involve multiple quantification and of the scope-shifting operations that have been proposed to deal with this phenomenon. It is by no means my intention to give a complete picture and analysis of all possible scopal interactions. I refer the reader to the literature mentioned in this section for extensive discussion.

[2] Sag (1976:108) talks about an optional "scope jumping" rule. May (1977, 1985) assumes that a quantifier phrase must always undergo QR. The now common idea is that scope-shifting operations are optional (cf. Fox 2000; Sauerland 2000b; Miyagawa 2006, 2011). See section 3.2, though, on obligatory QR.

relation by raising one quantifier above (i.e. to a position c-commanding) the scope position of another quantifier. The operation of QR is invisible ('covert') in English, i.e. it does not affect phonology.

In May's (1977) original conception, QR is an adjunction operation, adjoining all quantificational constituents (arguments and adjuncts) to TP.[3] As such, the operation of QR is very free. It reorders quantifiers by moving and adjoining them in any order. By permitting quantifiers to adjoin in any order, ambiguity is derived. To obtain the two readings of (1), QR can either apply first to the direct object and then to the object of the preposition, as in (2)a, or vice versa, as in (2)b.[4] As such, a scopally ambiguous sentence is associated with two syntactic representations, "each of which is mapped to a distinct semantic interpretation" (Johnson & Tomioka 1998:185).

(2) [cf. Bruening 2001:233, (1b)-(1c)]

a. [$_{TP}$ each house$_2$ [$_{TP}$ a different boy$_1$ [$_{TP}$ Jill saw t_1 in t_2]]]. ($\forall > \exists$)

b. [$_{TP}$ a different boy$_2$ [$_{TP}$ each house$_1$ [$_{TP}$ Jill saw t_2 in t_1]]]. ($\exists > \forall$)

It is very much debated in the literature whether the final landing site of QR is indeed situated in the TP area, as May proposed, or in the vP area. Consider the sentence in (3), which contains two quantified phrases, one in subject position and one in object position.

(3) [Cecchetto 2004:347, (1)]

A technician inspected every plane. ($\exists > \forall$), ($\forall > \exists$)

This sentence is scopally ambiguous.[5] It has an interpretation in which one and the same technician inspected all planes, but also one in which, if there are fifty planes, there can be fifty different technicians who inspected them (this reading can be brought out more clearly by adding *different* before *technician*). The first situation results from a configuration in which the subject existential quantifier c-commands

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[3] To be precise, the clausal node targeted by QR in May's (1977, 1985) original proposal is called 'S'.

[4] May (1985) adjusts this idea and proposes that an ambiguous sentence is associated with only one syntactic representation. He introduces the *Scope Principe,* which states that when two quantifiers mutually c-command (or govern) each other, they can take arbitrary relative scope (May 1985:33). That is, two adjoined quantifiers can be interpreted in either scopal order.

[5] As noted by Sag (1976:58), some consider a sentence like (3) to be semantically unambiguous: the two situations described are just "two different ways of satisfying [the] truth conditions" of (3). I do not adopt this stance here.

and takes scope over the object quantifier (the surface scope reading, ∃ > ∀). The second interpretation corresponds to the inverse scope configuration: the object universal quantifier c-commands and takes scope over the subject existential quantifier (∀ > ∃). As already discussed, to obtain the inverse scope reading, May (1977, 1985) proposes that the QRed object is adjoined to TP, above the TP-adjoined QR-position of the subject, as in (4).[6]

(4) $[_{TP}$ every plane$_2$ $[_{TP}$ a technician$_1$ $[_{TP}$ t_1 inspected t_2]]]. (∀ > ∃)

Alternatively, it has been proposed that ambiguous scope readings come about through the interaction of (short) QR and Quantifier Lowering (QL)/reconstruction (cf. Hornstein 1995; Johnson & Tomioka 1998; Fox 2000; Johnson 2000; Takahashi 2003; among many others). While QR raises a QP from its surface position, QL/reconstruction restores a QP into one of the positions it moved from.[7] When QR raises a QP to a position asymmetrically c-commanding the position of a lowered/reconstructed QP, the inverse scope reading is obtained. These alternative proposals state that the object QP can be adjoined in (i.e. undergo QR to) the periphery of the verb phrase, in a position c-commanding the subject's base position (Spec,vP).[8] In that case, lowering/reconstruction of the QP subject to its original vP-internal position induces inverse scope, cf. (5).[9]

(5) $[_{TP}$ ____ $[_{vP}$ every plane$_1$ $[_{vP}$ a technician inspected t_1]]]. (∀ > ∃)

[6] Alternatively, the object QP could undergo QR to a TP-adjoined position above the surface position of the subject in Spec,TP, cf. (i):

(i) $[_{TP}$ every plane$_2$ $[_{TP}$ a technician$_1$ T $[_{vP}$ t_1 inspected t_2]]]. (∀ > ∃)

[7] Chomsky (1995, section 4.7.4) takes QL to involve adjunction of the QP to a position that c-commands its trace position. Most proposals in the literature take QL/reconstruction to be an operation that restores a quantifier to (one of) its underlying position(s), though. According to some (cf. Johnson & Tomioka 1998; Johnson 2000), it is impossible for a subject to lower/reconstruct into the position in which its theta-role was assigned. The subject is then lowered to some intermediary position in the middle field of the clause.

Others (cf. Diesing 1992; Hornstein 1995; Bruening 2001), however, argue that a subject QP *can* be restored in its base position, where it got its theta-role (the specifier of vP). I adopt the latter proposal in this chapter.

[8] The idea that quantified phrases can adjoin to VP is already present in May (1985), where he modifies his (1977) proposal that all QPs adjoin to S/TP. Similarly, Sag (1976:108) notices "that quantifiers that are inside VP in shallow structure [i.e. surface structure – TT] are given what is essentially 'VP-scope' […]."

[9] For evidence that a subject quantifier needs to be interpreted in a lower position (i.e. not in its surface position Spec,TP) in order to fall within the scope of an object quantifier, see Hornstein (1995), Johnson & Tomioka (1998), Johnson (2000), Sauerland & Elbourne (2002), Miyagawa (2006, 2011). It should also be noted that the first three of these authors do not consider the shorter movement operation raising the object above the base position of the subject to be QR (see footnote 11).

In any case, some kind of scope-shifting operation (SSO) is needed to generate the inverse scope reading.[10] As noted by Cecchetto (2004:348), this scope-shifting mechanism "is usually conceived as a transformation that takes place in the syntactic derivation and that gives the 'right' input to the semantic component".[11]

1.2 Overview of this chapter

As already briefly discussed in section 6.3 of chapter 3, the operation Quantifier Raising can escape a verbal ellipsis site in English. This chapter provides an analysis of this observation in the cyclic, multidominant framework adopted in this dissertation. Johnson (2010a, 2011a) argues that QR is the result of Remerge of the NP-part of a quantificational phrase and Fusion between two adjacent heads, Q and D. In chapter 3, though, I argued that verbal ellipsis blocks Fusion Under Adjacency (and as such the formation of negative indefinites). Therefore, the fact that verbal ellipsis does not block QR seems surprising at first sight. In this chapter, I argue that this fact follows naturally if (i) one adopts the framework of cyclic Spell-Out and linearization I introduced in chapter 2 and implemented in chapter 3, and (ii) QR always targets vP (as a final or intermediate landing site).

This chapter is organized as follows. In the next section, I present the data showing that verbal ellipsis does not block QR. In section three, I discuss my

[10] The umbrella term 'scope-shifting operations' (SSOs), capturing both QR and QL/reconstruction, is used in Fox (1995b, 2000).

[11] In the literature, there are proposals that try to to reduce QR to A-movement for Case and agreement reasons to a position like Spec,AgrOP (cf. Takahashi 1993; Hornstein 1994, 1995; Pica & Snyder 1995; Schmitt 1995; Kitahara 1996). This analysis is primarily proposed in light of the very similar locality conditions on QR on the one hand and A-movement on the other. See Kennedy (1997), Johnson & Tomioka (1998), Johnson (2000), Bruening (2001), Tang (2001), Surányi (2002), and Cecchetto (2004) for problems with such accounts.

That said, the observation that QR differs from other types of A'-movement in being very local does raise problems for A'-movement accounts of QR (for an overview, see e.g. Hornstein 1995; Kennedy 1997; Fox 2000; Johnson 2000; Cecchetto 2004; Wurmbrand 2011a; Moulton to appear). To derive the locality conditions on QR, some authors have proposed to assimilate QR to scrambling (cf. Diesing 1992; Beck 1996; Johnson & Tomioka 1998; Johnson 2000). Although there is a parallelism between QR and schrambling, these proposals do "not say which grammatical principle is responsible for this common pattern" (Cecchetto 2004:353, fn.6). Miyagawa (2006, 2011) aims to offer a unified analysis, discussed briefly in section 3.2.2.

It seems that the locality of QR can be captured by adopting Fox's (1995b, 2000) ideas that principles like *Scope Economy* and *Shortest Move* restrict the length of QR considerably. Fox's proposals are discussed and adopted further on in this chapter.

For an implementation of the locality of QR in a phase-based framework, deriving the locality conditions from the interaction between Fox's economy principles and the PIC, see for instance Cecchetto (2004), Miyagawa (2006, 2011), and Wurmbrand (2011a,b).

multidominant, cyclic analysis of QR in English. Subsection 3.1 introduces Johnson's (2010a, 2011a) proposal that QR involves Remerge and Fusion. Subsections 3.2 and 3.3 discuss proposals that QR always targets vP (e.g. Heim & Kratzer 1998; Fox 2000; Legate 2003; Miyagawa 2006, 2011; Akahane 2008). In subsection 3.4, I incorporate the proposals from subsections 3.1, 3.2, and 3.3 into the cyclic Spell-Out and linearization model from chapters 2 and 3 and show how it follows that QR can escape verbal ellipsis. Section four concludes.

2 QR can escape a verbal ellipsis site: The data

In the previous section, I discussed how two quantificational expressions in an English simple clause can display ambiguous scope relative to each other and how scope-shifting operations like QR can give rise to this scopal ambiguity. This section focuses on the interaction between quantificational expressions in verbal ellipsis contexts. I present data showing that the operation of QR is not blocked in verbal ellipsis. These data concern QR of an object QP over a subject QP (subsection 2.2), QR of an object QP over sentential negation (subsection 2.3), and QR of an object QP over a modal (subsection 2.4). Before discussing the data, I introduce Fox's (2000) principle of Scope Economy in subsection 2.1. Fox argues that verbal ellipsis provides evidence for Scope Economy, as is also discussed in this chapter.

2.1 Scope Economy

The application of scope-shifting operations like QR and QL/reconstruction needs to be constrained. Consider sentences like those in (6):

(6) [cf. Sag 1976:57-60, (1.3.1)-(1.3.6)]
  a. Someone hit everyone.
  b. Bill hit everyone.

Sag (1976:58) notes that "someone who uttered [(6)a] would have told the truth in at least two situations. First, if there was some individual <u>a</u> who hit every individual in the relevant domain of discourse (with the possible exception of himself), and secondly, if everyone (in the relevant domain of discourse) was hit by someone, but not necessarily by the same person." That is, the sentence in (6)a is scopally ambiguous, with the first situation reflecting surface scope and the second one corresponding to inverse scope. Note, though, that (6)b, contains only one quantified expression, as the R-expression *Bill* is not quantificational. In this sentence, the inverse scope relation resulting from raising the QP *everyone* over the R-expression *Bill* is equivalent to the surface scope relation. Fox (2000:20) calls sentences that are semantically equivalent under their different scopal relationships "scopally uninformative".

Fox (2000) proposes that scopally uninformative sentences are restricted to surface scope. He argues that operations like QR are restricted by principles of (interpretation-sensitive) Economy (or, more broadly, by principles of 'least effort'). According to Fox (1995b, 2000), Economy considerations require each step of (possibly successive-cyclic) QR to be motivated.[12] The position of a quantificational expression can only be changed when this operation yields a semantic effect; it must give rise to an interpretation that would otherwise not be available. The principle of *Scope Economy* – also independently proposed in Tada (1993) and Reinhart (1994, 1995/2006, 1997a) – is given in (7):[13]

(7) *Economy condition on scope shifting (Scope Economy)*
Scope-shifting operations (SSOs) cannot be semantically vacuous.
[Fox 2000:3, (1)]

It follows from Scope Economy that reversing the relative scope of two quantified expressions is only possible in a situation where inverse scope is semantically distinct from surface scope. Thus, in (6)b, QR cannot apply to the object quantifier *everyone* for the purpose of taking scope over the subject *Bill*: because of Scope Economy, there can be no QR when it does not affect the semantics. (6)b is therefore restricted to surface scope. QR can, however, apply in (6)a because it has an interpretational effect: inverse scope is not semantically equivalent to surface scope in this sentence.

Fox (2000) provides compelling arguments for Scope Economy based on verbal ellipsis constructions. These are discussed further on in this chapter.

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[12] That is, quantifier movement must be motivated either by scope shifting or for independent reasons (such as type considerations). For the latter case, see the discussion in section 3.2.1.

[13] As noted by Fox (2000:28), "we would like to know how the cognitive system in which an SSO applies (syntax) determines whether or not an application of an SSO is semantically vacuous". He suggests "that there is a very narrow class of formal logical properties that certain words have": these properties alone "are accessible to syntax" and "determine whether or not an SSO can apply". I refer the reader to Fox (2000), especially section 2.5, for details and discussion.

2.2 Two QPs in verbal ellipsis

This section discusses how two quantificational DPs interact scopally in verbal ellipsis contexts. The data are well known from the literature, especially Sag (1976), Williams (1977), Hirschbühler (1982), Fiengo & May (1994), and Fox (1995b, 2000). The crucial contrast is the one in (8)b-(8)c:

(8) [cf. Fox 2000:4, (9a)-(10a); Fox 2000:30, (20)-(21)-(22e)]

a. Some boy admires every teacher. ($\exists > \forall$), ($\forall > \exists$)

b. Some boy admires every teacher. Mary does ⟨~~admire every teacher~~⟩, too. ($\exists > \forall$), ($*\forall > \exists$)

c. Some boy admires every teacher. Some girl does ⟨~~admire every teacher~~⟩, too. ($\exists > \forall$), ($\forall > \exists$)

The non-elliptical sentence in (8)a is scopally ambiguous in isolation. When this sentence serves as the antecedent for verbal ellipsis in (8)b, however, it no longer admits scopal variation. Inverse scope is impossible in this example; only surface scope remains. Sag (1976) and Williams (1977) took sentences like (8)b to show that ellipsis blocks inverse scope altogether, and indeed, when only considering the contrast between (8)a and (8)b, one might be tempted to conclude that QR of the object universal quantifier (or QL/reconstruction of the subject existential quantifier) is blocked in verbal ellipsis contexts. Crucially, though, Hirschbühler (1982) and Fox (2000) have demonstrated that this conclusion is false. As a sentence like (8)c shows, inverse scope is possible when (8)a antecedes verbal ellipsis. Thus, there is no general ban on inverse scope in verbal ellipsis constructions and verbal ellipsis does not as a rule block QR (or QL).

The authors mentioned above have proposed various accounts to deal with the contrast in (8)b-(8)c. I adopt Fox's (2000) proposal, which states that the contrast is due to the fact that the elliptical sentence in (8)c is scopally informative, while the one in (8)b is not (i.e. it is semantically identical under surface and inverse scope, see above, section 2.1).

According to Fox (2000), the lack of inverse scope in (8)b is due to a violation of Parallelism. It is well known that ellipsis is subject to a parallelism condition, which says that the ellipsis site and its antecedent must be parallel in form (cf. Lasnik 1972;

Sag 1976; Tancredi 1992; Chomsky & Lasnik 1993). Fox formulates the principle of Parallelism as in (9): [14]

(9) *Parallelism (a consequence of)*
In an ellipsis construction, the scope-bearing elements in the antecedent clause β_A must receive scope parallel to that of the corresponding elements in the ellipsis sentence β_E. [Fox 2000:31; Fox 2000:32, (24)]

The elliptical sentence in (8)b contains only one quantificational expression (the object universal quantifier *every teacher*); the subject *Mary* is an R-expression. Therefore, inverse scope and surface scope are not interpretively distinct, and this sentence is scopally uninformative. Because of Scope Economy (cf. section 2.1), the elliptical sentence does not allow scope shifting (QR or QL), as this operation would be semantically vacuous. Only surface scope is allowed. Parallelism requires the antecedent to have a parallel scopal interpretation. Because of Parallelism, then, there can be no scope-shifting operation in the antecedent either, hence the unambiguous scope relation. Only when the antecedent is interpreted with a surface scope reading, verbal ellipsis is possible. As such, the scopally uninformative elliptical clause disambiguates its antecedent: it restricts an otherwise ambiguous sentence to one scope.

In (8)c, on the other hand, both the antecedent and the elliptical clause are semantically distinct under surface and inverse scope. Therefore, Scope Economy allows scope-shifting operations. Both surface scope and inverse scope readings are allowed in (8)c, provided antecedent and ellipsis site both exhibit the same scopal relation (because of Parallelism).[15] If the elliptical clause involves inverse scope, the antecedent must as well (and vice versa): "ambiguities do not multiply in ellipsis [...] contexts" (Fox 2000:32).[16] That is, the sentence in (10) either means that there is one particular guard and one particular policeman who are standing in front of all of the buildings (surface scope in both β_A and β_E) or that the guards and the policemen

[14] The authors mentioned note that Parallelism also holds in constructions that involve deaccenting (i.e. phonological reduction). Given that deaccenting is not a topic of this dissertation, the discussion of Parallelism here only considers ellipsis.

[15] Crucial in all this is that a scope-shifting operation is never licensed to satisfy Parallelism. See (Fox 2000:Ch.3) for discussion.

[16] There are certain circumstances under which β_E need not be directly isomorphic to β_A. Fox (2000) shows that in these cases, a sentence β_A' – which follows (together with reasonable presuppositions) from β_A – can be accommodated. As long as β_A' is isomorphic to β_E, Parallelism is satisfied. I gloss over this issue here. See Fox (2000:Ch.3) for discussion.

can vary with the buildings (inverse scope in both β_A and β_E). It cannot mean that there is one particular guard who is standing in front of all of the buildings and the policemen vary with the buildings (surface scope in β_A and inverse scope in β_E).

(10) [Hirschbühler 1982]
One guard is standing in front of every building, and one policeman is, too.

Based on these interactions between Scope Economy and Parallelism, Fox derives the following generalization:

(11) *The Ellipsis Scope Generalization*
In an ellipsis construction a quantifier can have nonlocal scope only if local scope will yield a different interpretation, both in the sentence that includes the elided VP and in the sentence that includes the antecedent VP.
[Fox 2000:135, (60)]

At first sight, this means that QR can escape a verbal ellipsis site, as long as Fox's Ellipsis Scope Generalization is obeyed. However, all of the cases discussed so far involve scopal interactions between two quantificational DPs. As was discussed in section 1.1, inverse scope in sentences like these could in theory be the result of two different derivations: either (i) QR of the object to the TP area past the position of the subject or (ii) a combination of QR of the object to the vP area past the base position of the subject and QL/reconstruction of the subject to its base position Spec,vP.[17]

In section 4 of chapter 3, it was proposed that verbal ellipsis targets the complement of T. The landing site of short QR (the vP area) is thus contained in the ellipsis site. On the basis of the cases discussed in this section, it can therefore not be established conclusively whether or not QR can escape an ellipsis site. If the object QP raises to the vP-area (and the subject lowers/reconstructs into its base position Spec,vP), the QRed object QP is part of the verbal ellipsis site. Only if it can be established that a QP has undergone QR to (at least) the TP-area (i.e. outside of T's complement), it can be substantiated that QR can escape a verbal ellipsis site. The

[17] As noted by Fox (2000:46, fn.35), there have been attempts to eliminate QR from the grammar altogether, reducing all scopal ambiguities to QL/reconstruction. The most relevant objection to these approaches (in the current context) is that "it is not clear how they would account for ambiguities other than those involving two arguments of a verb. For example, it is not clear how they would deal with the scopal ambiguity of object quantifiers and heads such as modals, negation, and attitude verbs […]." Like Fox and many others, I stick to the idea that QR does indeed exist.

two options are schematically represented in (12), with ellipsis indicated by angled brackets:

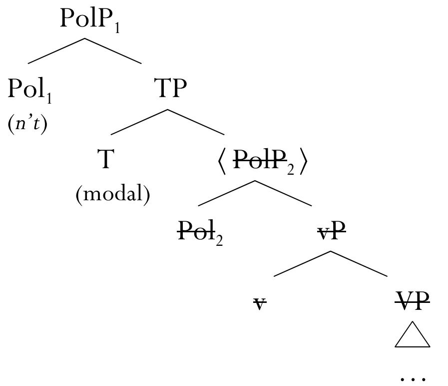
(12) a. $[_{TP}\ OB_{QP2}\ [_{TP}\ SU_{QP1}\ T\ \langle\ \cancel{[_{vP}\ t_1\ V\ t_2]]}\ \rangle\ ]$

b. $[_{TP}\ \_\_\_\_\ T\ \langle\ \cancel{[_{vP}\ OB_{QP1}\ [_{vP}\ SU_{QP}\ V\ t_1]]}\ \rangle\ ]$

Hence, we have not yet established whether or not QR can escape a verbal ellipsis site.

A sentence can, however, also contain a quantificational DP and another scope-bearing logical term such as an intensional verb (like *seem*), a modal operator (like *can* or *should*), or sentential negation. In that case, scopal ambiguities arise between quantified phrases and these other operators. The following two subsections concentrate on sentential negation *n't* and modals respectively. Consider the structure in (13):

(13)



Given that modals license verbal ellipsis and that they are considered to be base generated in T (cf. section 3 in chapter 3 and section 2 in chapter 4), a quanticational DP outscoping a licensing modal in verbal ellipsis must have undergone QR to a position in the TP area (or higher), that is, outside of the ellipsis site. When it comes to sentential negation, I consider the clausal structure to contain two PolPs, one below and one above TP, that is, one inside and one outside the verbal ellipsis site (cf. sections 3 and 4 of chapter 3). Recall that I argued that the contracted negation *n't* realizes the high head Pol_1 (cf. section 3.1.3 of chapter 3). Thus, if a quantified DP outscopes contracted negation *n't* in verbal ellipsis, it must have QRed to a position above Pol_1, i.e. it must have escaped the ellipsis site.

2.3 An object QP and sentential negation *n't* in verbal ellipsis

This section considers the interaction between a quantificational object DP and the sentential negator *n't* in verbal ellipsis. Recall that the contracted negation *n't* realizes the high head Pol_1 above TP (cf. section 3.1.3 of chapter 3).

As shown in (14), sentences containing these two quantificational elements are ambiguous: (14)a can have both the interpretation in (14)b and (14)c. As noted by Johnson & Tomioka (1998:187), in a situation where Jill answered half of the questions, (14)a would be true under the interpretation (14)b, but not under the interpretation (14)c. (14)b corresponds to the surface scope reading, (14)c to the inverse scope reading.

(14) [cf. Johnson & Tomioka 1998:186, (5)]
a. Jill didn't answer two thirds of the questions on the exam.
$(\neg > {}^{2}/_{3})$, $({}^{2}/_{3} > \neg)$
b. Jill answered less than two thirds of the questions on the exam.
c. Jill left two thirds of the questions unanswered.

Similarly, the sentence in (15), with sentential negation *n't* and the quantifier *many* in the object DP, "can report that the number of questions Gary didn't answer is great (*many of the questions* has scope wider than *not*) as well as deny that Gary answered many questions (*many of the questions* has scope narrower than *not*)" (Johnson 2000:191).

(15) [cf. Johnson 2000:191, (13)]
Gary didn't answer many of the questions on the exam.
$(\neg >$ *many*$)$, $($*many* $> \neg)$

A similarly ambiguous example, with the verb *give*, comes from Sauerland (2000b:4):

(16) [cf. Sauerland 2000b:4, (5)]
She didn't give me many dolls. $(\neg >$ *many*$)$, $($*many* $> \neg)$

The same goes for a sentence containing *n't* and an object DP with the quantifier *almost everything*. The sentence in (17) can assert that there is almost nothing I have read (*almost everything* has scope wider than negation) or it can deny that I have read almost everything (*almost everything* has scope narrower than negation). Johnson (2000:192) shows that these interpretations are distinct by considering the situation in which I have read everything: "In that (remarkable) situation, [(17)] is false on the first (object wide-scope) interpretation, but true under the second (object narrow-scope) interpretation."

(17) [cf. Johnson 2000:192, (14a)]
I haven't read almost everything.
($\neg$ > *almost everything*), (*almost everything* > $\neg$)

The availability of the inverse scope interpretation in (14)-(17) shows that QR can bring object quantifiers past the position of sentential negation realized by *n't* (see, for instance, Johnson & Tomioka 1998; Johnson 2000; Fox 2000; Sauerland 2000b; Bruening 2001).[18]

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[18] This contradicts the claim in von Fintel & Iatridou (2003:183-184) that "Scope-QR cannot easily cross sentential negation [nor] a negative quantifier". This claim is based on examples like those in (i):

(i) [von Fintel & Iatridou 2003:183-184, (40)-(42)]
a. John didn't touch every dessert. (*? $\forall > \neg$)
b. Nobody touched every dessert. (*? $\forall > \neg$)

As noted by Iatridou & Zeijlstra (2010:324) and Iatridou & Sichel (2011:623-624), however, in the following sentence, the negative DP cannot outscope the higher universal quantifier, i.e. (ii) does not give rise to an inverse reading:

(ii) [Iatridou & Zeijlstra 2010:324, (31)]
Everybody touched no dessert. (*? $\neg\exists > \forall$)

According to Iatridou & Zeijlstra (2010:324), the example in (ii) shows that the relative scopal ordering of the negative DP and the universal quantifier remains frozen. It does not necessarily show that *no dessert* is forbidden to raise across the subject QP: the subject could be forced to raise across the object again. Combining (ii) with (i), it seems that the relative scope of the universal quantifier *every* and negation (whether sentential negation or a negative DP) is fixed, restricted to surface scope. In any case, this restriction to surface scope does not seem to extend to the relative scopal ordering of negation and quantifiers like *many, two thirds of* or *more than three.* As shown in example (17), even adding *almost* to the universal quantifier *every* allows it to outscope negation. I therefore take Fox's argumentation to be valid and the examples in this footnote to concern independent issues (cf. "[t]he more general question as to what blocks the inverse reading in [(i)-(ii)] remains an open question" (Iatridou & Zeijlstra 2010:324)).

Another – related – observation can be found in Fox (2000:144, fn.5). In the examples in (iii) – originally from Jackendoff (1972) – there seems to be a preference for wide scope of *many* over negation in (iiia), while in (iiib), negation prefers to have wide scope relative to *many.*

(iii) [Fox 2000:144, fn.5, (i)]
a. Many arrows didn't hit the target.
b. The target wasn't hit by many arrows. (*continued on the next page*)

Having established that a quantificational object can undergo QR to outscope sentential negation *n't*, let us consider what happens in verbal ellipsis contexts. Fox (2000:45-46) discusses the following sentences:

(18) [cf. Fox 2000:45, (46)]
  a. Danny Fox doesn't speak more than three languages.
    (($\neg$ > *more than 3*) *true*, (*more than 3* > $\neg$) *true*)
  b. Ken Hale doesn't speak more than three languages.
    (($\neg$ > *more than 3*) *false*, (*more than 3* > $\neg$) *true*)

Fox (2000:45) notes that "[a]lthough both sentences are ambiguous, there is a difference between them that has to do with our knowledge of the world, and that helps us in conducting an important experiment. The sentence in [(18)a] is true irrespective of the relative scope of the object and of negation. The sentence in [(18)b], by contrast, is true only if the object has wide scope over negation. We can thus embed [(18)] in ellipsis constructions and use its truth value to determine which of its readings are available." In (19), the sentences in (18) are embedded in verbal ellipsis contexts:

(19) [cf. Fox 2000:45, (46)]
  a. Danny Fox doesn't speak more than three languages. Rob Pensalfini does. (*true*)
  b. Ken Hale doesn't speak more than three languages. Rob Pensalfini does. (*false*)
  c. Ken Hale doesn't speak more than three languages. Rob Pensalfini doesn't as well. (*true or false*)

The contrast between (19)a and (19)b, the former true, the latter false, shows that the antecedent must be interpreted with the sentential negation outscoping the quantified object, i.e. with its surface scope reading. The ellipsis site in (19)a and (19)b is scopally uninformative, as it contains only one quantificational element (*more than three languages*): there is no negation and no other quantificational DP. Therefore, Scope Economy will block scope-shifting operations in the elliptical

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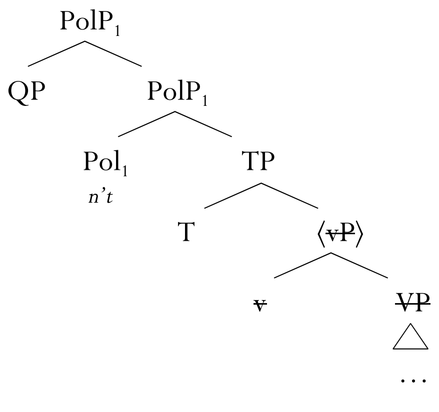
As noted by Fox, these examples "demonstrate that overt movement affects interpretive preferences. However, they do not demonstrate that overt movement yields interpretations that would be unavailable otherwise. Given the availability of covert scope-shifting operations, both sentences in [(iii)] are ambiguous." In the same footnote, Fox also notes that there "might be additional constraints on specific types of quantifiers".

clause. Parallelism will then block SSOs in the antecedent as well, resulting in the sentence only having a surface scope reading.

In (19)c, on the other hand, the sentence containing the ellipsis site is scopally informative, as it contains two quantificational elements (*more than three languages* and sentential negation *n't*). The antecedent is scopally informative as well. Scope Economy will hence allow for a scope-shifting operation giving rise to the inverse scope reading, as long as Parallelism is obeyed. Given that negation cannot lower (cf. Iatridou & Zeijlstra 2010; Iatridou & Sichel 2011), this scope-shifting operation can only be QR. As none of Fox's principles block QR, the question that concerns us now is whether the quantificational object can indeed raise to outscope the sentential negation. The fact that (19)c is ambiguous (it is either true or false) shows that both the surface and the inverse scope reading are available and hence that the object QP can undergo QR to scope above the negation.

Importantly, as discussed in section 3.1.3 of chapter 3, the contracted sentential negation *n't* always and only realizes the high polarity head Pol_1. This means that QR of the object QP needs to target a position above this head (e.g. at least adjoining to PolP_1) in order for the QP to c-command and outscope the negation in Pol_1. Pol_1 is situated above T, the licensor of verbal ellipsis (section 4.1.1 of chapter 3). Given all this, we can conclude that the landing site of QR is outside of the ellipsis site (the complement of the licensor T). This is illustrated in the (simplified) structure in (20). Thus, the example in (19)c shows that QR can escape a verbal ellipsis site, i.e. that verbal ellipsis does not block QR.

(20)



2.4 An object QP and a modal in verbal ellipsis

It is well known that scopal ambiguities arise between quantified phrases and modals. An example is given in (21):

(21) [cf. Johnson 2000:192, (14b)]
I can believe every one of Will's claims. (*can* > ∀), (∀ > *can*)

The sentence in (21) can assert that for every one of Will's claims, there is a possibility of my believing it (*every* has scope wider than *can*) or it can report that there is a possibility that I will find all of Will's claims believable (*every* has scope narrower than *can*). Johnson (2000:192) illustrates that these are distinct interpretations in the following way: "It could be, for instance, that I find each of Will's claims individually plausible, but know that together they are inconsistent. Inconsistency is a belief buster for me, so in this situation [(21)] will be true on its object wide-scope interpretation, but not its object narrow-scope interpretation." As such, the ambiguity of sentence (21) shows that an object quantificational DP can gain wider scope than the modal *can*. Hence, objects can undergo QR to a position above the modal. It was argued in section 3 of chapter 3 and section 2 of chapter 4 (cf. also Johnson 2000:193) that modals are base generated and interpreted in T. Thus, QR of the object QP must target a position at least as high as TP.[19]

Let us take a look at a case of verbal ellipsis where the antecedent contains an object QP and a modal, and verbal ellipsis is licensed by that same modal. Consider the non-elliptical sentence in (22) and its elliptical counterpart in (23):

(22) [Suppose someone wants to give you a present, gives you a list, and says:]
You can order every item on the list.

Reading 1: The person is very generous; you are allowed to order all items on the list. (*can* > ∀)

Reading 2: You will receive a present, but the present has to be one of the items on the list. For every item that is on the list, though, you are allowed to choose it. That is, you are allowed to choose whatever item you like from the list. (∀ > *can*)

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[19] The modal *can* in (21) has an epistemic possibility reading. In section 2.3 of chapter 4, I proposed that epistemic *can* is merged in T, after which it moves further on to a higher head Mod. Thus, the object QP undergoes QR to a position at least as high as TP, and potentially even higher than Mod.

(23) [Suppose someone wants to give you and John a present, gives you a list, and says:]
You can order every item on the list and John can too.

To the extent that the inverse scope reading ($\forall$ > *can*) is available in the non-elliptical sentence for my informants, it is also available in the elliptical one.[20]

As pointed out by one of my informants, the sentence in (22) can more easily get two readings when used in a different context.[21] If *you* in the sentence in (22) is interpreted as generic 'one', then the inverse scope reading becomes readily available. Consider the sentence in (22) with *you* interpreted as a generic. This sentence can for instance be uttered as customer information regarding the purchasing of band merchandise on a website. In this situation, there are two readings available:[22]

(24) a. There is nothing to prevent a customer from ordering every single item off the list if (s)he so desires. (*can* > $\forall$)
b. The website is making a claim about the fact that all the items on the list are in stock, and hence each and every one is available to be ordered. ($\forall$ > *can*)

Taking this into consideration, let us also put the elliptical clause in a 'customer context':[23]

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[20] Most of the speakers I consulted have some trouble with the inverse scope reading ($\forall$ > *can*) in both the non-elliptical and the elliptical sentences in (22) and (23). This is presumably due to the fact that *You can order any item on the list*, with free choice *any*, is the preferred way of expressing this reading, which could be an interfering factor.

[21] Thanks to Rachel Nye (p.c.) for the suggestion and for discussing this. All conclusions drawn here are of course my responsibility.

[22] The readings of *can* seem to differ somewhat in (22) vs. (24). In (22), the speaker allows the addressee to do something. In (24), it is the circumstances that allow the addressee to do something: no reference is being made to any particular source of permission. In both cases, however, the permission is put on the addressee by an external force (the speaker, circumstances of a certain kind, …), i.e. the source of modality is 'participant-external'. As such, these are cases of deontic modality, which is a hyponym of participant-external modality (cf. Van der Auwera & Plungian 1998; Van der Auwera 1999; Ziegeler 2006; Aelbrecht 2009). I take this to be minor differences that should not concern us here. The primary focus is whether or not a QP can outscope the modal. As also noted by Aelbrecht (2009:21, fn.16) in the discussion of different types of deontic readings, "there seems to be no syntactic difference related to the semantic distinction".

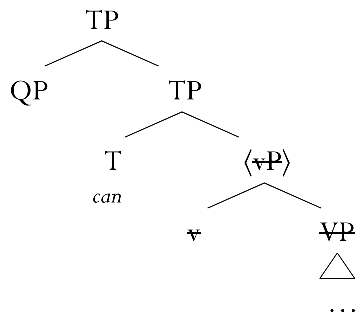
[23] As noted by Jeroen van Craenenbroeck (p.c.), because of Parallelism, it is predicted that the question in (i) can only have a surface scope reading (can > $\forall$) (given that the elliptical clause is scopally uninformative). This prediction seems to be borne out.

(i) Q: Can you order every item on the list?
A: Hell yeah! I just did.

(25) [The manager of a website/store/… says:]
Customers asked me whether they could order every item on the list and I told them they could.

(26) [In a FAQ list on a website:]
Can you/one order every item on the list? Of course you/one can.

According to my informants, both readings discussed above are available in the elliptical clauses as well. As such, it can be concluded that, when inverse scope is available in a non-elliptical clause containing a modal and a quantificational object, it is available in its elliptical counterpart as well. As this inverse scope is the result of an object QP undergoing QR to a position c-commanding the modal, this means that QR of the object QP is able to escape a verbal ellipsis site (to a position above the licensing modal in T).

(27)


2.5 Summary

In this section, I discussed the interaction of QR and verbal ellipsis. It was shown (inconclusively) on the basis of scope interactions between subject and object QPs and (conclusively) on the basis of scope interactions between an object QP and another quantificational operator (sentential negation *n't* or a modal) that QR can raise an object QP out of a verbal ellipsis site.

3 Analyzing QR out of ellipsis

In this section, I develop my multidominant, cyclic analysis of QR in English. Section (3.1) introduces Johnson's (2010a, 2011a) multidominant analysis of QR, QR being the result of remerge of the NP-part of a quantified phrase. Johnson also proposes that Fusion between the quantificational head Q and the determiner D of the object DP. I argue in section (3.4) that verbal ellipsis does not block QR follows if QR is always short, targeting vP (sections 3.2 and 3.3) and if Spell-Out and linearization occurs cyclically, as proposed in the previous chapters of this dissertation.

3.1 QR as remerge + fusion (Johnson 2010a, 2011a)[24]

The quote in (28) contains Johnson's (2010a, 2011a) description of 'movement':[25]

(28) "Movement of DPs [...] is the result of putting the terminals in a DP together in such a fashion that they spread across a sentence. The DPs that do this in the cases of QR and WH-movement are kinds of definite descriptions; those definite descriptions form the variable part of the movement relation. For morphological reasons, these definite descriptions form a constituent with an operator. In the case of WH-movement, this operator is the question morpheme. In the case of QR, this operator is the quantifier. While the morphology requires that these operators be in construction with the definite description, their semantics requires that they be merged in positions that are distant from those definite descriptions. These conflicting requirements are met by letting the relevant constituents stand in more than one position in the phrase marker. This is movement."

[Johnson 2011a:2-3]

QR is a semantic displacement operation in which the denotation associated with a

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[24] In very recent work, Johnson (2011b) departs from the proposal that QR involves Fusion. The analysis is replaced with an updated version of Contiguity (see section 6.4.1 in chapter 3). The basic idea is that the 'best' linearization of a structure is one that creates the fewest violations of Contiguity. The result of all this is that QR – almost 'accidentally' – is covert. I do not pursue this option here because the Fusion account seems more principled than the one proposed in Johnson (2011b) in that it also nicely handles the observations concerning negative indefinites discussed in chapter 3. Moreover, the Fusion account of QR (and of negative indefinites), combined with the cyclic Spell-Out model adopted in the previous chapters, gives us the desired result when it comes to the interaction with ellipsis. It remains to be seen whether all this can be made to follow from Contiguity.

As indicated by Kyle Johnson (p.c.), one motivation for abandoning the Fusion account might be the behavior of WH-in situ (combined with ACD). I leave the investigation of WH-in situ to future research.

[25] For Johnson's remerge analysis of WH-movement, see section 6.4.1 of chapter 3.

QP is applied at a position different from (higher than) the position in which it is spoken (Johnson 2011a:2). As movement sets up a binder-bindee relation, it is standardly assumed that in a process of movement, a silent variable is inserted in the bindee position. Johnson (2010a, 2011a), however, does not adopt this assumption. He proposes to model movement with remerge (i.e. Internal Merge, cf. section 2 of chapter 2): an element that has already been merged into one position is merged into a second one. The result is a multidominant phrase marker. As noted by Johnson (2011a:15), in a multidominant representation, one and the same phrase gets "different semantic interpretations depending on the positions it occupies: as a variable in its lowest position and as an operator in the highest position." Johnson assumes for QR, like for WH-movement (cf. section 6.4.1 of chapter 3), that it involves two components: (i) a DP in a lower position, which is given the denotation of a definite description and (ii) an operator in a higher position that binds this definite description, i.e. the definite description is interpreted as a variable bound by the operator.[26] The semantics requires that the operator (the quantifier) be merged in a position distant from the definite description. The semantic structure of a QP is as follows: it consists of an operator, its restriction and its nuclear scope. The denotation associated with quantifiers requires the operator to "combine first with the NP in the quantificational DP and then with another predicate, one that corresponds to the scope of the quantifier" (Johnson 2011a:21).[27,28] As shown in the structure in (30), remerge puts an NP in two positions in QR. The determiner in the lower position and the quantifier in the higher position both combine semantically with the same NP. Remerge (QR) has the motivation or effect of widening the scope of the operator.

An example like (29) gets the representation in (30), where the operator Q (the universal quantifier ∀) combines semantically both with NP and with TP. The NP is both part of the object DP and the higher quantificational phrase; both D and Q combine semantically with the NP. The DP in the object position is a definite description, interpreted as a variable. The higher QP binds the variable introduced by the definite description. In the case of QR then, a multidominant analysis is

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[26] Johnson's (2010a, 2011a) proposal goes back to Engdahl (1980, 1986), and Fox (2003).

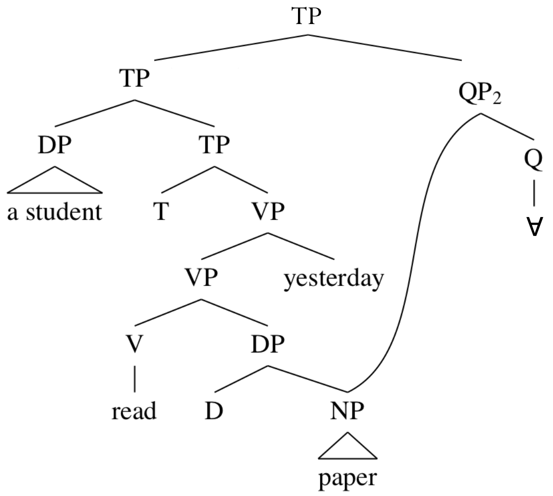
[27] As stressed by Johnson (2011a:21, fn.18), this presupposes that "the quantificational part of a quantificational DP can be expressed syntactically in a position different from where the quantificational DP is", a position which is defended in, for instance, Williams (1986, 1988), Beghelli (1993), Kitahara (1996), and Reinhart (1997b) (see Johnson 2011a:21, fn.18 for additional references).

[28] Thus, Johnson's analysis is close in spirit to Kennedy's (1997:669, fn.10) proposal that the syntactic operation QR "is driven by the need to generate a structure that permits the proper interpretation of a quantificational determiner."

motivated based on the semantics of the quantificational expression (unlike in the case of WH-movement, where Agree also played a significant role, cf. section 6.4.1 of chapter 3).

(29) [cf. Johnson 2011a:21, (48)]
A student read every paper yesterday.

(30) [cf. Johnson 2011a:24, (54)]



Although the components of a quantificational element spread across distant syntactic positions in a sentence, they are mapped onto a single word. Looking at (30), the question arises how the determiner in the DP in the lower position and the operator Q in the higher position can get mapped onto one lexical item. In the case of WH-movement, the form of the interrogative phrase depends on the presence of the Q-morpheme, because of the Agree-relation that holds between them (cf. section 6.4.1 in chapter 3). Agree requires the Probe to c-command the Goal, however. As there is no c-command relation between D and Q in, the mapping of D and Q onto one lexical item cannot be established via Agree in the case of Quantifier Raising.

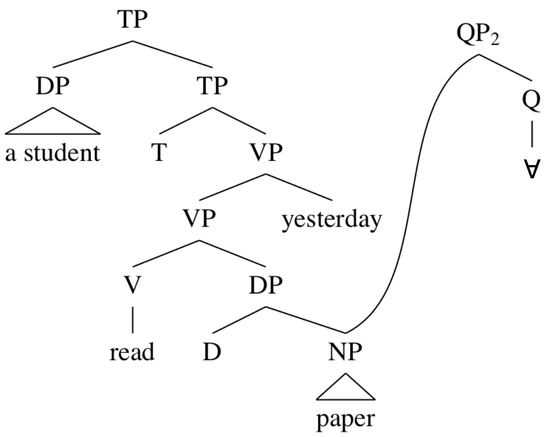
Johnson proposes that there is a morphological process Fusion (which I call 'Fusion Under Adjacency', see chapter 3) that combines two terminals into one, which is realized by one lexical item (*every* in the case of the universal quantifier ∀).[29] Fusion of two terminals is dependent on a locality condition: two terminals can fuse only if the linearization algorithm assigns them adjacent positions. Recall that Johnson has the specific definition of 'Adjacency' in (31), which I have adopted in chapter 3, adding (32):

(31) *Adjacency*
Two terminal items α and β are adjacent if the linearization algorithm puts nothing in between them. [cf. Johnson 2011a:25,fn.22]

(32) $\neg\exists x.(\alpha < x \;\&\; x < \beta)$ (and vice versa)

Johnson argues that the relevant adjacency becomes available when QP and TP are spelled out and linearized, but before they are merged together, that is, at the point of the derivation in (33):

(33) [cf. Johnson 2011a:24, (54)]



Recall that the linearization scheme applies to root nodes (section 3 in chapter 2), so it will apply to TP and QP independently. The result is (34):[30]

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[29] Johnson (2011a:22, fn.20) sees corroborating evidence for his Fusion analysis of quantifiers in the fact that some quantificational determiners transparently consist of separate parts. For instance, he mentions the German quantificational determiner *jeder* 'each', which transparently decomposes into the universal quantifier *je* 'each' and the definite determiner *der* 'the' (cf. also Sauerland 2003). See also section 6.4.2 of chapter 3.

[30] Note that the linearization in (34)a is actually the result of the linearization algorithm applying to TP, producing an A, after which a subset of the ordered pairs corresponding to (*continued on the next page*)

(34) a. The linearization of TP in (33) =

$$\left\{\begin{array}{lll} a < student & student < T & read < D \\ a < T & student < read & read < paper \\ a < read & student < D & read < yesterday \\ a < D & student < paper & \\ a < yesterday & student < yesterday & D < paper \\ & & D < yesterday \\ & & \\ & & paper < yesterday \end{array}\right\}$$

b. The linearization of QP in (33) = $\{ \forall < paper \}$

The linearization algorithm has put nothing in between D and ∀ in (34): there is nothing that follows Q and precedes D (or vice versa). Hence, D and ∀ are allowed to fuse, after which they get mapped onto an appropriate vocabulary item (the quantifier *every* in this case). That is, *every* will occupy the positions assigned to D and ∀ in (34). In the end, the linearized string will be *a student read every newspaper yesterday*, with the QRed phrase spelled out in its original position. Because the linearization scheme applies before the QP merged into the larger structure (cf. section 4 for discussion), "the material that is in both the QP and the larger structure will get its position fixed relative to the rest of the structure before the QP's position in the larger structure can be computed. This is how the effect of making a QR'd term be spelled out in the lower position is achieved" (Johnson 2011a:25-26). To guarantee that the positions assigned cannot be altered at some later stage in the derivation, Johnson follows the well-known proposal that positions assigned by the linearization algorithm at some stage in the derivation cannot be changed later on (following Fox & Pesetsky (2003, 2004a,b), discussed in section 3.3 and 3.4 of chapter 2).[31]

Summarizing, Johnson (2010a, 2011a) proposes that QR should be analyzed as a combination of remerge and Fusion. As argued at length in chapter 3, the interaction

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the asymmetric c-command relations in A is selected on the basis of language-specific requirements. On the basis of this subset, the linearization in (34)a produced. See sections 3.3 and 3.4 of chapter 2 and sections 3 and 4 of chapter 3.

[31] For a more detailed discussion of this proposal, comparing it with the account developed in this dissertation, see section 4 of this chapter.

of negative indefinites and ellipsis shows that verbal ellipsis (a PF-process) blocks Fusion Under Adjacency. If QR involves FUA and verbal ellipsis bleeds FUA, it is expected that verbal ellipsis blocks QR. This is, however, not the case. In section 2 of this chapter, it was established that QR can escape a verbal ellipsis site. At first sight, then, the proposal that QR involves Fusion seems incompatible with the fact that verbal ellipsis does not block QR. In the next sections, I show that the framework of chapters 2 and 3 can be maintained if we adopt the proposal that QR always targets vP (either as a final or an intermediate landing site). In the next sections (3.2 and 3.3), I first discuss the literature on obligatory short QR to vP. In sections 3.4 and 3.5, I work out a detailed analysis of QR escaping an ellipsis site, incorporating both the proposal of short QR and the framework of derivational ellipsis and cyclic Spell-Out developed in chapters 2 and 3.

3.2 Obligatory short QR

In the original proposal by May (1977, 1985), a quantificational phrase must always undergo QR, raising to a TP-adjoined position (see section 1.1 of this chapter). The now common idea is that scope-shifting operations (QR and QL/reconstruction) are optional (cf. Fox 2000; Sauerland 2000b; Miyagawa 2006, 2011). That is, in a sentence like (35), the quantificational object may or may not raise to the TP area (or higher), to a position above and c-commanding the modal in T.

(35) [cf. Johnson 2000:192, (14b)]
I can believe every one of Will's claims. (*can* > ∀, ∀ > *can*)

It has been proposed that object QPs (and unaccusative and passive subject QPs) are always obligatory affected by short QR, which targets the vP-area. This sets them apart from (transitive and unergative) subject QPs in Spec,vP and adjunct QPs adjoined in the vP-periphery, which are already present in the vP-area, as they have been merged here.

In this chapter, I adopt the idea that all QPs need to (have) be(en) in the vP-periphery. This vP-adjunction site can be either a final landing site or an intermediate landing site of successive-cyclic QR.[32] I follow Fox (2000), Miyagawa (2006, 2011), and Wurmbrand (2011a), amongst others, in arguing that the first

[32] Legate (2003), for instance, focuses on the first step in successive cyclic A'-movement/QR, where vP is not a final landing site, but an intermediate one.

short step of QR to the vP area is always obligatory, while further movement (e.g. to the TP area) is optional and subject to Scope Economy (cf. section 2.1 of this chapter).

In this section, I introduce some of the theoretical proposals that take QR to always be short, targeting vP. Then, in the next section (3.3), I present some empirical arguments from the literature that A'-movement in general and QR in particular has a landing site in the vP-periphery.

3.2.1 OBLIGATORY QR AND SHORTEST MOVE

Recall that Fox (2000) argues that a scope-shifting operation can only occur if it is not semantically vacuous, as it is subject to Scope Economy (section 2.1 of this chapter). It has been proposed, however, that QR of an object quantifier out of its base position is also required in sentences like (36), despite the fact that this sentence contains only one quantificational expression. In this sentence, QR is not required to represent scope ambiguity, as inverse scope does not result in a new interpretation (the sentence is scopally uninformative).

(36) [cf. Cecchetto 2004:347, (2)]
John inspected every plane.

Fox (2000) and Wurmbrand (2011a) take there to be two types of QR. The first, discussed in sections 1 and 2 of this chapter, is scope-driven (subject to Scope Economy) and optional. The second type is need-based and obligatory.

Fox (2000) proposes that every object QP must undergo QR. The same idea is also found in Sauerland (2000b, 2005), Bruening (2001), Surányi (2002), Yatsushiro (2002), Cecchetto (2004), Jones (2006), and Akahane (2008). These authors assume that this obligatorily QR takes place for type reasons, following Heim & Kratzer (1998). Semantically, generalized quantifiers (Barwise & Cooper 1981) are second-order predicates of type $\langle et,t\rangle$. As such, they are not of the right type to combine with their sister if their sister is not a one-place predicate (e.g. a transitive verb like *love* or *inspect*, a two-place predicate which is of type $\langle e, \langle et\rangle\rangle$). Thus, object quantifiers are uninterpretable in situ. The type mismatch between the object QP and its sister (V) can be repaired by QR (see Heim & Kratzer 1998:178-179,184-188). This obligatory QR must move the object QP to the edge of a clause-denoting expression, a node that denotes a closed proposition (of type $\langle t\rangle$). Via λ-abstraction, this movement creates a one-place predicate (which is of of type $\langle e,t\rangle$). The QP undergoes QR to create a variable of type ⟨*e*⟩ that can combine with the transitive verb. As such, the output of QR is an interpretable structure. This operation is thus necessary for semantic composition in a sentence like (36); it is forced by type considerations. QR takes place in the syntactic component, ensuring a readable input for the semantic component and thus allowing for semantic composition (cf. Cecchetto 2004:348). If a QP is interpretable in its in situ or surface position, obligatory QR does not occur. Thus, obligatory QR is always "justified independently of scope reversal" (Fox 2000:60, fn.47).

Obligatory QR moves a QP to a position in which it can be interpreted. It must target a clause-denoting expression, a node that denotes a closed proposition (type *t*). As a proposition is only closed after combining with a subject, the QP must adjoin above the subject. Hence, the maximal projection of the head that projects the external argument is the first available position of the appropriate type. Assuming the vP-internal subject hypothesis, vP is therefore the lowest position where the quantifier can be interpreted (cf. Fox 1995b:285, fn.4).[33]

Fox (2000) argues that the quantifier needs to raise *only* to adjoin to vP (above the subject in Spec,vP). He introduces a locality condition on movement, *Shortest Move*, "with the hope that it follows from general principles of locality" (Fox 2000:23). Shortest Move ensures that QR is blocked when the same interpretation can be achieved by a shorter movement step. This means that obligatory QR must target the first closed propositional node (of type *t*) dominating the object: its landing site has to be vP. Thus, obligatory QR is extremely local. The principle of Shortest Move is given in (37). It has been adopted by, amongst others, Takahashi (2003) and Sauerland (2005).[34]

(37) *Shortest Move*
An instance of QR is restricted to the closest XP that dominates QP
(where XP ranges over clause-denoting maximal projections).
[cf. Fox 2000:63]

[33] Fox (2000) and others, e.g. Bruening (2001), consider vPs to be proposition-denoting. Not everyone does, however (cf. also May 1977, 1985). For example, according to Kim (2006), vP denotes an event. Kim maintains that QR is only motivated by a scope effect (that is, there is no obligatory QR). In this view, QPs cannot raise to proposition-denoting nodes because a QP cannot distribute over a proposition. Movement of a QP to a propositional node has no semantic effect and, therefore, this movement is not motivated. vPs (with verbs like *marry* and *expect*) denote an event (that is, events like 'marrying' or 'expecting'). As the event permits a distributive relation, the QP may be adjoined to vP. QR is motivated because it gives rise to a semantic effect: it distributes over an event. This approach does not seem unproblematic, however, as it is unclear how QR could target non-eventive vPs, such as individual-level predicates like *know* (cf. Oh 2001).

[34] It has also been rephrased in a phase-based framework by e.g. Legate (2003), Miyagawa (2006, 2011), Akahane (2008), and Wurmbrand (2011a). See section 3.2.2.

Fox (2000) introduces Shortest Move to deal with scopally uninformative sentences like (36). Recall that he argues that scopally uninformative sentences are restricted to surface scope (cf. section 2 of this chapter). Therefore, it needs to be ensured that an object QP does not raise above the subject position in scopally uninformative sentences. Consider the sentences in (38):

(38) [Fox 2000:23-24, (7a)-(8a)]

a. A boy loves every girl.

b. John loves every girl.

Suppose that QR can target any node of type *t*, i.e. that there is no Shortest Move principle. If only Scope Economy were to restrict QR, this would not ensure that obligatory QR would not cross the subject position in (38)b (by adjoining to TP). This is because movement of the object QP is independently motivated (by type considerations), and therefore not restricted by Scope Economy. If long distance obligatory QR is not an option, however, inverse scope can be excluded for (38)b. If obligatory QR is subject to Shortest Move, the object *every girl* will move to the vP-periphery in both (38)a and (38)b. The question then arises whether a second (optional) scope-shifting operation – either QR or QL/reconstruction – is licensed. Optional QR to a TP-adjoined position in (38)a is not semantically vacuous: the inverse scope reading differs from the surface scope reading. Scope Economy thus allows QR in (38)a. In (38)b, on the other hand, further QR is semantically vacuous. A second step of QR is thus not licensed by Scope Economy. Optional QL is also only allowed by Scope Economy in (38)a. Only in (38)a does QL/reconstruction of the subject into its base position Spec,vP yield a semantic effect. Given both Scope Economy and Shortest Move, the inverse scope reading is not available for (38)b. If there were no Shortest Move principle, it is unclear how inverse scope could be blocked for this scopally uninformative sentence. Thus, the operation of QR is constrained by locality (*Shortest Move*) and Scope Economy. It should be noted that Fox also takes optional QR to be necessarily short as well, just like obligatory QR: "optional QR targets the closest position that dominates the relevant scope-bearing element that is being crossed" (Fox 2000:66).

Fox (2000) first introduced Scope Economy to determine whether an *optional* SSO is licensed (cf. section 2). If the optional SSO has no semantic effect (i.e. if it does not reverse the relative scope of two quantified expressions), the movement step is unavailable. According to Fox (2000), the obligatory instance of short QR to the vP-periphery also has a semantic effect: the object QP needs to target a closed proposition (of type *t*). Therefore, he takes it to be conceivable that Economy applies to *obligatory* QR as well as to *optional* QR (Fox 2000:23, fn.5). That is, each step of possibly successive-cyclic QR needs to be independently motivated; no step can be semantically vacuous. For example, QR can raise a QP to a position in which it can be affected by a second instance of QR only if the first instance of QR has a semantic consequence of its own. That is, a step of QR must have a motivation other than simply allowing further movement of the QP.[35] Thus, Fox's account incorporates Collins's (1997) view that economy is computed derivationally (locally), instead of globally.

Fox's generalized idea of interpretation-sensitive Economy is also adopted by, for instance, Cecchetto (2004) and Miyagawa (2006, 2011). It can be formulated as in (39):[36]

(39) *Interpretation Economy*
[QR] is licensed in the new position iff it alters the interpretation of the string. [based on Miyagawa 2006:11, (17)]

Following this condition, QR must affect the interpretation of quantifiers: it must lead to a new interpretation that would not be available otherwise (change scope relations, repair a type mismatch, …). The basic idea of the Minimalist Program (cf. Chomsky 1995) is "to rid the theory of any element that does not have a natural and independent justification" (Miyagawa 2006:4). Operations are triggered to meet the requirement of 'interpretability at the interface'. On the Last Resort view of MP, optional operations such as QR are not expected to exist (cf. Surányi 2002; Miyagawa 2006, 2011). That is because optional operations in principle *need* not occur. According to Miyagawa (2011:15), however, Fox's Economy "is consistent with the 'last resort' tenet of MP in so far as if optional movement does not take place, such as [QR] […] for scope taking, a new meaning (inverse scope) would not be possible. Optional movement is therefore a 'last resort' effort on the part of the grammar to induce the otherwise unavailable meaning."

[35] This is necessary since, as noted by Cecchetto (2004:354), "[i]f this were not assumed, the computational system would have 'look' ahead properties, because, by the time the [QP] evacuates its base position, the system should know that in later stages of the derivation there will be a trigger for QR that is not present at the start of the successive cyclic movement."

[36] The term *Interpretation Economy* is suggested in Miyagawa (2006). Fox (2000) also generalizes his Scope Economy condition to a condition that he calls *Output Economy*. Output Economy licenses operations like QR if they have an effect on outcome (cf. also Chomsky's (2000:109, 2001:34) *Interface Economy Condition*). I follow Miyagawa's (2006:11) reasoning that "[a]lthough Scope Economy is too restrictive and it needs to be expanded, […] the condition should continue to reference only matters of interpretation" and hence, not matters of pronunciation.

3.2.2 QR TARGETS VP: THE PIC AND FEATURE CHECKING

Following Chomsky (1981), many authors (e.g. Bruening 2001; Cecchetto 2004) adopt the view that construction-specific rules do not exist. In particular, QR – a displacement operation – must obey the same constraints that hold for other instances of (A') movement. For instance, it has often been argued that subjacency effects (i.e. island effects) arise with QR, just like with WH-movement is (May 1977; Longobardi 1991; Reinhart 1991; Simpson 2000).

Another such restriction is the Phase Impenetrability Condition (PIC) (cf. section 3.3 of chapter 2): movement operations must apply cyclically, phase by phase. It has been argued that QR, like other movement operations, is phase-bound (cf. Cecchetto 2004; Miyagawa 2006, 2011; Wurmbrand 2011a). The only way for QR to escape a phasal domain (the complement of the phase head) is to move out of the domain to the edge of the phase before it is completed. Movement to the edge is necessary for the QP to remain accessible. As v is a phase head, a QP is accessible for further movement only when it moves to the edge of the vP-phase.[37]

Many authors have also argued that QR, like other types of A'-movement, is a feature-driven operation (cf. Chomsky 2000:109; Sauerland 2000b; Bruening 2001; Tang 2001; Miyagawa 2006, 2011; Akahane 2008).[38] Movement operations in the Minimalist Program (MP, cf. Chomsky 1995) are viewed as strictly last resort. They are 'triggered' in that they occur in order to meet the requirement of interpretability at the interfaces. The triggers are formal (i.e. morphosyntactic) features; the moving element moves to the position of the formal feature in the structure. Sauerland (2000b), Bruening (2001), Tang (2001), Legate (2003), Miyagawa (2006, 2011), and Akahane (2008) propose that a formal feature of v triggers QR to the edge of vP.[39] This feature is often called [QU(antificational)], following Chomsky

[37] Cecchetto (2004), Miyagawa (2006, 2011), and Wurmbrand (2011a) have proposed to combine the PIC with Scope Economy (or, more general, Interpretation Economy) to limit the occurrence of long QR: each sub-link of successive-cyclic QR must have an interpretational motivation. If movement is semantically vacuous, it is in violation of Economy. For instance, the first step of QR, targeting the edge of vP, is motivated because the QP needs to target a node of type *t* (cf. the previous subsection). When the QP is in the edge of vP, it is accessible for further movement. This further movement is possible only if this operation crosses another quantificational element. That is, further movement must be sanctioned by Economy.

[38] Beghelli (1993, 1997) and Beghelli & Stowell (1994, 1997) have also argued that QR is driven by formal feature checking, but in a way different from the proposals outlined in this subsection. Different quantifier classes are taken to bear different syntactic features, which need to be checked in different quantifier-class specialized functional projections. See Bruening (2001) and Surányi (2002) for problems with this proposal.

[39] According to Akahane (2008), the QR-triggering feature can be assigned *only* to v (hence, the vP-edge is always the final landing site of QR). Others (e.g. Bruening 2001; Miyagawa 2006, 2011) argue that the relevant feature can be present on several heads in the clause.

(2000:109).[40] This formal feature attracts a QP under feature matching. v can only attract XPs of the right semantic type: it is a Probe looking for a quantificational Goal. If the VP contains a quantificational XP, and v appears with a [QU]-feature, the XP will be attracted to the vP-edge. For some (e.g. Chomsky 2000; Tang 2001), QU-features enter the derivation only if they have an effect on outcome (for instance, deriving a wide scope interpretation for an object QP). If the [QU]-feature is not present on v, the QP object remains in its base position. Others (e.g. Legate 2003; Akahane 2008) take [QU] to be assigned to v whenever VP contains an object quantificational expression. That is, QR to the edge of vP always takes place.[41]

Concluding, although implementations differ considerably, it should be clear that many authors have argued that QR must target the vP-periphery, either because of the PIC that requires that movement target the phasal edge before moving on further, or because of a feature on v that requires the QP to raise to the vP-area.

3.2.3 CONCLUSION

This subsection was meant to show that the idea that (a first step of) QR of an object QP must target the vP-area is widely present in the theoretical literature (although the motivations differ: semantically driven vs. feature-driven (or a combination of the two)).[42] The next subsection discusses empirical data that show that QR indeed targets the vP-periphery. In my multidominant, cyclic analysis of QR I will incorporate the proposal that QR always targets the edge of vP. To be precise, I

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[40] Some (Bruening 2001; Tang 2001; Legate 2003) take the QU-feature to be a reflex of the 'P(eriphery)-feature' (also known as 'OCC-feature' or 'EPP feature' in Chomsky 2000, 2001), which is optionally assigned to a phase head (e.g. v) and drives movement to the phase edge. Others (Chomsky 2000; Akahane 2008) claim that [QU] must be distinguished from the EPP-feature.

[41] Following recent MP proposals (Chomsky 2005, 2008), Miyagawa (2006, 2011) assumes that an element can always move freely to the edge of a phase, because phase heads carry Edge Features that can trigger Internal Merge.

[42] An alternative idea is presented in Lechner (2009, 2012), according to whom movement should not be described in terms of *Attract*, but rather in terms of *Survive*. Implementing the concept of push chains (cf. van Riemsdijk 1997; Moro 2007), he proposes that movement is a consequence of *repulsion*: a node is repelled from its local environment and pushed into a higher position in order to avoid a feature or type mismatch. Just like the other analyses discussed in the previous two subsections, Lechner (2009, 2012) takes an object quantifier to target the first propositional node (vP). However, his *Survive Principle* forces the object to move in small, incremental steps, targeting several intermediate VP- and vP-projections. This is because each time a new head, specifier, or adjunct is merged, it induces further (intermediate) movement of the object. This is not an option I will pursue here.

adopt the proposal that (i) QR must target a clause-denoting node (a closed proposition of type *t*), and (ii) this operation is subject to *Shortest Move* in (37):

(37) *Shortest Move*
An instance of QR is restricted to the closest XP that dominates QP (where XP ranges over clause-denoting maximal projections).
[cf. Fox 2000:63]

3.3 QR targets vP: empirical support

3.3.1 INTRODUCTION

In her (2003) LI squib, Legate collects empirical evidence for the phasehood of transitive, unaccusative, and passive vPs.[43] She reasons that evidence for phasehood can be obtained if intermediate landing sites of moved elements are detectable at the suspected phase edge. That is because the Phase Impenetrability Condition (cf. section 3.3 of chapter 2) demands that elements in the phasal complement that need to escape the phase move to the phase edge. Three of Legate's arguments concern the LF-interface properties of vP: the diagnostics are parasitic gaps, WH-reconstruction, and Quantifier Raising in ACD.[44] The first argument is based on insights by Nissenbaum (1998), the second one on Fox (2000).[45]

Although the first two diagnostics (parasitic gap licensing and WH-reconstruction) indicate that successive-cyclic WH-movement has an intermediate landing site in the vP-area, this conclusion need not necessarily carry over to the type of A'-movement

[43] The phrasal category of unaccusative and passive verb phrases is debated in the literature: are they VPs or vPs involving a (defective) v head? As noted by Legate (2003:506, fn.1), however, "[t]he question of the phasehood of these phrases is independent from the question of their categorical label".

[44] Legate (2003:511-513) also discusses a fourth argument, which concerns vP's PF-interface properties: nuclear stress in English.

[45] Den Dikken (2006b) argues that none of Legate's arguments for vP-phasehood are conclusive. Nevertheless, he stresses that his reply to Legate is not aimed "at establishing that vP is not a phase: [...] there are [...] good conceptual and empirical reasons for believing that vP exists and is phasal" (den Dikken 2006b:1) and that "we can arguably still derive syntactic evidence for vP's phasehood" (den Dikken 2006b:7). Den Dikken (2006b), referring to den Dikken (2006a:Ch.4, 2007), suggests to include small clauses (i.e. tenseless subject – predicate configurations) in the investigation of vP-phasehood. In den Dikken (2010), he even argues (on the basis of long WH-dependencies, resumptive prolepsis, and WH-scope marking in Hungarian) that successive-cyclic movement via Spec,CP does not exist; successive-cyclic A'-movement can take place only via vP-edges. The reader should thus be aware that Legate's (and therefore also Fox's and Nissenbaum's) argumentation is debated, but that the status of vP as a phase and the existence of vP-landing sites in successive-cyclic A'-movement is not.

discussed in this chapter, i.e. Quantifier Raising. Nevertheless, Fox (2000:165) concludes that the "intermediate landing site for A'-movement between the [surface position of the] subject and the [base position of the] object [i.e. the vP-edge – TT] [...] is the landing site that I assumed [...] for obligatory QR." That is, Fox equates the intermediate vP-adjoined landing site of WH-movement to the landing site of short obligatory QR (the latter being either a final landing site or an intermediate landing site of long QR, as discussed in section 3.2.1 of this chapter). Nevertheless, empirical evidence that QR does indeed target vP seems indispensable. This is discussed in the following subsection.

3.3.2 QR IN ANTECEDENT-CONTAINED DELETION

In the context of this chapter, the most relevant one of Legate's (2003) diagnostics is Quantifier Raising in Antecedent-Contained Deletion (ACD).[46] An example of ACD is given in (40). The sentence in (40) contains a direct object DP (*every boy*), to which a relative clause is attached. The VP inside the relative clause is elided.

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[46] The argumentation here disregards proposals that take ACD-resolving QR to be different from 'normal' QR (i.e. non-ACD-resolving QR such as scope QR), cf. for instance von Fintel & Iatridou (2003). Von Fintel and Iatridou (2003) list some properties of ACD-resolving QR that differ from those of 'normal' QR (see also Wilder 1997; Fox 1995a, 2000, 2002; Cechetto 2004). Most of these differences are handled by the analysis in Fox (1995a, 2000, 2002), showing that both types of QR can presumably be put on a par. See also Cecchetto (2004) for discussion in a phase-based framework.

Moreover, some of the differences have been contested in the literature. For instance, it is well known that ACD-resolving QR bleeds Condition C (cf. the discussion further on in this section). It has been claimed, though, that 'normal' QR differs from ACD-resolving QR in *not* bleeding Condition C (Fiengo & May 1994; Fox 1995a, 2000, 2002; Merchant 2000a; von Fintel & Iatridou 2003). According to the authors mentioned, there is a contrast between examples (i) and (ii): only (i), with ACD-resolving QR, is grammatical.

(i) Polly introduced him$_i$ to everyone Erik$_i$ wanted her to.
(ii) Polly introduced him$_i$ to everyone Erik$_i$ wanted to meet.

Kennedy (1997:686,fn.22), however, calls this judgment into question: "of 13 native speakers interviewed, only 1 judged (ii) unacceptable on the intended reading." Based on the judgments of Kennedy's informants, it would seem that both 'normal' and ACD-resolving QR bleed Condition C.

Given all this, I stick to the idea that ACD-resolving QR and non-ACD-resolving QR are one and the same operation.

(40) [cf. Fox 2002:64, (2)]

a. John likes every boy Mary does.

b. John $\underbrace{[_{\text{VP}} \text{ likes every boy Mary does } \overbrace{\langle\text{likes t}\rangle}^{\textit{elided VP}}\ ]}_{\textit{antecedent VP}}$.

ACD, first discussed in Bouton (1970), arises when an ellipsis site is contained inside the constituent that serves as its antecedent.[47] Ellipsis resolution in ACD configurations is problematic (as noted by e.g. Sag 1976; May 1997, 1985; Fiengo & May 1994): "[a]ny attempt to resolve the VP ellipsis by identity with an antecedent VP [...] will result in infinite regress" (Merchant 2000b:145). The sentence would continue ad infinitum and would therefore be uninterpretable. If infinite regress is to be avoided, the object in a sentence like (40) cannot be interpreted in its base position: it needs to be interpreted in a VP-external position (cf. (41)). Therefore, it has been proposed that the appropriate interpretation becomes available if QR moves the phrase that contains the elided VP outside the antecedent VP.[48] As such, because of QR, there is an appropriate antecedent for verbal ellipsis, which does not contain the ellipsis site itself. Hence, QR resolves the infinite regress problem of ACD (cf. Sag 1976; May 1977, 1985; Fiengo & May 1994; Fox 1995a, 2000, 2002; Kennedy 1997; Bruening 2001; Hackl et al. 2012).[49]

(41) John [every boy Mary does ⟨*likes t*⟩ $]_{\text{i}}$ $[_{\text{VP}}$ likes t_{i}]

One of the ACD-examples discussed by Legate (2003) is the one in (42):

(42) [Legate 2003:509, (4b)]

Some woman $[_{\text{VP1}}$ gave John $[_{\text{DP}}$ every message you did $[_{\text{VP2}}$ *e*]]].

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[47] As discussed below, a more precise formulation is: ACD arises when an ellipsis site at the surface seems to be contained inside the constituent that serves as its antecedent.

[48] The analysis that QR of the QP which hosts the ellipsis site resolves infinite regress goes back to Sag (1976) and May (1977). In fact, ACD was one of the initial motivations (cf. May 1977) to argue in favor of the existence of the operation QR.

[49] The analysis is often more complicated than is presented here. For example, Fox (2000, 2002) and Johnson (2011a) argue that it is not QR per se that obviates the Parallelism violation in ACD.

Incorporating insights from Fox & Nissenbaum (1999), these authors propose that QR allows for late merger of an adjunct, "thus circumventing the need to ever create a configuration in which the violation occurs" (Fox 2002:66). I abstract way from this here, as this is not crucial at this point. What is crucial is that QR always plays a vital role in ACD: in these more complex alternative proposals, too, QR is needed for ACD-resolution.

In this example, QR is required for ACD-resolution. The example in (42) is designed to ensure that QR targets the vP-edge. In one of the readings of (42) – the most salient one – the existential QP *some woman* outscopes the universal QP *every message*. Therefore, QR of the DP containing the universal QP must have targeted a position below the subject, a vP-adjoined position, as schematically represented in (43):[50]

(43) Some woman [$_{vP}$ [$_{DP}$ every message you did ⟨~~give John t~~⟩] [$_{vP}$ gave John t_{DP}]].

The idea that the (obligatory) step of QR needed for ACD resolution is short, targeting the vP-periphery, is widespread (cf. also e.g. Fox 1995a, 2000, 2002; Merchant 2000a, 2000b; Bruening 2001; Cecchetto 2004; Kiguchi & Thornton 2004).[51] Merchant (2000a) and Fox (1995, 2000) argue that the contrast between the sentence in (44) and those in (45) shows that ACD-resolving QR targets a position in the c-command domain of the subject.

(44) [Merchant 2000a:568, (6)]
I introduced him_1 to every guy Peter_1 wanted me to.

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[50] Den Dikken (2006b:3) rejects this proposal (in part) based on the following reasoning: "if Legate is right that in [(42)] QR targets a vP-adjoined position, and if, as is generally assumed, segments of multi-segment categories are not independently manipulable, then [(42)] must involve ellipsis of the root VP, not of vP, in order to ensure categorial identity of the ellipsis site and its antecedent. But the idea that the elliptical material in [(42)] is the root VP clashes with Chomsky's (2000) claims regarding the 'relative independence' of phases 'in terms of interface properties': non-phases (including VP) should not be allowed to undergo ellipsis." This critique can be countered on the basis of proposals in the literature showing (a) that there are crucial differences between phases and ellipsis (e.g. Aelbrecht 2009:3.2.4, contra Gengel 2007) and (b) that verbal ellipsis *can* target an intermediate vP projection/a segment of vP (e.g. Wilder 1997; Merchant 2000b; Johnson 2004). A piece of empirical evidence in favor of these latter proposals can be found in (i):

(i) [cf. Merchant 2000b:145, fn.1, (i)]
a. Abby quit because I did, but Ben didn't.
b. Abby [$_{VP1}$ [$_{VP2}$ quit] because I did ⟨~~quit~~⟩], but Ben didn't ⟨~~quit because I quit~~⟩.

As pointed out by Merchant (2000b:145, fn.1), in a sentence like this, "the first elided VP must take as its antecedent the lower VP segment (VP_2), while the second elided VP must be resolved by the higher VP segment (VP_1)."

[51] The alternative idea, i.e. QR in ACD adjoins to TP, is present in the literature as well. Although they assume that QR can target VP as an adjunction site in general, for Fiengo & May (1994), QR in ACD resolution must adjoin the QP outside of the VP entirely, i.e. ACD-resolving QR must target TP/S. Other authors taking QR in ACD to target the TP-domain are Agbayani (1996), and Kennedy (1997), for instance.

(45) [Merchant 2000a:568, fn.3, (i)]

a. * He_1 liked most (of the guys) I wanted $Peter_1$ to.

b. * She_2 read (us) every story $Beth_2$'s mom did.

c. * She_3 didn't give me a single book $Beth_3$ promised to.

It is well known that ACD-resolving QR obviates Condition C (cf. Fiengo & May 1994; Fox 1995a, 2000, 2002; Merchant 2000a, 2000b; Kiguchi & Thorton 2004), as shown in (44). If the indirect object pronoun *him* were to c-command the DP containing the ellipsis site, a Condition C violation would arise, as this DP contains the R-expression *Peter* (coindexed with *him*). If, however, ACD-resolving QR targets a position c-commanding the indirect object, coreference between *Peter* and *him* becomes possible. QR eliminates the illicit c-command relation holding between the pronoun *him* and the R-expression *Peter*.

The examples in (45) show that "the grammaticality of [(44)] does not arise from Principle C's being "turned off" in ACD or the like" (Merchant 2000a:568, fn.3). The examples in (45) show that the bleeding effect observed in (44) does not hold in sentences with coindexed subject pronouns. Therefore, the landing site of QR must be in the c-command domain of the subject, as coreference between the QRd R-expression and the subject pronoun is not allowed. Based on examples like these, Fox (1995b, 2000, 2002) points out that a TP-adjunction analysis is problematic: if QR targets TP, sentences like (45) should allow the interpretation in which the R-expression is coreferential with the pronoun. As QR would raise the R-expression out of the pronoun's c-command domain, Condition C should no longer rule out coreference, contrary to fact.[52] Therefore, Fox argues that, instead of TP-adjunction, vP-adjunction must be available to QR. In his (2000a) *LI* squib, Merchant leaves open the option that the ACD-resolving QR either targets TP or a position below the subject. Merchant (2000a:568, fn.3) suggests that in the former case, the QRed XP can be in the c-command domain of the subject via a segment theory of m-command as in May (1985) (see footnote 4). In his (2000b) *Syntax* article, on the other hand, Merchant argues on the basis of NPI licensing in ACD that ACD-resolving QR must target a low (VP-adjoined) position.[53]

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[52] Legate (2003) also takes NPI-licensing in ACD to constitute an argument in favor of a QR-landing site at the vP-edge. Both Merchant's and Legate's argumentation assumes NPIs to be licensed solely at LF, which is not in line with the assumptions concerning NPIs adopted in chapter 3 of this dissertation. I do not discuss the NPI-argument here, given that there are sufficient other pieces of evidence (based on quantifier scope and binding theory) that ACD-resolving QR targets vP.

[53] It is often proposed that the vP-landing site of QR for ACD-resolution is the same node as the one targeted by obligatory short QR (cf. Fox 2000; Cecchetto 2004; Hackl et al. 2012).

As already mentioned, Fox (1995a, 2000, 2002) also adheres to the analysis that ACD-resolving QR targets vP. This follows from his proposal that Economy considerations determine that QR must target the closest available XP that yields an interpretable structure, where XP is a clause-denoting maximal projection (cf. section 3.2.1 of this chapter). In the case of ACD, this is the most local clausal XP above the elided VP. Fox argues that QR cannot be licensed by the need to satisfy Parallelism (see also footnote 15): QR is only licensed on the basis of interpretational considerations. As the example in (46)a shows, ACD is available where there is no scope ambiguity. According to Fox (2000:22, fn.2), this "virtually forces the assumption that short QR is always motivated on independent grounds" (because Parallelism-inducing QR does not exist). That is, he considers ACD-resolving QR to be an instance of the obligatory short QR discussed in section 3.2.1. ACD resolution is just a by-product of obligatory short QR targeting vP. As such, ACD shows that there is always obligatory QR (to a vP-adjoined position).[54] This assumption is reinforced by the observation that ACD is impossible when the QP is replaced by an R-expression that can be interpreted in situ (cf. (46)b).

(46) [based on Fox 2000:22, fn.4]
a. John [$_{\text{VP1}}$ stood near [$_{\text{DP}}$ every boy that Mary did [$_{\text{VP2}}$ *e*]]].
b. * John [$_{\text{VP1}}$ stood near [$_{\text{DP}}$ Bill, who Mary didn't [$_{\text{VP2}}$ *e*]]].

In an example like (46)a, further movement (e.g. adjunction to TP) is not needed, hence not allowed, because it would be semantically vacuous (and would thus violate Interpretation Economy). Adjunction of the quantificational DP to vP is sufficient for obtaining the intended interpretation.

Fox's idea differs from other proposals in the literature that take ACD-resolution to be an independent motivation for QR, that is, independent of effects like scope inversion or type-mismatch-resolution (cf. Bruening 2001; Cecchetto 2004; Hackl et al. 2012).[55] According to Hackl et al. (2012), ACD-resolving QR occurs even when the DP hosting the ellipsis site is definite, cf. (47). They present sentences like (47) as evidence that ACD-resolving QR exists, independent of the semantic properties of the object DP: "if there is an ACD site, QR occurs irrespective of whether the DP is quantificational" (Hackl et al. 2012:16-17).

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[54] The same idea is present in Bruening (2001:254): "The fact that all quantifiers within VP must move to vP [...] makes satisfaction of the conditions on the interpreation of ACD a trivial matter."

[55] See also Vanden Wyngaerd & Zwart (1991) on ACD in non-restrictive relative clauses.

(47) [cf. Hackl. et al 2012:11, (18a)]

a. John read the book that Mary did.

b. John [$_{VP1}$ read [$_{DP}$ the book that Mary did [$_{VP2}$ *e*]]].

As indicated by Hackl et al.'s (2012) real-time sentence processing research, however, sentences like (47) do seem to differ from 'standard' ACD-cases involving QPs, like (40). Condider (48):

(48) [cf. Hackl. et al 2012:29, (29)]

The doctor was reluctant to treat …

a. the patient that the recently hired nurse admitted

b. the patient that the recently hired nurse did

c. every patient that the recently hired nurse admitted

d. every patient that the recently hired nurse did

… after looking over the test results.

As noted by Hackl et al. (2012:1), "the integration of a quantifier in object position and the resolution of antecedent-contained deletion (ACD) […] are linked". Their real-time sentence processing research shows that resolution of ACD is facilitated if the DP hosting the ellipsis site is quantificational but not if it is definite. That is, ACD resolution is facilitated in (48)d but not in (48)b. According to Wurmbrand (2011a) and Hackl et al. (2012), this shows that an independent instance of local QR is available in (48)c/d, for quantifier integration, which is independent of ACD-resolution.

Concluding, irrespective of whether or not non-quantificational DPs license ACD (cf. Fox's (2000) vs. Hackl et al.'s (2012) data), the data from ACD confirm that an independent obligatory short instance of QR, targeting vP, exists.

3.3.3 CONCLUSION

This subsection discussed empirical data showing that (a first step of) QR targets the vP-area. The proposal that QR always has a landing site in the vP-periphery seems well supported. Therefore, I incorporate this idea into the multidominant, cyclic analysis of QR presented in the next section.

3.4 QR and verbal ellipsis: Sample derivations

In this section, I show how the multidominant, cyclic framework presented in chapter 2 and implemented in chapter 3 also straightforwardly captures the QR data presented in the previous sections of this chapter. I first present a sample derivation of a non-elliptical sentence containing both a QP object and a modal (subsection 3.4.1). Then, I show how the framework allows QR to escape a verbal ellipsis site, crossing a modal in T (subsection 3.4.2).

3.4.1 QR ACROSS A MODAL IN A NON-ELLIPTICAL SENTENCE

Let us consider the derivation of the sentence in (49), a shortened version of one of the sentences discussed in section 2.4 of this chapter. The sentence in (49) contains the modal *can* and a universal QP in object position. It was shown in section 2.4 that this sentence has two readings, one in which the modal outscopes the object universal QP, and one in which the QP outscopes the modal.

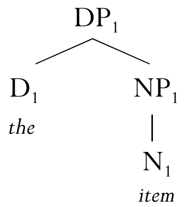
(49) You can order every item (on the list). (*can* > ∀), (∀ > *can*)

As discussed in chapter 2 (cf. also sections 3 and 4 of chapter 3), a syntactic derivation starts out with a collection of terminals in a numeration N. The numeration in (50) contains the necessary grammatical formatives (terminals).

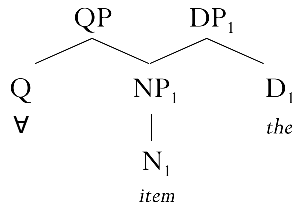
(50) $N = \{ D_1, N_1, Q, V, D_2, v, T, C \}$

The primitive, recursive structure building operation Merge constructs phrase markers (in a bottom-up fashion) by taking two (possibly complex) syntactic objects and combining them into a new complex syntactic object. Merge applies until one single phrase marker is constructed from the terminals in the Numeration. Merge is External, Internal or Parallel Merge, depending on the objects it combines. Internal and Parallel Merge give rise to structures in which a single node has two mothers, i.e. to multidominant phrase markers. Recursively applying the primitive structure building operation Merge will produce a syntactic representation for the sentence in (49).

The first applications of Merge form the object QP. First, a definite determiner merges with the object NP_1. The resulting DP_1 is a definite description that will function as variable bound by the quantifier Q.

(51)


Recall from section 3.1 that Johnson (2010a, 2011a) argues that both the definite determiner D_1 and an operator (quantifier) Q combine with an NP_1 (both syntactically and semantically).[56] This is a case of Parallel Merge: a syntactic object (NP_1) that is a subpart of one rooted object (DP_1) is remerged with another rooted object (Q). The result is a structure in which a single node (NP_1) has two mothers (DP_1 and QP). As such, the phrase marker transits through a representation in which the tree has more than one root.

(52)


What if Merge of Q and NP_1 is held off to a later stage in the derivation? Recall that when the first phase (vP) is finished, the phasal complement (VP) is sent off to the interfaces. As will be discussed shortly, DP_1 is part of the phasal complement. Hence, Q needs to merge with NP_1 (inside DP_1, inside the phasal complement) before the phasal complement is spelled out, that is, before the phase vP is completed. Otherwise, remerge of NP_1 with Q would violate the PIC in (53):[57]

(53) *The Phase-Impenetrability Condition (PIC)*

In a phase α with a head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

[Chomsky 2000:108]

---

[56] Similar ideas regarding the ordering of the first applications of Merge are present in Johnson (2008).

[57] Jeroen van Craenenbroeck (p.c.) points out that this kind of merger (i.e. Merge between Q and NP_1, the former outside, the latter inside the phasal complement) could be made possible by slightly adjusting the PIC in (53) to, for instance, "the domain of H is not accessible to operations c-commanding α". I adhere to Chomsky's original definition (53) here.

As long as the merger of Q and NP happens before Spell-Out of VP, merging NP and Q does not violate the PIC. I follow Johnson's (2008) derivation, in which merger of NP and Q happens immediately. The reader should keep in mind, though, that this Merge operation could be postponed until just before completion of the vP phase. It should be pointed out that I do not want to claim that merger of Q and NP1 is *forced* at this point in the derivation, as this would involve lookahead. As also discussed in section 3.1 of chapter 3, Merge is free. Merger of Q and NP_1 could or could not happen at this point. If it does not, however, because of the PIC, Q and NP will not be able to merge after completion of the vP phase. Given that the denotation associated with quantifiers requires the operator (Q) to combine with its restriction (NP), the derivation will crash at the LF interface level if Q and NP_1 did not merge.

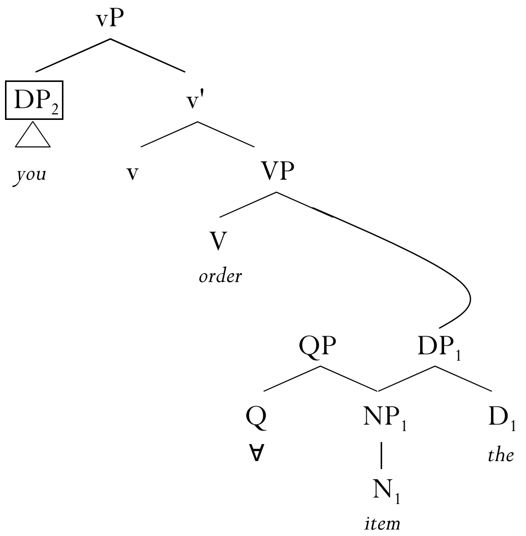
After (52) has been formed, DP_1 is selected by the verb as its complement.[58] Next, v merges with the VP and the subject DP is merged to form Spec,vP. Complex (i.e. branching) left branches (specifiers and adjuncts) need to be spelled out (and hence linearized) before merging to the phrase marker under construction (following Uriagereka 1999, cf. section 3.3.1 of chapter 2). Therefore, the subject undergoes Spell-Out, after which it merges with vP.[59,60] The result of all this is given in (54):

[58] Note that the verb selecting a QP as its object is problematic for semantic reasons, as discussed in section 3.2.1 of this chapter.

[59] I take pronouns to be DPs here (following Déchaine & Wiltschko (2002), who take English first- and second-person pronouns to be DPs), which might be contested. The issue of the internal structure of pronouns is orthogonal to my purposes. See for instance Déchaine & Wiltschko (2002) and Cowper & Hall (2009).

[60] As already mentioned in section 3.3.1 of chapter 2 and section 3.2 of chapter 3, I abstract away from the questions of whether (i) the two phrase markers (the subject and the vP) are assembled simultaneously in separate derivational spaces or sequentially in the same derivational space and (ii) whether (and if so, how) the Spelled-Out subject is renumerated.

(54)



Recall that an object QP always targets the edge of vP (cf. sections 3.2 and 3.3 of this chapter).[61] To be precise, (i) a QP must target a clause-denoting node (a closed proposition of type *t*), and (ii) this operation is subject to *Shortest Move*:

(37) *Shortest Move*

An instance of QR is restricted to the closest XP that dominates QP (where XP ranges over clause-denoting maximal projections).

[cf. Fox 2000:63]

The first node of type *t* dominating the object QP is vP. The condition in (37) then requires the object QP to adjoin to vP.[62,63] As QP will merge as a complex left

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[61] Although this does not really have an impact on the analysis of non-elliptical sentences with QR in English, it does on their elliptical counterpart, as discussed in the next section.

Moreover, I take the stopover in vP to be motivated on independent grounds (cf. sections 3.2 and 3.3 of this chapter). Therefore, I incorporate this step in the analysis of non-elliptical QR sentences as well.

[62] This differs from Johnson's (2008, 2010a, 2011a) analysis, in which QP does not adjoin to VP/vP, but to TP. See section 3.1 of this chapter and the discussion in section 4.

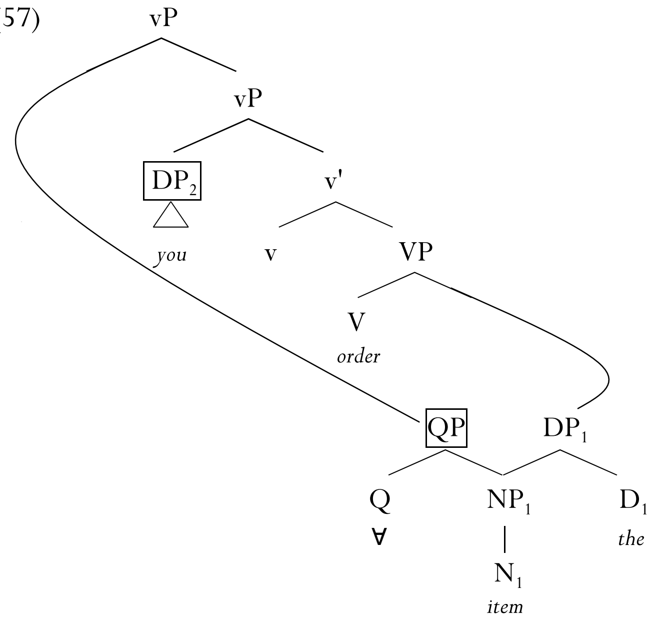
[63] The reader might have noticed that obligatory QR here is somewhat different from the cases discussed in section 3.2.1. In the structure in (57), QP is not a sister of the verb; obligatory QR is therefore not 'forced' by type considerations. Note, though, that the QP in (57) needs to be merged in the clausal spine. The QP needs to target a clause-denoting node (corresponding to its nuclear scope) and in light of Fox's *Shortest Move* (here actually *Fastest Merge*) this needs to happen as soon as possible. That is, the QP needs to merge with the first constituent of the appropriate semantic type, which is vP. Note also that for these reasons, this adjunction to vP is allowed by *Interpretation Economy* (cf. section 3.2.1).

branch in the clausal spine, it needs to be spelled out (and hence linearized) before merging with vP (following Uriagereka 1999). The QP undergoes Spell-Out and the linearization scheme applies. The asymmetric c-command relations in the A in (55) correspond to ordered pairs, the interpretation of which (in terms of precedence of subsequence) is left open (cf. section 3.2 of chapter 2). These ordered pairs are disambiguated by language-specific requirements. A maximally small disambiguated subset is given in (56)a and the linearization d(A) in (56)b.

(55) $A = \{ \langle Q, NP_1 \rangle, \langle Q, N_1 \rangle \}$

(56) a. $A' = \{ Q < N_1 \}$
b. $d(A) = \{ Q < N_1 \}$

Then, QP merges with vP, finishing the vP phase, as shown in (57):

(57)


As vP is a phase, the PIC requires that the domain of the phase head v is spelled out, i.e. transferred to PF (cf. chapter 2, section 3.3.1). Spell-Out targets the VP-complement of the phase head v, that is, all the material dominated by VP.[64] The

[64] I take NP_1 to be spelled out as part of the phasal domain, as it is dominated by DP_1 and therefore by the phasal complement VP. It needs to be pointed out, however, that, by virtue of being (*continued on the next page*)

phasal complement targeted by Spell-Out constitutes a linearization domain and forces the linearization scheme to apply. The linearization algorithm will therefore produce ordering statements for the VP. The ordered pairs corresponding to the asymmetric c-command relations in the A in (58) need to be disambiguated. A subset has to be selected, which meets language particular requirements and which will result in a total linearization (i.e. one that puts all of the terminals in a relative ordering with respect to each other). In this case, the heads V and D_1 will be linearized to the left of their complement. After this, a linearization d(A) is produced that meets Kayne's (1994) well-formedness conditions. The maximally small subset is given in (59)a, and the linearization in (59)b.

(58) $A = \{ \langle V, D_1\rangle, \langle V, NP_1\rangle, \langle V, N_1\rangle, \langle D_1, N_1\rangle \}$

(59) a. $A' = \{ V < D_1, V < N_1, D_1 < N_1 \}$
b. $d(A) = \{ V < D_1, V < N_1, D_1 < N_1 \}$

After Spell-Out and linearization of the complement of the phase head, the PF-branch contains three spelled-out phrases and their linearizations: the phasal domain VP and two complex left branches, the subject DP_2 and QP. These relevant d(A)s are listed in (60): [65]

dominated not only by DP_1, but also by QP, NP_1 is part of the phase edge as well. Fox & Pesetsky (2003:4) claim that "[a] phrase dominates a moved constituent only if it dominates its most recently merged position". That is, according to Fox & Pesetsky (2003, 2004a), DP_1 and VP do not dominate NP_1 and hence, NP_1 cannot be spelled out as part of the phasal domain VP. NP_1 will be spelled out in its remerged position.

Note though, that even if NP_1 is spelled out in its remerged position, N_1 will need to be linearized to the right of D_1, i.e. $\{D_1 < N_1\}$, as English-specific requirements demand heads to precede their complements. The reverse linearization statement $\{N_1 < D_1\}$, will result in an ungrammatical output in English. D_1 has already been linearized with respect to V_1 earlier in the derivation $\{V< D_1\}$, though, as both are (only) part of the phasal domain VP. Given that linearization statements cannot be altered later on, N_1 will be spelled out to the right of both V_1 and D_1. Concluding, because of the fact that remerge only targets NP_1, not D_1 (Johnson 2010a, 2011a) and earlier linearization statements cannot be altered, the resulting linearization will always be one in which the object QP is realized in its base position, the complement of the verb. Given all this, in what follows, I simply take NP_1 to be spelled out and linearized as part of the phasal domain VP.

[65] To be precise, recall (cf. chapter 3) that the d(A) of DP_2 in (60)c is actually not the singleton $\{D_2\}$, but an empty set { }, as d(A) is a collection of ordering statements and 'D_2' is not an ordering statement. This will not pose problems for the linearization of D_2, as it will be linearized once again when the domain of the CP-phase is spelled out and linearized.

(60) a. $d(A)_{QP} = \{ Q < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$
c. $d(A)_{DP_2} = \{ D_2 \}$

This is the point in the derivation where the quantificational determiner *every* is created. It was discussed at length in chapter 3 that the morphological process of Fusion Under Adjacency can combine two terminals into one, realized by one lexical item. Here, I repeat Johnson's (2011a:23) Adjacency condition on Fusion and his specific definition of 'Adjacency', adopted here (adding (63)).

(61) *The Adjacency condition on Fusion*
X and Y can fuse only if the linearization algorithm assigns them adjacent positions.

(62) *Adjacency*
Two terminal items α and β are adjacent if the linearization algorithm puts nothing in between them. [cf. Johnson 2011a:25, fn.22]

(63) $\neg\exists x.(\alpha < x \;\&\; x < \beta)$ (and vice versa)

The linearizations in (60) put nothing in between Q and D_1: there is no element that precedes D_1 and follows Q (or vice versa). Therefore, Q and D_1 are adjacent at this point in the derivation.[66] Hence, the terminals Q and D_1 can fuse: they can be brought together under one terminal. Once Q and D_1 have fused, the terminal onto which Q and D_1 are jointly mapped will occupy the positions assigned to Q and D_1 in the linearizations in (60). The result of Fusion applying to the terminals Q and D_1 in (60), repeated here, is given in (64). The joint mapping of Q and D_1 (represented as $Q = D_1$) will ultimately be spelled out as the quantificational determiner *every*.[67]

[66] It might seem strange to talk about 'string adjacency' when at least one of the elements (Q) is invisible (i.e. it cannot get a lexical realization on its own). However, Richards (2010) argues that it is crucial that nodes dominating phonologically null lexical items are linearized. Moreover, the organization of the PF-branch of the grammar in Distributed Morphology (DM) might play an important role: does Vocabulary Insertion happen prior to or at Linearization (cf. Embick & Noyer 2001; Fuß 2005; Kandybowicz 2007) or does Vocabulary Insertion take place after Linearization (cf. Parrott 2006; Richards 2010). In the latter proposals, Linearization orders terminal nodes into a particular sequence, after which the nodes are assigned a phonological exponent. The precise ordering of operations at PF is not the primary concern of this dissertation, however.

[67] As I mentioned in section 3 of chapter 3, for Kayne's (1994) well-formedness conditions on linearizations it is crucial that, after Fusion, Q and D_1 are no longer considered 'distinct' terminals. Otherwise, the d(A) in (64) would violate Totality as neither $Q < D_1$ nor $D_1 < Q$. (*continued on the next page*)

(64) a. $d(A)_{QP} \;=\; \{\, Q = D_1 < N_1 \,\}$

b.
$$d(A)_{vP} \;=\; \left\{ \begin{array}{c} V < Q = D_1 \\ V < N_1 \\ Q = D_1 < N_1 \end{array} \right\}$$

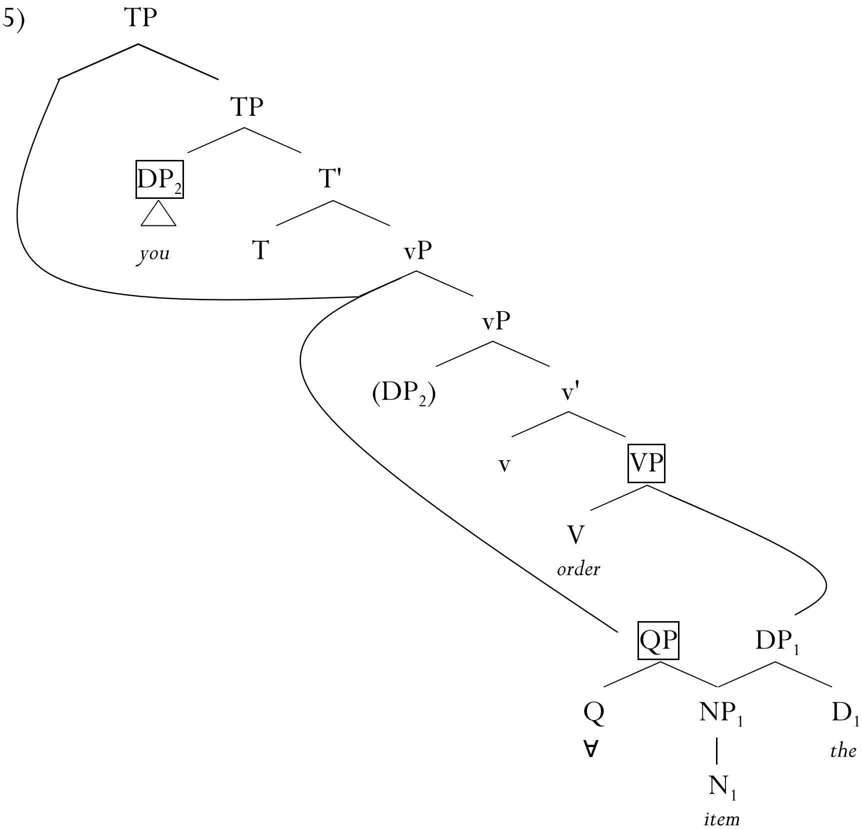
c. $d(A)_{DP_2} \;=\; \{\, D_2 \,\}$

Next, T is merged with vP. I take modals to be base-generated in T (cf. section 3 in chapter 3 and section 2 in chapter 4), so this is the merge position of the existential modal *can*. Then, the subject DP_2 is remerged to become the specifier of TP.[68] If we want to derive the inverse scope reading of the sentence in (49), where the object QP outscopes the modal, QP needs to be remerged into a position c-commanding the modal. The propositional node TP is an appropriate landing site for QR. Moreover, adjunction of QP to TP is allowed by Fox's *Scope Economy* or, more generally, *Interpretation Economy* (cf. sections 2.1 and 3.2.1 of this chapter), as this operation is not semantically vacuous. Adjunction of QP to TP results in a reversal of the scope relation between the universal object QP and the existential modal. Note that the (re)merged left branch had already been spelled out earlier in the derivation, so spelling out and linearizing QP before merger with TP is not necessary.

That is, Q and D_1 are looked at as one terminal by the well-formedness conditions. Therefore, I chose the notation $Q = D_1$, to indicate that Q and D are to be considered one position from the point of view of (the well-formedness conditions on) linearization.

[68] As mentioned in section 3 of chapter 3, I gloss over the issue of whether or not movement of the subject to Spec,TP for EPP reasons takes place in narrow syntax or at PF, as this is not crucial for my purposes.

(65)



Then, the phase head C is merged and after completion of the CP phase, the phasal complement TP is transferred to PF. The phasal domain undergoes Spell-Out and the linearization algorithm applies. The asymmetric c-command relations are given in the A in (66). Note that the linearization scheme applies to both both the QP in the TP-area and in the vP-area.[69]

[69] Here, I ignore the ordering statements regarding the subject DP_2 in Spec,vP. The subject DP_2 should actually get linearized twice, once in Spec,TP and once in Spec,vP. Because of Tolerance, the ordering statements referring to the subject DP_2 in Spec,vP will eventually be jettisoned as English-particular requirements choose to linearize subjects in Spec,TP. For a more detailed picture of the linearization of the subject, see section 3 of chapter 3.

(66)

$$
A = \left\{
\begin{array}{llll}
\langle QP, DP_2 \rangle & \langle DP_2, T \rangle & \langle T, QP \rangle & \langle v, V \rangle \\
\langle QP, D_2 \rangle & \langle DP_2, vP \rangle & \langle T, Q \rangle & \langle v, DP_1 \rangle \\
\langle QP, T' \rangle & \langle DP_2, QP \rangle & \langle T, NP_1 \rangle & \langle v, D_1 \rangle \\
\langle QP, T \rangle & \langle DP_2, Q \rangle & \langle T, N_1 \rangle & \langle v, NP_1 \rangle \\
\langle QP, vP \rangle & \langle DP_2, NP_1 \rangle & \langle T, v' \rangle & \langle v, N_1 \rangle \\
\langle QP, QP \rangle & \langle DP_2, N_1 \rangle & \langle T, v \rangle & \\
\langle QP, Q \rangle & \langle DP_2, v' \rangle & \langle T, VP \rangle & \\
\langle QP, NP_1 \rangle & \langle DP_2, v \rangle & \langle T, V \rangle & \\
\langle QP, N_1 \rangle & \langle DP_2, VP \rangle & \langle T, DP_1 \rangle & \\
\langle QP, v' \rangle & \langle DP_2, V \rangle & \langle T, D_1 \rangle & \\
\langle QP, v \rangle & \langle DP_2, DP_1 \rangle & \langle T, NP_1 \rangle & \\
\langle QP, VP \rangle & \langle DP_2, D_1 \rangle & \langle T, N_1 \rangle & \\
\langle QP, V \rangle & \langle DP_2, NP_1 \rangle & & \\
\langle QP, DP_1 \rangle & \langle DP_2, N_1 \rangle & & \\
\langle QP, D_1 \rangle & & & \\
\langle QP, NP_1 \rangle & \langle TP, Q \rangle & \langle T', D_2 \rangle & \\
\langle QP, N_1 \rangle & \langle TP, NP_1 \rangle & & \\
 & \langle TP, N_1 \rangle & &
\end{array}
\right\}
$$

The ordered pairs corresponding to the asymmetric c-command relations in the A in (66) need to be disambiguated. A subset of the ordered pairs needs to be selected that has to satisfy language-particular requirements. Heads have to precede their complement. Specifiers have to precede the material they asymmetrically c-command. The disambiguated subset has to result in a total linearization, i.e. one that puts all the terminals of the structure in a relative linear order with respect to each other.[70] The question is what happens to the remerged QP adjoined to TP. Does it get linearized following or preceding DP_2, T, v, etc.? Following Johnson's (2007) proposal, phrases are pushed to the left of the material they asymmetrically c-command in English. That would mean that the QP adjoined to TP has to precede the material in TP it asymmetrically c-commands. Let us see what would happen in

[70] That is, all terminals except for C, which will be linearized later on as it is not part of the phasal domain.

that case.[71] The (maximally small) disambiguated subset is given in (67). The resulting linearization is (68).

(67)

$$A' = \left\{ \begin{array}{ll} DP_2 < T & v < V \\ DP_2 < vP & v < DP_1 \\ & \\ T < vP' & QP < TP' \\ & QP < DP_2 \end{array} \right\}$$

(68)

$$d(A) = \left\{ \begin{array}{lllll} D_2 < T & T < v & v < V & Q < D_2 & N_1 < D_2 \\ D_2 < v & T < V & v < D_1 & Q < T & N_1 < T \\ D_2 < V & T < D_1 & v < N_1 & Q < v & N_1 < v \\ D_2 < D_1 & T < N_1 & & Q < V & N_1 < V \\ D_2 < N_1 & & & Q < D_1 & N_1 < D_1 \\ & & & Q < N_1 & N_1 < N_1 \end{array} \right\}$$

Note that the linearization in (68) contains several problematic statements. The statement $N_1 < N_1$, for instance, is a violation of Reflexivity. Moreover, the d(A) in (68) contains antisymmetric statements such as $N_1 < T$ and $T < N_1$ or $N_1 < D_2$ and $D_2 < N_1$. Furthermore, orderings such as $N_1 < V$ and $Q < V$ clash with the linearization statements that were introduced earlier in the derivation. That is, they are inconsistent with the orderings that were calculated before QP was adjoined to TP. Recall that the linearizations established for linearization domains earlier in the derivation cannot be changed later on. Linearization statements that are introduced later in the derivation have to be both total and consistent with the earlier statements.

Johnson (2007) proposed that d(A) is tolerant, just as A is: inconsistent and conflicting pairs can be discarded. As such, the reflexive statements can be deleted

[71] It seems to me, though, that adjuncts in the periphery of vP, TP, … etc. can be linearized to the right as well. For instance, in *I spoke to my mother yesterday*, the adverb *yesterday* is linearized following all vP- and TP-internal material. Following the standard idea that an adverb like this is adjoined to, for instance, vP, the adjunct needs to be linearizeable to the right (presumably, this is an English-specific requirement). If this is the case, linearization of the QP to the right of T, v, etc. is consistent with the linearization statements collected earlier. I choose to pursue the alternative situation where QP needs to be linearized as preceding TP-internal material, however, in order to show that this is compatible with my assumptions as well.

and the antisymmetric statements can be disposed of. Likewise, the orderings conflicting with linearization statements collected earlier can be deleted. Moreover, certain statements in (68) need to obey Transitivity when combining with statements collected earlier (cf. those in (64)). Relevant examples are given in (69). These statements in (69) are, however, contradicted by other statements in (68), namely Q < T and Q < v. As the statements in (64), putting Q = D_1 to the left of V, were collected earlier in the derivation and these cannot be altered, the two statements in (68) under discussion need to be discarded.

(69) TRANSITIVITY

a. T < V (68) + V < Q = D_1 (64) → T < Q = D_1

b. v < V (68) + V < Q = D_1 (64) → v < Q = D_1

Finally, note also that the statement Q < D_2 needs to be discarded, as it was established earlier that Q = D_1: D_2 precedes not only D_1, but also e.g. V, which was linearized as preceding D_1 (=Q).

The remaining statements are those in (70), which will be added to the orderings collected earlier (i.e. the ones in (64)).

(70)

$$d(A) = \left\{ \begin{array}{lll} D_2 < T & T < v & v < V \\ D_2 < v & T < V & v < D_1 \\ D_2 < V & T < D_1 & v < N_1 \\ D_2 < D_1 & T < N_1 & \\ D_2 < N_1 & & \end{array} \right\}$$

Note that, in the d(A) in (70), not all terminals seem to be ordered with respect to each other (because of Tolerance in d(A)). For instance, there is no statement T < Q (or vice versa). Nevertheless, T and Q are ordered with respect to each other by virtue of Fusion Under Adjacency between Q and D_1 earlier in the derivation: T < D_1 and Q = D_1, hence T < Q= D_1. The result of adding the ordering statements in (70) to the ones in (64) is a total, consistent ordering, which will eventually be realized as *You can choose every item.*

In this section I have developed an analysis for QR of an object QP across a modal in English. I incorporated Johnson's (2010a, 2011a) remerge + Fusion proposal for QR into the cyclic Spell-Out framework I introduced in chapters 2 and 3. The analysis has the following key components: decomposition of the quantified phrase, remerge (multidominance), cyclic Spell-Out and linearization, and Fusion under Adjacency. As proposed by Johnson (2010a, 2011a), the remerge + Fusion analysis ensures that the two components of an English quantificational determiner, an operator Q and a determiner, can fuse together. Moreover, the cyclicity of Spell-Out and linearization and the requirement of Order Preservation make sure that the object QP is realized in its base position, although it can be interpreted in its remerge position (e.g. outscoping a modal such as *can*). This is because it is only the NP-part of the QP that is remerged; the determiner always remains inside the phasal domain in the complement of V.

The next section focuses on the interaction between QR (across a modal) and verbal ellipsis in English. I argue that combining the analysis of QR developed in this section with the concept of derivational ellipsis (cf. section 4 of chapter 2 and section 4 of chapter 3) straightforwardly captures the fact that a QP can escape an ellipsis site, despite its being the result of Fusion Under Adjacency.

3.4.2 QR ACROSS A MODAL IN VERBAL ELLIPSIS

Relevant examples of QR of an object QP across a modal escaping a verbal ellipsis site were discussed in section 2.4 of this chapter and are repeated here:

(71) a. You can order every item on the list and John can too.
b. Customers asked me if they could order every item on the list and I told them they could.
c. Can you order every item on the list? Of course you can.

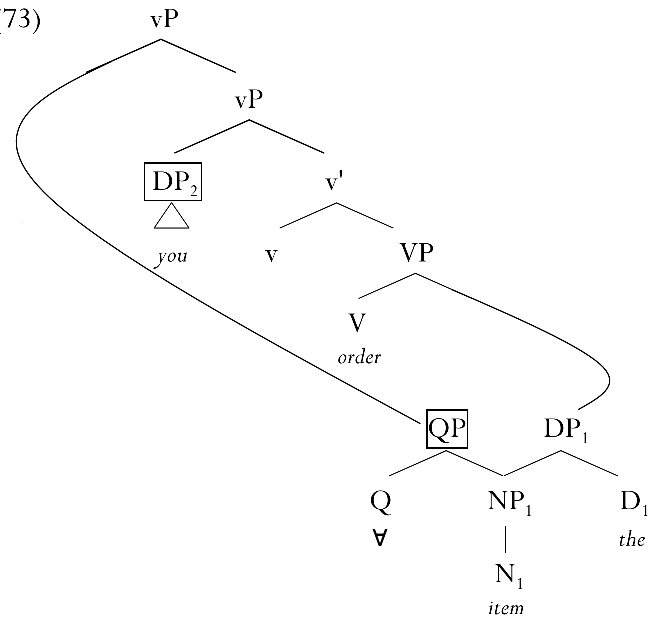
The antecedents in the examples in (71) are sentences with the modal *can/could* and a universal object QP *every item (on the list)*. The modal *can/could* is the licensor of verbal ellipsis in the elliptical clause. QR of the QP to outscope the modal, escaping the ellipsis site, is possible: it was discussed in section 2.4 that the sentences in (71) (at least (71)b and (71)c) are ambiguous.

Let us consider the elliptical clause in (71)c. For this example, the syntactic derivation starts out with the collection of terminals in a numeration N given in (72):

(72) $N = \{ D_1, N_1, Q, V, D_2, v, T , C \}$

The first applications of Merge are identical to those discussed in section 3.4.1: Merge creates an object DP_1, the NP_1-part of which undergoes Parallel Merge with an operator Q to form a QP. After this, V merges with the DP_1, v merges with VP, and the subject DP_2 is merged as Spec,vP. The subject DP_2 is spelled out before merger as the vP-specifier. Then, crucially, QP is merged in the vP-periphery:

(73)



As discussed before, an object QP always targets the edge of vP (sections 3.2 and 3.3 of this chapter). The object QP targets a clause-denoting node, and this operation is subject to *Shortest Move* in (37):

(37) *Shortest Move*
An instance of QR is restricted to the closest XP that dominates QP (where XP ranges over clause-denoting maximal projections).
[cf. Fox 2000:63]

The first node of type *t* dominating the object QP is vP. *Shortest Move* in (37) thus requires the object QP to adjoin to vP. As QP merges as a complex left branch in the clausal spine, it needs to be spelled out (and hence linearized) before merging with vP (following Uriagereka 1999). The adjunct QP undergoes Spell-Out and the linearization scheme applies. The ordered pairs corresponding to the asymmetric c-command relations in the A in (74) are disambiguated by language-specific requirements. A maximally small disambiguated subset is given in (75)a, and the linearization in (75)b.

(74) $A = \{ \langle Q, NP_1 \rangle, \langle Q, N_1 \rangle \}$

(75) a. $A' = \{ Q < N_1 \}$
b. $d(A) = \{ Q < N_1 \}$

Upon completion of the vP-phase, the complement of the phase head v (VP) is shipped off to PF. Spell-Out and linearization target all the material dominated by VP (that is, V, $D(P)_1$ and $N(P)_1$). The resulting linearization is the d(A) in (76):

(76) $d(A) = \{ V < D_1, V < N_1, D_1 < N_1 \}$

At this point, the PF-branch contains the linearizations of three spelled out phrases:

(77) a. $d(A)_{QP} = \{ Q < N_1 \}$
b. $d(A)_{VP} = \{ V < D_1, V < N_1, D_1 < N_1 \}$
c. $d(A)_{DP_2} = \{ D_2 \}$

As the linearization algorithm has put no element in between the terminals Q and D_1, they are adjacent at this point in the derivation. Therefore, they can undergo Fusion Under Adjacency. Once Q and D_1 have fused, the terminal onto which Q and D_1 are jointly mapped will occupy the positions assigned to Q and D_1 in the linearization in (77). The result of Fusion Under Adjacency of Q and D_1 is given in (78).

(78) a. $d(A)_{QP} = \{ Q = D_1 < N_1 \}$

b.
$$d(A)_{VP} = \left\{ \begin{array}{rcl} V & < & Q = D_1 \\ V & < & N_1 \\ Q = D_1 & < & N_1 \end{array} \right\}$$

c. $d(A)_{DP_2} = \{ D_2 \}$

After this, T is merged with vP. T is the licensor of verbal ellipsis, i.e. it triggers deletion of its complement (here vP). Because ellipsis is derivational (Aelbrecht 2009), the ellipsis site is transferred to PF as soon as the licensing head T is merged (cf. section 4 of chapter 2). Following Fox & Pesetsky (2003, 2004a), ellipsis of vP involves (i) the non-pronunciation of any terminal element dominated by vP and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by vP (chapter 2, section 4). Crucially, this entails that ellipsis targets (the ordering statements referring to) the terminals v, V, Q, D_1, and N_1 (all dominated by vP). The terminals V, Q, D_1 and N_1 had already been ordered with respect to each other when VP was sent off to PF and when QP was spelled out because it constituted a complex left branch. Q and D_1 became jointly mapped through Fusion Under Adjacency. These ordering statements are deleted (cf. (79)a, (79)b). No new ordering statements referring to v are added (cf. (79)c).

(79) a. $d(A)_{QP} = \{ \cancel{Q = D_1 < N_1} \}$

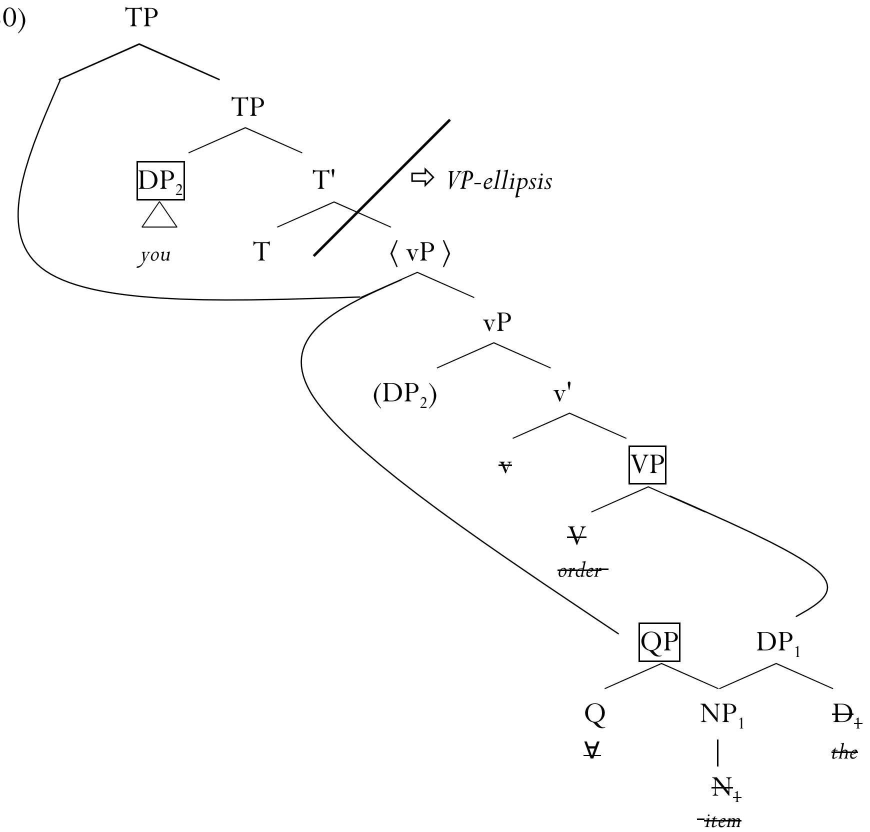
b. $$d(A)_{VP} = \left\{ \begin{array}{c} \cancel{V < Q = D_1} \\ \cancel{V < N_1} \\ \cancel{Q = D_1 < N_1} \end{array} \right\}$$

c. $d(A)_{vP} = \{ \}$

As Fusion under Adjacency between Q and D will always takes place before verbal ellipsis occurs, the quantificational determiner will have been formed before verbal ellipsis, which explains why formation and QR of an object QP in a verbal ellipsis context is allowed.

Importantly, the subject DP_2 in Spec,vP and the object QP in the vP-edge can escape the ellipsis site. Aelbrecht (2009) argues that all operations targeting the projection of the licensor (i.e. TP) occur simultaneously with the triggering of the ellipsis. As such, the subject DP_2 can be remerged to become the specifier of TP and the object QP can be remerged, adjoining to TP, simultaneously with T's complement (vP) being transferred to PF for deletion. Note that raising of QP to adjoin to TP is allowed by *Scope Economy*, as it results in reversing the scopal relation with the modal in T. After all this, the rest of the structure (i.e. the C-head) is merged and after completion of the CP-phase, its TP-complement is spelled out.

(80)



Looking at the structure in (80), a non-trivial question arises, though. If the QP is able to escape the ellipsis site to outscope the modal (because of Aelbrecht's (2009) derivational ellipsis), why is it not linearizable in the TP-area? That is, why are linearization statements such as { Q < T }, { T < Q }, or { N_1 < D_2 } lacking?

Note that spelling out QP (i.e. Q and $N(P)_1$) does not lead to a convergent derivation. D_1 is always elided as part of the verbal ellipsis site: D1 is the head of the DP_1-complement of V, only the NP_1-part of which has been remerged. As such, there will be no head D_1 for the Q-head to fuse with and Q and D_1 are not able to undergo Fusion (again). Q cannot be mapped onto a lexical item on its own, and can thus not be expressed morphologically.[72] The derivation will crash at the PF-interface: **You can order item on the list* is not a grammatical sentence of English.

[72] Here, Q differs from Neg in that the latter can be expressed morphologically on its own (cf. especially section 5 in chapter 3). That is, lack of Fusion between Neg and D does not lead to a non-convergent derivation, while lack of Fusion between Q and D results in a crash (at the PF-interface).

It could simply be argued that there is a choice as to whether or not spell out/linearize the QP in the TP-domain. Spelling out the QP in the TP-area leads to a crash, not spelling it out does not. Of course, the question then arises why this 'choice' is only available to QPs escapting the ellipsis site, and not for instance to the subject DP in Spec,TP, or WH-phrases is Spec,CP (which both need to be spelled out). The former is illustrated in the VP-ellipsis example in (81), the latter in the sluice in (82):

(81) Can you order every item on the list? Of course **you** can.

(82) John has ordered something but I don't know **what**.

Not spelling out the subject in Spec,TP in (81) would, however, lead to a violation of the EPP (the requirement that Spec,TP be filled). The EPP properties of T in (81) require movement of the subject to (and spell-out of the subject in) Spec,TP. Merchant (2001), Brattico & Huhmarniemi (2006), and van Craenenbroeck & den Dikken (2006) argue that the EPP is a PF condition. Merchant (2001) and van Craenenbroeck & den Dikken (2006) have shown that movement of the subject to (or spell-out in) Spec,TP does not need to occur if the EPP is not violated (cf. also den Dikken et al. 2000; van Craenenbroeck 2010). For instance, if T is part of a clausal ellipsis site, the EPP is suspended: if T is elided at (or not shipped off to) PF, "then the EPP is not in effect" (van Craenenbroeck & den Dikken 2006:655). In the case under discussion here, however, T is not elided (it is the licensor of ellipsis) and the EPP cannot be violated.

English interrogative WH-phrases (and, hence, sluicing remnants as well) are inherently focused, i.e. they carry a [focus] feature (cf. Horvath 1986; Rochemont 1986; Stjepanović 1995; Kim 1997). As shown by Kim (1997) and Romero (1998), for instance, sluicing remnants – such as *what* in (82) – must carry focal stress: the sluiced WH-word "in the elliptical clause is highlighted with contrastive focal intonation" (Romero 1998:11). Not spelling out the WH-remnant in a sluice would obviously violate this requirement.

Thus, although there is a choice as to whether or not to spell out the subject in Spec,TP or the WH-phrase in Spec,CP, one of the choices (i.e. not spelling out) is unavailable on independent grounds. For a QP in the TP-area there is, in principle, a choice to spell out the QP in the TP-domain or not, but spelling out the QP in the

TP-area leads to a crash at PF, while not spelling it out there leads to a convergent derivation.[73]

4 QR in Johnson (2010a, 2011a): Discussion

As discussed in section 3.1 of this chapter, Johnson (2010a, 2011a) argues that QR should be analyzed as involving (i) remerge of the NP-part of a quantified expression, with the NP dominated by both DP and QP, and (ii) Fusion between the quantificational head Q and the D-head of the DP object. I adopted both these proposals in this chapter. In this chapter, I explained how QR can both involve Fusion Under Adjacency and escape a verbal ellipsis sight (something that seemed problematic at first sight, given that I argued in the previous chapter that ellipsis bleeds FUA). If QR is always short (targeting vP, either as an intermediate or a final landing site) and if the framework of cyclic Spell-Out/linearization and derivational

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[73] In section 2.3, I have shown that QR of an object QP can escape a verbal ellipsis site to outscope the sentential negator *n't*. In section 3.1.3 of chapter 3, I argued that *n't* always realizes the high polarity head Pol_1 above T (the licensor of verbal ellipsis). This means that QR needs to target (at least) $PolP_1$ in order for the object QP to c-command and outscope *n't* in Pol_1. Given the discussion in this chapter, this conclusion is not unproblematic, though. I proposed that QR of the object QP has to target TP (the projection of the licensor T), as it cannot escape the verbal ellipsis site otherwise (following Aelbrecht 2009). I also adopted Fox's (2000) *Scope Economy,* which says that a scope-shifting operation targeting a propositional node higher than vP needs to have an interpretational effect. QR of the object QP to TP does not invert the scopal relation of two quantified expressions, however, as T(P) does not contain another quantificational element. If one of the two conditions presented by Aelbrecht and Fox can be dropped, there is no problem: QP simply QRs to TP without any scopal motivation or the QP only raises after Pol_1 has been merged. But let us suppose both conditions are valid. How could QR of the object QP to a position above Pol_1 be allowed?

I propose to adopt (a version of) Miyagawa's (2006, 2011) conception of *Interpretation Economy*. In Miyagawa's proposal, movement is evaluated by Interpretation Economy. An element can only undergo QR if this movement is not semantically vacuous: it must, for instance, create a new scopal relation. However, Miyagawa's implementation of Economy differs from Fox's original conception in that Economy "must apply at the next phase, that is, in the phase subsequent to the phase that contains the optional movement [i.e. QR – TT]" (Miyagawa 2011:21):

(i) *Application Domain of Interpretation Economy*
Interpretation Economy evaluates optional movement in one phase at the next higher phase.
In the root phase the evaluation takes place simultaneously with the movement.
[based on Miyagawa 2011:22, (33)]

If the evaluation of whether or not QR has an interpretational effect only occurs at the next phase (that is, C), movement of the QP can target TP (to escape the ellipsis site), after which it moves further on to $PolP_1$. At the next phase, Interpretation Economy evaluates QR of the object QP to $PolP_1$ in its phasal domain. As a new scopal relation has been created (the object QP outscopes *n't*), Interpretation Economy will allow this raising of the object QP.

ellipsis is adopted, it straightforwardly follows that QR can escape a verbal ellipsis site.

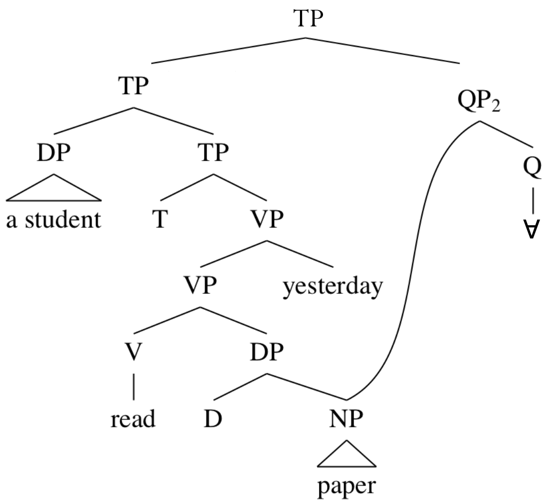
In this section, I discuss two aspects of Johnson's (2010a, 2011a) analysis of QR, showing how my proposal fairs better: the first one concerns the driving force of cyclic linearization and the second one the interaction of QR and verbal ellipsis (4.2).

4.1 THE DRIVING FORCE OF CYCLIC LINEARIZATION

Johnson (2010a, 2011a) argues that the quantificational operator Q combines semantically both with NP and with TP. He also proposes that remerge puts an NP in two positions in QR: the NP is both part of the object DP and the higher quantificational phrase; both D and Q combine semantically with the NP, as shown in (30) for (29), repeated here as (84) and (83), respectively.

(83) [Johnson 2011a:21, (48)]
A student read every paper yesterday.

(84) [Johnson 2011a:24, (54)]



Johnson proposes that there is a morphological process Fusion (which I call 'Fusion Under Adjacency' in this dissertation) that combines two terminals into one, which is realized by one lexical item. Two terminals can fuse only if the linearization algorithm assigns them adjacent positions. If Fusion combines the terminals Q and D into one, it can get realized as one lexical item (*every* in the case of the universal quantifier ∀). When looking at (84), it is not obvious, though, how Fusion brings together the Q-head and the D-head, as these are clearly not adjacent in the phrase marker. Johnson argues that there is a way of making Q and D adjacent. He speculates that there is a condition that requires the terms in a phrase marker to be expressed morphologically. This condition will for instance require the Q-head in (84) to be mapped onto matching morphology. (85)

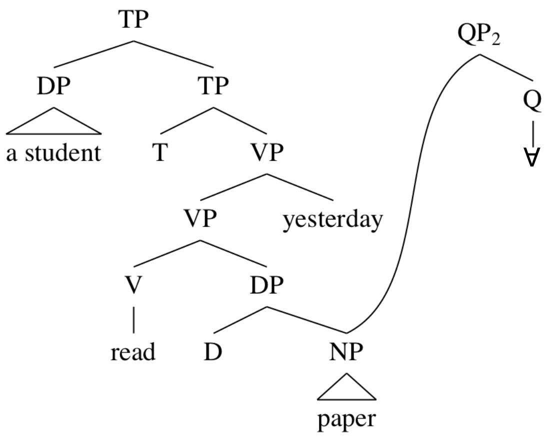
(85) [Johnson 2011a:24, (53)]

a. Principle of Full Interpretation (morphology)
Every terminal in a phrase marker must be expressed morphologically.

b. English particular properties of determiners
Every QR'able determiner (e.g. *every, many,* etc.) can only insert into a position where [D] and Q fuse.

Johnson proposes that this condition forces Q to be fused with D, as it cannot survive on its own. Fusion, however, requires of the to-be-fused terms that they are adjacent. Therefore, "Fusion may look like an inappropriate means for bringing Q and D together in [(84)] because they are clearly not adjacent in the phrase marker" (Johnson 2011a:13). Johnson suggests that, therefore, fusion has to occur before the structure in (84) is built by QR: the linearization algorithm has to "run on structures formed before QR has applied. […] [T]his ability to linearize during the derivation is compelled by [(85)]" (Johnson 2011a:24). As such, the morphological requirements of Q and D force (cyclic) linearization to take place prior to the merger of QP and TP, i.e. at the point of the derivation in (86):

(86) [cf. Johnson 2011a:24, (54)]



The linearization scheme applies to TP and QP independently. The result is (87):

(87) a. The linearization of TP in (86):

$$\left\{\begin{array}{lll}
\text{a} < \text{student} & \text{student} < \text{T} & \text{read} < \text{D} \\
\text{a} < \text{T} & \text{student} < \text{read} & \text{read} < \text{paper} \\
\text{a} < \text{read} & \text{student} < \text{D} & \text{read} < \text{yesterday} \\
\text{a} < \text{D} & \text{student} < \text{paper} & \\
\text{a} < \text{yesterday} & \text{student} < \text{yesterday} & \text{D} < \text{paper} \\
 & & \text{D} < \text{yesterday} \\
 & & \\
 & & \text{paper} < \text{yesterday}
\end{array}\right\}$$

b. The linearization of QP in (86): $\{ \forall < \text{paper} \}$

Johnson's definition of 'Adjacency' is repeated here in in (88) (with my addition in (89)):

(88) *Adjacency*
Two terminal items α and β are adjacent if the linearization algorithm puts nothing in between them. [cf. Johnson 2011:25, fn.22]

(89) $\neg\exists x.(\alpha < x \;\&\; x < \beta)$ (and vice versa)

The linearization algorithm has put nothing in between D and ∀ in (87). Therefore, D and ∀ are allowed to fuse, after which they get mapped onto an appropriate vocabulary item (the quantifier *every*). *Every* will then occupy the positions assigned to D and ∀ in (87). In the end, the linearized string will be *a student read every newspaper yesterday*, with the QRed phrase spelled out in its original position. Because the linearization scheme was forced to apply before QP merged into the larger structure, "the material that is in both the QP and the larger structure will get its position fixed relative to the rest of the structure before the QP's position in the larger structure can be computed. This is how the effect of making a QR'd term be spelled out in the lower position is achieved" (Johnson 2011a:25-26). To guarantee that the positions assigned cannot be altered at some later stage in the derivation, Johnson proposes that positions assigned by the linearization algorithm at some stage in the derivation cannot be changed later on (following Fox & Pesetsky 2003, 2004a,b). Secondly, he needs to ensure that the linearization algorithm runs at the point in the derivation immediately before the QP merges to the rest of the structure. Therefore, he proposes the following constraint:

(90) [Johnson 2011a:26, (58)]
Apply the linearization algorithm as late in the derivation as possible.

Although my analysis of negative indefinites (chapter 3) and QR (this chapter), takes some of the ingredients of Johnson's (2010a, 2011a) analysis of QR as a starting point, it avoids several problems raised by it.

First of all, I have not adopted Johnson's proposal of how to make the two components of the determiner adjacent. He relies on the Principle of Full Interpretation to force fusion, and therefore linearization, to occur before QR merges QP with TP. It is the morphological requirements of Q and D that force cyclic linearization to take place before merger of QP and TP. The fact that morphological requirements force Spell-Out and linearization at some point in the derivation is, however, impossible to implement in a framework like Distributed Morphology (Halle & Marantz 1993), where narrow syntax (i.e. Merge) only takes features or feature bundles as its input. Morphophonological information about the terminals only becomes available *after* Spell-Out, in the PF-component of the grammar. In this framework, it is impossible for certain terminals to *force* Spell-Out and linearization, in order to undergo Fusion Under Adjacency to obey the Principle Of Full Interpretation: this involves major lookahead. Furthermore, this information is simply not available in narrow syntax.

Moreover, Johnson adds the condition in (90), which says that the linearization algorithm has to be applied as late in the derivation as possible. This condition seems rather ad hoc, though: it is unclear which properties of the grammar would motivate this condition (as also acknowledged by Johnson (2011a:26)).

In my analysis of negative indefinites (chapter 3) and QR (this chapter), the cyclic Spell-Out/linearization at certain points in the derivation follows from independent principles of the grammar. The Chomskyan PIC requires that a phasal domain (the complement of the phase head) be spelled out once the phase has been completed. Secondly, complex left branches have to be transferred to PF before they are merged in the clausal structure (following Uriagereka 1999). These principles have been proposed on independent grounds in the literature, when dealing with phenomena other than negative indefinites or Quantifier Raising. The properties of English negative indefinites and QR follow nicely when embracing the PIC and Spell-Out of complex left branches. The analysis proposed here does not have to resort to lookahead or other ad hoc principles.

4.2 QR AND VERBAL ELLIPSIS

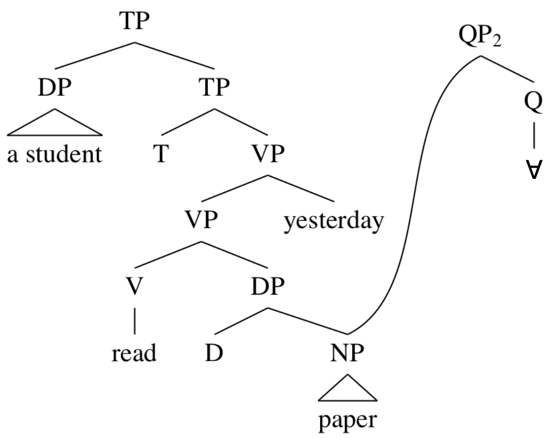
Consider the ambiguous sentence in (91), the inverse scope reading (∀>∃) of which is our primary concern here, and consider again the structure in (86), proposed by Johnson (2010a, 2011a).[74] For Johnson (2010a, 2011a) QR of the object QP targets the TP-area.

(91) A professor read every paper yesterday and a student did, too.

(∃>∀), (∀>∃)

[74] Recall from sections 1.1 and 2.2 of this chapter that we do not know for certain whether the inverse scope reading of (91) involves QR (rather than QL/reconstruction). For the present discussion, I follow Johnson's analysis that a sentence like this does involve QR to the TP area and I point out the problems arising in the context of verbal ellipsis. The same concerns arise, for instance, for QR across a modal in T.

(86) [cf. Johnson 2011a:24, (54)]



Recall that verbal ellipsis is licensed by T, i.e. T triggers ellipsis of its complement (cf. section 4 of chapter 3). Thus, ellipsis targets VP in the structure in (86). As ellipsis takes place in the course of the derivation (Aelbrecht 2009), the ellipsis site VP is sent off to PF (marked for ellipsis) as soon as the licensing head T is merged (cf. section 4 in chapter 2). Following Fox & Pesetsky (2003, 2004a), ellipsis of VP involves (i) the non-pronunciation of any terminal element dominated by VP and (ii) the deletion from the Ordering Table of all ordering statements referring to the terminal elements dominated by VP (cf. section 4 in chapter 2). This entails that ellipsis targets (the ordering statements referring to) the terminals V, D, N, and Adv (*yesterday*). All ordering statements referring to the terminals dominated by VP will be deleted, the result of which is shown in (92).

(92) The linearization of VP in (86): d(A) = { }

Johnson (2010a, 2011a) assumes that QP (as well as TP) is spelled out and linearized right before the QP and TP are merged together.[75] This is the point in the derivation where Q and D would normally become adjacent and undergo Fusion. However, the object DP has, as part of the VP-ellipsis site, been subject to ellipsis. This means that the terminals in DP (D and N) have been elided: these terms are not pronounced and

[75] In the cyclic model I have adopted in the previous chapters, this is also the case: it follows from the fact that QP is a complex phrase adjoining to TP. As a complex phrase, it has to be spelled out before it merges to TP (cf. section 3.3.1 of chapter 2).

linearization statements referring to them are ignored. As D has already been elided at this point, there is nothing for Q to fuse with. Fusion between Q and D is blocked because of ellipsis. Only Q remains. Q cannot be spelled out as an independent lexical item: there is no other lexical item than fused *every* to lexicalize ∀ (cf. "Every QR'able determiner [...] can only insert into a position where [D] and Q fuse" (Johnson 2011a:24)). Therefore, the derivation will crash. Thus, (91) is predicted to be ungrammatical (at least under the inverse scope reading) under Johnson's (2010a, 2011a) 'adjunction to TP'-analysis, contrary to fact.[76]

Summing up, if Johnson's proposal that QR of the object QP targets the TP-area and that Spell-Out and linearization are cyclic (the latter adopted here as well) is combined with the view that ellipsis is derivational (as proposed by Aelbrecht 2009 and adhered to here), it is predicted that verbal ellipsis will block QR (to TP). We have seen, however, that this is not the case (cf. section 2). I proposed that if QR is obligatorily short, always targeting vP, the observation that QR is not bled by verbal ellipsis follows straightforwardly. For my argumentation it is crucial that the Q- and D-parts of the quantificational determiner undergo Fusion Under Adjacency before (one of) these elements are targeted by verbal ellipsis. If FUA takes place before ellipsis targets the complement of T, the vP-ellipsis site can contain an object quantifier. This can only be accomplished if the QP adjoins in the vP-periphery.

Concluding, while I take some of the components of Johnson's (2010a, 2011a) multidominant analysis of Quantifier Raising as a starting point for my account of negative indefinites and QR, the cyclic, derivational view on Spell-Out, linearization, and ellipsis introduced in chapter 2 and implemented in chapter 3 and this chapter fares better in several ways. The properties of English QR (and English negative indefinites, chapter 3) – including their interaction with ellipsis – follow nicely when embracing cyclic Spell-Out/linearization (specifically, the PIC and Spell-Out of complex left branches), derivational ellipsis, and short QR.

[76] Note that, even if merger/Spell-Out of QP happens simultaneously with ellipsis of VP (as proposed by Aelbrecht 2009), Fusion is still not possible, as D is still being deleted before Fusion can occur.

5 Conclusion

In this chapter, I have discussed the interaction of QR and verbal ellipsis in English. It was shown (inconclusively) on the basis of scope interactions between subject and object QPs and (conclusively) on the basis of scope interactions between an object QP and another quantificational operator (sentential negation *n't* and a modal) that QR can raise an object QP out of a verbal ellipsis site.

In Johnson's (2010a, 2011a) analysis, QR is the result of remerge of the NP-part of a quantificational phrase and Fusion between two adjacent heads, Q and D. I adopted this proposal. In this chapter, I explained how QR can both involve Fusion Under Adjacency and escape a verbal ellipsis site. This seemed surprising at first sight, given that I argued in chapter 3 that verbal ellipsis bleeds FUA. I argued that the facts straightforwardly follow if (i) one adopts the framework of cyclic Spell-Out/linearization and derivational ellipsis introduced in chapters 2 and 3 of this dissertation and (ii) QR is always short, targeting the vP-periphery. The latter proposal was supported by ample evidence from the literature. In particular, I adopted the view that QP must target a clause-denoting node (a closed proposition of type *t*). This operation is subject to *Shortest Move,* which states that QR must move an object QP to the closest clause-denoting element that dominates it, i.e. vP.

CHAPTER 6

CONCLUSIONS & FUTURE PROSPECTS

1 Summary and conclusions

This dissertation has shed new light on the interaction of multidominant phrase markers, cyclic Spell-Out/linearization and derivational ellipsis by providing a novel account for the scopal behavior of English negative indefinites, modals, and quantified phrases in ellipsis.

This dissertation set out to answer the following two main research questions:

(1) a. Why does ellipsis block high scope of object negative indefinites?
b. Why is QR of a quantified object out of an ellipsis site allowed?

The research question in (1)a also raised the following additional research questions:

(2) a. If verbal ellipsis is licensed by a modal, do negative indefinites always show the same scopal possibilities when this modal is deontic, epistemic, or dynamic? If so/not, why (not)?
b. Is it possible for a negative polarity item *any* to antecede the ellipsis of a negative indefinite? If so/not, why (not)?

The theoretical base for dealing with these issues was provided in chapter 2 of this dissertation. It was argued that a syntactic object can be remerged, which results multi-rooted phrase marker. Moreover, in a cyclic Spell-Out/linearization model of the grammar, a total, consistent linear order for a multidominant structure may be generated, provided two hypotheses. First, both the linearization scheme and the linearization d(A) are tolerant, and language-particular requirements and Kayne's (1994) well-formedness conditions function as 'filters', selecting an appropriate subset. Second, at the end of a linearization domain, linear order is fixed once and for all (Order Preservation). Finally, ellipsis is considered a PF-phenomenon that involves the non-pronunciation of terminal elements and the deletion of linearization statements. Moreover, (the licensing/marking of) ellipsis takes place in the course of the derivation: an ellipsis site is sent to PF as soon as the licensor is merged. This dissertation provided an answer to the questions in (1) and in (2) given this multidominant, cyclic model of the grammar.

The questions in (1)a and (2)b were answered in chapter 3 of this dissertation. The investigation of the empirical data in this chapter led to two generalizations:

(3) THE CLAUSAL/VERBAL GENERALIZATION

While in clausal ellipsis *any* can antecede the ellipsis of *no*, in verbal ellipsis this polarity switch is disallowed.

(4) THE VPE/NI GENERALIZATION

A negative indefinite in object position cannot scope out of a VP-ellipsis site.

These two generalizations were accounted for in the multidominant, cyclic model developed in chapter two. It was argued that a negative indefinite is the result of a morphological process, Fusion Under Adjacency, between its two subparts (sentential negation and an indefinite determiner). This seemed surprising at first sight, as these two components are not obviously string-adjacent in English. I proposed that the required locality/adjacency is established under remerge, in combination with a cyclic Spell-Out/linearization. The PF-process of ellipsis can bleed the morphological process of FUA (at PF) in the formation of a negative indefinite. The timing of FUA and ellipsis is crucial: FUA has to happen before the licensing head merges. In the case of clausal ellipsis, FUA always takes place before the ellipsis licensor is merged. In the case of verbal ellipsis, on the other hand, FUA only takes place before merger of the licensor if the negative indefinite has narrow scope. High scope of a negative indefinite is, however, blocked in VP-ellipsis.

Chapter 4 provided an answer to the question in (2)a. It was shown that when ellipsis is licensed by a deontic, epistemic, or dynamic modal, an object negative indefinite in a verbal ellipsis site only has a narrow scope reading. Hence, the analysis presented in chapter three could straightforwardly be extended to all types of modals. However, when an epistemic modal co-occurs with an aspectual auxiliary in verbal ellipsis and when a dynamic modal is part of a verbal ellipsis site licensed by *do,* all scopal possibilities are available. I argued that co-licensing (by the epistemic modal and aspectual auxiliary) of verbal ellipsis after movement of the epistemic modal accounts for the former observation. Co-licensing by a deontic modal and an aspectual auxiliary shows different scopal properties, though, given that, unlike epistemic modals, deontic modals do not move. The scopal facts regarding dynamic modals were accounted by considering them to involve a biclausal structure.

Finally, the question in (1)b received an answer in chapter 5. In this chapter, QR is argued to be the result of remerge of the NP-part of a quantificational phrase and FUA between two adjacent heads, the quantificational operator and the head of its restriction. Again, the two terminals fuse under adjacency in the multidominant, cyclic model of the grammar developed here. The lack of a blocking effect of ellipsis in QR (which also involves FUA) is accounted for by the fact that QR is always short, targeting the vP-periphery. In particular, a quantificational phrase must target a clause-denoting node and this operation is subject to *Shortest Move*. Fusion Under Adjacency therefore always occurs before the ellipsis licensing head is merged.

Concluding, by allowing for remerge/multidominance in C_{HL} and adopting a cyclic view of the syntax-to-PF-mapping, the interaction of quantifier scope and ellipsis in English can be accounted for. Ellipsis, a PF-process, can bleed the morphological process FUA, which plays a crucial role in the formation of English negative indefinites and quantificational determiners. The derivational timing of both FUA and (the licensing/marking of) ellipsis plays a vital role in whether or not the latter bleeds the former.

2 Future prospects

This short final section identifies a number of areas for future research. I do not provide any detailed analyses in this section. The questions raised in this section might lead to confirmation or modification of the proposals made in this dissertation.

2.1 Negative concord

As discussed in section 6.4.2 of chapter 3, there are several reasons to prefer a FUA analysis of negative indefinites to an account in terms of Agree. One of these is that an Agree analysis would predict the negation and the agreeing indefinite D-head to be able to be spelled out simultaneously. This is, however, not possible in English, as illustrated in (5).

(5) a. * John did not buy nothing. (* under the single negation reading)
b. * John does not read no novels. (* under the single negation reading)

As noted in section 6.4.2 of chapter 3, this suggests that the account of negative concord in languages such as Italian (cf. (6)) should be different from the analysis of negative indefinites developed here. The same goes for varieties of English in which the sentences in (5) are grammatical under the single negation reading.

(6) [cf. Sauerland 2000a:5, (8a)]
Non o visto nessuno
not have seen nobody
'I saw nobody.' [Italian]

This is in line with accounts in the literature that propose different analyses for negative concord and negative indefinites. For instance, although Zeijlstra (2004) develops an Agree analysis for negative concord in various languages, he argues (contra e.g. Penka 2011) in Zeijlstra (2011) that this analysis should not be extended to negative indefinites in non-negative concord languages like German, Dutch and English. For the latter, he develops an analysis which incorporates both QR and amalgamation (cf. section 6.2 of chapter 3). If it is indeed the case that negative concord involves Agree (cf. Ladusaw 1992; Zeijlstra 2004; Penka 2011; among many others), we predict that ellipsis should not interact with sentences like the one in (6) as it does with negative indefinites in English (cf. section 4 of chapter 3). It was shown in this dissertation that high scope of a negative indefinite is blocked in verbal ellipsis in English, as illustrated in (7). I argued that verbal ellipsis blocks FUA in this case.

(7) a. Quentin Tarantino can offer no help. (¬ > *can*, % *can* > ¬)
b. Q: Who can offer no help?
A: % Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. (* ¬ > *can*, % *can* > ¬)

Recall (section 6.2 of chapter 3), though, that ellipsis does not block Agree. If negative concord is indeed to be analyzed as involving Agree, it is predicted that the elliptical counterpart of (8)a in (8)b should be grammatical with a high scope reading (that is, for speakers who allow (8)a with a single negation reading to begin with).

(8) a. The Rolling Stones can't get no satisfaction.
b. Q: Who can't get no satisfaction?
A: The Rolling Stones can't.

It remains to be seen whether these predictions are borne out.

2.2 Overt QR and NEG-shift

In this dissertation, I argued that Fusion Under Adjacency, the cyclicity of Spell-Out and linearization, and the requirement of Order Preservation cause an object negative indefinite and an object QP to always be realized in their base positions (cf. section 4 of chapter 3 and section 3 of chapter 5, respectively), although they can be interpreted in their remerge positions (e.g. outscoping a modal).

As also noted by Johnson (2011a:25, fn.23), "[t]his way of making QR 'covert' seems to predict that no language could have an overt version of QR. This has sometimes been claimed to arise, even in English." Hungarian has also been claimed to exhibit both covert and overt QR (cf. Szabolcsi 1997; Surányi 2002). To entertain the possibility that all QR in Hungarian is covert, I need to propose that the overt fronting of quantifiers is not QR, but rather an instantiation of an operation piggybacking on an independently existing movement operation such as topicalization and focus movement. See e.g. Surányi (2002) for discussion (although Surányi rejects this proposal).

Also note that according to Fox (2000), overt QR does not have to affect semantic interpretation; only covert scope-shifting operations cannot be scopally vacuous (given *Scope Economy*). Fox (2000:76) predicts that "in Hungarian QR will need to affect semantic interpretations only when it is covert". The prediction that overt QR in Hungarian can be scopally vacuous seems to be correct, as noted by Surányi (2002:98): "it appears that there does not need to be a scope-sensitive element in the clause for QR to occur in a preverbal position overtly". This observation at least leaves open the possibility that overt and covert fronting of quantifiers in Hungarian should be distinguished from each other.

When it comes to negative indefinites, Johnson (2010b) – who adheres to an Agree account of negative indefinites – proposes that the linearization algorithm can put an object negative indefinite in one of two positions. Either the object negative indefinite could be realized in its base position, or it could be realized in its remerge position. Johnson (2010b:2) supposes that "English [...] expresses the first case and those languages that have NEG-movement express the other." In this dissertation, however, negative indefinites are argued to involve FUA and to be realizable only in their base position. My analysis thus predicts there to be only *in situ* negative indefinites and, hence, no overt NEG-shift. This seems corroborated by the fact that many proposed instances of NEG-shift are parasitic on independently attested movement operations, such as scrambling in continental West-Germanic (Haegeman 1995) and object shift in Scandinavian (Svenonius 2002). Tubau (2008:136ff) argues that overt fronting of negative indefinites should be analyzed as an instance of focus movement. As such, overt NEG-shift would again be an instantiation of an operation piggybacking on an independently existing movement operation.

A detailed investigation of cases of apparent overt QR and NEG-shift is beyond the scope of this dissertation.

2.3 Dutch negative indefinites

As discussed in sections 1.1 and 6.1 of chapter 3, lexical decomposition analyses of negative indefinites were originally proposed for SOV languages like Dutch and German (cf. Jacobs 1980; Rullmann 1995). A superficially adjacent negative marker and indefinite determiner are considered to undergo obligatory amalgamation/incorporation (forming a negative indefinite). As Dutch and German are SOV languages, the object and sentential negation surface adjacent to each other (i.e. the verb does not intervene between them). The co-occurrence of sentential negation and an indefinite object is ungrammatical. All this was illustrated with the examples in (9)-(10)-(11) (cf. section 6.1 of chapter 3).

(9) EU-landen mogen niet de doodstraf uitvoeren.
EU-countries may not the death-penalty execute
'EU-countries may not execute the death penalty.' [Dutch]

(10) * EU-landen mogen niet (een) doodstraf uitvoeren.
EU-countries may not a death-penalty execute
INTENDED: 'EU countries may not execute a death penalty.' [Dutch]

(11) EU-landen mogen geen doodstraf uitvoeren.
EU-countries may no death-penalty execute
'EU countries may not execute a death penalty.' [Dutch]

According to Rullmann (1995), incorporation/amalgamation seems is blocked when lexical material intervenes between the negation and the indefinite determiner. Relevant examples were the sentences in (12), with an intervening preposition (cf. section 6.1 of chapter 3).

(12) [cf. Rullmann 1995:197, (10)]

a. Zij mogen niet naar een eenhoorn zoeken.
they may not for a unicorn search
'They are not allowed to look for a unicorn.'

b. ?* Zij mogen naar geen eenhoorn zoeken.
they may for no unicorn search [Dutch]

The question arising then is whether the analysis developed in this dissertation for English, an SVO-language is extendable to SOV-languages like Dutch and German. The sentences in (12) at first sight seem to indicate that Dutch and German negative indefinites indeed crucially rely on phonological string-adjacency – and not on adjacency at some point in the derivation as proposed in this dissertation. Note that in English, a negative indefinite inside a prepositional phrase is grammatical, also with high scope (as in (13)):

(13) The prisoner is not permitted to exercise; nor is he allowed to leave his cell. He may talk with no one (if he is caught speaking, he is penalized with another day in "the hole").
[Krause v. Schmidt, 341 F.Supp. 1001 (1972)][1]
= He is not allowed to talk with anyone. ($\neg > \Diamond$)

The ungrammaticality judgment for sentences such as (12)b is contested, however. As Rullmann (1995:197) himself indicates, “there is quite some variation regarding the acceptability of sentences like these” (translation TT). It is easy to find examples of Dutch sentences with negative indefinites inside PPs (with the negation scoping high). In the sentences in (14) and (15), the prepositions *over* ‘of’ and *met* ‘with’ intervene between sentential negation and the indefinite. Nevertheless, negative indefinite formation is allowed.[2]

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[1] http://www.leagle.com/xmlResult.aspx?page=2&xmldoc=19721342341FSupp1001_11174.xml&docbase=CSLWAR1-1950-1985&SizeDisp=7

[2] Note that the grammaticality of both the a- and b-sentences in (14) and (15) – the former ones with a negative indefinite, the latter ones with sentential negation and an indefinite – also contradicts Rullmann’s (1995:197) claim that “when incorporation is possible, it is also required in Dutch”. Rullmann (1995:197) himself gives an example (cf. (i)a) that shows that incorporation is not always required:

(i) a. [cf. Rullmann 1995:197, (9b)]
? Ze willen niet verpleegkundigen / een verpleegkundige ontslaan.
they want not nurses a nurse fire
‘They do no want to fire any nurse(s).’

b. Ze willen geen verpleegkundige(n) ontslaan.
they want no nurse(s) fire
‘They want to fire no nurse(s).’ [Dutch]

(14) a. Men mag over geen eigendommen beschikken.[3]
one may of no properties have
'One is not allowed to have any properties.' ($\neg > \Diamond$)

b. Men mag niet over eigendommen beschikken.
one may not of properties have
'One is not allowed to have any properties.' ($\neg > \Diamond$)

[Dutch]

(15) a. Ik mag met geen wagen rijden, gezondheidsproblemen.[4]
I may with no car drive health-problems
'I am not allowed to drive a(ny) car, (since I have) health problems.'
($\neg > \Diamond$)

b. Ik mag niet met een wagen rijden.
I may not with a car drive
'I am not allowed to drive a(ny) car.' ($\neg > \Diamond$)

[Dutch]

Moreover, the question arises whether subject negative indefinites in Dutch are the result of phonological string adjacency. As noted by Iatridou & Sichel (2011:609) for English subject negative indefinites, "the negative component of a subject NegDP behaves with respect to scopal predicates just as sentential negation does. If the negative part of NegDPs is, in some sense, sentential negation, it is almost trivial that [this generalization] should hold." Sentential negation in Dutch is, however, not realized adjacent to the subject, as shown in (16)a. If Iatridou & Sichel (2011) are on the right track in arguing that the subject negative indefinite has sentential negation as one of its subparts, it remains to be seen how subject negative indefinites (as in (16)a) can be the result of superficial adjacency.

(16) a. <*niet> (de/een) journalist(en) <*niet> mag/mogen …
not the/a journalist(s) not may
… Syrië <niet> in.
Syria not in
'(The/a) journalist(s) may not enter Syria.' ($\neg > \Diamond$)

[3] http://www.ocmw.dessel.be/file_uploads/1813.pdf?_vs=0_N
[4] http://forum.belgiumdigital.com/f22/sd-brugge-30-november-2003-a-27582-5.html

b. Geen journalist mag Syrië in.
no journalist may Syria in
'No journalist may enter Syria.'
(= All journalists are required to stay out.) ($\neg > \Diamond$)
[Dutch]

Given these preliminary observations, the analysis developed in this dissertation might be preferable to an account in terms of 'real' phonological string adjacency for negative indefinites in SOV languages like Dutch and German. I leave an inquiry into the precise formation of these indefinites to future research.

2.4 Subject QPs and negative indefinites

This dissertation has focused on negative indefinites and quantified phrases (QPs) in object position. The analysis of negative indefinites and QPs in terms of Fusion Under Adjacency in a cyclic, multidominant model of the grammar should be extended to subject negative indefinites and QPs.[5]

As noted by for instance von Fintel & Iatridou (2003) subject QPs show scope ambiguities with deontic modal operators, as illustrated in (17):

(17) [von Fintel & Iatridou 2003:175, (4)]
Most of our students must get outside funding –
a. for the department budget to work out.
b. the others have already been given university fellowships.

The sentence in (17)a has an inverse scope reading, with the subject QP scoping below the deontic modal (for the budget to work, it needs to be the case that most of the students get outside funding; von Fintel & Iatridou 2003:175). The sentence in (17)b has a surface scope reading, with the subject QP scoping above the modal (the obligation is imposed on those specific students who have not already been given fellowships; von Fintel & Iatridou 2003:175).

If the subject QP is first merged in the vP-area and later on remerged in the TP-

[5] In any case, subject QPs and negative indefinites are not expected to be obligatorily spelled out in their base position (as was the case for object QPs and negative indefinites), given that they are not part of the spelled-out domain of the vP-phase (as object QPs and negative indefinites are). Subjects are merged in Spec,vP, part of the vP-edge.

area above the deontic modal in T (as proposed throughout this dissertation), the ambiguity follows straightforwardly. This is also perfectly in line with the analysis developed for object QPs in chapter 5 of this dissertation: first, the object QP is obligatorily part of the vP-domain, and later on, it may be remerged in the TP-domain, accounting for scopal ambiguities (for instance with respect to a deontic modal).

When it comes to subject negative indefinites, Iatridou & Sichel (2011) have shown that some scope above a deontic modal (cf. (18)), while others do below it (cf. (19)).

(18) [cf. Iatridou & Sichel 2011:599, (6)]
Interpretation: Subject NegDP > Mod

a. No student has to / needs to leave.
  = All are allowed to stay.
  ≠ It is required that no student leaves.

b. No student can / may leave.
  = All are required to stay.
  ≠ It is permitted that no student leaves.

(19) [cf. Iatridou & Sichel 2011:599, (7)]
Interpretation: Modal > Subject NegDP

a. No student should / ought to leave.
  = All should / ought to stay.
  ≠ All can stay.

b. No student must leave.
  = All must stay.
  ≠ All are allowed to stay.

Iatridou & Sichel (2011) argue that a negative indefinite should be decomposed, with sentential negation as one of its subparts (as also proposed in chapter 3). Iatridou & Sichel (2011:609) observe that "the negative component of a subject NegDP behaves with respect to scopal predicates just as sentential negation does." That is, subject negative indefinites scope above a Neg>Mod modal such as *have to*, but below a Mod>Neg modals such as *should* (cf. chapters 3 and 4 on Mod>Neg and Neg>Mod modals).

When adopting the account developed in chapter 3, the negative component of the subject negative indefinites in (18) is part of the high $PolP_1$ (from where it outscopes the modal in T). Thus, NegP is merged as the specifier of $PolP_1$. It is conceivable that the DP-part of NegP was first remerged in Spec,TP for EPP reasons. For the subject negative indefinites in (19), on the other hand, their negative component has to be part of the low $PolP_2$ (with the modal outscoping the negation). Hence, NegP is merged as the specifier of $PolP_2$. It is unclear, however, how the negative indefinite ends up in Spec,TP, the surface position of the subject. Remerge of NegP in Spec,TP is ruled out, as this would result in the negation outscoping the modal in T (contrary to fact, cf. (19)). If only the DP-part of NegP is remerged in Spec,TP, it is predicted that the indefinite component of the subject negative indefinite may outscope the modal in T ($\exists$ > Mod > $\neg$) in (19). Alternatively, the subject negative indefinite occupying Spec,TP could be a surface effect. It has been argued that the EPP is a PF-phenomenon: "it is controlled by morphosyntactic properties of expressions at PF rather than at LF" (Brattico & Huhmarniemi 2006:7) (cf. Merchant 2001; Lasnik & Park 2003; Brattico & Huhmarniemi 2006; van Craenenbroeck & den Dikken 2006 for discussion). In this case, it is predicted that only the reading with the modal outscoping the whole subject negative indefinite is allowed in (19). Answering the question how the subject negative indefinites in (19) end up in their surface position Spec,TP thus requires a detailed investigation of the scopal possibilities of the subparts of subject negative indefinites with respect to other scopal other operators in the TP-area. I leave this issue open for further research.

2.5 Remaining issues

There are some other remaining questions that have not been answered in this dissertation. How do negative indefinite formation and QR interact, given that both of these operations require a D-head to fuse with a higher functional head? How should an English sentence containing two negative indefinites be analyzed (whether it has a positive interpretation or a negative concord reading, cf. (20)a vs. (20)b and (21)a vs. (21)b)?

(20) But no one said nothing. [Fleetwood Mac, *Walk a thin line*]
   a. Everyone said something.
   b. No one said anything.

(21) The coach gave no one nothing.
   a. The coach gave everyone something.
   b. The coach gave no one anything.

Moreover, in this dissertation, it was argued how multidominance and cyclicity feed Fusion Under Adjacency in the formation of negative indefinites and quantificational determiners. The question arises whether there are other such non-local morphological relations elsewhere in the grammar. Jacobs (1980) suggests to extend his decomposition analysis of negative indefinite determiners to other negative expressions (such as *nichts* 'nothing'); Stickel (1970) argues that all negative expressions should be analyzed as involving decomposition. Sportiche (2005) proposes that all quantificational DPs can have a split structure, with the determiner possibly generated in the matrix clause and the NP-part in the embedded clause. It remains to be seen whether the analysis proposed in this dissertation can be extended to other (non-quantificational) elements and if so, how these need to be constrained (e.g. in terms of locality). It should be clear that ellipsis is a promising diagnostic tool: if something is bled by ellipsis, it is probably the case that it involves a (potentially non-local) morphological relation (as discussed at length in chapter 3 of this dissertation, see also van Craenenbroeck & Temmerman 2011).

I leave these questions open for future research.

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SAMENVATTING IN HET NEDERLANDS

Dit proefschrift geeft een gedetailleerde beschrijving en analyse van de interactie tussen Engelse negatieve indefiniete determinatoren (zoals *no* 'geen'), modale hulpwerkwoorden (zoals *can* 'kunnen') en kwantoren (zoals *every* 'ieder') in elliptische contexten. In een elliptische constructie blijft een deel van de zin onuitgesproken. Er wordt een onderscheid gemaakt tussen verbale en clausale elliptische constructies. In verbale elliptische contexten blijft een werkwoordelijke constituent onuitgesproken; in clausale elliptische constructies wordt een zinsconstituent (TP) weggelaten. Relevante voorbeelden zijn respectievelijk (1) en (2). Elliptisch materiaal is gemarkeerd met ⟨—⟩.

(1) VERBALE ELLIPTISCHE CONSTRUCTIE

You don't have to come, but you can ⟨$_{VP}$ ~~come~~⟩.
je doet-niet hebben te komen maar je kan komen
'Je hoeft niet te komen, maar je mag (wel).'

(2) CLAUSALE ELLIPTISCHE CONSTRUCTIE

V: Who won the World Cup in 2010?
wie won de wereld beker in 2010
'Wie won de Wereldbeker in 2010?'

A: Spain ⟨$_{TP}$ ~~won the World Cup in 2010~~⟩.
Spanje won de wereld beker in 2010
'Spanje.'

Hoewel een deel van de zin onuitgesproken blijft, is de betekenis ervan perfect duidelijk. De elliptische zin in (2)A, bijvoorbeeld, wordt geïnterpreteerd als de volzin *Spanje won de Wereldbeker in 2010*, hoewel de TP-constituent niet fonetisch gerealiseerd is (enkel het onderwerp *Spanje* wordt uitgesproken). De interpretatie van de elliptische zin is dus rijker dan datgene dat wordt uitgesproken. In deze dissertatie wordt het voorstel aangenomen dat een elliptische constructie dezelfde syntactische structuur heeft als zijn niet-elliptische tegenhanger. Een deel van die structuur wordt echter niet uitgesproken (zie bijvoorbeeld Merchant 2001 *et seq.*). Ellipsis is een PF-proces, d.w.z. een proces in de (morfo)fonologische component van de grammatica (verantwoordelijk voor de overgang van syntactische naar fonologische processen). In de PF-tak van de grammatica wordt de instructie gegeven dat bepaald syntactisch materiaal weggelaten (niet uitgesproken of fonologisch niet verwerkt) moet worden.

Een belangrijke observatie in dit proefschrift is de volgende: een negatief indefiniet object heeft geen bereik buiten de verbale constituent (bijvoorbeeld boven een modaal hulpwerkwoord) wanneer deze onuitgesproken blijft. Dit wordt geïllustreerd met het contrast in (3)-(4):

(3) Quentin Tarantino can offer no help. (¬ > *can*, % *can* > ¬)
Quentin Tarantino kan bieden geen hulp
'Quentin Tarantino mag geen hulp bieden.'

(4) V: Who can offer no help?
wie kan bieden geen hulp
'Wie mag geen hulp bieden?'
A: % Quentin Tarantino can ⟨ ~~offer no help~~ ⟩. (* ¬ > *can*, % *can* > ¬)
Quentin Tarantino kan bieden geen hulp
'Quentin Tarantino mag dat.'

De niet-elliptische zin in (3) is ambigu: de negatieve indefiniete determinator *no* 'geen' heeft zowel bereik boven als onder het modale hulpwerkwoord *can* 'kunnen'. De eerste interpretatie (¬ > *can*) is *het is niet toegestaan dat Quentin Tarantino hulp biedt*; de tweede lezing (*can* > ¬) komt overeen met *het is toegestaan dat Quentin Tarantino geen hulp biedt*. De negatieve indefiniete determinator heeft echter geen bereik boven het modale hulpwerkwoord als hij deel uitmaakt van een onuitgesproken verbale constituent (cf. (4)). In dit geval is enkel de tweede lezing (met laag bereik) beschikbaar.

Een (positief) gekwantificeerd object, daarentegen, heeft wel bereik buiten een verbale elliptische constituent (bijvoorbeeld boven een modaal hulpwerkwoord). Men neemt algemeen aan dat het gekwantificeerde object verplaatst, een operatie die *Quantifier Raising* (QR) wordt genoemd. QR verplaatst een gekwantificeerde uitdrukking naar een positie boven een andere kwantor (i.e. naar een positie die de andere kwantor c-commandeert). Laten we de zinnen in (5) en (6) bekijken:

(5) [Iemand wil je een geschenkje geven, geeft je een lijst en zegt:]

You can order every item on the list.
je kan bestellen ieder item op de lijst
'Je mag ieder item op de lijst bestellen.'

Lezing 1: Deze persoon is erg vrijgevig; je mag alle items op de lijst bestellen. (*can* > ∀)

Lezing 2: Je zal een geschenkje krijgen, maar je mag niet zomaar iets vragen: je moet een van de items op de lijst kiezen. Je bent wel volledig vrij om te kiezen welk item op de lijst je bestelt. (∀ > *can*)

(6) [Iemand wil jou en Jan een geschenkje geven, geeft jullie een lijst en zegt:]

You can order every item on the list and John can too.
je kan bestellen ieder item op de lijst en Jan kan ook
'Je mag ieder item op de lijst bestellen en Jan mag (dat) ook.'

Wanneer mijn informanten de tweede lezing (∀ > *can*) toelaten in de niet-elliptische zin in (5), is deze ook beschikbaar in de elliptische tegenhanger (6). Deze lezing (∀ > *can*) is het resultaat van QR van de gekwantificeerde uitdrukking *every item* 'ieder item' naar een positie die het modaal hulpwerkwoord *can* 'kunnen' c-commandeert. Deze voorbeelden tonen aan dat QR van een gekwantificeerd object vanuit een verbale elliptische constituent (naar een positie boven het modaal hulpwerkwoord) mogelijk is.

Samenvattend: hoewel negatieve indefiniete objecten geen bereik hebben buiten een verbale elliptische constituent, kunnen positief gekwantificeerde objecten verplaatsen (via QR) naar een positie buiten een verbale elliptische constituent. Dit proefschrift biedt een eenduidige en diepgaande analyse van dit contrast in de context van multidominantie. *Multidominantie* heeft betrekking op knopen die verbonden zijn met meerdere, in de bomen hiërarchisch hoger gelegen, knopen. Deze syntactische configuratie ontstaat door *remerge*: een knoop die reeds deel uitmaakt van een syntactisch object wordt opnieuw gemerged (samengevoegd) met een ander syntactisch object.

Dit proefschrift beargumenteert dat zowel Engelse negatieve indefiniete determinatoren als Engelse (positieve) kwantificationele determinatoren opgebouwd zijn uit twee (syntactisch en semantisch) onafhankelijke elementen. De vorming van negatieve indefiniete determinatoren zoals *no* 'geen' en (positieve) kwantificationele determinatoren zoals *every* 'ieder' is het resultaat van een morfologisch proces, dat de twee onafhankelijke eenheden samenvoegt. Dit proces noem ik *Fusion Under Adjacency* 'Fusie in Aangrenzing' (FUA). Ik neem de definitie van *Adjacency* 'Aangrenzing' in (7)a aan, welke werd voorgesteld in Johnson (2011a). Dit wordt gepreciseerd in (7)b, waar '<' staat voor 'gaat (lineair) vooraf aan'.

(7) a. *Aangrenzing*
α en β zijn aangrenzend als het linearizatiealgoritme niets tussen α en β plaatst (zie (7)b).

b. $\neg\exists x.(\alpha < x \;\&\; x < \beta)$ (en vice versa)

Het voorstel dat Engelse negatieve indefiniete determinatoren bestaan uit twee (syntactisch en semantisch) onafhankelijke elementen die (morfologische) fusie ondergaan, is misschien verrassend op het eerste gezicht. Het is namelijk niet meteen duidelijk hoe de twee componenten van een Engelse negatieve indefiniete determinator (zinsnegatie en een indefiniete determinator) aangrenzend zijn. Dit proefschrift betoogt dat de nodige localiteit/aangrenzing (voor fusie van de negatie en de determinator) voortkomt uit multidominantie (*remerge*) in combinatie met de cyclische toepassing van *Spell-Out* en linearizatie. De twee componenten van een (positief) gekwantificeerde determinator (een kwantificationele operator en de determinator van zijn restrictie) ondergaan op dezelfde manier FUA (in een multidominant en cyclisch model van de grammatica).

Een belangrijk voorstel in dit proefschrift is dat ellipsis – een PF-proces – de vorming van negatieve indefiniete determinatoren kan blokkeren. Met een elliptische constituent α gebeurt het volgende in de PF-tak: elementen gedomineerd door α worden niet uitgesproken en linearizatie-instructies die verwijzen naar elementen gedomineerd door α worden verwijderd (Fox & Pesetsky 2003, 2004a,b). Dit proefschrift betoogt dat aangezien het een PF-proces is, ellipsis het morfologische proces FUA (op PF) in de vorming van negatieve indefiniete determinatoren kan blokkeren. Ellipsis gebeurt in de loop van de derivatie (Aelbrecht 2009): een elliptische constituent wordt naar PF gestuurd zodra de ellipsis-fiatteerder (het hoofd dat ellipsis toelaat) in de syntactische structuur geïntroduceerd (gemerged) wordt. Ik stel voor dat de timing van FUA een zeer belangrijke rol speelt: FUA moet gebeuren voor de ellipsis-fiatteerder gemerged wordt. Indien dit niet het geval is, wordt de vorming van de negatieve indefiniete determinator geblokkeerd. Wanneer de indefiniete determinator onderdeel wordt van een elliptische constituent alvorens hij FUA onderging met zinsnegatie, kunnen deze twee eenheden later geen FUA meer ondergaan. De indefiniete determinator die onderdeel is van een elliptische constituent wordt namelijk niet uitgesproken en de linearizatie-instructies die ernaar verwijzen werden verwijderd. FUA tussen zinsnegatie en de indefiniete determinator wordt daarom onmogelijk.

In het geval van QR (een operatie die ook FUA inhoudt, zie boven) heeft ellipsis echter geen blokkerend effect. Ik stel voor dat dit volgt uit het voorstel dat QR altijd moet 'landen' in de vP-periferie, in een positie lager dan de ellipsis-fiatteerder. Omdat QR altijd 'kort' moet zijn (*Shortest Move* in Fox 2000), zal FUA altijd plaatsvinden voor de fiatteerder gemerged wordt. Dit verklaart waarom ellipsis QR nooit blokkeert.

Dit proefschrift geeft aldus niet enkel een analyse voor het bereik van gekwantificeerde elementen in ellipsis; het verschaft ook nieuwe inzichten in de overgang van de syntaxis naar de PF-tak. Dit proefschrift draagt bij tot ons begrip van de overdracht van multidominante structuren (gebouwd in de syntaxis) naar de PF-tak voor fonologische verwerking (zie onder voor meer details). Het model dat in dit proefschrift aangenomen wordt, is een cyclische visie op de syntaxis-naar-PF-overdracht (cyclische *Spell-Out* en linearizatie en derivationele ellipsis). Hieronder bespreek ik kort hoe het proefschrift opgebouwd is in hoofdstukken.

Hoofdstuk 2 introduceert de theoretische fundamenten van dit proefschrift. Een syntactisch object kan ten gevolge van *remerge* twee moeders hebben (i.e. multidominantie). Dit hoofdstuk bespreekt hoe multidominante structuren gelinearizeerd worden in een cyclisch model van de grammatica. Twee hypotheses zijn nodig voor het genereren van een totale, consistente lineaire ordening voor een multidominante structuur. Ten eerste zijn zowel het linearizatiealgoritme als de linearizatie 'tolerant' (d.w.z. dat bijvoorbeeld tegenstrijdige linearizatie-instructies kunnen gegenereerd worden), waarbij taalspecifieke vereisten en Kaynes (1994) *well-formedness conditions* als 'filters' functioneren om de geschikte subset uit alle gegenereerde linearizatie-instructies te selecteren. Ten tweede moet aan het eind van ieder linearizatiedomein de lineaire ordening voorgoed vastgelegd worden (*Order Preservation*, zoals bijvoorbeeld voorgesteld in Fox & Pesetsky 2003, 2004a,b). Ook wordt het PF-fenomeen ellipsis besproken in dit hoofdstuk.

Hoofdstuk 3 geeft een gedetailleerd overzicht van het bereik van Engelse negatieve indefiniete determinatoren in clausale en verbale elliptische constructies. In dit hoofdstuk worden twee empirische generalisaties geïntroduceerd. Er wordt vastgesteld dat een hoog bereik van negatieve indefiniete determinatoren (bijvoorbeeld boven een deontisch modaal hulpwerkwoord) geblokkeerd is in verbale elliptische contexten, terwijl dit niet het geval is in clausale elliptische constructies. Dit hoofdstuk geeft een analyse van negatieve indefiniete determinatoren en hun interactie met verbale en clausale elliptische constructies in het multidominante, cyclische model van de grammatica dat voorgesteld werd in hoofdstuk 2. Engelse negatieve indefiniete determinatoren worden geanalyseerd als bestaande uit twee (syntactisch en semantisch) onafhankelijke onderdelen (zinsnegatie en een indefiniete determinator). Deze twee componenten ondergaan FUA in de PF-tak. Ellipsis, een PF-proces dat plaatsvindt in de loop van de derivatie, kan dit morfologische proces blokkeren. De timing van FUA en derivationele ellipsis blijkt een cruciale rol te spelen: FUA moet plaatsvinden voor de ellipsis-fiatteerder gemerged wordt.

Hoofdstuk 4 geeft een uitgebreid overzicht van de interactie tussen Engelse epistemische en dynamische modalen, negatieve indefiniete determinatoren, en verbale elliptische constructies. Een Engelse negatieve indefiniete determinator in objectspositie heeft enkel een laag bereik wanneer het onderdeel is van een verbale elliptische constituent waarbij een epistemische of dynamische modaal de ellipsis-fiatteerder is (los van zijn bereik in een niet-elliptische zin). De analyse die uitgewerkt werd in hoofdstuk 3 kan moeiteloos uitgebreid worden naar de gevallen besproken in dit hoofdstuk. Wanneer een epistemische modaal echter samen met een aspectueel hulpwerkwoord voorkomt in een verbale elliptische constructie, heeft een negatieve indefiniete determinator niet enkel een laag bereik. Ik argumenteer dat dit kan verklaard worden indien een epistemische modaal en een aspectueel hulpwerkwoord samen fungeren als fiatteerder voor de verbale elliptische constructie. Dit co-fiatteren gebeurt enkel na verplaatsing van de epistemische modaal. Ook wanneer een dynamische modaal niet zelf de ellipsis-fiatteerder is (maar onderdeel is van een verbale elliptische constituent met *do* 'doen' als fiatteerder) is hoog bereik mogelijk. Dit is compatibel met de analyse in hoofdstuk 3 als deze dynamische modalen een biclausale structuur hebben.

In **hoofdstuk 5** worden de data met betrekking tot QR gepresenteerd: QR uit een verbale elliptische constituent is mogelijk. Dit hoofdstuk argumenteert dat QR het resultaat is van *remerge* en fusie (tussen twee aangrenzende hoofden, de kwantificationele operator en het hoofd van zijn restrictie). Verbale ellipsis blokkeert QR niet omdat QR altijd 'landt' in de vP-periferie. Hierdoor vindt FUA altijd plaats alvorens de ellipsis-fiatteerder gemerged wordt.

Hoofdstuk 6 geeft de samenvatting en conclusies van dit proefschrift. Tot slot bespreek ik een aantal resterende vragen die kunnen dienen als uitgangspunt voor verder onderzoek.

Curriculum vitae

Tanja Temmerman was born on May 14th, 1985 in Aalst, Belgium. She completed her secondary education (Sint-Maarteninstituut Aalst) in 2003. She started studying Dutch and English Literature and Linguistics at the Catholic University of Brussels, where she received her candidate's (BA) degree (*magna cum laude*) in 2005. She continued her studies at the Catholic University of Leuven, where she focused on Linguistics. She obtained her licentiate's (MA) degree (*magna cum laude*) in 2007. From 2007 to 2012 she was a PhD candidate at the Leiden University Centre for Linguistics (LUCL). In 2009 and 2010 she was lecturer in the English department at Leiden University. From September 2010 to September 2011 she was employed as teaching assistant of Dutch Linguistics at the Facultés Universitaires Saint-Louis (FUSL) in Brussels and as research assistant at the Centre for Research in Syntax, Semantics, and Phonology (CRISSP) at University-College Brussels. This dissertation is the result of her PhD research. From September 1st, 2012, she is a postdoctoral researcher on the FWO/NWO-sponsored project 'The Syntax of Idioms', awarded to Prof.dr. Jeroen van Craenenbroeck (University-College Brussels) and Prof.dr. Norbert Corver (Utrecht University).