

ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ



UNIVERSITY OF PATRAS

***Wh*-constructions and the division of labour between
syntax and the interfaces**

by

Christos Vlachos

A thesis submitted to the Department of Philology
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy (in Linguistics)

at the

UNIVERSITY OF PATRAS

May 2012

Στούς γονείς μου, Άγγελο και Φλώρα
«Όπου υπάρχει ένα θέλω εκεί υπάρχει κ' ένας δρόμος»

Declaration

This study has been composed by myself, and has not been submitted in any previous application for a degree. The work reported within has been conducted by myself, unless otherwise stated.

May 2012

Contents

Declaration	ii
Contents	iii
Abstract	vi
Περίληψη	viii
Acknowledgments	x
1 So, this study is about what (and why)?	1
1.1 Theoretical scope	1
1.2 Empirical scope	7
1.2.1 <i>Wh</i> -questions	8
1.2.3 Sluicing	13
1.3 Overview	15
Notes	18
2 <i>Wh</i>-questions	21
2.1 Patterns of distribution	21
2.2 Patterns of interpretation	28
2.2.1 Information-seeking questions	28
2.2.2 Echo questions	33
2.3 Patterns of intonation	35
2.3.1 Information-seeking questions	37
2.3.2 Echo questions	40
2.4 Summary	42

Notes	43
3 The division of labour between syntax and PF	45
3.1 Typical <i>wh</i> -ex situ and <i>wh</i> -in situ	45
3.2 Approaches to <i>wh</i> -in situ alternatives	47
3.2.1 Covert or feature movement	47
3.2.2 Remnant movement	49
3.3 Computing <i>wh</i> -ex situ	52
3.4 Computing <i>wh</i> -in situ	58
3.4.1 Root clauses	58
3.4.2 Embedded clauses	63
3.4.3 (In)sensitivity to islands	66
3.4.4 (<i>Wh</i> -)parameterization	68
3.5 Disambiguating (non-)echo	73
3.5.1 From syntax to PF	75
3.5.2 From PF to LF	82
3.5.3 Formal PF-LF mapping (updating the T-model)	87
3.6 Summary	94
Notes	95
4 Sluicing	101
4.1 Between ex situ and in situ	101
4.2 Patterns of distribution and interpretation	103
4.2.1 Distribution	105
4.2.2 Interpretation	113
4.3 Members of the ‘ex situ’ family	120
4.4 Members of the ‘in situ’ family	130
4.5 Summary	137
Notes	139

5	The division of labour between syntax and LF	143
5.1	The anaphoric pattern of sluicing	143
5.2	Computing the SLUICE	148
5.2.1	C/case considerations	151
5.2.2	Formal link	156
5.3	From syntax to LF	164
5.3.1	When less form corresponds to more meaning	169
5.4	Predictions	180
5.4.1	The arguments ‘in favour’	180
5.4.2	Turning the tide of the arguments ‘against’	185
5.5	Summary	195
	Notes	197
6	So, this study was about what (and why)?	200
	References	205

Abstract

The minimalist approach to natural human language argues that the syntax of a language L maps a certain structure to a certain ‘form’ (π) at PF and to a certain ‘meaning’ (λ) at LF. With the above in mind, the ideal perhaps scenario, in terms of transparency, would be that the mapping between form and meaning would be one to one (1:1); in other words, there is as much form as there is meaning. This would further imply that the mapping between form and meaning is symmetric. The present thesis studies some aspects of the form and meaning of two kinds of *wh*-constructions in Modern Greek, i.e., questions and sluicing, and shows that the relevant mapping may not necessarily be 1:1. With respect to questions, it is argued that the same form may correspond to more than one meaning. As regards sluicing, it is proposed that there is less form than meaning. On the face of the previous, the argument will be as follows. Syntax generates form, and restricts part of meaning, while additional aspects of meaning are facilitated by PF (regarding *wh*-questions) and LF (concerning sluicing). Finally, since PF contributes to meaning, LF ‘sees’ PF, and vice versa.

Chapter 1 serves two purposes. First, it introduces the theoretical underpinnings, and the technical apparatus, of the minimalist approach to natural human language, up to its most recent incarnation. There, a number of preliminary clarifications are made, as regards some aspects of the theoretical (and, hence, the technical) background that the present study will revisit. The second aim of this chapter is to provide a historical excursus, and lay the groundwork, of the empirical scope of this thesis, which will be the syntax and interpretation of *wh*-constructions, both ‘full-fledged’ (*wh*-questions) and ‘elliptical’ (sluicing).

The rest of this study is equally devoted to the topics in question. That is, chapters 2 and 3 concentrate on *wh*-questions, while chapters 4 and 5 on sluicing. Chapter 2 provides evidence from the distribution, interpretation, and intonation of Modern Greek *wh*-questions,

which shows that the form of a *wh*-question does not map to a single meaning. Given the relevant facts, chapter 3 pans out a system that divides the (standardly assumed) labour between syntax (that computes form) and the interfaces (that compute meaning), in a way that syntax does not regulate every aspect of the corresponding form-meaning associations. So, the idea is that aspects of these associations are configured at PF. This means that the two interfaces interact, since PF actually determines aspects of interpretation (LF).

A similar line of reasoning, and mode of exposition, is maintained in chapters 4 and 5, where sluicing is taken up. That is, chapter 4 examines a number of data, pertaining to both distribution and interpretation, which suggest that aspects of the relevant form-meaning association are not determined by syntax. Instead, the proposal to be offered in chapter 5 is that syntax provides all the essential information so that LF computes the additional parts of meaning. In other words, the labour between syntax and the interfaces is divided in a way that syntax ‘regulates,’ but does not contain every aspect of the relevant interpretation.

Finally, chapter 6 summarizes and concludes the discussion. It provides a brief overview of the theoretical and empirical issues covered throughout, and puts together the most important conclusions that stem from the present study.

Περίληψη

Το μινιμαλιστικό πλαίσιο προσέγγισης της φυσικής ανθρώπινης γλώσσας υποστηρίζει ότι η σύνταξη μίας γλώσσας Γ αντιστοιχεί μία ορισμένη δομή με μία ορισμένη «μορφή» (π) στην ΦΔ, και με μία ορισμένη «σημασία» (λ) στην ΛΔ. Με αυτό ως δεδομένο, το ιδεατό ίσως σενάριο, όσον αφορά στην διαφάνεια, θα ήταν ότι η αντιστοίχιση μεταξύ μορφής και σημασίας είναι ένα προς ένα (1:1)· με άλλα λόγια, υπάρχει τόση μορφή όση και σημασία. Κάτι τέτοιο θα υπονοούσε επίσης ότι η αντιστοίχιση μορφής-σημασίας είναι συμμετρική. Η παρούσα διατριβή μελετά ορισμένες πτυχές της μορφής και της σημασίας δομών ερώτησης μερικής αγνοίας (*wh*-questions), και δομών εκκένωσης (*sluicing*), στα Νέα Ελληνικά, και δείχνει ότι η εν λόγω αντιστοίχιση δεν είναι απαραίτητα 1:1. Όσον αφορά στις δομές ερώτησης μερικής αγνοίας, υποστηρίζεται ότι η ίδια μορφή μπορεί να σχετίζεται με περισσότερες από μία σημασίες. Σχετικά με τις δομές εκκένωσης, προτείνεται ότι φέρουν λιγότερη μορφή από σημασία. Με βάση τα παραπάνω, το επιχείρημα θα έχει ως εξής. Η σύνταξη παράγει μορφή, και περιορίζει μέρος της σημασίας, ενώ ένα άλλο μέρος της σημασίας εισάγεται από την ΦΔ (όσον αφορά στις ερωτήσεις μερικής αγνοίας) και την ΛΔ (σχετικά με τις δομές εκκένωσης). Τέλος, αφού η ΦΔ συνεισφέρει στην σημασία, τότε η ΛΔ «βλέπει» την ΦΔ, και αντιστρόφως.

Το κεφάλαιο 1 υπηρετεί δύο σκοπούς. Πρώτον, εισάγει το θεωρητικό και τεχνικό υπόβαθρο του μινιμαλιστικού πλαισίου προσέγγισης της φυσικής ανθρώπινης γλώσσας, έως την πιο πρόσφατη εκδοχή του. Εκεί, γίνονται διάφορες προκαταρκτικές διευκρινίσεις σχετικά με ορισμένες θεωρητικές (και, άρα, τεχνικές) πτυχές αυτού του πλαισίου που η παρούσα διατριβή θα επανεξετάσει. Ο δεύτερος στόχος αυτού του κεφαλαίου είναι να κάνει μία ιστορική αναδρομή, και να παράσχει μία πρώτη θεώρηση των εμπειρικών δεδομένων με τα οποία καταπιάνεται αυτή η διατριβή, που είναι η σύνταξη και η ερμηνεία

των δομών ερώτησης μερικής αγνοίας και εκκένωσης, κοινό χαρακτηριστικό των οποίων είναι η παρουσία της ερωτηματικής φράσης.

Το υπόλοιπο μέρος αυτής της διατριβής είναι αφιερωμένο ισόρροπα στα υπο συζήτηση θέματα. Δηλαδή, τα κεφάλαια 2 και 3 ασχολούνται με τις ερωτήσεις μερικής αγνοίας, ενώ τα κεφάλαια 4 και 5 με τις δομές εκκένωσης. Ειδικότερα, το κεφάλαιο 2 παρουσιάζει δεδομένα σχετικά με την κατανομή, την ερμηνεία, και τον επιτονισμό των ερωτήσεων μερικής αγνοίας στα Νέα Ελληνικά, τα οποία δείχνουν ότι η μορφή μίας τέτοιας ερώτησης δεν σχετίζεται αποκλειστικά με μία συγκεκριμένη σημασία. Με βάση αυτά τα δεδομένα, το κεφάλαιο 3 αναπτύσσει μία ανάλυση που καταμερίζει την (θεωρούμενη ως καθιερωμένη) εργασία ανάμεσα στην σύνταξη (που παράγει μορφή) και τα επίπεδα διεπαφής (που παράγουν σημασία) με τέτοιον τρόπο, ώστε η σύνταξη δεν καθορίζει εξ'ολοκλήρου την εν λόγω αντιστοίχιση μορφής-σημασίας. Η ιδέα, λοιπόν, είναι ότι όψεις αυτής της αντιστοίχισης ρυθμίζονται στην ΦΔ. Αυτό σημαίνει ότι τα επίπεδα διεπαφής αλληλεπιδρούν, αφού η ΦΔ στην ουσία καθορίζει πτυχές της σημασίας (ΛΔ).

Μία παρόμοια επιχειρηματολογία και παρουσίαση ακολουθείται και στα κεφάλαια 4 και 5, όπου εξετάζονται οι δομές εκκένωσης. Ειδικότερα, το κεφάλαιο 4 καταπιάνεται με δεδομένα κατανομής και ερμηνείας, τα οποία υποδηλώνουν ότι πτυχές της σχετικής αντιστοίχισης μορφής-σημασίας δεν καθορίζονται από την σύνταξη. Αντίθετα, όπως προτείνεται στο κεφάλαιο 5, η σύνταξη παρέχει όλες τις απαραίτητες πληροφορίες, έτσι ώστε η ΛΔ να συμπληρώσει τα υπόλοιπα μέρη του νοήματος. Με άλλα λόγια, η εργασία μεταξύ σύνταξης και επιπέδων διεπαφής καταμερίζεται με τέτοιον τρόπο, ώστε η σύνταξη να «ρυθμίζει», αλλά να μην περιέχει κάθε πτυχή της σχετικής ερμηνείας.

Τέλος, το κεφάλαιο 6 συνοψίζει και ολοκληρώνει την συζήτηση. Κάνει μία σύντομη ανασκόπηση των θεωρητικών και εμπειρικών θεμάτων που έχουν εξεταστεί, και παρουσιάζει τα πιο σημαντικά συμπεράσματα που προκύπτουν από την παρούσα διατριβή.

Acknowledgments

Many people have contributed to the making of this dissertation, with support of many kinds. First and foremost, I am truly indebted to my thesis advisor, Anna Roussou—an inspiring scientist and teacher, and invaluable friend—for the time she spent and the effort she made so as to bring order to my unstructured (and, occasionally, purely chaotic) thinking and writing, and for teaching me how to do it. I thank her for helping me find my own way through.

I am grateful to Kleanthes Grohmann, a true friend, not only for his illuminating comments about aspects of my work regarding *wh*-questions, but also for the early opportunity he offered me to be involved in a research project about minimalism, and, thus, to benefit from it in so many crucial respects that I came to realize not until later in my research. I cordially thank Dimitris Papazachariou and Maria Giakoumelou for help and discussions during the phonetic experiment that I have conducted, Ineke Mennen for comments regarding the results of this experiment, Athanasios N. Karasimos for providing me with his localized manual of the PRAAT program, Christina Manouilidou for help and suggestions about the formation of a questionnaire (not documented here), which investigated the various forms of *wh*-questions in Modern Greek, as well as, the other two members of my thesis committee, Elena Anagnostopoulou and Ianthi Tsimpli, for their patience, encouragement and support. I would also like to acknowledge the contribution of the other members of my evaluation committee, that is, Dimitra Theophanopoulou-Kontou, Arhonto Terzi, and George Kotzoglou.

For insightful comments and suggestions, during various stages of my research regarding *wh*-questions, ellipsis, and anaphora, many thanks to Artemis Alexiadou, Theresa Biberauer, Scott AnderBois, Adrian Brasoveanu, Barbara Citko, Cleo Condoravdi, Donka Farkas, Anastasia Giannakidou, Vera Gribanova, Andreas Haida, Ruth Kempson, Winfried Lechner, Rita Manzini, Jason Merchant, Joanna Nykiel, Luigi Rizzi, Ian Roberts, Ourania Sinopoulou,

Neil Smith, Vassilis Spyropoulos, Michal Starke, and especially, Sandra Chung and Jim McCloskey—Sandy and Jim, I truly thank you for making my stay at UCSC in the fall of 2010 both pleasant and productive. I am also grateful to Jorge Hankamer for illuminating discussions and fruitful debates, and for organizing a workshop on ellipsis (among others), from which I benefited a lot. Also, this thesis has greatly benefited from the comments and criticisms of various audiences, and reviewers, to whom parts of the research reported here have been exposed (not always clearly).

For technical support, and various solutions to the issues I encountered during the formatting of this thesis, which has been composed with (plain) $\text{T}_{\text{E}}\text{X}$, I want to thank the Ling- $\text{T}_{\text{E}}\text{X}$ community, Richard Koch, Herbert Voss, and especially, John Frampton, whose constant support, and valuable advice (not only on coding) are greatly appreciated.

Doing research and documenting its products is an adventurous journey that I was blessed to share with others. I want to acknowledge, with deep appreciation, the support and encouragement of Dimitris Anagnostou, Marios Andreou, Argyris Archakis, Panagiotis Asproulas, Metin Bağriaçik, Taylor Bell, Christos Christodoulopoulos, George Giannopoulos, Maria Kambanaros, Efymia Karakantza, Anna-Maria Margariti, Dimitra Melissaropoulou, Angela Ralli, Elena Papadopoulou, Athina Prountzou, Spyridon Ragos, Lilly Saranti, as well as, George Xydopoulos. Last but surely not least, a heartfelt “thank you” to Dimitra Papamentzelopoulou (as if a “thank you” is enough, even a heartfelt one. . . but, actually, it isn’t), and, it goes without saying, a humble “thank you” to my family—the list is too large even to enumerate.

Finally, it needs to be acknowledged that the work reported here has been generously supported by the research fund “K. Karatheodori” (Grant No.: C.581) of the University of Patras (principal investigator, Anna Roussou).

Chapter 1

So, this study is about what (and why)?

1.1 Theoretical scope

The general framework of this thesis is the Minimalist Program (hereafter, MP), as developed by Chomsky (1993, onwards). As Chomsky (2000: 92) argues, the MP is not a theory, in the strict sense of the term, but a project of inquiry that leads to a theory. This project seeks to explain the properties of natural human language, and its relation to other cognitive capacities, by adopting a ‘reductionist’ perspective. That is, a project of defining the postulates that are ‘virtually conceptually necessary’ for an adequate theory of language. This section introduces the theoretical backdrop of the present study, section 1.2 its empirical scope, and section 1.3 provides an overview. One of the major concerns of this study is to narrow down the postulates that are ‘virtually conceptually necessary’ to account for (and, thus, predict) the empirical data to be examined. That said, it will become apparent, as the discussion unfolds, in what ways this study will differentiate itself from other minimalist approaches as regards not only the ‘amount’ of the technical apparatus adopted, but also the way this apparatus is (usually) conceptualized.

Let us start with the relevant background. A language L—where L may be any natural human language, such as English, or Modern Greek, etc.—is a cognitive system that contains information about sound, meaning and structural organization (see Chomsky 2000). This information is ‘externalized’ in the form of a linguistic expression, and in order for this to happen, a language L ‘interacts’ with two performance systems, i.e., a system of thought (Conceptual-Intentional) and a sensorimotor system (Articulatory-Perceptual). The interaction between the language L and the performance systems is mediated by two interface levels, in the following terms: the information that L provides to the performance systems comes in the form of two

‘levels of representation.’ One level, termed L(ogical) F(orm), is devoted to meaning, and is accessed by the system of thought. The other level that pertains to sound is the P(honological) F(orm), and is accessed by the sensorimotor system. In Chomsky’s (1995a: 390) words,

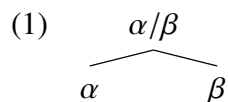
“L is then to be understood as a generative system that constructs pairs (π, λ) that are interpreted at the A-P and C-I interfaces respectively. π is a PF representation and λ an LF representation. . . A linguistic expression of L is at least a pair (π, λ) of this sort—and under minimalist assumptions, at most such a pair, meaning that there are no ‘levels of structure’ apart from the two interface levels PF and LF. . .”

Glossing over unnecessary details, the idea is that a language L is a device that creates expressions. Each expression is a linguistic structure which consists of elements that are put together in the generative component of L (I will provide more details shortly). A linguistic structure equals a set of two representations. One representation is relevant for PF and the other for LF, where the expression is associated with a form π and a meaning λ respectively. In an important sense, then, a linguistic structure combines information that is relevant for PF and LF. Therefore, structure mediates between form and meaning, mapping the former to the latter.

Turning to the nature of this information, and to the way it is put together, the standard assumption in the generative framework is that the grammar of any language L has a (finite) set of operations (i.e., computational procedure for human language (C_{HL}); see Chomsky 1995b), which operates over a set of lexical items.¹ Lexical items are mental objects that consist of a structured array of properties called ‘features’ (F). Features are linguistic objects that provide information to the interfaces PF and LF (and, through the interfaces, to the performance systems). Some of these features are assumed to be ‘interpretable’ at the interfaces, while others ‘uninterpretable,’ conventionally notated as $[iF]$ and $[uF]$ respectively, after Chomsky (1995b). A $[uF]$ needs to get a value (or be deleted) before the computational output is ‘Spell(ed)-Out,’ that is, sent to the interfaces. Thus, a $[uF]$ must be associated with a ‘matching’ (i.e., non-distinct, and not necessarily identical) $[iF]$. The idea that a computation operates on task-oriented formal primitives (‘features’) will be maintained in the present study, but, as we will see in chapter 3 (and in subsequent chapters), the ‘uninterpretability’ of features is not a necessary assumption for an adequate empirical analysis. Instead, the idea will be that all features are ‘interpretable,’ including features that are usually taken to be ‘radically

uninterpretable’ (specifically, Case; see Chomsky 2000).

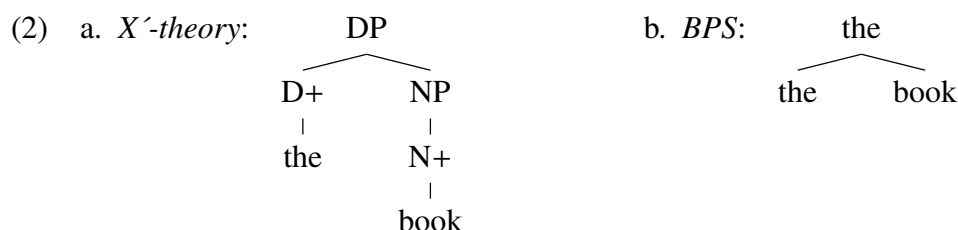
Roughly speaking, for a computation to take place, (bundles of) features are assembled in an initial array called ‘Numeration,’ and the need of [μ Fs] to be valued drives syntactic operations. These operations are of the following three types. Specifically, the first operation is ‘Merge.’ Merge is a concatenation calculus that brings two disjoint lexical items, say α and β , together to form a larger object (cf., (1)).



As depicted in (1), either α or β may project and label the output of Merge, meaning that Merge is ‘symmetric’ (see Chomsky 1995a).² Moreover, Merge is ‘recursive’ in that the output of any formed object may serve as the input to subsequent applications of Merge.

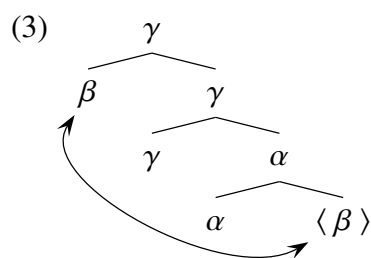
The second operation is ‘Agree.’ Agree is responsible for establishing a relation between (features of) lexical elements, one of which is the ‘Probe’ (P) and another the ‘Goal’ (G), the latter being in the c-command domain of the Probe (see Chomsky 2000). In order for Agree to take place, both the Probe and the Goal have to be ‘active,’ in that both participants must contain (an) uninterpretable feature(s) that need(s) to be valued before the output of syntax enters the interfaces.

At this point, notice that, as of Chomsky’s (1995a) revision of X’-theory, X’-related projections (where X may be any lexical or functional category) are to be treated as notational artifacts, void of any psychological reality (see Muysken 1982 for a first discussion). Chomsky’s Bare Phrase Structure (henceforth, BPS) assumes that lexical elements do not project in predefined syntactic categories. Therefore, syntactic mechanisms, like Merge or Agree, operate directly on abstract morphosyntactic features—i.e., the properties of lexical elements.³ By way of illustration, consider the X’-theoretic representation (2a) that is reconceptualized as (2b), in terms of BPS (repeated from Chomsky, op. cit.: 399, (3a,b)).



In the X' -oriented schema (2a), the *book* projects its N-category, which, in turn, ends in the maximal projection NP (I assume that Chomsky uses the sign ‘+’ in its traditional sense, where categories like N(oun), V(erb), A(djective), and P(reposition), were distinguished in terms of binary values ‘+’ and ‘-’; see Chomsky 1965 for an early discussion). The head D, which dominates *the*, selects NP and projects the maximal category DP. On the other hand, with respect to the BPS counterpart (2b), the elimination of the X' -projections reduces to the bare minimum requirement that syntax directly evaluates the features of lexical items for the purposes of Merge (and Agree). So, the lexical item *the* selects and merges with *book*, while the (unordered) set $\{the, book\}$ is labeled by one or the other item, whatever ultimately projects, and which then becomes relevant for further operations of Merge; here, it is the lexical item *the*. In tandem with (2b), I will trivially assume that reference to categorial projections and the like is a conventionalism that is useful for expository purposes. To put it differently, the present study will adopt the conceptual underpinnings of the BPS model of the Grammar, and will extend this model, incorporating more radical assumptions about the way syntax (i.e., the operations Merge and Agree) interacts with lexical items (see, especially, chapters 3 and 5).

The third operation relevant for computation is ‘Move.’ Literally, Move is responsible for the displacement of lexical items to positions other than that of their initial Merge. As of Chomsky (2000), if a Probe has a (generalized) EPP-feature, a Goal moves to the periphery of the Probe in satisfaction of that EPP. What is more, Chomsky (2004) reconceptualizes the operation Move as a special instance of Merge, distinguishing between ‘External’ and ‘Internal’ Merge. By and large, the difference between the two operations is that External Merge is associated with argument structure, while Internal Merge with derived structure. For instance, suppose that an object β externally merges in an argument position, say with some predicate α (cf., (3)). Subsequently, take β to be a Goal that agrees with a Probe γ , which projects higher in the linguistic structure. If γ has edge properties (EPP), β internally merges with γ .

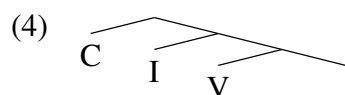


So, to put it simply, External Merge introduces one occurrence of β , while Internal Merge introduces the second (or more) occurrence(s) of β . With regard to labeling, Chomsky (1995a) argues that Internal Merge is ‘asymmetric,’ meaning that the Probe γ always projects, and not the Goal β (as opposed to External Merge, which is ‘symmetric;’ compare with (1)).

In an important sense, the two occurrences of β in (3) form a ‘chain’ with the following properties. If β is a phrase, then β is interpreted in (at least) two positions at LF, while only one of these positions is realized at PF. It is (usually) the higher occurrence of β that is lexicalized, while the lower occurrence is a copy that is deleted at PF, and translates to a variable at LF.⁴ As in (3), copies of extracted items will be enclosed in angle brackets, a notation that I adopt from Starke (1997).

Note here that the system to be developed in chapter 3, onwards, will assume Merge and Agree without further discussion. However, Internal (or, second) Merge (‘Move’) will be understood as a cover term for the notion of displacement, having actually no (or, at least, not necessarily any) psychological reality. This will lead to (at least) two results. First, EPP will be reconceptualized as a feature that encodes instructions relevant for (first) Merge. And second, the discrepancy between a ‘symmetric’ vs. an ‘asymmetric’ projection, which standardly distinguishes between (first) Merge and Internal Merge in terms of labeling, will lose much of its theoretical justification.

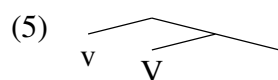
So, successive applications of (External/Internal) Merge and Agree, which apply on items selected from the Numeration, form linguistic structures.⁵ Typically, such structures comply with a particular hierarchical pattern (cf., (4)) that divides the conceivable space into three domains with distinguishable properties (to which I return shortly).



Each domain in (4) is defined by a certain (functional) head that merges at the top of the other (see Platzack 2001 and Grohmann 2003; also Fukui 2001 for a historical overview). Roughly speaking, the thematic (V-)domain expresses the thematic (θ -)relation of the predicate with its arguments. The inflectional (I-)domain is associated with the grammatical properties of the clause, such as tense, inflection, and subjecthood, while the complementizer (C-)domain

comprises discourse related, quantificational and clause typing properties, such as topic, focus, question, etc.

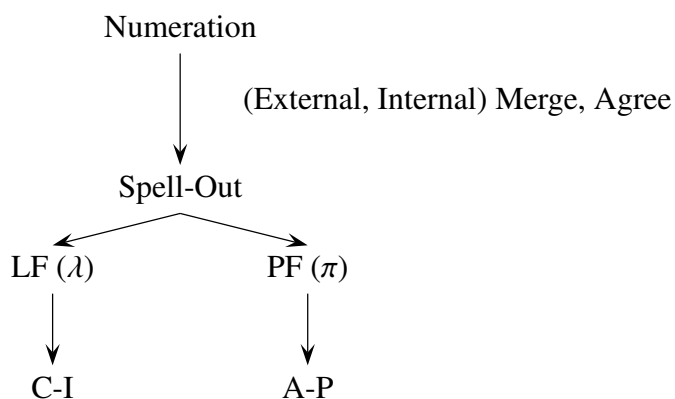
I use the term ‘domain,’ since C, I and V have usually been regarded as surrogates of a more articulated sequence of functional projections (see, e.g., Rizzi 1990, Cinque 1999, and Starke 2001, for more elaboration). For example, as regards the C-domain, Rizzi (1997) proposes that C is a cover term for a richer representation that consists of heads like Force, Focus, Topic, and Finiteness. Moreover, Benincà (2001) and Benincà & Polletto (2004) assume a more fine-grained articulation of the Topic and Focus layers, while Rizzi (2001) introduces an additional Interrogative projection. On the other hand, it has also been suggested that functional heads, like Topic or Focus, carry interpretational information that may not necessarily be encoded in the syntactic structure (see, among others, Chomsky 1995b, 2000, 2008, Manzini & Savoia 2007; 2011a, Roussou & Tsimpli 2006, and van Craenenbroeck 2009). The I-domain is also termed T(ense)-domain, while the V-domain is taken to comprise a vP-shell (cf., (5)).



As illustrated in (5), the shell headed by a (light) *v* is associated with transitivity (i.e., it discharges the θ -role of the external argument and is responsible for Accusative Case assignment; see Hale and Keyser 1993, Chomsky 1995b). *V* contains the predicate and its internal argument(s). In the course of the present discussion, the relevant constructions to be examined will be presented in the more restrictive C-I-*v*/*V* domain-oriented fashion, since I want to implicate (although I will not justify further) that functional heads like ‘Focus,’ or ‘Topic,’ are discourse-oriented constructs that are not necessarily encoded in the linguistic structure.

By way of summary, we may consider the grammatical system proposed by the MP as a ‘T-Model’ depicted in (6) (this illustration suffices for present purposes, but see Chomsky 1995b; 2001; 2004; 2008 for a more fine-grained approach).

(6) *The Minimalist T-Model of the Grammar:*



The schema in (6) shows that three syntactic operations—i.e., External Merge, Internal Merge, and Agree—operate on lexical items (i.e., bundles of features) that are assembled in a Numeration. These syntactic procedures generate (hierarchically articulated) linguistic structures, which are spelled-out to the interfaces LF and PF, and are associated with meaning λ and form π respectively. The two interfaces, each of which is accessed by a performance system for reasons of externalization (i.e., LF by C-I, and PF by A-P), do not interact with each other.

The T-Model predicts that linguistic structures determine form-meaning associations (see Chomsky 2000: 95). Keeping this prediction in mind, an ideal perhaps scenario would be that the mapping between form and meaning is ‘transparent,’ so that a certain form π at PF corresponds to a certain meaning λ at LF. In turn, the previous scenario would entail that each linguistic structure maps to a unique form and meaning (hence, symmetric). As will become empirically clear in the next section, there are reasons to believe that form-meaning associations are not transparent (and, symmetric). The line of reasoning that this study will adopt and adapt will invest on this idea, and will treat the relevant form-meaning ‘opacities’ in a way that will lead to an ‘update’ to the T-model (see, especially, chapters 3 and 5). This update will concern the relation between the interfaces PF and LF, and hence, the interaction of the π - λ pair.

1.2 Empirical scope

In this section, I present the empirical object of this study from a cross-linguistic perspective, including a first discussion of Modern Greek, from which I will mostly draw data. In doing so, I demonstrate that some amount of form-meaning mismatching, regarding two types of

wh-constructions, i.e., questions and sluicing, appears to be tolerated by various languages. I begin with *wh*-questions (section 1.2.1), while sluicing enters the discussion at the end (section 1.2.2). In the course of the discussion, I introduce some additional terminology used throughout, and I also prefigure the rationale of my approach, compared to others, in the scope of the theoretical framework summarized above (section 1.1).

1.2.1 *Wh*-questions

Typically, the formation of *wh*-questions has been argued to fall under a certain pattern.⁶ This pattern is usually assumed to distinguish between two types of languages. Specifically, English, which stands for the first type, exhibits ‘*wh*-ex situ’ forms, as shown in (7a) (from the Latin *ex situ* meaning ‘off position’). Chinese, which exemplifies the second type, exhibits ‘*wh*-in situ’ configurations (‘in position’), as in (7b), repeated from Huang (1982: 253, (159)).

- (7) a. Who did you see?
b. Ni kanjian-le shei?
you see-ASP who
“Who did you see?”

The classical treatment of (7a) is roughly the following. *Who* originates as the argument of the predicate *see*, and is then ‘displaced’ to a left peripheral position, leaving a variable in its argument position. In the ‘displaced’ site, *who* acquires scope by being construed with a Q(uestion)-operator, binding its variable in the ‘vacated’ site (see Chomsky 1977, Katz & Postal 1964, Baker 1970, and Pesetsky 1987, for early discussions). So, the representation of (7a) reduces to a well-formed operator-variable chain (see Browning 1987), in which *who* surfaces in the projection of the operator (termed ‘specifier’).

Regarding *wh*-in situ configurations of the kind in (7b), there have been three different views, in the generative literature, about how this operator-variable chain is created. By and large, there are approaches proposing that in situ *wh*-elements are ‘displaced’ to a left peripheral site at LF (‘covert phrasal movement;’ see, e.g., Huang 1982, and Nissembaum 2000); others, which argue that only a *wh*-feature is ‘displaced,’ and not the entire phrase (‘feature-movement;’ see Chomsky 1995b); and yet others, which assume that there is no ‘displacement,’ but some sort of ‘construal/quantification’ that holds between an operator and the in situ

wh-element (see, e.g., Nishigauchi 1990, and Chomsky 2000). Differences aside, the shared observation among the aforementioned accounts is that in situ *wh*-elements lexicalize the position of the predicate-internal variable, and not the one projected by the operator, as opposed to the ex situ *who* in (7a) (see, also, Cheng 1991, Watanabe 1992, Tsai 1994, Cole & Hermon 1994, Hagstrom 1998, and Cable 2007, among others).

Cross-linguistic evidence of the kind in (7) has given rise to a *wh*-parameter, which says that English-type *wh*-elements acquire scope ‘overtly,’ while Chinese-type *wh*-elements take scope ‘covertly’ (that is a rough statement of the parameter, but it will do for present purposes; see the references cited above for various technical formalizations).⁷ Overt scope is a scope-taking strategy that is evident at both PF and LF, and corresponds to ‘displacement’ in syntax proper. On the other hand, covert scope is visible only at LF, and has no phonological effects. So, the *wh*-parameter predicts that both types of questions in (7) share the same meaning (LF representation) but contrast in terms of form (PF representation).

The *wh*-parameter has traditionally been concerned with what one may call ‘information-seeking’ questions (hereafter, IQs),⁸ an example of which is (7). Roughly speaking, IQs convey the meaning that the speaker may have no clue about what the value of the *wh*-element is. Yet, along with IQs, *wh*-ex situ languages instantiate another type of *wh*-question, whose form and meaning contrast with the form and meaning of (7a). These are the so-called ‘echo’ questions (henceforth, EQs),⁹ which are typically exemplified by English sentences like (8b).

- (8) a. I saw John.
b. You saw WHO?

Specifically, *who*, which corresponds to *John* in (8a), appears ‘in situ,’ as opposed to (7a) (for ease of comparison with IQs, hereafter I will indicate echo elements in SMALL CAPS). Here and throughout, I will avoid giving a precise definition of EQs, and I will simply assume that “echo questions are not requests for new information; instead they are requests for confirmation of something someone has heard (Carnie 2006: 340).”¹⁰ It is true that EQs have rarely been discussed within the current minimalist view of syntax (an exception that confirms the rule is Sobin 2010), since they contradict general considerations regarding the ‘obligatoriness’ of *wh*-movement. Even more so, EQs have traditionally been argued to fall outside the ‘core’ properties of syntax. For example, Cooper (1983) proposes that EQs are not strictly speaking

syntactic phenomena and reasons that (as cited by Parker & Pickeral 1985: 337) “. . . the grammatical rules of language should not generate them. The situation with these questions is, I think, quite similar to something that arises with stress in phonology.”¹¹ Nevertheless, I hasten to note that I side with Sobin (2010: 131) who states that EQs “. . . are of great interest and relevance to analyses of question formation since they are clearly in the realm of ‘automatic’ and ‘untutored’ knowledge, just the sort of linguistic knowledge that generative grammar has had the aim of explaining since its inception.”

Keeping the previous remarks in mind, although EQs challenge the view that ‘displacement’ is obligatory in the question-formation in English, they appear to argue in favour of the following (hypo)thesis: *wh*-ex situ forms map to IQs, while *wh*-in situ configurations map to EQs. To state it otherwise: the mapping between the form and meaning of *wh*-questions in English-type languages seems to be one to one, in that there is one form for each meaning.

Neat as the above taxonomy may look like, once we restrict attention to *wh*-ex situ languages the picture does not come out that simple. More precisely, several (if not all) *wh*-ex situ languages may observe *wh*-in situ forms with an IQ interpretation.¹² An early example from English is offered in Bolinger (1978), as illustrated in (9), (*his*, 132 & 135: (265) & (285)–(287)).¹³

- (9) a. After the first failure, the instructions were relayed how?
 b. And you did it for what reason?
 c. And you did it why?
 d. And it happened as a result of what?

Obviously, the surface word order of *how* (cf., (9a)), *for what reason* (cf., (9b)), *why* (cf., (9c)) and *of what* (cf., (9d)) resembles the ‘in situ’ pattern in (8b), and contrasts with the expected ‘ex situ’ order in (7a). Yet, the sentences in (9) may be interpreted as IQs, on a par with (7a), and not necessarily as EQs (cf., (8b)).

Apart from English, the availability of *wh*-in situ IQs has continuously been reported for a number of *wh*-ex situ languages, some of which are listed in (10), with representative citation.¹⁴

- (10) a. Brazilian Portuguese (see Kato 2004, Oushiro 2011).

- b. (A dialect of) European Portuguese (see Cheng & Rooryck 2002).
- c. French (see Aoun et al. 1981, Obenauer 1984, Chang 1997, Bošković 1997; 2000, Starke 2001, Mathieu 2004, Adli 2006, Richards 2010, Baunaz 2011, Kellert 2011, Oiry 2011).
- d. Modern Greek (see Sinopolou 2009, Vlachos 2010).
- e. Cypriot Greek (see Grohmann & Papadopoulou 2011).
- f. German (see Bayer 2006).
- g. (Certain dialects of) Italian (see Munaro 1997; Poletto & Pollock 2004; Manzini & Savoia 2011b).
- h. Spanish (see Jiménez 1997, Uribe-Etxebarria 2002, Etxepare & Uribe-Etxebarria 2005, Reglero 2007, Reglero & Ticio 2008).

The situation is quite similar with EQs, as shown in the English example in (11), repeated from Parker & Pickeral (1985: 337, (1), (2b) and (2c) respectively) (notice that I leave out their notation that is relevant for intonation; see also Bolinger 1987, and Sobin 1990; 2010, for more English data).

- (11) a. The dog ate the book.
 b. The dog ate *WHAT*?
 c. *WHAT* did the dog eat?

What corresponds to *the book* in (11a), and may appear either ‘in situ’ (cf., (11b)) or ‘ex situ’ (cf., (11c)). Among the languages listed in (10), Modern Greek has also been reported to observe *wh*-ex situ EQs (see Roussou et al. 2011).

Although this thesis is mainly concerned with *wh*-ex situ languages, and especially with Modern Greek, it is interesting to mention, at this point, that standard *wh*-in situ languages, such as Mandarin Chinese, have also been reported to attest *wh*-ex situ configurations. More precisely, in Mandarin Chinese, *wh*-elements normally surface in their predicate-internal sites. This is shown in (12), with *shei* (who) (cf., (12a)), and *sheide pengyou* (whose friend) (cf., (12b)), repeated from Cheung (2008: 20 (25a) & (26a) respectively).

- (12) a. Ni xihuan shei (ne)?
 you like who Q
 “Who do you like?”
- b. Ni xihuan sheide pengyou (ne)?
 you like whose friend Q
 “Whose friend do you like?”

But, *wh*-fronting is also possible, as in (13), repeated from Cheung (2008: 12, (15)).

- (13) a. (Shi) shei, Lisi zui xihuan ⟨shei⟩ ne?
 be who Lisi most like Q
 “Who is it that Lisi likes most?”
- b. (Shi) na-ge ren, Lisi zui xihuan ⟨na-ge ren⟩ ne?
 be which-cl person Lisi most like Q
 “Which person is it that Lisi likes most.”

Both *shei* (who) (cf., (13a)) and *na-ge ren* (which person) (cf., (13b)) may be ‘displaced’ to a left-peripheral position (see also Tang 1988, Cheng 1991, and Wu 1999, for evidence).

As the matter now stands, a certain asymmetry in the mapping between form and meaning seems to be tolerable by several *wh*-ex situ languages (*wh*-in situ languages will be largely kept aside). That is, the same *wh*-form (either ex situ or in situ) may correspond to two meanings (either IQ or EQ). That being the case, the question arises as to whether these form-meaning mismatching effects are real or deceptive. To put it differently, since linguistic structures (that is, syntax) determine form-meaning associations (see section 1.1), the question is to what extent the syntax of these *wh*-questions controls their meaning.

The vast majority of the literature cited previously maintains the ‘ideal’ scenario that syntax generates one form for each meaning. Details aside, the consensus is that differences in meaning (information-seeking vs. echo) and form (*wh*-ex situ vs. *wh*-in situ) are explained in terms of different choices from the functional part of the lexicon, and the way syntax interacts with them. That is, dedicated functional heads and operators are selected from the lexicon, on the basis of which syntax generates each form and maps it to the corresponding meanings.

However, my take on the matter will stand against the aforementioned set of assumptions, and the ‘ideal’ scenario. Specifically, by concentrating on Modern Greek, I will alternatively

argue (building on Roussou et al. 2011) that syntax may generate either a *wh*-ex situ or a *wh*-in situ form, but does not distinguish between IQs and EQs. This distinction takes place at PF, via intonation. To put it differently, unlike the majority of the approaches to the subject in question, the current idea will be that IQs and EQs are not distinguished *inside*, but *outside* (narrow) syntax, at the PF interface, through intonation. Now, since we are dealing with different interpretations (LF), then the two interfaces must be ‘seeing’ each other, and this is a conclusion already supported by a number of independent approaches, such as Brody (1995), Culicover & Jackendoff (2005), Vergnaud & Zubizarreta (2005), and Roussou (2010a), Roussou et al. (2011), among others.

1.2.2 Sluicing

Considerations revolving around the ‘*wh*-ex situ vs. *wh*-in situ’ debate, the association between form and meaning, and the way syntax mediates this association, reappear in the context of another type of *wh*-construction, which consists of the second empirical part of the present study. In particular, so-called elliptical representations of the form (14a), dubbed by Ross (1969) ‘sluicing,’ give rise to full-fledged interpretations such as (14b).

- (14) a. She bought something and I wonder what.
b. ‘She bought something and I wonder what she bought.’

Pre-theoretically, one may make two observations vis-à-vis both the syntax and the interpretation of (14). More precisely, as regards syntax, *what* (henceforth, SLUICE) surfaces in a position after the predicate *wonder* (cf., (14a)). As is well known, such positions are mostly reserved for full-fledged, sentential complements (*wh/if*-clauses), and not for single lexical items (see Grimshaw 1979 for an early discussion). On the other hand, despite the fact that no additional constituents are lexicalized after the SLUICE, the latter is interpreted as a typical *wh*-interrogative clause (cf., (14b)).

Ever since Ross (op. cit.) evidence of the above sort have motivated a fruitful, cross-linguistic debate, which has boosted a considerable number of approaches, covering a large spectrum of the possible views of the matter under consideration. An indicative categorization of the relevant accounts is in order.

On the one hand, there are proposals, such as Ross (op. cit.), Wasow (1972), Chao (1987), Lobeck (1995), Chung, Ladusaw & McCloskey (1995; 2011), Romero (1998), Merchant (2001), and Fox & Lasnik (2003) (also Lechner 2004, for some discussion), among others, which argue that the syntax of (14a) bears ‘more structure than meets the eye.’¹⁵ For instance, and leaving much details aside, the SLUICE, in (15), is taken to be part of an underlying, *wh*-interrogative clause.

(15) She bought something and I wonder what (she bought).

What is ‘displaced’ at the left periphery of the relevant clause, as is the case with typical *wh*-*ex situ* constructions, while the constituents enclosed in parentheses do not survive at PF, but are available at LF. As such, the interpretation of (15) is predicted to be that of (14b).

On the other hand, there are approaches, such as Jackendoff (1972), Chomsky (1976), van Riemsdijk (1978), Ginzburg & Sag (2001), Schlangen (2003), Culicover & Jangendoff (2005), and Sag & Nykiel (2011), among others, which argue that (14a) has ‘no more structure than meets the eye.’ Although each of these proposals puts forward its own technical apparatus, and some of them are couched in different frameworks, the intuition that all share is that (14a) is syntactically represented along the lines of (16).

(16) She bought something and I [wonder what].

What is directly selected by *wonder*, and there is no other structure available than the ‘surface’ structure. Moreover, a number of semantic and/or pragmatic mechanisms apply so that the interpretation of (16) maps to (14b). Notice also that (16) is akin to an ‘in situ’ form, where the *wh*-element does not appear ‘displaced’ to a left peripheral position, but surfaces in a predicate-internal site.

Although the above two families of approaches make substantially different predictions, and implications, all of them share the indisputable view that sluicing is an instance of ‘ellipsis,’ in the sense that the interpretation of the SLUICE implies more than what its (surface) form makes available. The question, then, is how much syntax is necessary (or, enough) for (14a) to map to the interpretation in (14b). Accounts that deploy an articulated, non-surfacing structure maintain the ‘ideal’ scenario that syntax controls every aspect of meaning. However, for

approaches that do not assume the additional structure, syntax does not control every aspect of the available meaning.

After discussing evidence from Modern Greek, I will adopt the view that sluicing has no more structure than meets the eye, siding in this respect with the latter family of approaches. Sluicing is what one may call a ‘hybrid’ phenomenon. On the one hand, it partly draws from mechanisms reserved for *wh*-questions, and on the other hand, it makes use of operations independently attested in (cross-sentential) anaphoric dependencies. As such, the ‘question-like’ meaning is regulated by syntax, but the ‘missing’ (sentential) interpretation is supplied by LF.

Overall, in the spirit of the ‘reductionist perspective’ of the MP, I will sketch out a parsimonious system, which will assume that the *wh*-constructions at hand—(non)echo questions and sluicing—are generated in the ‘overt’ syntax, on the basis of a restricted inventory of operations, and (interpretable) features, while aspects of their meaning are handled after Spell-Out, at the interfaces. To repeat for convenience, the (non)echo distinction is computed at PF, and the ‘missing’ interpretation of sluicing is computed at LF. In the previous sense, both PF and LF ‘fill in’ additional information, and since PF contributes to meaning (in the case of (non)echo), then LF ‘sees’ PF (and, vice versa). The division of labour between syntax and the interfaces that I will suggest is that syntax ‘restricts’ (regulates part of) the meaning of (*wh*-)constructions, while the interfaces supply the rest. In short, I side with Chomsky (2000: 95) that linguistic structures are exponents of form-meaning associations, but not with the minimalist trend that linguistic structures are the exclusive determinants of these associations.

1.3 Overview

Let us provide a snapshot of the arguments that each of the remaining chapters will develop. Chapter 2 is concerned with (full-fledged) *wh*-questions in Modern Greek, both IQs and EQs, by examining their distribution, interpretation, and intonation. The main contribution of this chapter is that *wh*-ex situ constructions are distinguished from their *wh*-in situ counterparts in all three respects. That is, *wh*-ex situ forms are restricted in distribution, attest more meanings, and have a dedicated intonation contour. On the other hand, *wh*-in situ configurations are unrestricted in distribution, assume fewer meanings, and have a distinct intonation.

Chapter 3 starts out by presenting two current proposals about the formation and interpretation of *wh*-ex situ in English and *wh*-in situ in Japanese. Then, three approaches to *wh*-in situ alternatives in typical *wh*-ex situ languages are discussed, namely covert, feature, and remnant movement. Given the relevant set of assumptions, the system to be developed in order to account for the Modern Greek data will treat ex situ and in situ forms in terms of syntax, but IQ and EQ meanings in terms of PF. This way of viewing things will lead to a reconceptualization of Merge, and EPP, as well as, of the relation between PF and LF; the latter will fall under a formal mapping between prosody and interpretation. Issues revolving around blocking effects (islands), and (*wh*-)parametrization, are also discussed.

Chapter 4 turns to sluicing, and considers various aspects pertaining to its distribution and interpretation. The main argument of this chapter is that sluicing does not attest all the properties that are available to full-fledged *wh*-questions. The discussion ends with the presentation of two different lines of reasoning about the treatment of sluicing. One family of approaches follows an ‘ex situ’ view, while the other family endorses an ‘in situ’ reasoning. As will become apparent, both views treat sluicing as a kind of ‘dependency,’ although differently captured.

Chapter 5 offers an analysis of sluicing constructions (in Modern Greek) that invests on, and extends the notion ‘dependency,’ as proffered by the in situ family of approaches. That is, sluicing, in fact, assumes two types of dependencies. One is clause-internal (local), and concerns the association of the SLUICE with a relevant predicate, while the other is clause-external (non-local), and rests on an anaphoric-like relation between a SLUICE and a term in the available linguistic environment. This dual nature of the dependency regulates both the (morpho)syntax and the interpretation of a SLUICE. In terms of syntax, there is no other structure apart from the one that ‘surfaces,’ while as regards interpretation, LF contributes the necessary information. The technical aspects of the analysis are these developed in chapter 3 concerning the formation and interpretation of typical *wh*-questions. Several arguments that have been pursued in the relevant literature, and seem to stand against the analysis of sluicing to be offered, are examined under an alternative reasoning, which is consistent with both the analysis in question, and the minimalist framework adopted.

Finally, chapter 6 puts together the empirical and theoretical arguments offered in the present study, by looking at the issues in question from a broader perspective. That is, in the

scope of the given empirical facts, two lines of reasoning are compared. One line says that syntax regulates every aspect of form-meaning associations, while the one presently espoused argues that syntax mediates between form and meaning, but does not (have to) control every aspect of this mapping, once the role of the interfaces (PF and LF) in the externalization of syntactic structures is put into perspective.

Notes

- ¹ For reasons that I will not discuss further, I adopt the (strong version of the) ‘Lexicalist Hypothesis’ (also known as ‘Early insertion’) according to which all lexical items enter syntax fully formed and inflected from the ‘Lexicon’ (see Chomsky 1970; 1995b, and Manzini & Savoia 2007; 2011a, for a version of this proposal). The previous stands against the framework of Distributed Morphology (see Halle & Marantz 1993), which proposes that there is no unified ‘Lexicon,’ but the functions that other theories attribute to the Lexicon (see, for instance, Aronoff 1994) are ‘distributed’ among different components of the Grammar. As such, there are no lexical items that syntax manipulates, but abstract terminal nodes. After the syntactic component has finished manipulating these nodes, ‘Late Insertion’ takes place at a designated, post-syntactic Morphological Structure (MS), which triggers the corresponding ‘sound’ at PF (see also Starke’s 2009 ‘nanosyntax’ framework for a distinct version of this approach). Therefore, the ‘lexicon’ reduces to a superficial reflex of feature-based instructions.
- ² Of course, it may prove to be correct that as far as syntax is concerned no labeling algorithm is necessary, as long as the output of Merge is interpretable at the interfaces (see Collins 2002, Chomsky 2004, Seely 2006, and Jayaseelan 2008, among others, for relevant discussions).
- ³ For a thorough discussion, see Chomsky (1995a), Collins (2002), and Fukui (2001).
- ⁴ Noteworthy, there is an alternative conceptualization of Internal Merge that does not make reference to copies of extracted elements. That operation is called ‘Remerge,’ and is adopted by the proponents of the theory of ‘multiple-dominance’ (see, for example, McCawley 1982, Starke 2001, Gärtner 2002, Frampton 2004, deVries 2009, and Johnson 2010). Roughly put, Remerge predicts that an element is construed with more than one mother node. This view of ‘movement’ requires a linearization (PF-)algorithm which defines which ‘occurrence’ of the remerged element will be ultimately lexicalized.

- ⁵ To be more precise, for Chomsky (2000, onwards) linguistic structures are formed in incremental chunks, dubbed ‘phases’ (see also Grohmann 2009a,b, and Gallego 2010, among others). By and large, ‘phases’ incorporate a (semi-)derivational view of syntactic operations. I say ‘semi’-derivational, because strictly speaking, phases are to some extent representational, meaning that phases need to maintain the notion of chains, albeit in the disguised form of ‘derivational history (or memory).’ As far as I am concerned, this set of assumptions is not directly relevant to the present discussion, although I hasten to add that everything that will be said in this and the following chapters may be restated in ‘phase’-oriented terms.
- ⁶ Arguably, the pattern exemplified here is not the only one that distinguishes among languages with respect to the formation of *wh*-questions (see, e.g., Richards 1997, and Pesetsky 2000, for discussions). Yet, I will only be considered with this pattern, and understand it as ‘typical,’ for reasons of exposition.
- ⁷ An observation that has affected the way the relevant parameter has been articulated is that *wh*-elements in *wh*-in situ languages, like Chinese (and Japanese), are not intrinsically interrogative. Instead, they are ‘indeterminate pronouns,’ meaning that their interpretation varies in accordance with the operator that binds them (see Kuroda 1965, Nisigauchi 1990, Cheng 1991, Shimoyama 2001; 2006, among others). So, the idea is that these elements have no quantificational force of their own, but provide an ‘open sentence’ (variable) that is ‘closed-off’ (bound) by a relevant operator.
- ⁸ I borrow this descriptive term from Tsimpli (1998) and Bayer (2006).
- ⁹ Otherwise known as ‘confirmation-seeking,’ or ‘reprise,’ or ‘repeat’ questions.
- ¹⁰ For more elaboration on various uses of echo questions, I refer the reader to Bolinger (1957; 1987), Sobin (1978; 1990; 2010), Parker & Pickeral (1985), Ginzburg & Sag (2001), and Fiengo (2007), among others.
- ¹¹ For a similar idea see Carnie (2006: 341), who argues that echo questions are licensed by intonation and stress.
- ¹² One may argue, however, that there is a predominant preference for the *wh*-ex situ strategy.
- ¹³ See also Ginzburg & Sag (2001), and Pires & Taylor (2007) for a recent discussion.
- ¹⁴ Additional languages that have been claimed to attest the *wh*-ex situ vs. *wh*-in situ optionality are: Bahasa Indonesia (see Saddy 1991, Sato & Yuliani 2008), Babine-Witsuwit’en (see Den-

ham 2000), Egyptian Arabic (see Lassadi 2003), Hindi (see Mahajan 1990; 1994, Dayal 1991; 1994), Iraqi Arabic (see Wahba 1991, Ouhalla 1996), Malagasy (see Sabel 2003), Malay (see Cole & Hermon 1998), Nguni (see Sabel & Zeller 2006), as well as, Singapore English (see Yeo 2011). I have not included these languages in the list in (10), since that would classify them as *wh*-ex situ languages. But, as far as I know, some of the aforementioned languages have been classified in the relevant literature as *wh*-in situ, on a par with Chinese. Two examples are Hindi and Iraqi Arabic (see references cited above).

¹⁵ I borrow this theory-neutral and elegantly descriptive sentence from Stainton (2006: 64).

Chapter 2

Wh-questions

2.1 Patterns of distribution

Typically, Modern Greek (hereafter, MG) forms IQs by fronting the *wh*-element (see, among others, Agouraki 1990, Tsimpli 1990; 1995; 1998, Anagnostopoulou 1994). That is exemplified by the root clause in (1), where the direct object *pjo vivlio* (which book) surfaces in the left periphery. Notice that MG is a ‘pro-drop’ language, roughly meaning that the lexicalization of the clausal subject is optional (see, e.g., Philippaki-Warbuton 1985; 2001, Horrocks 1994, Alexiadou & Anagnostopoulou 1998, Roussou & Tsimpli 2006).

- (1) Pjo vivlio aghorases?
which book-ACC bought-2SG
“Which book did you buy?”

Moreover, MG observes *wh*-in situ constructions (cf., (2)) that have traditionally been treated as EQs (see Tsimpli 1995; 1998 for a discussion).

- (2) Aghorases pjo vivlio?
bought-2SG which book-ACC
“You bought WHICH BOOK?”

Most recently, Sinopoulou (2009) and Vlachos (2010) have argued that in situ configurations like (2) may also give rise to IQ readings,¹ while Roussou et al. (2011) demonstrate that an ex situ representation of the form (1) may alternatively map to an EQ interpretation.

In the light of the above facts, the empirical question that arises is this: what are the regularities (if any) among the aforementioned patterns of form-meaning mapping? This is

the topic of the present chapter, which unfolds as follows. The current section looks at some aspects of the distribution of *wh*-IQs and EQs, while data concerning their interpretation and intonation follow in sections 2.2 and 2.3 respectively. Section 2.4 summarizes the discussion.

So, to begin with distribution, the pattern attested in the root clauses above (cf., (1) and (2)) is also observed in cases where the *wh*-elements are construed with embedded predicates, as exemplified in (3), where each embedded clause is the complement of the verb *ipan* (said), and is introduced by the declarative complementizer *oti* (that) (see the relevant bracketing; note that, in describing the evidence, I will stick to unlabeled bracketing, and that in order to avoid unnecessary repetitions, whenever possible I will represent both *wh*-ex situ and *wh*-in situ alternative occurrences in the same sentence. But, I will enclose the *wh*-in situ IQs/EQs in parentheses to show that simultaneous manifestation is banned).

- (3) a. Pjos/PJOS [ipan [oti efije (pjos/PJOS)]]?
 who-NOM said-3PL that left-3SG (who-NOM)
 “Who did they say left?”
- b. Ti/TI [ipan [oti edhose (ti/TI)]]?
 what-ACC said-3PL that gave-3SG (what-ACC)
 “What did they say that s/he gave?”
- c. Se pja/SE PJA [ipan [oti edhose to daxtilidhi (se pja/SE PJA)]]?
 to whom said-3PL that gave-3SG the ring-ACC (to whom)
 “To whom did they say that s/he gave the ring?”
- d. Pu/PU [ipan [oti tha pai (pu/PU)]]?
 where said-3PL that will go-3SG (where)
 “Where did they say that s/he will go?”

In (3a), *pjos* (who), which is associated with the embedded predicate *efije* (left), may surface either in the left periphery of the matrix clause, or inside the embedded clause. The same is true with the direct object *ti* (what) of the verb *edhose* (gave) (cf., (3b)), the indirect object *se pja* (to whom) of the verb *edhose* (gave) (cf., (3c)), as well as, with the adjunct *pu* (where) that modifies the predicate *pai* (go) (cf., (3d)). In all these sentences, regardless of the site that *wh*-elements surface in, both readings, i.e., IQ or EQ, are equally possible.

Turning to indirect questions, *wh*-in situ IQs and EQs are grammatical with predicates

like *rotao* (ask) that select for (*wh*-)interrogative complements, if a relevant complementizer is present, as shown in (4).²

- (4) Rotisan [*(an) ipe ti/ṭi]]?
 asked-3PL if said-3SG what-ACC
 “What did they ask *(if) he said?”

The object *ti* (what) of the embedded verb *ipan* (said) may appear in situ, and converge with both readings, provided that *an* (if) is present.

Let us next consider (non)echo ex situ and in situ occurrences under certain opaque domains that are typically known as ‘islands.’ Ever since Ross (1967), islands is a cover term for those environments out of which certain instances of extraction that yield filler-gap dependencies, like *wh*-movement, are obstructed. Roughly put, islands are classified according to whether the blocking effect they cause between a filler (e.g., the extracted *wh*-element) and its gap (e.g., the relevant copy/trace that resides in the extraction site) is absolute or selective.³ So, strong islands radically block extraction of both arguments and adjuncts, while weak islands selectively obstruct extraction of adjuncts only (see Szabolcsi 2006 for a thorough discussion). What is more, the classical assumption, as of Huang (1982), is that islands may impede not only overt movement (i.e., placed in narrow syntax, and thus visible at PF), but also covert movement (i.e., visible only at LF) (see also Cheng 2003a,b; 2009 for an overview). Consequently, islands have typically been treated as diagnostics of movement, in general.

Keeping the above backdrop in mind, in the remainder of this section, I present evidence from MG (also drawing from Sinopoulou 2009 and Vlachos 2010), which shows that *wh*-in situ IQs are not constrained by islands, as opposed to their ex situ counterparts.⁴ In passing, I also examine EQs, since EQs may also surface ex situ. Notice that I do not intend to look into the properties of islands *per se*. So, I simply follow others in distinguishing between strong and weak islands (see, for example, Szabolcsi & den Dikken 2002, and Szabolcsi 2006). At the end of this section, I will also address some related cases of (operator) intervention that are evident in (a dialect of) French, regarding in situ IQs, something that is not attested in MG.

Let us start with strong islands, in the scope of (5).

- (5) *Ti/TI se timorise [epidhi ipes (✓ ti/TI)]
 what-ACC you-CL punished-3SG because said-2SG (what-ACC)
 “*What did s/he punish you because you said?”

Ti (what), which is the object of the embedded predicate *ipes* (said), stays inside the adjunct clause introduced by *epidhi* (because). The construction is grammatical with either an IQ or an EQ interpretation (indicated with the sign ‘✓’). If, however, *ti* (what) moves to the matrix clause, both interpretations are excluded.

The same is true with *wh*-adjuncts, as shown in (6).

- (6) *Pos/POS se timorise [epidhi milises (✓ pos/POS)]
 how you-CL punished-3SG because talked-2SG (how)
 “*How did s/he punish you because you talked?”

Pos (how), which modifies the embedded predicate *milises* (talked), is grammatical in situ, with either an IQ or EQ interpretation, but ungrammatical ex situ.

Another instance of strong island is the so-called complex NP. This is exemplified here in (7), repeated from Sinopoulou (2009, 8: (33a,b)), with a relative clause, introduced by *pu* (that).

- (7) *Ti/TI vlepume [tus navaghosostes [pu kanun (✓ ti/TI)]]?
 what-ACC see-1PL the lifeguards-ACC that are-doing-3PL (what-ACC)
 “*What do we see the lifeguards who are doing?”

As shown above, the in situ counterpart is grammatical, and converges with either reading, while the ex situ option is banned, and neither reading is possible.

Adjuncts follow the same pattern, as in (8).

- (8) *Pote/POTE sinadises [afton [pu irthe (✓ pote/POTE)]]?
 when met-2SG him-ACC who came-3SG (when)
 “*When did you meet the one who came?”

Pote (when) is construed with the embedded predicate *irthe* (came). The in situ occurrence is licit with both readings, while the ex situ counterpart is blocked.

Turning to weak islands, for simplicity, I will concentrate on the extraction of *wh*-adjuncts, since arguments are in principle unrestricted (see, e.g., Rizzi 1990, and Kiss 1993). Typical instances of such blocking effects are observed with *wh*-islands, as depicted in (9).

- (9) *Pote/POTE rotisan [pjos tha fiji (✓ pote/POTE)]?
 when asked-3PL who-NOM will leave-3SG (when)
 “*When did they ask who will leave?”

The result is grammatical (under either reading) with *in situ*, but ungrammatical with ‘displacement’ of *pote* (when) to the matrix clause, over the embedded interrogative.⁵

The same holds for adjuncts that are extracted out of *whether*-islands, as in (10).⁶

- (10) *Pos/POS anarotjunde [an tha fijis (✓ pos/POS)]?
 how wonder-3PL if will leave-2SG (how)
 “*How do they wonder if you’ll leave?”

Pos (how), which is associated with the embedded predicate *fijis* (leave), may admit either an IQ or an EQ interpretation, provided that the *wh*-element stays in the embedded clause.

Arguably, *in situ* questions obviate both strong and weak islands, while *ex situ* alternatives may not, depending on the islands that are involved, as well as, on the argument vs. the adverb status of the *wh*-elements. Furthermore, IQs and EQs behave alike as far as islands are concerned. A piece of corroborating evidence for these observations may come from so-called *Beck*-style intervention effects (see Beck 1996), which I turn to below. To put the discussion into perspective, first, I concentrate on French *wh*-*in situ* IQs, where such interventions have been observed, and then, compare these effects with the MG congeneric cases.

Chang (1997) argues that, in a dialect (or, register/variety) of French, if the *wh*-*in situ* elements are preceded by certain operators that surface in the same clause, but in hierarchically higher positions, only the EQ interpretation is available. The relevant data are repeated in (11) (*hers*, (40a–d), pp. 19–20), where the asterisk (*) notation indicates only IQ ungrammaticality.

- (11) a. *Il n’ a pas rencontré qui?
 he NE has not met who
 intended non-echo: “He has not met who?”
 b. *Il peut rencontrer qui?
 he can meet-INFL who
 intended non-echo: “He can meet who?”

- c. *Il admire toujours qui?
 he admires always who
 intended non-echo: “He always admires who?”
- d. *Personne n’ admire qui?
 nobody NE admires who
 intended non-echo: “Nobody admires who?”

The offending operators are the negation in (11a), the modal in (11b), the adverb of quantification in (11c), and the (negative) polarity item in (11d).

In MG, however, the corresponding *wh*-in situ configurations converge with both IQ and EQ readings, as shown in (12a) through (12d) respectively (modified from Vlachos 2010: 95–96, (25a–d); see also Sinopoulou 2009).

- (12) a. ✓Dhen exi sinadisi pjon/PJON?
 NEG has met-3SG who-ACC
 “Who has he not met?”
- b. ✓Bori na sinadisi pjon/PJON?
 can-3SG PRT meet-3SG who-ACC
 “Who can he meet?”
- c. ✓Thavmazi pandote pjon/PJON?
 admires-3SG always who-ACC
 “Who does he always admire?”
- d. ✓Kanenas dhen thavmazi pjon/PJON?
 nobody-NOM NEG admires-3SG who-ACC
 “Who does nobody admire?”

To complete the picture just drawn, the *ex situ* alternatives to the MG data (12a–d) are also possible with both interpretations, as in (13a) through (13d) respectively.

- (13) a. ✓Pjon/PJON dhen exi sinadisi?
 who-ACC NEG has met-3SG
 “Who has he not met?”

- b. ✓Pjon/PJON bori na sinadisi?
 who-ACC can-3SG PRT meet-3SG
 “Who can he meet?”
- c. ✓Pjon/PJON thavmazi pandote?
 who-ACC admires-3SG always
 “Who does he always admire?”
- d. ✓Pjon/PJON dhen thavmazi kanenas?
 who-ACC NEG admires-3SG nobody-NOM
 “Who does nobody admire?”

With respect to French, Chang mentions that the *wh*-ex situ counterparts of (11) are grammatical as IQs, but she does not consider EQs (for which I have no judgements to offer, either).

Before I conclude this section, a brief digression is in order. I have used the term ‘dialect (or register/variety) of French’ in referring to Chang’s evidence, although Chang herself does not attribute her data to a particular French dialect. Nevertheless, the upshot seems to be that there are at least three such dialects, as regards *wh*-in situ IQs. More precisely, in the dialect examined by Chang, *wh*-in situ is restricted to root clauses, is ungrammatical in embedded environments, and observes intervention effects (see also Bۆsković 1998, Boeckx 1999, and Cheng & Rooryck 2000). In another dialect, *wh*-in situ is manifested in both root and embedded clauses, but shows intervention effects (see Mathieu 1999; 2004). Yet, in a different dialect, *wh*-in situ is not only available in root and embedded environments, but is also island-free (see Adli 2006).⁷ Leaving a further discussion aside, such discrepancies suggest that *wh*-in situ IQs consist of a non-homogeneous class of phenomena (i.e., not uniform in distribution and content), indicating micro-parametric variations, provided, of course, that the empirical reasoning is well motivated (and I have no reasons to doubt that it is). It should be noted, however, that such micro-parametric differences are quite puzzling, considering that the same heterogeneity has not been reported, as far as I know, for the *wh*-ex situ IQ counterparts.

To summarize the discussion so far, ex situ and in situ IQs and EQs behave in the same manner under a number of environments (*modulo* selected interrogatives). Moreover, it is obvious that ex situ instances have a restricted distribution, contrary to their in situ counterparts. A case in point is (strong and weak) islands, under which ex situ or in situ configurations behave

alike, regardless of the IQ vs. EQ distinction.

2.2 Patterns of interpretation

Let us now turn to interpretation. Intuitively speaking, the prototypical distinction between the two types of questions is that IQs are requests for information, while EQs are (usually) not. Here, it is further shown that once IQs and EQs are examined in tandem with the two potential forms that each meaning may map to (i.e., *ex situ* or *in situ*), a more fine-grained picture appears to surface. Section 2.2.1 deals with IQs, while section 2.2.2 with EQs.

2.2.1 Information-seeking questions

Wh-in situ IQs are infelicitous (indicated with the symbol ‘#’) when there is no pre-established linguistic environment, which I will term ‘micro-discourse.’ One example of this is (14).

- (14) a. Anna, ti jinete (# ti)?
 Anna-voc what-ACC is-happening (what-ACC)
 “Anna, what’s happening?”
- b. Anna, ti ora ine (# ti ora)?
 Anna-voc what time is (what time)
 “Anna, what time is it?”
- c. Anna, pos pai (# pos)?
 Anna-voc how is-going-3SG (how)
 “Anna, how is it going?”

(14) shows that *wh*-in situ instances may not facilitate ‘out-of-the-blue’ questions, contrary to their *wh*-ex situ counterparts. This is true of questions that involve either *wh*-arguments (cf., (14a,b)) or adjuncts (cf., (14c)).⁸

A similar effect can be observed with phrases like *on earth* (or, *the hell*) which attach to the *wh*-element. As Pesetsky (1987) shows, such phrases are considered to force an ‘aggressively non-D(discourse)-linked’ reading, in that “the appropriate answer is presumed not to figure in previous discourse (p. 111)” (see also den Dikken & Giannakidou 2002, for a more recent discussion). In the light of this, consider (15).

- (15) a. *Pjos sto kalo irthe* (# *pjos sto kalo*)?
 who-NOM to-the good came-3SG (who-NOM to-the good)
 “Who on earth came?”
- b. *Ti sto kalo aghorases* (# *ti sto kalo*)?
 what-ACC to-the good bought-2SG (what-ACC to-the good)
 “What on earth did you buy?”
- c. *Pos sto kalo ksekinise i fotja* (# *pos sto kalo*)?
 how to-the good started-3SG the fire-NOM (how to-the good)
 “How on earth did the fire start?”

The subject *pjos* (who) (cf., (15a)), the object *ti* (what) (cf., (15b)), and the adjunct *pos* (how) (cf., (15c)) are infelicitous in situ, if they surface with the phrase *sto kalo* (on earth), as opposed to the *wh-ex situ* equivalents.⁹

Assuming by default that in situ IQs are indeed available, then, the obvious question is: under what sort of linguistic environments are *wh-in situ* IQs felicitous? I want to suggest that *wh-in situ* elements are anchored to a micro-discourse, and this anchoring may take place under either of the following two ways. First, the value of the *wh*-element may figure in a familiar set. To illustrate, consider the following dialogue between two (imaginary) speakers, A and B.¹⁰

- (16) a. *Speaker A:*
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B:*
Ke o pateras su aghorase ti?
 and the father-NOM yours bought-2SG what-ACC
 “And what did your father buy?”

Speaker A describes an event of buying that involves three agents, i.e., the speaker’s father, mother, and the speaker herself, as well as, three entities, i.e., eggs, milk and coffee (cf., (16a)). Speaker B, who is familiarized with both the set of agents and that of entities, by virtue of (16a), may make the *wh-in situ* IQ in (16b). In a strong sense the value of *ti* (what) must range over the set of entities already present in the immediate discourse (with the exclusion of the ‘eggs’ for obvious reasons). This is verified further by the infelicity of (17).

- (17) #Aghorase mila.
 bought-3SG apples-ACC
 “He bought apples.”

Speaker’s B question (cf., (16b)) restricts speaker’s A possible answer, in that speaker A may not give the response in (17), which does not make reference to either ‘milk’ or ‘coffee,’ but updates the established discourse with a new entity, i.e., ‘apples.’

A second manner under which a *wh*-in situ IQ may be anchored to a micro-discourse is through some sort of accommodation in which case the value of the *wh*-element may be novel.¹¹ To be more precise, take the mini-dialogue in (18).¹²

- (18) a. *Speaker A:*
 It is Paul’s birthday next week.
- b. *Speaker B:*
 Ke les na tu aghorasume ti?
 and say-2SG PRT him buy-1PL what-ACC
 “And what do you think we should buy him?”

(18a) contrasts with (16a) in at least two respects. First, no act of buying is presupposed, and second, there is no pre-established set of possible values that *ti* (what) in (18b) may draw from. Nonetheless, the micro-discourse in (18a) implies a buying event under the hypothesis that it is rather natural for people to buy birthday presents. In the previous informal sense, the *wh*-in situ question in (18b) is accommodated to that micro-discourse, although the value of *ti* (what) maps to a novel set (i.e., a set not previously established).

It is evident from the previous discussion that *wh*-in situ IQs in MG carry stronger presuppositions than their *wh*-ex situ counterparts.¹³ This semantic/pragmatic property has gained considerable cross-linguistic attention, and a commonly held assumption is that *wh*-in situ IQs do not tolerate negative answers, meaning that they presuppose an answer set. Before considering MG, let us discuss an example from French. Chang (1997) argues that (in her dialect) (19b) is quite deviant as an answer to the question in (19a), which is not the case with typical *wh*-ex situ IQs (*hers*, (40), p. 42).

- (19) a. Marie a acheté quoi?
 Marie has bought what
 “What has Marie bought?”
- b. ??Rien.
 “Nothing.”

In fact, it is interesting that the plausibility of negative answers to French *wh*-in situ IQs appears to vary in tandem with the dialectal differences that have been reported in the previous section. For instance, Bósković (1998), Boeckx (1999), and Cheng & Rooryck (2000) share Chang’s judgments, as opposed to Mathieu (2004) and Adli (2006).

With respect to MG, I side with Sinopoulou (2009) who argues that the felicity or not of negative answers is not a criterion that can safely distinguish between *wh*-ex situ and *wh*-in situ IQs, in terms of presuppositionality. This may easily be shown in (20), repeated from Sinopoulou (op. cit.: 5, (22–23)).

- (20) a. Ti kanis?
 what-ACC are-doing-2SG
 “What are you doing?”
- b. Psonizo.
 shopping-1SG
 “I’m shopping.”
- c. Pu psonizis (pu)?
 where shopping-2SG (where)
 “Where are you shopping?”
- d. #Puthena.
 “Nowhere.”

Under the mini-discourse (20a,b), either a *wh*-ex situ or a *wh*-in situ IQ is possible (cf., (20c)), but (20d) is precluded as an answer to either of the two questions. (20d) yields a logical fallacy since it directly contradicts the premises of the mini-discourse in (20a,b), which are maintained in the event presupposition of (20c), in the form of either an ex situ or an in situ question.

It is expected then that once presuppositionality is relaxed, *wh*-in situ IQs may admit negative answers. This is shown in (21), repeated from (16).

- (21) a. *Speaker A:*
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B:*
 Ke o pateras su aghorase ti?
 and the father-NOM yours bought-2SG what-ACC
 “And what did your father buy?”
- c. *Speaker A:*
 Actually nothing; he stayed in the car.

By (21a), speaker A does not presuppose that her father eventually bought something; she simply states that her father was aiming at buying something. Thus, (21c) is felicitous as an answer to (21b). The previous means that a *wh*-in situ question does not appear to force any stronger presupposition than that projected in the established discourse.

Likewise, (22b) (repeated from (18)) does not presuppose anything more than what (22a) does. So, speaker A may give a negative reply (cf., (22c)).

- (22) a. *Speaker A:*
 It is Paul’s birthday next week.
- b. *Speaker B:*
 Ke les na tu aghorasume ti?
 and say-2SG PRT him buy-1PL what-ACC
 “And what do you think we should buy him?”
- c. *Speaker A:*
 Well, I don’t think we can buy him anything, since we won’t see him for quite some time; he will be studying abroad for a year or so.

To put the above evidence together, contrary to *wh*-ex situ IQs, in situ occurrences are anchored to an immediate linguistic environment, which I have been calling micro-discourse. This anchoring may proceed as follows. The value of the *wh*-element may figure in a familiar set, or it may be novel, yet accommodated to the relevant micro-discourse. Certainly, presuppositionality is a characteristic property of *wh*-in situ IQs, but, as I have shown, this property may best be described, although informally done so here, under the above two strategies of

discourse anchoring, and not under the test of negative answerhood. In the next section, I turn to the interpretation of EQs, which I examine in comparison with that of IQs.

2.2.2 Echo questions

EQs are heavily tied to the immediate linguistic environment, since both *ex situ* and *in situ* occurrences are infelicitous under the lack of a pre-established discourse, as in (23).

- (23) a. #Anna, TI jinete (TI)?
 Anna-voc what-ACC is-happening (what-ACC)
 intended echo: “# Anna, WHAT’s happening?”
- b. #Anna, TI ORA ine (TI ORA)?
 Anna-voc what time is (what time)
 intended echo: “# Anna, WHAT TIME is it?”
- c. #Anna, POS pai (POS)?
 Anna-voc how is-going-3SG (how)
 intended echo: “# Anna, HOW is it going?”

All the EQs in (23) are illicit as out-of-the-blue questions, irrespective of the site that either *ti* (what) (cf., (23a)), or *ti ora* (what time) (cf., (23b)), or *pos* (how) (cf., (23c)) may lexicalize.

In a similar manner, ‘aggressively non-D-linked’ phrases, such as *on earth*, block EQ interpretations (cf., (24a) through (24c)).

- (24) a. #PJOS STO KALO irthe (PJOS STO KALO)?
 who-NOM to-the good came-3SG (who-NOM to-the good)
 intended echo: “# WHO ON EARTH came?”
- b. #TI STO KALO aghorases (TI STO KALO)?
 what-ACC to-the good bought-2SG (what-ACC to-the good)
 intended echo: “# WHAT ON EARTH did you buy?”
- c. #POS STO KALO ksekinise i fotja (POS STO KALO)?
 how to-the good started-3SG the fire-NOM (how to-the good)
 intended echo: “# HOW ON EARTH did the fire start?”

Apparently, EQs, irrespective of the form they manifest, share one crucial property with *in situ* IQs. In particular, recall from the conclusion of the previous section that *in situ* IQs also lean

on a micro-discourse in order to be facilitated. That being the case, in what follows I compare both types of questions, in terms of the way each one is associated with a micro-discourse.

To begin with, as opposed to *wh*-in situ IQs, EQs are not felicitous if a familiar set of values is available. To illustrate, take again the two dialogues in (16) and (18), which I repeat below as (25) and (26) respectively, with two essential modifications. That is, in both (25b) and (26b), which I now understand as EQs, I omit the conjunction markers *ke* (and), and I illustrate the ex situ along with the in situ instantiations in the same sentence.

- (25) a. *Speaker A*:
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B*:
 #Ti aghorase o pateras su (Ti)?
 what-ACC bought-2SG the father-NOM yours (what-ACC)
 “# Your father bought WHAT?”

Obviously, although the mini-discourse in (25a) contains two possible values for *ti* (what), i.e., ‘milk’ and ‘coffee,’ the EQ is illegitimate (cf., (25b)).

In an important sense, EQs are radically anchored to the immediate linguistic environment, in a way that *wh*-in situ IQs are not, as becomes clear in (26).

- (26) a. *Speaker A*:
 It is Paul’s birthday next week.
- b. *Speaker B*:
 #Ti les na tu aghorasume (Ti)?
 what-ACC say-2SG PRT him buy-1PL (what-ACC)
 “# You think we should buy him WHAT?”

Despite potential accommodation to the micro-discourse in (26a), the value of *ti* (what) resists mapping onto a novel set, as indicated by the infelicity of (26b).

So, the question arises as to how EQs are anchored to a micro-discourse, if not via some sort of familiarity, or accommodation. My answer is that an echo question is felicitous so long as the value of the *wh*-element is prominently figured in the micro-discourse. Consider (27).

- (27) a. *Speaker A:*
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B:*
 ✓Ti aghorase i mitera su (Ti)?
 what-ACC bought-2SG the mother-NOM yours (what-ACC)
 “Your mother bought WHAT?”

In principle, (27a) makes available a set of values from which a *wh*-element may draw. The values range over ‘eggs,’ ‘milk’ and ‘coffee,’ but only ‘eggs’ acquires a prominent status among the other members of the set, which are still under ‘negotiation,’ so to speak, since the relevant agents (i.e., ‘father’ and ‘speaker A’) have not been mapped to the corresponding entities (i.e., ‘milk’ and ‘coffee’). The saliency of the ‘eggs’ is what makes the EQ felicitous in (27b), in that *ti* (what) targets the most prominent value in the micro-discourse.

To sum up, EQs and *wh*-in situ IQs are both anchored to an immediate linguistic environment. The values of the *wh*-element in EQs are prominent in that environment, while in IQs, the values of the *wh*-elements either figure in a familiar set, or are accommodated to the relevant environment. More generally, it appears that in situ occurrences have limited options in terms of interpretation, contrary to ex situ counterparts. However, the aforementioned asymmetric view is distorted once we consider EQs, the interpretation of which is oblivious to the ex situ vs. in situ distinction.

2.3 Patterns of intonation

Let us now concentrate on the intonation contours of IQs and EQs. Preliminarily, judging only by intuition, EQs sound as if they have a ‘higher’ or ‘heavier,’ so to speak, tonal melody than that relevant for IQs. If so, then, it is expected that each *wh*-question may have a matching intonation contour. As this section shows, the above is borne out. Furthermore, once the two potential sites that the *wh*-elements may lexicalize are also considered, an additional pattern appears to surface.

In order to examine the relevant prosodies, I have conducted an experiment that emulated

the natural production of the configurations under consideration, in laboratory conditions.¹⁴ Specifically, informants were asked to participate in two pre-constructed written dialogues that facilitated the production of all the four possible configurations, in a context that elicits these structures as naturally as possible. One dialogue was constructed to evoke IQs, and a different dialogue targeted EQs. Each dialogue involved two participants, one of whom was the informant at hand and the other an imaginary interlocutor.

To make things more concrete, consider the dialogue in (28) which aimed at investigating information-seeking *wh*-questions.

(28) *Dialogue bearing on IQs:*

- a. Interlocutor: Ipe oti tha evlepe ti Maria,
 said-3SG that would see-3SG the Mary-ACC
 ala telika dhen nomizo oti tin idhe.
 but eventually NEG think-1SG that her saw-3SG
 “He said he would see Mary, but I don’t think he saw her eventually.”
- b. Informant: Ke pja nomizis oti idhe? (wh-ex situ)
 and who-ACC think-2SG that saw-3SG
 “And, who do you think he saw?”
- c. Informant: Ke nomizis oti idhe pja? (wh-in situ)
 and think-2SG that saw-3SG who-ACC
 “And, who do you think he saw?”

Given the discourse in (28a) (i.e., the interlocutor’s utterance), an informant was urged to produce the *wh*-ex situ IQ in (28b). Then, after a second pass over (28a), the same informant was asked to produce the *wh*-in situ IQ in (28c).

An identical procedure was followed in the case of (29) which pertains to echo questions.

(29) *Dialogue bearing on EQs:*

- a. Interlocutor: Ipe oti idhe ti Maria.
 said-3SG that saw-3SG the Mary-ACC
 “He said that he saw Mary.”

- b. Informant: PJA idhe? (wh-ex situ)
 who-ACC saw-3SG
 “He saw WHO?”
- c. Informant: Idhe PJA? (wh-in situ)
 saw-3SG who-ACC
 “He saw WHO?”

As a reaction to the discourse in (29a), an informant was asked to produce the *wh*-ex situ EQ in (29b), and, then, the same informant had to produce the *wh*-in situ EQ in (29c).

A preliminary, yet crucial result of the above experiment is that informants were able to produce casually all the four different utterances. This provides independent evidence in favour of the existence of all the four types of *wh*-questions in MG. Another result pertains to the intonation contours that each configuration manifests, which I analyze in the next two sections, starting from the intonation of *wh*-ex situ and *wh*-in situ IQs (section 2.3.1), and continuing with that of the corresponding EQs (section 2.3.2). To clarify the mode of presentation that I adopt throughout, I should mention that the description of the spoken data is implemented through the PRAAT program for speech analysis and synthesis,¹⁵ while for the annotation of the intonation contours, I use GrToBI (i.e., Greek ToBI), as has been modified by Arvaniti & Baltatzani (2005). GrToBI is a tool for annotating the intonation and prosodic structure of spoken instances of MG, within the autosegmental-metrical framework of intonational phonology, as has been established by Pierrehumbert (1980).

2.3.1 Information-seeking questions

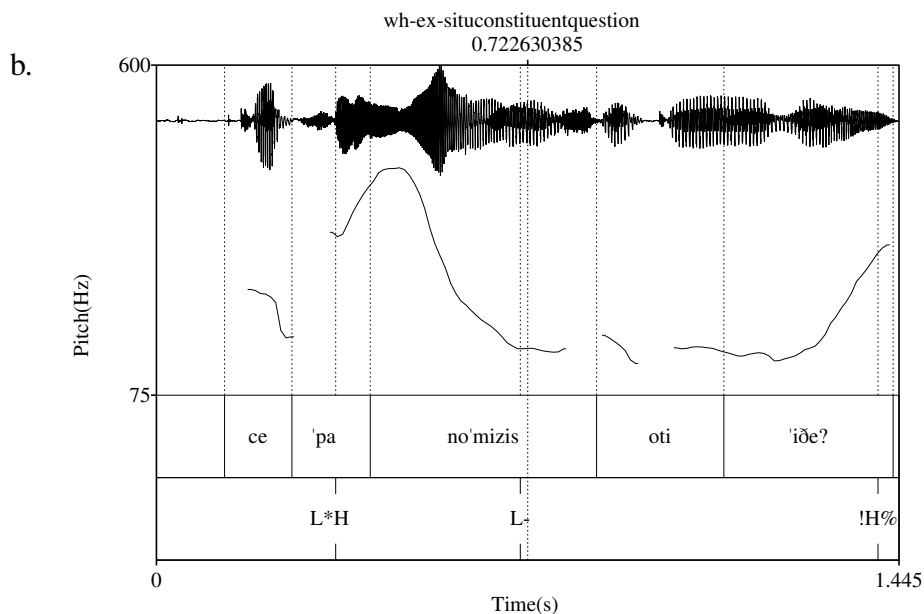
Arvaniti (2001) has extensively studied and described the intonation structure of the majority of *wh*-ex situ IQs of MG, as a sequence of L*+H L- !H%. Specifically, L*+H is the pitch accent, L- is the phrase accent, and !H% is the boundary tone. According to Arvaniti, the pitch accent appears on the *wh*-element, at the beginning of the *wh*-question, and is either high (H*), if the utterance starts immediately with a monosyllabic stressed *wh*-word, or rising (L+H), if the beginning of the utterance is another word, which is unstressed and surfaces before the *wh*-element (see also Arvaniti & Ladd 2009, for discussion). Typical instances of the latter are prepositional phrases that head *wh*-words, like *apo pu* (from where), whereby the preposition

apo (from) phonetically precedes the adverb *pu* (where). The phrase accent is a L- tone, which is realized either phonetically, if there is not enough segmental material, or, on a lexically stressed syllable following the *wh*-element, when the *wh*-question is not a short one. Finally, there is always a rising at the final syllable of the utterance, therefore a H% boundary tone. Arvaniti also argues that in most of the cases, the H boundary tone is not really high, therefore she characterizes it as a downstepped tone.

With the previous clarifications in mind, consider the intonation structure of the *wh-ex situ* IQ (30a) (repeated from (28b)), which has been produced by the informants of the present experiment as in (30b).

(30) *Typical intonation contour of wh-ex situ IQs:*

- a. Ke pja nomizis oti idhe?
 and who-ACC think-2SG that saw-3SG
 “And, who do you think he saw?”



The relevant intonation pattern perfectly agrees with Arvaniti’s pattern. In particular, the pitch accent is also a L*+H (as the rising continues to the next syllable after the stressed one), the phrase accent is a L- which is realized on the next stressed syllable from *pja* (who), and the boundary tone is a !H%, which is realized on the last syllable of the utterance.

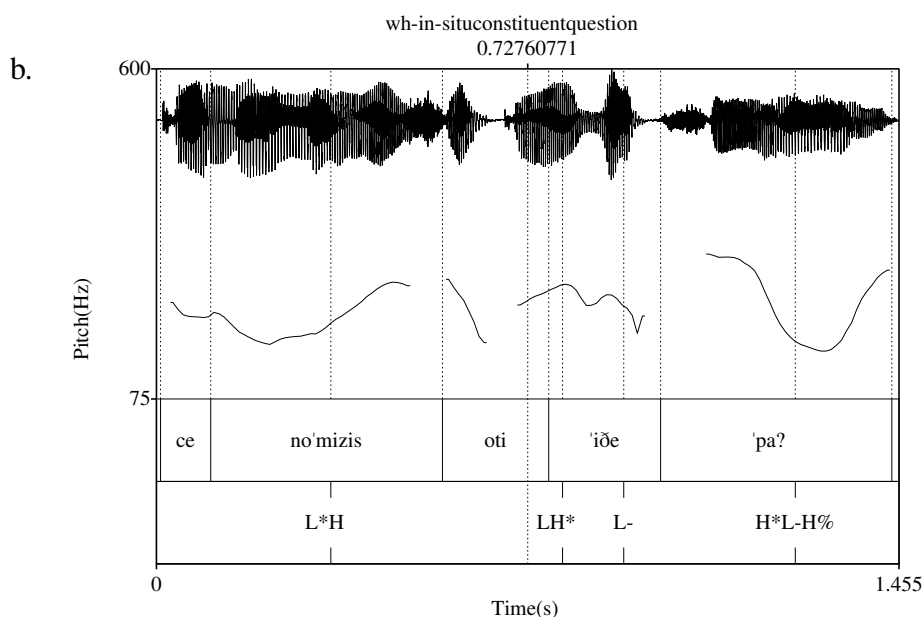
At this point, take notice of the fact that, in line with Arvaniti (op. cit.), the intonation contour of typical *wh-ex situ* IQs remains constant, regardless of the length of the sentence.

In particular, the author shows that the only possible truncation would be at the beginning of the intonation contour, where the pitch accent, instead of a L*+H, could be a H*, if the *wh*-interrogative starts immediately with a *wh*-element which is stressed on its first syllable.

Keeping the above clarifications in mind, consider the intonation contour of the *wh*-in situ counterpart in (31b), which corresponds to the question in (31a) (discussed in (28c)).

(31) *Typical intonation contour of wh-in situ IQs:*

- a. Ke nomizis oti idhe pja?
 and think-2SG that saw-3SG who-ACC
 “And, who do you think he saw?”



A close look reveals that the intonation contour of *pja* (who), at the right end of the utterance is a typical *wh*-ex situ IQ intonation contour, that is a H* L- H% (as has been also described by Arvaniti, op. cit.). To put it simply, the same intonation contour that expands on the whole sentence in the case of *wh*-ex situ IQs concentrates in a shorter surface vis-à-vis *wh*-in situ IQs.¹⁶ Regarding the part of the utterance that precedes *pja* (who) in (31a), i.e., *ke nomizis oti idhe* (and you think that he saw), it is reasonable for one to argue that it constructs as an intermediate intonation phrase with two pitch accents. That is, L*+H & L+H*, and a L-phrase accent (cf., (31b)). The most important phonetic cue in favour of the hypothesis that the preceding part is an intermediate intonation phrase is the pitch gap of more than 100 Hz between the end of the intonation contour of the preceding part and the beginning of the *wh*-

element (see Roussou et al. 2011). It could also be noted that the preceding intermediate intonation phrase presents a typical intonation contour of the pre-focus element.

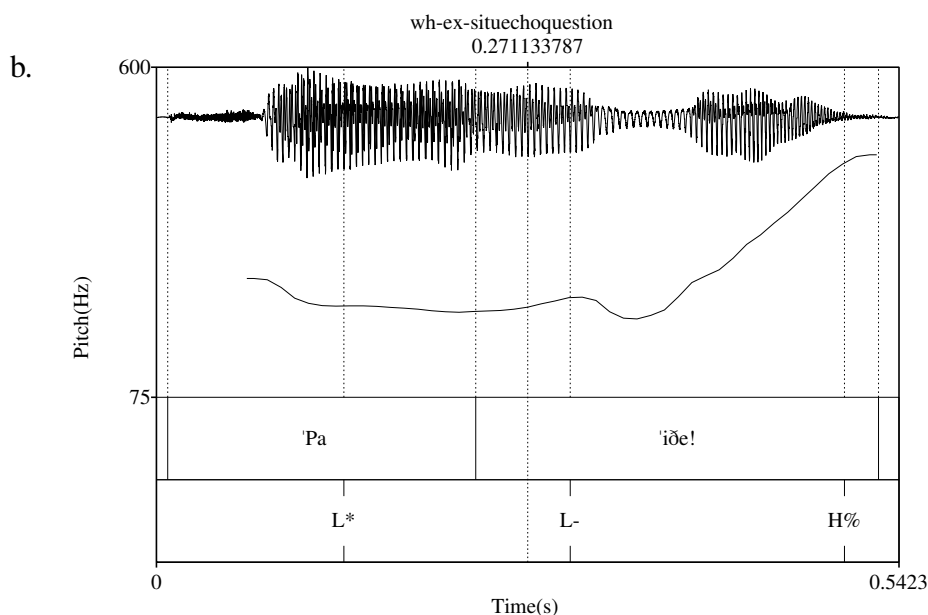
To sum up so far, IQs share the same intonation contour, which spreads across the whole utterance in the case of *ex situ* instances, but ‘shrinks’ on the *wh*-element in the case of *in situ* occurrences, formulating the preceding part as an intermediate intonation phrase.

2.3.2 Echo questions

Let us now turn to the intonation contour of EQs, in comparison with that of IQs. As is obvious in (32b), the melody manifested in typical *wh-ex situ* EQs (cf., (32a) which is repeated from (29a)) is absolutely different from that of *wh-ex situ* IQs (compare with (30b)).

(32) *Typical intonation contour of wh-ex situ EQs:*

- a. PJA idhe?
 who-ACC saw-3SG
 “He saw WHO?”

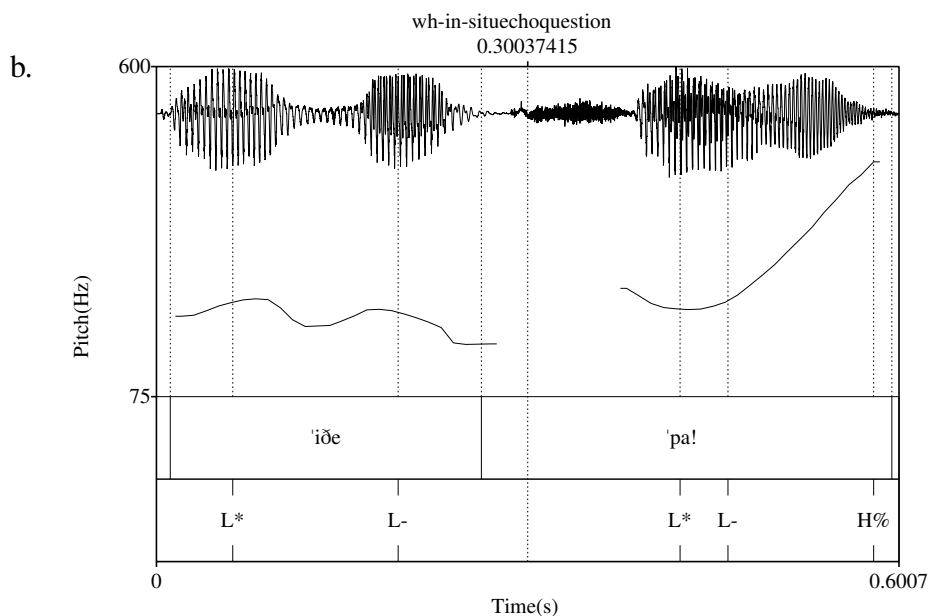


The echo question presents a sequence of L* L- H%. The L* is a low plateau pitch accent on the stressed syllable of *pja* (who), the L- appears as a low plateau on the next stressed syllable (in case there is one), and the intonation contour is completed with a really high H% during the last syllable of the utterance. Obviously, this intonation pattern is clearly distinct from the intonation pattern of the *wh-ex situ* IQs.

Interestingly, if one compares the intonation contours of ex situ EQs with that of in situ EQs (to which I return shortly), one finds the same thing that has been found earlier in the case of ex situ and in situ IQs. Consider (33).

(33) *Typical intonation contour of wh-in situ EQs:*

- a. Idhe PJA?
 saw-3SG who-ACC
 “He saw WHO?”



The intonation contour of a whole ex situ EQ appears exactly the same on the rightmost *wh*-element of the in situ EQ. This is shown in (33b) which is the intonation contour of (33a) (repeated from (29b)). (33b) is described as L* L- H% since the pitch accent is a low plateau, and the last syllable ends up really high. Again, the part of the intonation contour that precedes the in situ *wh*-element (i.e., *pja* (who)) forms an intermediate intonation phrase, which is described as L* L-. The most important phonetic cue for realizing this intermediate intonation phrase is the pitch gap of more than 60 Hz between the end of the intonation contour of the preceding part and the beginning of the *wh*-element.

So, EQs have a dedicated intonation contour, as well, which is distinguishable from that of IQs. Other than that, EQs also manifest a similar ‘spreading’ vs. ‘shrinking’ pattern that has also been observed earlier with respect to IQs.

2.4 Summary

Let us summarize the evidence discussed in this chapter. MG observes either *ex situ* or *in situ* *wh*-constructions, each of which may map to either an information-seeking (IQ) or an echo question (EQ). Depending on the site that *wh*-elements may lexicalize, differences emerge with respect to distribution, interpretation and intonation. Specifically, *ex situ* forms have a restricted distribution (e.g., islands), acquire more meanings (e.g., out-of-the-blue IQs), and have a matching intonation contour that spreads over the whole utterance (i.e., L*+H (or H*) L- !H% for IQs; and, L* L- H% for EQs). On the other hand, *in situ* forms are syntactically unrestricted (e.g., islands), they are confined in meaning (e.g., discourse anchored IQs and EQs), and have a matching, ‘shrinking’ melody, which otherwise resembles that of their *ex situ* counterparts.

Couched in the framework presented in chapter 1, section 1.1, the following chapter offers a formal analysis of the data examined above. Specifically, after introducing a number of more recent approaches to the relevant constructions, as regards both *wh-ex situ* and *wh-in situ* languages, the chapter concentrates on MG, and develops a system which accounts for the ‘*ex situ*’ and ‘*in situ*’ forms, as well as, the ‘IQ’ and ‘EQ’ meanings.

Notes

- ¹ It should be noted that I. Philippaki-Warburton was the first to observe the availability of *wh*-in situ IQs in MG, as acknowledged by Tsimpli (1998: 208, 8ff).
- ² See Tsimpli (1998), Sinopoulou (2009), and Vlachos (2010), for the same argument; see Rousou (2010b) for a recent discussion of the selectional properties of *rotao* (ask), among others.
- ³ For concreteness, notice that the copy vs. trace distinction is crucial for theory-internal purposes. Traces are *prima facie* new objects that are created at the course of the rearrangement of lexical items in the computational component of the Grammar. Copies, on the other hand, are phonologically null replicants of displaced lexical items. As such, Chomsky (2000) revives the theory of copies (see Chomsky [1955]1975 for a first formalization) and abandons that of traces (see, for example, Chomsky 1981), since copies comply with the minimalist postulate known as Inclusiveness Condition (see Chomsky 1995b).
- ⁴ Ex situ IQs abide by the typical islandhood pattern; see Horrocks & Stavrou (1987), as well as, Kotzoglou (2005) for a recent discussion.
- ⁵ I will abstract away from so-called ‘pair-list,’ ‘individual’ and/or ‘functional’ readings that are evident under the association of *pjos* (who) with the in situ *pote* (when). Such matters call for an examination of ‘multiple’ *wh*-questions, which are tangential to present purposes. For early discussions of multiple *wh*-questions, see Higginbotham & May (1981), Pesetsky (1987), and Reinhart (1998).
- ⁶ See Tsimpli (1995) and Agouraki (1999) for a discussion of *whether*-islands in MG.
- ⁷ Oiry (2011) also offers evidence from a speech production study, which shows that French children use *wh*-in situ IQs in embedded contexts quite productively.
- ⁸ Sinopoulou (2009) makes the same observation. For a cross-linguistic comparison, see Pires & Taylor (2007) who argue that *wh*-in situ IQs are infelicitous in ‘out-of-the-blue’ contexts, in

both English and Brazilian Portuguese. Regarding French, see Mathieu (2004), Baunaz (2005) and Adli (2006) who accept in situ occurrences as out-of-the-blue questions, as opposed to Chang (1997) and Ginsburg & Sag (2001).

⁹ *The hell* phrases fit the pattern as well; see Sinopoulou (2009) for examples.

¹⁰ (16) is first examined in Spanish by Uribe-Etxebarria (2002: 222, (14a,b)). The dialogue is attributed to Jiménez (1997).

¹¹ For a formal discussion of the semantic properties of the mechanism of accommodation I refer the reader to Lewis (1979), as well as, Heim (1982).

¹² (18) is modeled on Chang's (1997) congeneric French example (46), p. 45.

¹³ For an illustrative debate over the semantic and pragmatic properties of presuppositional contexts, see Lakoff (1971), Karttunen (1973), Stalnaker (1973; 1999; 2002), and Heim (1990), among others.

¹⁴ I want to express my gratitude to the 20 research participants of the experiment (some among them senior colleagues and some junior), to Dimitris Papazachariou and Maria Giakoumelou for invaluable support during the description and analysis of the phonetic evidence, to Anna Roussou for her theoretical insights, as well as, to Ineke Mennen for helpful comments (during her short visit at the University of Patras in the spring of 2010). The results of the experiment presently reported were first delivered at the 20th International Symposium of Theoretical and Applied Linguistics (ISTAL 20), as Roussou et al. (2011).

¹⁵ Here, I would like to cordially thank my friend and colleague Athanasios N. Karasimos for providing me with his comprehensive, and thoroughly informed manual of the PRAAT program.

¹⁶ Ineke Mennen (personal communication) comments that if a constituent follows the *wh*-in situ element, say a modifier like *akrivos* (exactly), as in (i) below, then, one expects that the intonation contour will acquire a more expanded shape.

- (i) Ke nomizis oti idhe pja akrivos?
and think-2SG that saw-3SG who-ACC exactly
“And, who do you think he saw exactly?”

Although I have not tested cases like (i), I share Ineke Mennen's intuition that the relevant melody will expand over *akrivos* (exactly), in a way similar to typical *wh*-ex situ IQs, where the intonation contour expands over the constituents that follow at the right of the *wh*-element.

Chapter 3

The division of labour between syntax and PF

3.1 Typical *wh*-ex situ and *wh*-in situ

Typical *wh*-ex situ constructions, which are exemplified in English as in (1), are generated as follows (see Chomsky 2000, onwards):

- (1) [_C Which student did [_I you (did) [_{v/V} see ⟨which student⟩]]]?

Which student externally merges in the predicate/V-domain, where it acquires a θ -role by being construed as the internal argument of the predicate *see* (for simplicity, I collapse the vP-shell). Although the representation of the auxiliary *did* is tangential to my concerns, I typically illustrate it as ‘T-to-C movement’ (see Chomsky 1995b). Notice also that the subject *you* is assumed to have moved to [Spec, I] from its canonical [Spec, v] position, where *you* is the external argument of *see* (not indicated in (1)).¹

The *wh*-element is associated with C in the following terms: *which student* comes with an interpretable [*i*Q], and an uninterpretable [*uwh*]. C projects with an (generalized) EPP-feature and an uninterpretable [*u*Q].² Both C and the *wh*-element are ‘active,’ meaning that C probes for a suitable Goal to value its [*u*Q]. The Goal that is available in the ‘search’ (c-command) domain of C is the *wh*-element that carries a matching (non-distinct) [*i*Q]. So, C agrees with the *wh*-element and both participants value their [*u*Fs].³ The EPP-feature of C triggers Internal Merge (‘displacement’) of the *wh*-element to C, while the original site contains a copy of the remerged element (as depicted in (1)).

By virtue of its association with C, *which student* translates to an operator at LF. To be more precise, the operator is the determiner *which*, while the noun *student* is the restrictor.

The copy that resides in the V-domain is deleted at PF (see Chomsky 1995b), and at LF, it is converted to a variable (see Fox 2002) bound by the operator. ‘Displacement’ in syntax then yields a *wh*-chain at LF that is construed between the *wh*-operator that surfaces in the C-domain and the variable that appears in the V-domain. Only one position is realized at PF (usually that of the operator), but both positions are available at LF; hence the necessity of copies.

Turning to typical *wh*-in situ languages, consider (2), which is an example from Japanese, repeated from Watanabe (2003: 520, (1)).

- (2) [Taroo-ga nani-o te-ni ireta koto]-o sonnani okotteiru no?
 Taro-NOM what-ACC obtained fact-ACC so much be-angry Q
 “What are you so angry about the fact that Taro obtained?”

In the scope of Chomsky’s account of English *wh*-ex situ (given above), more recently, Watanabe (2006) treats *wh*-questions, like (2), as an instance of Agree between the in situ *nani-o* (what) and the Q-particle *no* that surfaces in C (note that Japanese is a head-final language). The author argues that C does not come with edge properties (a ‘pied-piper’ feature in his terms) that would trigger ‘displacement’ of the *wh*-element, as opposed to English. Thus, Agree forms the necessary *wh*-chain between *nani-o* (what), which provides the variable, and C, which provides the operator.⁴

Notice that *nani-o* (what) in (2) is inside a complex NP island, and the result is grammatical, which shows that Japanese *wh*-in situ is not restricted by certain islands relevant for English. However, Japanese *wh*-in situ is not island-free, as shown in (3), where *nani-o* (what) appears inside a *wh*-island introduced by *kadooka* (whether) (Watanabe’s 2006: 51, (7)).

- (3) ??John-wa [Mary-ga nani-o katta kadooka] Tom-ni tazuneta no?
 John-TOP Mary-NOM what-ACC bought whether Tom-DAT asked Q
 “What did John ask Tom whether Mary bought?”

Concentrating on (3), Watanabe (2006) maintains that the *wh*-island constraint is an instance of minimality, and argues that this minimality is induced by Agree. In particular, and glossing over unnecessary details, the author’s idea is that island restrictions (in Japanese) be captured in narrow syntax, under Agree, which says that a Probe must Agree with the closest Goal (see Chomsky 2000). So, in (3), *kadooka* (whether) is a possible Goal for Agree with (the Q-particle in) C, and is closer to C than *nani-o* (what).

In short, under most recent assumptions, the difference between typical *wh*-ex situ and *wh*-in situ constructions boils down to this: the former assume additional Merge of the *wh*-element ('displacement'), which is not attested in the latter. Other than that, Agree forms the relevant operator-variable chains, in both cases.

Considering the MG data discussed in chapter 2, in the scope of the previous set of assumptions, the question arises as to how alternative *wh*-ex situ and *wh*-in situ structures are computed in the same grammar. Another question is how information-seeking (IQ) and echo (EQ) interpretations are disambiguated. These are the issues discussed in the present chapter, which is divided into two parts. The first part is (mostly) concerned with the syntax of *wh*-constructions. In particular, section 3.2 presents two (commonly adopted) lines of reasoning about *wh*-in situ alternatives, in *wh*-ex situ languages like French and Spanish. Section 3.3 is the analysis of MG *wh*-ex situ, and section 3.4 that of the *wh*-in situ counterparts. The other half of the present chapter (mainly) focuses on the disambiguation of IQ and EQ readings (section 3.5), and finally, section 3.6 summarizes the discussion.

3.2 Approaches to *wh*-in situ alternatives

By and large, two seminal proposals have influenced the treatment of alternative *wh*-in situ configurations. One proposal dates back to Huang (1982), and has (mostly) been incorporated to accounts of French (varieties of) *wh*-in situ (section 3.2.1). The other proposal is due to Kayne (1994), and has been advocated for Spanish *wh*-in situ (section 3.2.2).

3.2.1 Covert or feature movement

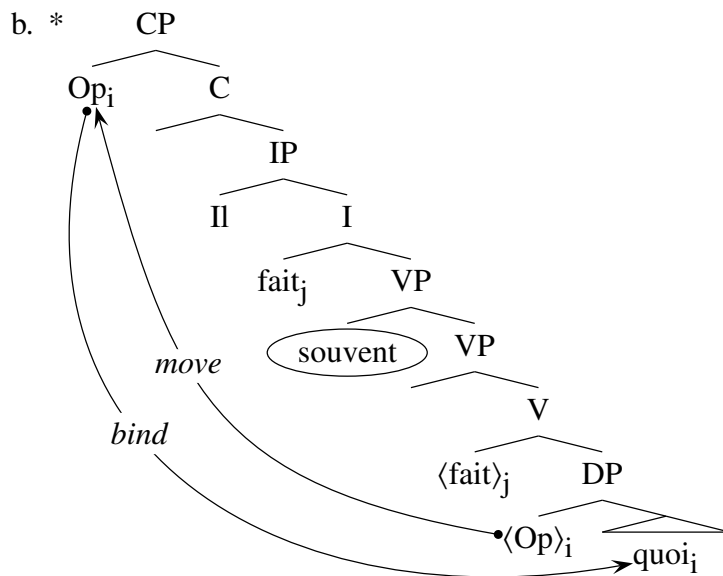
Huang (1982) examines the formation of Chinese *wh*-constructions, in comparison with the English counterparts. Roughly speaking, the author observes that although Chinese *wh*-arguments and adjuncts surface in situ, *wh*-adjuncts are constrained by weak islands (specifically, *wh*-islands), as is the case with English. Since weak islands restrict movement of a *wh*-element to C in English, Huang concludes that *wh*-elements must also move to C in Chinese. But, the type of movement relevant for Chinese yields no PF-effects. Instead, movement in Chinese takes place only at LF. In effect, Huang's proposal contributed to the assumption that LF is a 'covert'

component of the Grammar, where syntactic operations that are not visible at PF may take place. In fact, the Empty Category Principle (ECP), which was corroborated by Huang's observation that covert movement may be blocked as well, was distinguished from the Subjacency principle, which was taken to restrict only overt movement (see Chomsky 1982; 1986a).

In the early period of minimalism (see Chomsky 1995b), covert (phrasal) movement was reincarnated as 'feature-movement,' which is performed in overt syntax, but is invisible to PF. Feature-movement inherited the core properties of covert movement, including the idea that feature-movement may be constrained by weak islands (and other intervening quantifiers).

As an example of feature-movement, consider Mathieu's (1999; 2004) treatment of *wh*-in situ constructions in (his variety of) French. Mathieu maintains an early distinction between so-called 'referential' vs. 'non-referential' variables. Roughly put, the former are discharged by arguments that "...refer to specific members of a preestablished set (Cinque 1990: 8)," and do not require local licensing, while non-referential variables need local licensing, and prototypically concern adjuncts (see also Rizzi 1990). The author then suggests that a *wh*-in situ element, part of which moves to C (I will return to this shortly), behaves like an 'adjunct', in that its variable must be locally licensed. So, when an intervening quantifier is present, this licensing is blocked (see also Starke 2001 and Shlonsky 2009 for similar lines of reasoning, couched in different frameworks). By way of illustration, consider the ungrammatical (4a), schematized in (4b) ((4a) is repeated from Mathieu 1999: 467, (55), and (4b) is modeled on his analysis; for simplicity, I do not illustrate the representation of the adjunct *le dimanche* (on Sunday)).

- (4) a. *[CP Il fait souvent quoi le dimanche]?
 he does often what the Sunday
 “What does he often do on Sundays?”



As in (4b), *quoi* (what) is treated as a split-DP structure (on a par with split *combien de* (how many of) constructions). A phonologically null Op(erator), which originates in the specifier of the *wh*-element ([Spec, DP]), is separated from its semantic restriction, and moves to C. The construal between Op and *quoi* (what) (cf., the relevant coindexing) is blocked by the presence of the negative operator *souvent* (often) which adjoins to VP (cf., the circled node).

The above set of assumptions, regarding either covert or feature-movement, has traditionally been incorporated in other approaches to French (varieties of) *wh*-in situ, as well (see, for instance, Chang 1997, Bošković 1998, Cheng & Rooryck 2000, among many others). To put it simply, ignoring technical details, the shared intuition among such proposals is that the type of movement that creates *wh*-ex situ structures has PF-effects, while that relevant for the *wh*-in situ counterparts does not; yet, both constructions assume movement.

3.2.2 Remnant movement

The second significant approach that has shaped part of the discussion about *wh*-in situ is due to Kayne (1994), and can be summarized as follows (repeated from Kayne 1998: 128):

“In a number of cases. . . where covert (LF) phrasal movement has been postulated, it is possible and advantageous to dispense with covert movement (including feature raising) and replace it with a combination of overt movements of phonetically realized phrases. . . The strongest interpretation of this conclusion is that. . . UG [Uni-

versal Grammar—CV] leaves no choice: Scope must be expressed hierarchically, there are no covert LF phrasal movements permitted by UG, and neither can the effect of covert phrasal movement be achieved by feature raising. Scope reflects the interaction of merger and overt movement.”

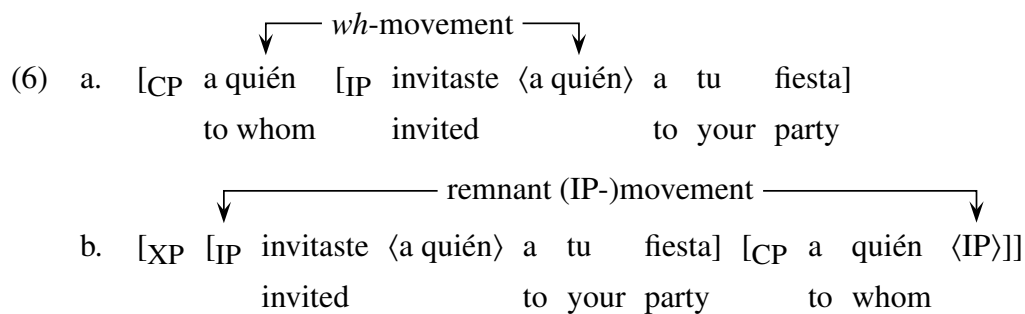
As is obvious from the above quote, Kayne’s research enterprise dispenses with covert (including feature-) movement altogether. Instead, the idea put forward is that the effects of covert movement be replaced by ‘massive’ applications of overt movement.

To see how that system works for *wh*-in situ, consider the following approach. Uribe-Etxebarria (2002) (see also Etxepare & Uribe-Etxebarria 2005) argues that *wh*-in situ in Spanish does not exhibit a neutral word order pattern. For instance, every constituent in a root clause must precede the *wh*-in situ element. In turn the *wh*-element must surface in the right edge of the relevant clause. This is shown in the minimal pair in (5) (repeated from Uribe-Etxebarria 2002: 220, (4a) & (5a) respectively).

- (5) a. ¿[Y tú] invitaste a tu fiesta a quién?
 [and you] invited to your party to whom
 “And, who did you invite to your party?”
- b. Yo invité a María a mi fiesta.
 I invited-1SG to Mary to my party
 “I invited Mary to my party.”

In (5a), the interrogative *a quién* (to whom) surfaces sentence final, although the neutral word order is that shown in (5b) with the corresponding declarative *a María* (to Mary) preceding *a mi fiesta* (to my party).

The author then proposes that *wh*-in situ is not literally ‘in situ,’ but undergoes ordinary, overt movement to C. Subsequently, the relevant IP, which is called the ‘remnant,’ surfaces in the left of the *wh*-element, to a position dubbed by the author as XP. That position is recognized as a Topic-like position, in the spirit of Rizzi’s (1990) cartography of the left periphery of the clause. By way of illustration, see the relevant movement steps of (5a) given in (6a) through (6b) (for simplicity, I have left out the representation of the string *y tú* (and you)).



A quién (to whom) externally merges with the predicate *invitaste* (invited), and after agree with C, the *wh*-element internally merges to [Spec, C], leaving the relevant copy in the original site (cf., (6a)). Subsequently, the remnant IP moves to a position inside XP, past the *wh*-element (cf., (6b)); hence, the sentence final position of *a quién* (to whom).

In other words, for the remnant movement view, *wh*-ex situ and *wh*-in situ constructions are both computed in syntax proper. What distinguishes between the two constructions is an extra movement step. That is, the IP in *wh*-in situ is reordered around the ‘displaced’ *wh*-element. For Uribe-Etxebarria, movement of the IP is motivated not only by word order considerations, but also by interpretive needs (in fact, it is a tacit assumption of the remnant movement framework that movement hints at interpretive requirements). Her argument is formulated as follows: the IP in *wh*-in situ carries an event presupposition that the congeneric IP in the *wh*-ex situ counterpart does not have. That presuppositional effect is explained under the assumption that the moved IP acquires a topicalized, or a ‘given’ status, so to speak, due to its purported surface position. In effect, the *wh*-in situ element maps to the so-called ‘contrastive’ focus reading. In short, the remnant movement approach to *wh*-in situ entails that discourse requirements, such as presuppositionality, need to be structurally represented, although it remains unclear how discourse can feed syntax.

Let us put the discussion so far together. In recent terms, typical *wh*-ex situ constructions (e.g., in English) are generated by (External/Internal) Merge and Agree. External Merge creates the initial occurrence of a *wh*-element in the V-domain. Agree (facilitated by uninterpretable features) establishes the appropriate construal between C and the *wh*-element. Internal Merge derives the second occurrence (‘displacement’) of the *wh*-element in the C-domain, by virtue of the edge properties of C (EPP). At LF, the two occurrences form a *wh*-chain. The head of the chain is an operator, while its foot is a variable. At PF, only the operator is realized, while the original occurrence (copy) is deleted. In the context of the above analysis, it has been

recently suggested that, for typical *wh*-in situ languages (e.g., Japanese), Agree (and External Merge) suffices to yield the corresponding *wh*-dependencies, assuming no additional Merge, given the lack of ‘displacement.’

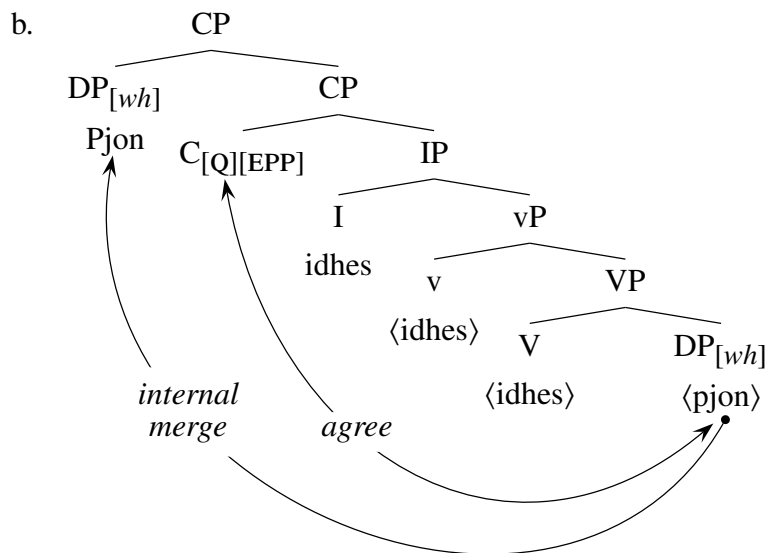
In the generative literature, there are two competing approaches to *wh*-in situ constructions observed in *wh*-ex situ languages (e.g., French and Spanish). One account maintains the traditional assumption of covert or feature-movement. Covert movement is performed at LF, feature-movement in the overt syntax, and both operations have no PF-effects. The other account substitutes covert (and, feature-) movement for massive applications of overt movement, assuming also that discourse requirements are structurally represented.

Compared to the above set of assumptions, I will approach the syntax of the MG *wh*-constructions as follows: I will typically maintain that *wh*-ex situ configurations are predicated upon (External/Internal) Merge and Agree (on a par with English), although I hasten to add that: a) nothing will hinge on the necessity of Internal Merge (or, better, the duality of Merge), b) I will depart from the assumption that uninterpretable features drive the relevant computations, and c) following a recent approach, I will substitute EPP for an instruction for lexicalization. Then, *wh*-in situ constructions, which will be instances of an Agree/quantification dependency (akin to Japanese), will not lack this instruction, contrary to current wisdom, but will satisfy it in a manner different from their *wh*-ex situ counterparts. An additional consequence will be that covert/feature and remnant movement become superfluous, and thus dispensable.

3.3 Computing *wh*-ex situ

To put the preceding reasoning into perspective, let us start with the syntax of *wh*-ex situ constructions. Consider the representation of (7a), as depicted in (7b).

- (7) a. Pjon idhes?
who-ACC saw-2SG
‘‘Who did you see?’’



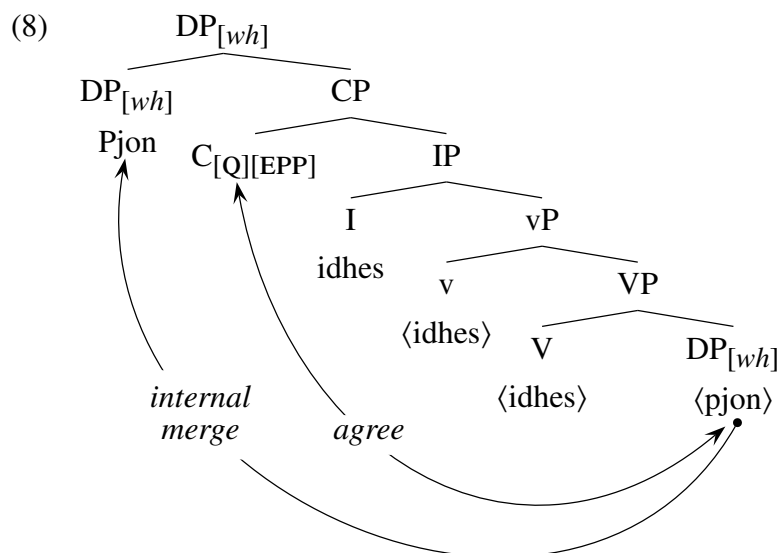
Pjon (who) merges in the V-domain, and is construed as the internal argument of the predicate *idhes* (saw). Here, I follow Anagnostopoulou (1994), and Kotzoglou (2005), in assuming that V-raising does not extend to C, unlike English, whose interrogative C is realized by auxiliary inversion, but nothing hinges on that (see Roussou & Tsimpli 2006, for the ‘T-to-C’ view).

Turning to the feature composition of C, I take C to bear quantificational properties that are traditionally represented in terms of a Q-feature, notated in (7b) as [Q] (see Katz & Postal 1964 for a first proposal, and many others thereafter). However, contrary to the minimalist consensus that features may come with either a positive or negative value, I assume that all morphosyntactic features are positively specified, in that they are interpretable at both interfaces, as argued by Brody (1997), Roberts & Roussou (1997), and Manzini & Savoia (2004), among others. So, in the light of the previous clarifications, the [Q] feature of C enters a dependency with the [*wh*] feature of *pjon* (who). Siding with Chomsky’s (2000) intuition, I understand this dependency as an Agree/quantification relation (i.e., facilitated by morphosyntactic means) that translates at LF as follows (see also Kratzer & Simoyama 2002, Johnson 2010, and Manzini & Roussou 2011, for a similar proposal): Q is a (quantificational) function that maps to a ‘question’ (it yields a question meaning). I take the term ‘function’ to actually mean that Q is a kind of ‘predicate,’ that is, a λ -abstractor that needs an argument (variable) in order to be interpreted, otherwise we have vacuous quantification.⁵ What Q then does is to predicate the property of ‘question’ over some value for the variable that Q abstracts over. Among the variables that are open to construal with Q are those delivered by *wh*-elements. So, in (7b), the variable that Q

probes for is the one discharged by *pjon* (who) (the Goal). By virtue of its construal with C, the *wh*-element translates to an (*wh*-)operator (itself a predicate). In turn, this operator must be associated with an argument (variable). This argument corresponds to the variable construed in the V-domain, and provides the θ -role. In other words, the operator-variable chain in (7b) is a recursive predicate-argument construal that is derivable at LF by virtue of Agree/quantification between C and the *wh*-element.

Let us now concentrate on the nature of the EPP-feature, and the configuration it has been assumed to yield. It is typically argued that EPP, which has sometimes been termed EF (Edge Feature; see Chomsky 2008), stands for the property of functional heads to allow for additional Merge. Generally, the EPP-feature has its roots in the ‘Government and Binding’ framework (see Chomsky 1981), and specifically in the traditional Extended Projection Principle (EPP), which requires that clauses have a subject.⁶ Here, I follow Manzini & Savoia (2011a), Manzini & Roussou (2011), and, to some extent, Roberts & Roussou (2003), in assuming that there is no (generalized) EPP-feature, in the strict minimalist sense explained above, but an ‘instruction for lexicalization,’ which is encoded in first Merge. Specifically, an instruction to create a single occurrence realized at PF (PF-realization) (and, by implication, interpreted at LF; LF-realization). In the context of *wh*-ex situ structures, then, the instruction is that the head of the *wh*-chain (the position of the operator) be lexicalized under Merge in the C-domain. To clarify further, although I will continue to refer to the (generalized) EPP-feature in *wh*-ex situ constructions, perhaps somewhat misleadingly in the light of the current clarifications, I will do so only for the following reason. Although the current assumption is that there is no (generalized) EPP-feature that triggers ‘movement,’ but an instruction for lexicalization, there may be a need to conceptualize this instruction in feature-oriented terms. If so, then one may resort to some notion of (generalized) EPP (or, equivalent, for that matter), and this is what the schema in (7b) points at. On the other hand, it may, of course, be sufficient for one to assume that Merge is always ‘overt,’ which means, in turn, that lexicalization is encoded in the operation Merge (in the spirit of Manzini & Roussou 2011), and not in some task-oriented feature (EPP). So, the crucial point to be kept from the present discussion is that, in (MG) *wh*-ex situ chains, the position of the operator is lexicalized, and this lexicalization boils down to an instruction that is associated with first Merge, no matter how one may wish to conceptualize this instruction.

On a related issue, the head of a *wh*-chain (the position occupied by the *wh*-element) has traditionally been identified as a ‘specifier’ ([Spec, C]). However, a natural consequence of the Bare Phrase Structure (BPS) view of the Grammar is that specifiers are obsolete (see chapter 1, section 1.1), standing for a notational relic of the X'-theory (see Chomsky 1995a; 2004, Starke 2004, and Jayaseelan 2008, for discussions). The availability of Agree makes ‘spec(ifier)-head’ configurations redundant, and thus dispensable (see Chomsky 2001; 2004; 2008). In the light of the above remarks, I assume that merge of the *wh*-element with C creates a position dominating C. Now, if it turns out that labeling is indeed an algorithm that is required by syntax (but see Collins 2002), that position is labelled by the ‘displaced’ element (the Goal). So, in the structures under consideration, I suggest that what labels the relevant projection is not C but *pjon* (who) itself. Consider (8), where the DP_[wh] projects above CP (contra (7b)).

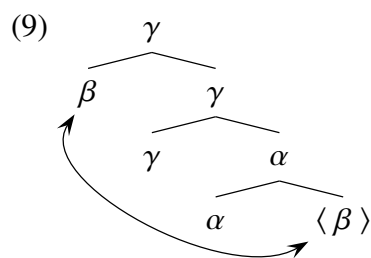


Notice that I indicate the relevant projection only for expository reasons. Strictly speaking, under a BPS model, it is not a DP_[wh] that surfaces above C in (8), but *pjon* (who). In other words, it is not the merger of ‘types’ (categories) that matters, but that of ‘tokens’ (morphosyntactic features). So, what (8) shows is that the ‘displaced’ element, but not the target (C), projects and defines the structure (in effect, turning the clause to a nominal phrase).

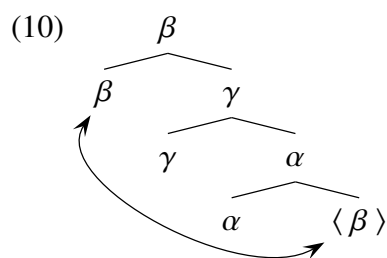
Starke (2004) provides several convincing arguments against the notion of specifiers. Although I will not go into his arguments here, one point is relevant for our discussion. In particular, Starke reconceptualizes *wh*-elements (single lexical items and phrases) as ‘complex heads,’ and proposes that *wh*-elements lexicalize the C-head (hence, they do not create a posi-

tion above C, as I have been claiming). As such, a typical *wh*-ex situ structure does not depict a spec-head configuration, but a head-complement one. In his words, “. . . syntactic structures are nothing but raw layers of head-complement relationships (2004: 264).” I share Starke’s intuition that merge of the *wh*-element with C reduces to a head-complement structure, where C corresponds to a (sentential) ‘complement.’ Nonetheless, I follow Manzini & Savoia (2007; 2011a) in assuming that C encodes verb specifications, meaning that C is the projection, or more precisely, a scope position of V (as is I(nflection)). The previous means that C in (8) does not host *pjon* (idhes) because the latter is nominal in nature.

From a theoretical standpoint, (8) takes issue with the long-held assumption, maintained in current minimalist syntax, that Internal Merge, unlike External Merge, is ‘asymmetric,’ meaning that only the target projects, and not the ‘moved’ constituent. Specifically, recall the discussion revolving around (3), chapter 1, section 1.1, which is repeated in (9) for convenience. What (9) depicts is the traditional idea that the ‘moved’ β projects in the specifier of γ .



But, in line with what has been said so far about the absence of specifiers, (9) is recast as in (10), where β is the element that actually projects and labels the output, yielding a recursive head-complement configuration.



In an important sense, (10) sides with a number of independently motivated approaches, such as Brody (2000; 2003), Bury (2003), Starke (2004), Cechetto & Donati (2010), Donati & Cechetto (2011), and Citko (2011), which propound that ‘displaced’ elements are capable of labeling the positions they create.⁷ And, I agree with Bury (2003: 10), who states that “. . . this

condition [the asymmetry between External vs. Internal Merge in terms of phrase structure building—CV] does not follow from any principles of phrase structure, but rather from particular assumptions about movement and its triggers.” This, in turn, is verified by Chomsky (2004: 113), who argues that “. . . it is not the Spec-head relation but the way it is satisfied that is crucial [that is, via ‘displacement’—CV].”

Anna Roussou (personal communication) has pointed out to me that the schema in (10) makes sense if, in any case, all instances of Merge are External Merge. In fact, this is true for any approach to phrase structure building that allows for the possibility that the ‘moved’ β may also project. I agree with her comment that the present analysis tacitly alludes to the view that Merge comes only in one flavour, that is, External. There are three major reasons for this. First, as presently assumed, EPP is an instruction for lexicalization. Since this instruction is carried out by Merge, and since lexicalization of the same lexical item (β in our case) can take place only once in a given construction (probably, for PF-oriented reasons), it follows that EPP may only be associated with (trigger) External Merge. So, Internal Merge, which introduces a second occurrence (copy) of β , and thus, predicts an additional lexicalization possibility, is precluded by definition. Second, since the results obtained by Internal Merge, regarding phrase structure building, can be shown to equal those delivered by External Merge, the (perhaps, one of the most fundamental) difference(s) between the two facets of Merge becomes obscure, or quite trivial, at best. And third, since Agree/quantification alone suffices to yield the appropriate operator-variable (*wh*-)construals, without the necessity of second Merge, it is quite possible that this Agree/quantification is a purely interpretive process, where predicate-internal ‘copies’ actually correspond to open argument slots (variables) that are directly introduced at LF by relevant predicates, and are saturated (bound) by ‘displaced’ elements (e.g., the operator β), which have to bind a variable (e.g., the ‘copy’ of β) for reasons of interpretation (see Manzini & Roussou 2011 for this alternative view). Certainly, an exhaustive discussion about the duality of Merge is beyond the scope of our present purposes, but, in the light of the previous remarks, I want to stress that I will keep referring to Internal Merge, not as a distinct operation of the Grammar (in the standard minimalist sense), but as a cover term for ‘displacement.’

In sum, *wh*-ex situ structures are generated as follows. A *wh*-element agrees and (internally) merges with C, on the basis of interpretable features. Merge yields a head-complement

configuration, where C corresponds to a ‘complement.’ At LF, the operator-variable chain construed is actually a recursive predicate-argument relation: the quantificational properties of C predicate the *wh*-element, which, in turn, translates to an operator (itself a predicate) that binds a variable associated with V. ‘Displacement’ is due to the instruction (EPP) that the head of the chain (the position of the operator) be lexicalized (realized at PF). As the matter now stands, the question arises as to how alternative *wh*-in situ representations are computed. This is the issue I take up in the next section.

3.4 Computing *wh*-in situ

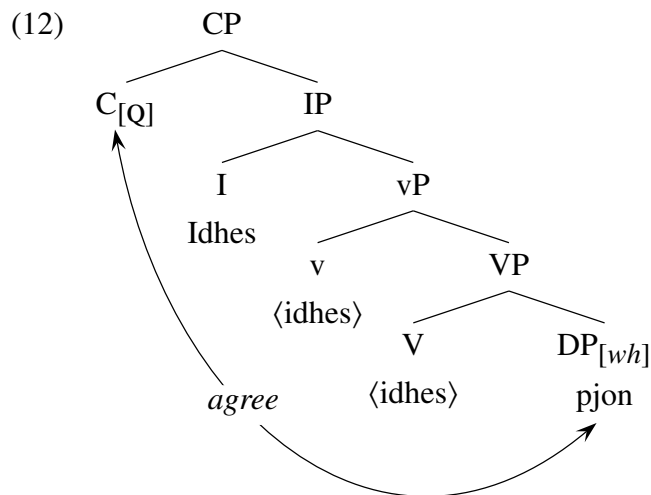
Section 3.4.1 considers root *wh*-in situ constructions with *wh*-arguments and adjuncts. Section 3.4.2 turns to the (un)grammaticality of *wh*-in situ in embedded clauses. Section 3.4.3 comments on some implications regarding the (in)sensitivity of *wh*-in situ inside islands, and section 3.4.4 discusses some issues concerning (*wh*-)parameterization.

3.4.1 Root clauses

As extensively discussed in chapter 2, *wh*-elements in MG may also surface in situ. This is exemplified in (11), where the object *pjon* (who) follows the predicate *idhes* (saw).

- (11) *Idhes pjon?*
 saw-2SG who-ACC
 ‘Who did you see?’

I suggest that in the cases represented by (11), C agrees with *pjon* (who), which in turn lexicalizes its argument position, as shown in (12).⁸



The relevant operator-variable chain is construed between C and the *wh*-in situ element under Agree, in a way similar to *wh*-ex situ constructions (see section 3.3). That is, Agree is enough to realize both the interpretation of the operator (due to the quantificational properties of C) and that of the variable (by virtue of the construal of the *wh*-element with V), without the further instance of Internal Merge (or, that of covert/feature/remnant movement). That is also how the relevant interpretation comes up with *wh*-ex situ constructions. MG then makes use of an Agree/quantification construal that is attested in typical *wh*-in situ languages, like Japanese, as discussed in section 3.1.

Let us turn to the issue of EPP. Since, as presently assumed, EPP (or, any other relevant feature-oriented notation, in case there is need for such a notation) is an instruction for lexicalization (PF-realization), I suggest that this instruction also applies to *wh*-in situ constructions. Specifically, *wh*-in situ merges in the V-domain, and since Merge is ‘overt,’ as currently maintained, it yields the relevant PF-effect. In other words, the difference with the *wh*-ex situ counterparts is which site in a *wh*-chain materializes the instruction, to be carried out by Merge. So, *wh*-in situ elements lexicalize the position of the variable (the instruction is satisfied in the V-domain), while *wh*-ex situ elements that of the operator (the instruction is satisfied in the C-domain). It is a matter of the lexicon of MG that each position is potentially realized by the same *wh*-element, which yields the (PF-)effect of ‘ex situ’ vs. ‘in situ.’ In short, contrary to the conventional belief (EPP or no-EPP for C), *wh*-in situ is not lack of a formal instruction (EPP) that a position in the C-domain be realized, but the satisfaction of an instruction for lexicalization in the V-domain (that is, a position in the V-domain be realized). This idea is quite

natural under the assumptions that: a) nothing, in principle, should block the lexicalization of the relevant positions in a *wh*-chain, and b) variables may or may not have a lexicalization (see Manzini & Roussou 2011).

To slightly diverge, but at a relevant degree, variants of the idea currently pursued that *wh*-in situ elements surface in their thematic positions may also be found in Denham (2000) regarding Babine-Witsuwit'en, and Sinopoulou (2009) concerning MG. Both of these approaches argue that *wh*-in situ representations lack a C-projection, as opposed to their *wh*-ex situ counterparts. So, 'displacement' of the *wh*-element is precluded. The question with such accounts is how *wh*-in situ are typed as interrogatives, under the lack of a relevant C-head. Denham avoids that problem by introducing a Type Phrase that merges above C. That phrase is responsible for the relevant typing of the clause (along the lines of the Clause Typing Hypothesis of Cheng 1991). On the other hand, Sinopoulou argues that *wh*-elements in MG are intrinsically interrogative (in the spirit of Tsai's 1994 approach to English), and that *wh*-in situ maps to a 'declarative question.' Therefore, the interrogative meaning is carried over by the *wh*-element *per se*, while lack of C yields a declarative flavour. In Vlachos (2010), I side with Sinopoulou's idea about the inherent interrogative nature of the *wh*-elements (but not with her intuition about the declarative effect of *wh*-in situ).⁹

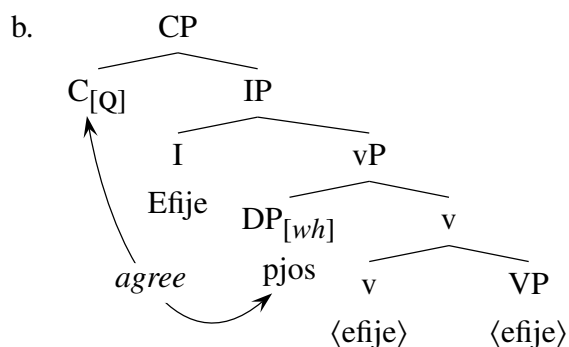
I no longer hold that assumption, maintaining that *wh*-elements in MG have the denotation of (focused) indefinites; hence, no intrinsic quantificational force (see Roberts & Roussou 2003). Moreover, the classical approach is that *wh*-elements pattern with *some*-indefinites or (basic) noun phrases introduced by the indefinite determiner *some* (see, for instance, Chomsky 1964; 1995b, Katz & Postal 1964, Klima 1964, Karttunen 1977, and Reinhart 1995, 2006, among others). What is more, from a typological perspective, Haspelmath (1997), and Bhat (2000; 2004) show that interrogative pronouns, across many languages of the world, are derivationally related to indefinite pronouns (and, vice versa). In the light of these clarifications, I maintain that, as is also the case with *wh*-ex situ constructions (see section 3.3), quantification relevant for 'questions' (currently notated as [Q]) is encoded in C, which types the clause as interrogative—so, there is no need for an extra 'Type Phrase'—and, assigns the status of the operator to the *wh*-element (in a manner previously described). This approach is especially natural under familiar ideas from the semantic literature that *wh*-elements have no semantic

contribution, apart from introducing alternatives (see Hamblin 1973, Rooth 1985; 1992, and Beck 2006, among many others). As Beck (2006: 12) puts it, “. . . the ordinary semantics of the *wh*-phrase is in fact undefined. . .,” and, as such, a Q-operator comes to rescue this undefinedness, as shown in (13b), which is the LF-representation of (13a) (*his*, (33) & (33’) respectively).¹⁰

- (13) a. Who left?
 b. [Q [who left]]

Let us turn now to *wh*-in situ subjects, where a similar reasoning applies. Consider (14a) schematized in (14b). *Pjos* (who) surfaces in its thematic [Spec, v] position,¹¹ and is subsequently construed with C via Agree.

- (14) a. Efije pjos?
 left-3SG who-NOM
 “Who left?”



MG is a ‘pro-drop’ language, which allows for a VS(O) word order, as well. So, the interrogative *pjos* (who) may lexicalize its argument position, as is typically the case with in situ subjects, in grammars that instantiate the ‘pro-drop’ option.¹² The details of the VS(O) pattern will not concern me here, and I refer the reader to Philippaki-Warbuton (1985; 1987), Tsimpli (1990), Alexiadou & Anagnostopoulou (1998; 2001), and Roussou & Tsimpli (2006), among others, for extensive cross-linguistic discussions, including MG.

The fact that *wh*-elements, when in situ, lexicalize their thematic position, has an interesting consequence with respect to the interpretation of *wh*-adjuncts. Consider (15).

- (15) a. Ke pos efjes toso noris apo to parti?
 and how left-2SG such early from the party
 (i) “How did you leave the party that early?”
 (ii) “How come you left the party that early?”
- b. Ke efjes toso noris apo to parti pos?
 and left-2SG such early from the party how
 (i) “How did you leave the party that early?”
 (ii) # “How come you left the party that early?”

The *ex situ* question in (15a) is about “the way you left the party,” where *pos* (how) is construed with the event denoted by the predicate *efjes* (left) (cf., (15a-i)). This question also has a secondary reading, which is roughly about “the fact that you left the party” (cf., (15a-ii)), and becomes more natural under the possible continuation *You had told me you’d stay till late*. Here, *pos* (how) is associated with the meaning of the whole proposition. In Starke’s (2001) terminology, the *ex situ pos* (how) may be interpreted as either ‘event-related’ or ‘fact-related.’ Turning to the *in situ* counterpart (15b), only the event-related reading surfaces (cf., (15b-i)), while the fact-related interpretation is infelicitous (cf., (15b-ii)), and a possible continuation of the form *You had told me you’d stay till late* is banned. This means, in turn, that *pos* (how) is not construed with the whole proposition. If we assume that event-related *wh*-adjuncts may be associated with (generalized) θ -roles (see Rizzi 1990, and Starke 2001), *pos* (how) in (15b) is construed with the predicate, and not with the whole proposition, because *wh*-*in situ* elements lexicalize their thematic positions, as presently argued. This becomes clear in (16), where the string *pos ke* (how come) lexicalizes only the fact-related reading, and *wh*-*in situ* is ungrammatical (cf., (16a,b)).

- (16) a. Pos ke efjes toso noris apo to parti?
 how and left-2SG such early from the party
 “How come you left the party that early?”

- b. *Efijes toso noris apo to parti pos ke?
 left-2sg such early from the party how and
 “How come you left the party that early?”

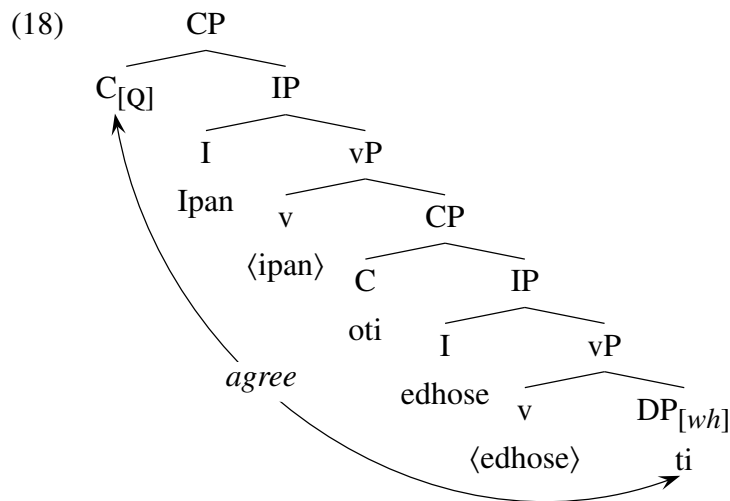
Starke (2001) considers English data of the form (16a), and proposes that *wh*-adjuncts unrelated to predicates are base-generated in the left periphery of the clause. Independent support to Starke’s approach provides the ungrammaticality of (16b), under the current view. *Pos ke* (how come) cannot stay in situ because it corresponds to no thematic position. Here, I do not wish to consider *wh*-adjuncts any further, since that would lead us too far afield. So, in the light of the previous discussion, I assume that *wh*-in situ adjuncts, such as *pos* (how), *pote* (when), and *jati* (why), are only construed with event-related readings that appear low in the structure, because *wh*-in situ surfaces in its argument position. In contrast, *wh*-ex situ adjuncts may give rise to either propositional or predicate-related interpretations. Consequently, if the propositional modification is somehow forced, as in (16), *wh*-in situ is ungrammatical (see also Grohmann & Papadopoulou 2011 for a similar point).

3.4.2 Embedded clauses

Turning to embedded clauses, as discussed in chapter 2 (section 2.1), *wh*-elements may surface in situ in configurations of the form (17).

- (17) Ipan [C oti edhose ti]?
 said-3PL that gave-3sg what-acc
 “What did they say that s/he gave?”

Under the present view, (17) is schematically captured as in (18).



Ti (what) lexicalizes the internal argument of the embedded predicate *edhose* (gave), and since there is no Q associated with the embedded C (lexicalized by *oti* (that)),¹³ *ti* (what) directly agrees with the matrix C, and is assigned the relevant scope.

The (un)availability of *wh*-in situ in embedded environments becomes more interesting once we consider (19a) as opposed to (19b).

- (19) a. *Rotisan [C aghorases ti].
 asked-3PL bought-2SG what-ACC
 “*They asked you bought what.”
- b. Rotisan [C ti aghorases].
 asked-3PL what-ACC bought-2SG
 “*They asked what you bought.”

(19) shows that in certain embedded contexts, a *wh*-element (here, *ti* (what)) cannot stay in situ (cf., (19a)), but must ‘move’ to its scope position, yielding a *wh*-ex situ configuration (cf., (19b)). Notice that the predicate *rotisan* (asked) in (19) carries different properties from a predicate like *ipan* (said) (cf., (20)); *rotisan* (asked), unlike *ipan* (said), is an interrogative predicate that selects for interrogative complements, as shown in (20a,b).

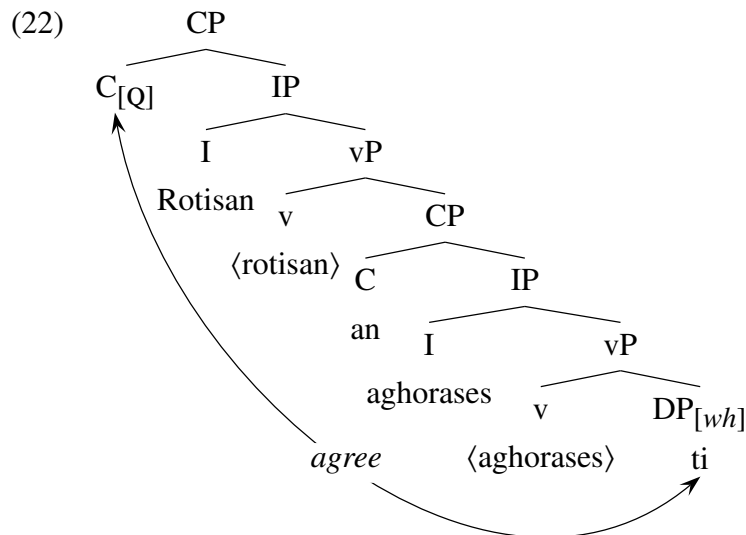
- (20) a. *Rotisan [C oti aghorases ti]?
 asked-3PL that bought-2SG what-ACC
 “*They asked that you bought what.”

- b. Ipan [C oti aghorases ti]?
 said-3PL that bought-2SG what-ACC
 “They said that you bought what.”

In (19a) (and (20a)), the matrix predicate *rotisan* (asked) merges with a complement that does not lexicalize the relevant property, yielding ungrammaticality. The obligatoriness of the ex situ configuration (cf., (19b)) raises from the properties of *rotisan* (asked), and has nothing to do with the *wh*-element as such. As Manzini & Savoia (2011b: 103) put it “. . . interrogative properties must be overtly lexicalized in C just in case they are selected for. This means that either an interrogative complementizer or a *wh*-phrase must occupy the left periphery of the sentence.”¹⁴ This is supported by the fact that if the interrogative/conditional *an* (if) is present, *wh*-in situ is possible (cf., (21)).

- (21) Rotisan [an aghorases ti]?
 asked-1SG if bought-2SG what-ACC
 “What did they ask if you bought?”

The representation I assume for (21) is that given in (22).



(22) shows that the in situ *ti* (what) agrees with the matrix and not the embedded C. The reason is this: the predicate *rotisan* (asked) selects the embedded C that is headed by *an* (if). The relevant interpretation corresponds to an embedded ‘yes/no’ question. If so, the embedded C (or, the construal facilitated by the predicate *rotisan* (asked)) cannot be simultaneously associated

with *ti* (what), which gives rise to a ‘*wh*-question’ reading. In other words, *an* (if) semantically embeds propositional variables (see Roussou 2010b for a recent discussion), while *ti* (what) discharges an individual variable. So, the idea is that the scope of *ti* (what) is not restricted to the embedded clause, in virtue of its association with the matrix C (similarly to (18)).

3.4.3 (In)sensitivity to islands

Let us turn our attention to islands. As shown in (23), the in situ *ti* (what) is grammatical inside a strong island, while the ex situ counterpart is not (cf., (23a)). The same is true with weak islands, as exemplified in (23b) ((23) is repeated from chapter 2, section 2.1, (5) & (9) respectively; the same pattern arises with echo *wh*-elements, although this is not shown here).

- (23) a. *Ti se timorise [epidhi ipes (✓ ti)] (strong island)
 what-ACC you-CL punished-3SG because said-2SG (what)
 “*What did s/he punish you because you said?”
- b. *Pote rotisan [pjos tha fiji (✓ pote)]? (weak island)
 when asked-3PL who-NOM will leave-3SG (when)
 “*When did they ask who will leave?”

In present terms, the scope-taking strategy of *wh*-in situ amounts to an LF-interpretive construal. The data in (23), then, show that this construal is not restricted by (strong/weak) islands.

But, what about languages that do observe blocking effects in *wh*-in situ constructions? As already discussed in chapter 2, an example is Chang’s (1997) dialect (or, register/variety) of French. According to her observations, *wh*-in situ is ungrammatical if c-commanded by a negative operator, as shown in (24) (repeated from section 2.1, (11a)).

- (24) *Il n’ a pas rencontré qui?
 he NE has not met who
 “Who has he not met?”

Details aside, Chang is in favour of a covert movement approach to (24), in the spirit of Huang’s (1982) account of Chinese.

Another example is offered by Mathieu (1999), discussed in section 3.2.1, (4a), and repeated below as (25) for convenience.

- (25) *_{[CP} Il fait souvent quoi le dimanche]?
 he does often what the Sunday
 “What does he often do on Sundays?”

Recall that, according to Mathieu, the adjunct *souvent* (often) blocks the construal between a null Op and the in situ *quoi* (what), after the former has feature-moved to C, where feature-movement restates Huang’s proposal in narrow syntactic terms.

In the light of (24) and (25), then, the question is if a covert/feature-movement operation is at stake. Proposals of this sort are situated in the generative tradition that maintains a strict correlation between islands and movement. So, under this tradition, (24) and (25) have been supportive of covert/feature-movement, which is taken to reconcile the lack of PF-effects of *wh*-in situ with the ungrammaticality inside (certain) islands. Nonetheless, it should not escape one’s attention that covert/feature-movement comes with a price. Specifically, in the scope of the current minimalist theory, Agree effectively derives construals at LF that are not observable at PF, as shown both by Watanabe’s (2006) approach to Japanese *wh*-in situ (section 3.1), and by the present account of MG *wh*-in situ. So, covert/feature movement is redundant, and thus dispensable. As Chomsky (2000: 119 & 132) argues “. . . feature chains [and, by implication, covert movement—CV] do not exist, hence. . . features cannot move. . . .” That is because “. . . agree alone, not combined with merge in the operation move, can precede overt operations, contrary to assumptions made in MP, and related work. Crucial cases are long-distance agree, *wh*-in situ, and others.” In other words, what Chomsky claims is that covert/feature-chains (and their effects) that were the byproduct of movement may be considered as the precursor of chains formulated under Agree. Add to the previous that covert movement maintains the quite controversial stipulation that LF is ‘a syntactic component’ of the Grammar, where operations analogous to narrow syntax may take place.¹⁵

If the previous reasoning about the redundancy of covert/feature-movement is on the right track, the question arises as to how the susceptibility of (French) *wh*-in situ to islands may be accounted for. Although I abstract away from a thorough examination of the issue, I want to provide some indication as to what might be going on. First, Watanabe’s (2006) treatment of Japanese *wh*-in situ inside weak islands shows that an Agree/quantification-based approach is capable of accounting for island restrictions (section 3.1). Second, the generative literature

has independently justified that islands may impede LF-chain construals, in general. Since these construals subsume chains created by movement, then island restrictions do not necessarily provide evidence for movement (see Cinque 1990, Szabolcsi & Zwarts 1993, Beck 1996, Honcoop 1998, Brody 2003, Vergnaud & Zubizarreta 2005, and Szabolcsi 2006, among others). Third, the psycholinguistic literature has extensively argued that the principles/properties governing islands may be exponents of ‘cognitive constraints,’ that is, processing/parsing restrictions imposed on dependencies (see Gibson 1998, Alexopoulou & Keller 2007, Hofmeister & Sag 2010, among others). Putting these considerations together, one may say that an explanation of islands in structural (and hence, narrow syntactic) terms is neither inescapable, nor self-evident. In other words, an explanation of island restrictions may as well be stated outside narrow syntax. Or, as Hofmeister & Sag (2010: 268) argue “An analysis of these island effects in cognitive terms, however, opens the way to a more homogenous and transparent set of grammatical constraints on FGDs [Filler-Gap Dependencies—CV]. That is, once we obtain a deeper understanding of the interacting performance factors, we may obtain a clearer understanding of the grammatical constraints on gap-binding dependencies.”

The above discussion about islands, then, suggests that the ungrammaticality of (24) and (25), compared to the grammatical (23) (considering only the *in situ* cases), may not necessarily be an argument in favour of a covert/feature-movement operation. Instead, *wh-in situ* is an interpretive process, which may be restricted inside islands, in some languages (e.g., French), but may not in others (e.g., MG) (see Manzini & Savoia 2011b for a similar point).

3.4.4 (Wh-)parameterization

If the present view of MG *wh-in situ* as an instance of Agree/quantification is on the right track, an issue arises with respect to (*wh-*)parameterization (and, optionality). Let us start with the necessary background. As discussed in chapter 1, section 1.1, cross-linguistic comparisons between typical *wh-ex situ* and *wh-in situ* languages have led to a *wh*-parameter. The classical conception of the parameter is that English-type *wh*-elements acquire scope ‘overtly,’ while Japanese-type *wh*-elements take scope ‘covertly’ (chapter 1 discusses the parameter in comparison with Chinese, and not Japanese, as is done here, but nothing hinges on that). We have already seen that, within the current minimalist framework, this ‘overt’ vs. ‘covert’ distinction

has been restated in terms of the (generalized) EPP-feature. That is, EPP may be parameterized among languages, meaning that, in some languages, EPP may be associated with certain functional heads, while, in others, may not. If so, as Chomsky (2000: 132) implies, and Watanabe's (2006) treatment of Japanese points at (section 3.1), EPP may be the formal expression of a macro-parameter that concerns the functional part of the lexicon, and may distinguish between two types of languages: those that have EPP for C (*wh*-ex situ) vs. those that do not (*wh*-in situ).

Macro-parameters of the EPP sort are (re)couched in the core assumptions of the Minimalist Program as an interface requirement on grammars, regarding the generation of interpretable syntactic objects. In particular, operations that take place in narrow syntax are regulated by (or must comply with) 'bare output conditions.' These are conditions of legibility, on the basis of which a syntactic object is read-off at the interface levels PF and LF respectively. Satisfaction of such conditions takes place 'optimally,' in the sense that a given grammar may not deploy alternative operations that generate a certain syntactic object; hence, so-called 'optional' strategies are precluded. In the scope of the discussion revolving around 'EPP or no-EPP for C,' then, a given grammar is bound to exhibit either one or the other of the two aforementioned strategies, as part of its lexical/functional specifications. In other words, if EPP is associated with C (or, not, for that matter), then overt (or, covert) scope corresponds to the 'optimal solution'—that is, the only possible option—that the relevant grammar may display in order to satisfy conditions of legibility.

Obviously, the fact that MG (along with many other *wh*-ex situ languages) may also have *wh*-in situ raises serious problems concerning optionality, and calls for a reevaluation of the *wh*-parameter. Here, I shall indicate how the present proposal appears to deal with the aforementioned issues, although the discussion will not pretend to be exhaustive.

Let us restrict attention to MG and Japanese. Shifting the conventional logic of 'EPP or no-EPP for C,' the idea currently pursued has been that EPP (or, any relevant notion) is the exponent of a formal instruction for lexicalization (PF-realization). The previous means that there is no optionality: this instruction must be satisfied in both MG and Japanese *wh*-constructions. In fact, this seems to be the normal case, meaning that there is no language, as far as I know, that does not lexicalize at least one position in a *wh*-chain. How this instruction is parameterized—

that is, manifested among languages—depends on the lexicon of each language.

On the one hand, *wh*-elements in MG may lexicalize the position of either the operator or the variable, yielding the ‘ex situ’ vs. ‘in situ’ effect. Simultaneous realization of both positions is banned, because the same *wh*-element is involved in the lexicalization of each position. This is shown in (26), where *pjo vivlio* (which book) cannot surface both ex situ and in situ.

- (26) *Pjo vivlio aghorases pjo vivlio?
which book-ACC bought-2SG which book-ACC
“*Which book did you buy which book?”

As Stavrakaki & Tsimpli (1999) argue, the internal structure of MG *wh*-elements (concentrating on nominals) assumes a *wh*-part, which lexicalizes information about indefiniteness (and, quantification), and a pronominal part, which specifies agreement features and case. In our present terms, the interpretation of the *wh*-operator and the variable (the ‘restrictor’, that is) are combined in a single lexical item, which may only surface with questions (and, with exclamatives, but with limited distribution, ranging over ‘degree’ or ‘amount’).

On the other hand, as Watanabe (2006) maintains (see section 3.1), Japanese *wh*-elements, like *nani-o* (what) in (27) (repeated from (2)), lexicalize the position of the variable, while a Q-particle, like *no*, that of the operator.

- (27) [Taroo-ga nani-o te-ni ireta koto]-o sonnani okotteiru no?
TARO-NOM what-ACC obtained fact-ACC so much be-angry Q
“What are you so angry about the fact that Taro obtained?”

The standard assumption is that *wh*-elements in typical *wh*-in situ languages, such as Japanese, are ‘indeterminate pronouns,’ meaning that their interpretation varies in tandem with the operator that binds them (see Kuroda 1965, Nisigauchi 1990, Cheng 1991, Tsai 1994, Hagstrom 1998, Kratzer & Shimoyama 2002, Shimoyama 2001; 2006, and Watanabe 2006, among many others). This is shown in (28), repeated from Watanabe (2006: 56, (19a,b)).

- (28) a. Dare-ga ringo-o tabeta no?
who-NOM apple-ACC ate Q
“Who ate an apple?”

- b. *Daremo-ga ringo-o tabeta.*
 everyone-NOM apple-ACC ate
 “Everyone ate an apple.”

The interrogative interpretation of *dare-ga* (who) (cf., (28a)) alters to a universal reading, if the particle *mo* is added to the *wh*-element, and the Q-particle *no* is absent (cf., (28b)).

So, with respect to *wh*-question formation, the comparison between MG and Japanese shows that the lexicon of Japanese, unlike that of MG, ‘splits’ the *wh*-paradigm, providing independent lexicalizations for each position. If this reasoning is correct, one may say that the ‘ex situ’ vs. ‘in situ’ pattern attested in MG is ‘combined’ in a single *wh*-chain regarding Japanese. In this sense, the ‘ex/in situ’ option is available to both languages, but is instantiated differently in virtue of the lexical specifications of each language. (*Wh*-)parameterization, then, is a facet of the lexicon of each grammar (see Borer 1983), and in current terms, of the substantive, and not (necessarily) of the functional part of the lexicon. So, the currently assumed instruction for lexicalization may not be a macro-parameter device—since it is available to both MG and Japanese—but a device that triggers micro-parametric variations, which, in turn, distinguish among closely related grammars (see Manzini & Savoia 2011b for the same point). Or, to state it differently, and in, perhaps, more general terms, a *wh*-operator-variable chain is externalized differently among languages, on the assumption that a *variant* lexicon (e.g., MG vs. Japanese) maps onto an *invariant* computational system (Agree, Merge), partitioning the conceptual space (C/V-domain) in different ways.¹⁶

Further support to the current discussion may provide the example in (29), modeled on Miyagawa (2001: 311, (40)), which shows that the Q-particle *no* may or may not surface in C (enclosed in parentheses).

- (29) [Hanako-ga pikunikku-ni nani-o mottekita] (no)?
 Hanako-NOM picnic-to what-ACC brought Q
 “Hanako brought what to the picnic?”

Miyagawa (2001: 312) argues that if *no* is present, the *wh*-question has an ‘exhaustive’ interpretation, in that “. . . it is expected that the answer will exhaustively list all the things Hanako brought to the picnic.” If, however, *no* is absent, then “. . . there is no presupposition that the answer needs to list everything that Hanako brought; listing just one item will satisfy the question,

even if it is understood that Hanako brought more than one thing.” In the light of Miyagawa’s observation, Japanese, like MG, appears to have the option of lexicalizing only the position of the variable—the ‘in situ’ option, so to speak—perhaps, leaving the operator null. Interestingly, this strategy affects the meaning of the *wh*-question, which is also the case with MG, in virtue of the fact that *wh*-in situ elements may only have an event-related reading (section 3.4.1). In short, both grammars (MG and Japanese) appear to share the same lexicalization possibilities, regarding *wh*-question formation. Differences in distribution, and interpretation, emerge from the way the lexicon partitions the available positions in a *wh*-chain.

To sum up, *wh*-elements in MG may also lexicalize their thematic positions, yielding *wh*-in situ configurations. In situ operator-variable chains are construed under Agree with C (on a par with ex situ chains). That is, any further instance of Merge is superfluous, and MG is open to an Agree/quantification dependency akin to typical *wh*-in situ languages (e.g., Japanese). In situ *wh*-adjuncts only give rise to event-related readings. That is, readings thematically linked to predicates. If such readings are blocked, *wh*-in situ modification is illegal. Embedded *wh*-in situ is, in principle, available, unless the selectional properties of the matrix predicate must be lexicalized in C. In such case, a *wh*-ex situ construction is compulsory. But, if these selectional properties are independently satisfied, say by an interrogative/conditional complementizers *an* (if), *wh*-in situ is grammatical. Moreover, embedded *wh*-in situ gets matrix scope, and cannot be associated with its clause-mate C, if the latter has incompatible properties (e.g., if C introduces declaratives, or yes/no questions). In the context of islands, a covert/feature-movement approach to *wh*-in situ is redundant, under the availability of Agree, and a base-generated view may account for island effects, once islandhood is dissociated from ‘movement,’ which is a plausible research alternative, and once gap-filling processes are (re)cast as interpretive construals that occur outside narrow syntax. In this case, we may assume that some languages (e.g., MG) may attest certain interpretations but others (e.g., French) may not. Finally, once EPP is substituted for an instruction for lexicalization, there is no optionality, since ‘ex situ’ and ‘in situ’ are both manifestations of this instruction. MG has the option of either *wh*-ex situ or *wh*-in situ, due to the lexical properties of the *wh*-elements. Japanese (usually) combines both options in a single *wh*-chain, in virtue of the lexical specifications of the *wh*-elements. (*Wh*-)parameterization, then, appears to reduce to the substantive part of the

lexicon (*wh*-elements), and to how this partitions the clause structure (C/V-domain).

3.5 Disambiguating (non-)echo

Let us now concentrate on another issue. Recall from chapters 1 and 2 that *wh*-questions may be distinguished into those that ‘seek for further information’ (IQ) and those that ‘echo’ (EQ) a constituent in the micro-discourse (the immediate linguistic environment). The question then arises as to how these two readings are computed. Before I consider the MG evidence, let us discuss a recent approach to English.

Sobin’s (2010) account is the first detailed attempt at capturing the differences between IQs and EQs in terms of minimalist syntax. His analysis relies on the following premises. In principle, the author maintains the typical assumption that English may only admit *wh*-ex situ IQs (cf., (30a)). Thus, the challenge for interrogative syntax is the formation of in situ EQs, which he terms ‘syntactic’ EQs (cf., (30b); he also uses the abbreviation ‘EQ’ as a cover term for echo questions). Interestingly, Sobin argues that *wh*-ex situ configurations, like (30a), may alternatively map to EQ meanings. But, he claims that such instances are ‘pseudo’ EQs, meaning that they are not directly relevant to syntax. ((30) corresponds to *his*, (2b,c)).

- (30) a. Who did Mary have tea with? (either IQ or ‘pseudo’ EQ)
b. Mary had tea with *WHO*? (‘syntactic’ EQ)

After defining his empirical field, the author builds a feature-oriented system that deals with the formation of both *wh*-ex situ IQs (cf., (30a)) and *wh*-in situ EQs (cf., (30b)).¹⁷ To be more precise, he proposes that C in typical *wh*-ex situ IQs comes with the feature bundle in (31) (abbreviated as C_{WH}; modeled on *his*, (25)).

- (31) C_{WH} ⇒ C[Int, Q, [*uwh**], B^{WH}]

The [Int] feature carries the interrogative (illocutionary) force of the clause. The feature [Q] causes normal T-to-C movement in root questions, but is absent in embedded environments (in the spirit of Adger 2003). The uninterpretable [*uwh**] feature triggers Agree between C and the *wh*-element, and subsequent merge of the *wh*-element with C. The obligatory nature of ‘*wh*-movement’ is conceptualized as ‘feature strength,’ and is represented through the asterisk

notation. Note that feature strength is proposed in Chomsky (1995b), while the asterisk notation is used in Roberts & Roussou (1997). In recent terms feature strength is subsumed under the [EPP] feature of Chomsky (2000), as is also acknowledged by Sobin (2010). Finally, C comes with a B^{WH} feature that assigns scope to the *wh*-element, in the following terms. Roughly speaking, B^{WH} is an ‘unselective binder’ in terms of Baker (1970) and Pesetsky (1987). That is, B^{WH} is a (binding) function that takes a *wh*-variable as its argument (input) and returns a chain (output), which is construed between a scope operator *S* and the *wh*-variable. That function, which is encoded in the lexicon, is defined in (32) (from Sobin, op.cit.: 139, (26)).

$$(32) \quad B^{WH} (XP_i) \longrightarrow S_i \\ [wh]$$

In particular, (32) predicts that once C agrees with a *wh*-element, the binding function of C (B^{WH}) assigns scope to the *wh*-element (XP), by returning a scope operator *S* for C. The operator *S* is coindexed with the variable that is discharged by the *wh*-element, forming a chain.¹⁸

Sobin, then, proposes an analysis for *wh*-in situ EQs, as in (30b). His reasoning here consists of two parts. The first part concerns the feature composition of the corresponding C, which he notates as C_{EQ} . This is defined in (33a), and the corresponding binding function B^{EQ} is stated in (33b) (from Sobin, op. cit.: 145, (44) & (45) respectively).

$$(33) \quad \text{a. } C_{EQ} \Rightarrow C[Int, B^{EQ}] \\ \text{b. } B^{EQ} (XP_i) \longrightarrow S_i \\ [i-m]$$

In line with (33a), the illocutionary force of EQs is also interrogative. But EQs have neither a [Q] feature that triggers T-to-C movement, nor a [*uwh**] feature that causes *wh*-movement.¹⁹ What is more, the binding function B^{EQ} is differentiated from that of IQs (cf., (32)) in one respect: the constituent that B^{EQ} binds is ‘interrogative-marked,’ notated as [i-m].

The second part of Sobin’s approach to EQs assumes that the relation between EQs and the discourse is syntactically represented in the structure of EQs. The intuitive idea is that EQs are related to various sentence-types in the discourse. For example, the EQ in (34b), notated as ‘E,’ is related to the interrogative ‘utterance’ (U) in (34a) (from Sobin, op. cit.: 132, (4a,b)).

- (34) a. U: What did Dracula drink at Mary's party?
 b. E: What did *who* drink at Mary's party?

According to the author, an EQ like (34b), where *who* is echoed, retains the interrogative force of (34a). This phenomenon is termed by Sobin as 'comp freezing,' which literally means that E contains a copy of the CP structure of U. By way of illustration, I represent (34b) in (35).

- (35) [_{C_{EQ}} [_{C_[WH]} What_[wh] did [_I who_[i-m] <did> [_{V/V} <who> drink <what> at Mary's party]]]]?

Notice that I simplify the structure, glossing over a detailed representation of the involved constituents. So, C_{WH} of the interrogative (34a) is copied in the structure of EQ, where C_{WH} is actually the complement of C_{EQ}. In effect, C_{WH} is construed with *what*, while C_{EQ} is associated with *who*.

One may summarize the spirit of Sobin's analysis as follows. A fundamental aspect of minimalism is that features of lexical items drive syntactic representations (see Chomsky 1995b). If so, then it is conceivable that (all) aspects of variation in form and meaning be attributed to the feature composition of lexical items, and to the way syntax interacts with that feature composition. So, in the constructions under consideration, different feature bundles in C, in association with the feature bundles of the *wh*-elements, instruct syntax to generate the relevant forms and map them to the corresponding meanings.²⁰

Considering the MG data below, I will radically depart from the above set of assumptions, placing the distinction between IQs and EQs at PF. First, I examine some aspects of the interaction between syntax and PF (section 3.5.1), and then, I concentrate on the relation between PF and LF (section 3.5.2), which is captured in more formal terms in section 3.5.3.

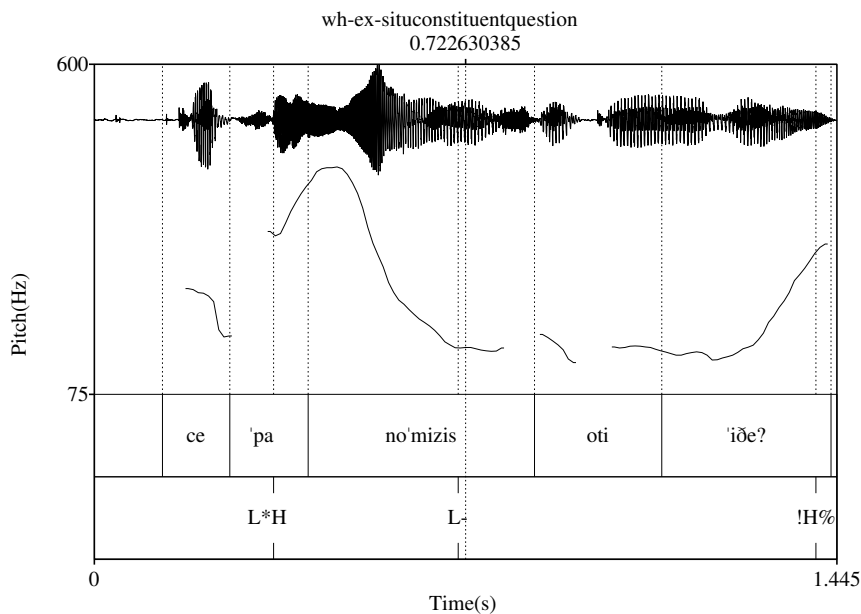
3.5.1 From syntax to PF

As we may recall from chapter 2, each *wh*-ex situ and *wh*-in situ construction is possible with either an IQ or an EQ meaning. This is shown in (36), where the IQ *pja* (*who*) (cf., (36a)), and the EQ *pja* (*who*) (cf., (36b)) may surface either ex situ or in situ ((36a) corresponds to (30a)–(31a) of section 2.3, and (36b) to (32a)–(33a)).

- (36) a. Ke pja nomizis oti idhe (pja)? (wh-ex situ/wh-in situ IQ)
 and who-ACC think-2SG that saw-3SG (who-ACC)
 “And, who do you think he saw?”
- b. PJA idhe (PJA)? (wh-ex situ/wh-in situ EQ)
 who-ACC saw-3SG (who-ACC)
 “He saw WHO?”

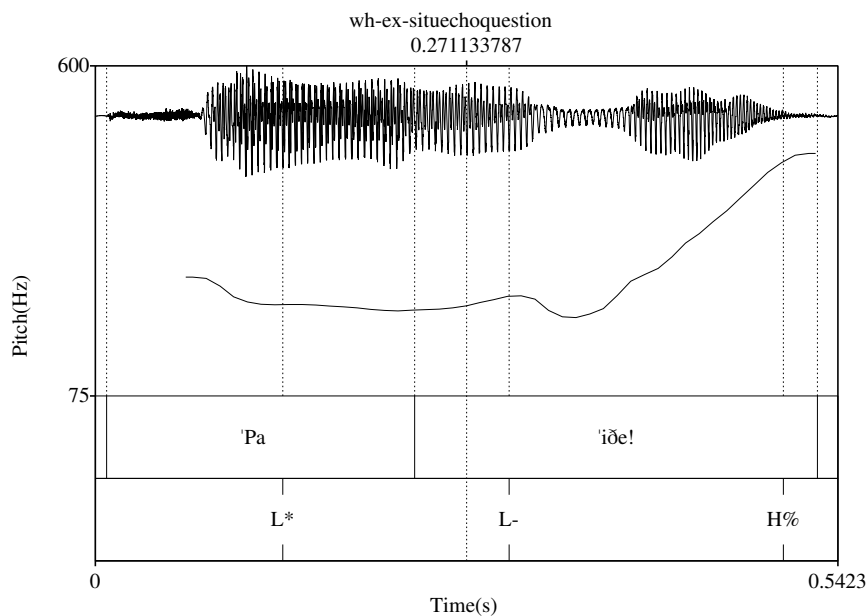
Considering the data from intonation, the contour that corresponds to the *wh-ex situ* IQ in (36a) is L*+H (or H*) L- !H%, as in (37) (from section 2.3.1, (30)).

(37) *Intonation contour of the wh-ex situ IQ (36a):*



On the other hand, the intonation contour of the *wh-ex situ* EQ in (36b) manifests as L* L- H%, repeated in (38) (from section 2.3.1, (32)).

(38) *Intonation contour of the wh-ex situ EQ (36b):*



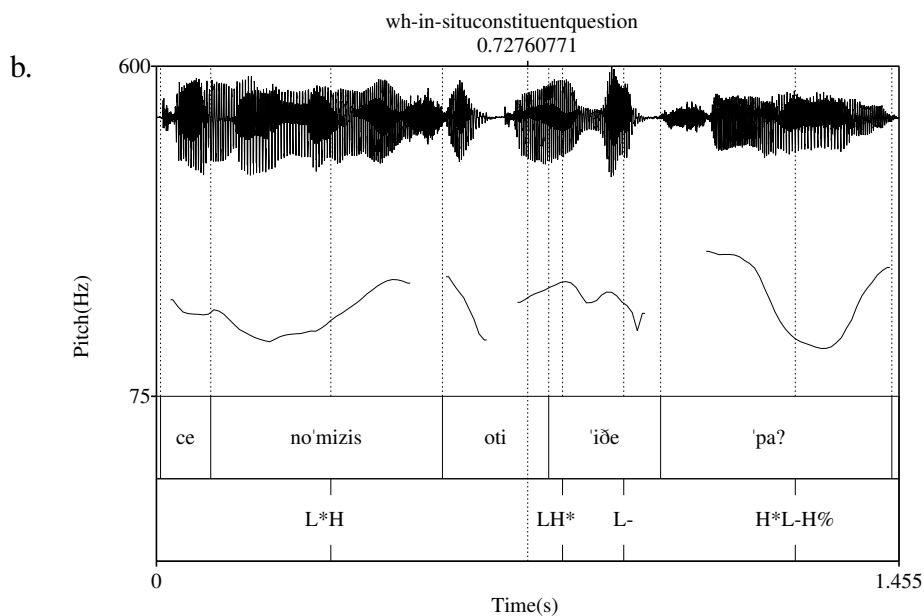
In the light of the above evidence, I follow Roussou et al. (2011) in assuming that PF disambiguates IQs from EQs by assigning clearly distinct intonation contours. It has long been proposed that intonation may disambiguate an otherwise ambiguous utterance. For example, Jespersen (1933/2006: 139) argues that sentences like *I can't do anything* may have either the default, negative interpretation “I can't do anything,” or a positive reading “there are some things which I can do,” depending on how the polarity item *anything* is intonationally marked. Likewise, Sportiche (1998: 408) claims that “Intonation plays a disambiguating or interpretive role in many constructions and in particular in other kinds of questions. . . .” Interestingly, he notes that two of these questions are “. . . in situ normal *wh*-questions versus echo questions. . . [in French—CV] (1998: 417, 46ff).” A related issue is what stimulates (or, ‘triggers’) the relevant prosodic structures of IQs and EQs. A line of thinking, which is implicated by Sobin’s (2010) analysis (see also Cheng & Rooryck 2000, for a discussion of French *wh*-in situ), is to assign the status of morphosyntactic features to prosodic properties, and to treat the latter as regular features that require some sort of licensing (perhaps, on a par with the ϕ -features of verbs). I side with Chomsky (1995a: 5ff), who argues that lexical items enter syntactic computations without carrying information about syllabic and intonational structure, nor “. . . much of the output of phonetic matrix.” So, an intonation-oriented feature with morphosyntactic properties would not only unnecessarily describe, but also redundantly replicate

in morphosyntactic terms, what should, perhaps, be attributed to the PF component of the Grammar: that PF may be equipped with certain intonation patterns (or, perhaps, ‘meaning dimensions/codes,’ in the spirit of Gussenhoven 2002; 2004), which are not regulated by narrow syntax.

Turning to the in situ utterances, consider the panel in (39b) (from section 2.3.1, (31b)), which is the intonation contour of the *wh*-in situ IQ (36a), given again in (39a) for convenience.

(39) *Intonation contour of the wh-in situ IQ (36a):*

- a. Ke nomizis oti idhe pja?
 and think-2SG that saw-3SG who-ACC
 “And, who do you think he saw?”

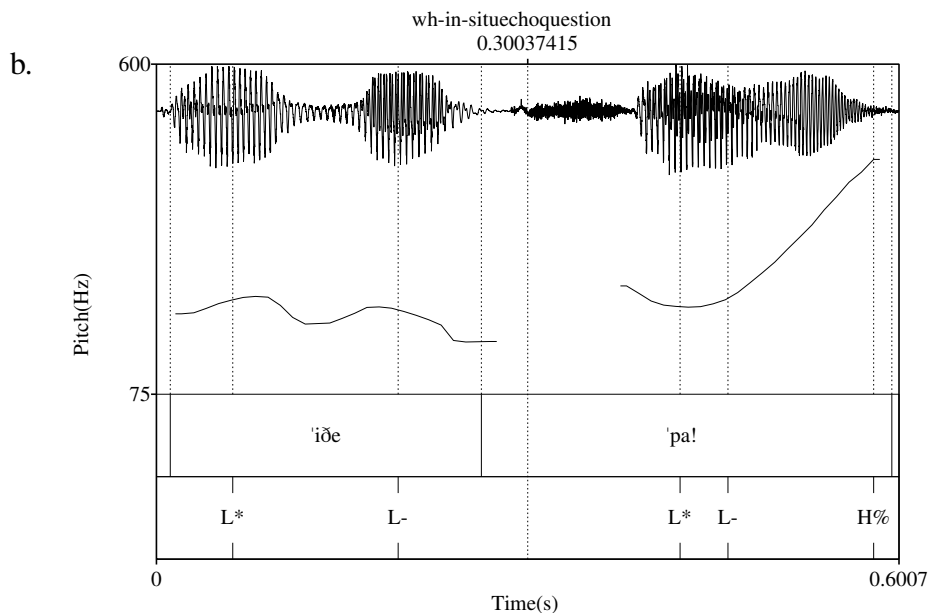


The *wh*-in situ melody is also H* L- H%, similarly to the *wh*-ex situ one (cf., (37)). But, unlike the ex situ counterpart, the in situ IQ manifests a ‘shrinking’ effect that concentrates on *pja* (who), while the part of the clause that precedes the *wh*-element is realized as an intermediate intonation phrase (see section 2.3.1, for discussion).

The same is true with *wh*-ex situ and *wh*-in situ EQs. The panel in (40b) (from section 2.3.2, (33b)) is the intonation contour of the *wh*-in situ EQ (36b), repeated in (40a) for convenience.

(40) *Intonation contour of the wh-in situ EQ (36b):*

- a. Idhe pJA?
 saw-3SG who-ACC
 ‘He saw WHO?’



This melody is also L* L- H%, but unlike the ex situ counterpart (cf., (38)), it concentrates on *pja* (who), and the preceding part forms an intermediate intonation phrase (similarly to the *wh-in situ* IQ (39b)).

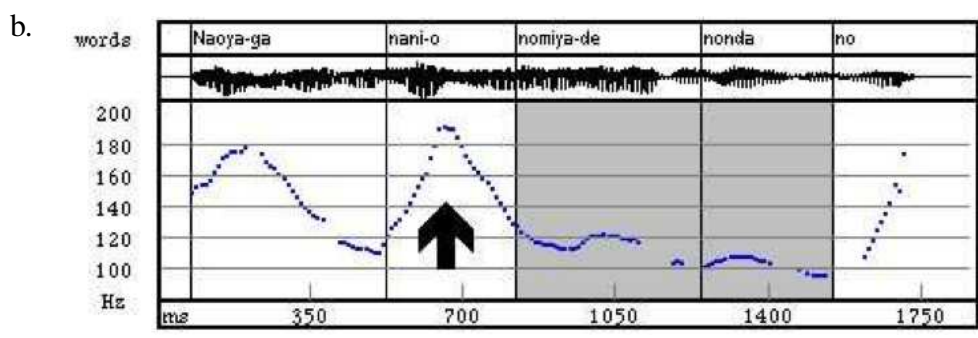
So, a simple and straightforward explanation of the intonation facts is that PF, and not syntax, distinguishes between IQ and EQ readings. This brings us to a related issue. More precisely, as is standardly assumed in the relevant literature, the *wh*-element in MG is the most prominent word of the utterance (see Baltazani 2002). For example, Arvaniti & Ladd (2009) argue that the *wh*-element is the nucleus of the question. Alexopoulou & Baltazani (2012) show that the nuclear stress aligns with the *wh*-element, either the latter is ex situ or in situ, and the rest of the utterance is either post- or pre-nuclear respectively. Given these clarifications, the melodies from (37) through (40b) provide independent support to the current view of the syntax of *wh*-constructions (see sections 3.3 and 3.4), because it is prosodically clear that ex situ and in situ *wh*-elements lexicalize distinct positions in the clause structure: in the C and V-domain respectively. In other words, prosodic facts point at the lexicalized positions in a certain construction. Let us clarify this point further by comparing the prosody of MG and

Japanese IQ *wh*-chains.

Consider (41) (the examples are taken from Ishihara 2003: 52–53, (28b), and they maintain his mode of illustration). The sentence in (41a) is a *wh*-question (an IQ, in our terms), and the panel in (41b) its intonation contour.

(41) *Typical intonation contour of Japanese wh-in situ questions:*

- a. Náoya-ga náni-o nomíya-de nónda no?
 Naoya-NOM what-ACC bar-LOC drank Q
 “What did Naoya drink?”

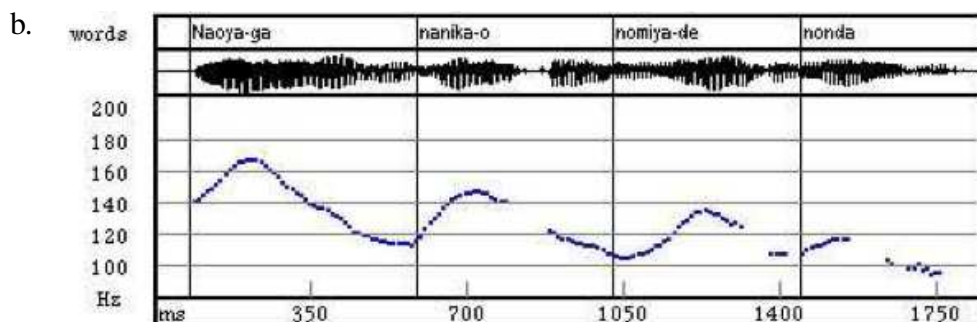


Recall that *náni-o* (what), which is the object of the predicate *nónda* (drank), is in situ, and is bound by the Q-particle *no* that lexicalizes C. As Ishihara observes, the *wh*-element has a prominent pitch accent (measured 191Hz, and illustrated with the boldfaced sign ‘↑’), while the constituents that surface between the *wh*-element and the Q-particle *no*, which is also stressed, are intonationally lowered (see the gray-shading).

The above intonation contour is differentiated from that of declaratives, as in (42) (from Ishihara 2003: 52–53, (28a)).

(42) *Typical intonation contour of Japanese declaratives:*

- a. Náoya-ga nánika-o nomíya-de nónda?
 Naoya-NOM something-ACC bar-LOC drank
 “Naoya drank something at the bar?”



According to Ishihara, the indefinite *nánika-o* (something) in (42a) is measured 148Hz, and is less prominent than *náni-o* (what) (191Hz; cf., (41a)). This is indicated in (42b), which also shows that the relevant contour, unlike that in (41b), is lowered at the end of the utterance, which does not realize a Q-particle, for obvious reasons.

The point that is most relevant for our discussion is that the pitch contour of the *wh*-in situ question in Japanese starts with *náni-o* (what) and ends with the complementizer *no*, which also has its pitch boosted (cf., (41)). Turning to MG, as has been argued in previous sections, the Q-feature of C, construed with the *wh*-element, is not realized at PF. In current terms, Q has no prosodic effects, being visible only at LF. A plausible assumption then is that the prosody of a *wh*-chain varies in tandem with the lexicalization possibilities available in a language: in MG, the *wh*-in situ prosody ‘shrinks,’ excluding the non-lexicalized Q; the *wh*-ex situ prosody ‘spreads,’ due to the surface position of the *wh*-element; and, in Japanese, the *wh*-in situ prosody ‘spreads,’ including the lexicalized Q-particle (here, it would be interesting to test if the *wh*-in situ contour also ‘shrinks’ in Japanese, in the absence of *no*; this is, presumably, the case, but I could not find any evidence for it). The comparison between MG and Japanese, in terms of the prosodic properties of *wh*-chains available in each language, shows that the morphosyntactic output, which is read-off at PF, affects the way the corresponding melodies are manifested, resulting to either a ‘spreading’ (ex situ), or a ‘shrinking’ (in situ) pattern. In other words, although the relevant intonation contours are not controlled by syntax, it is expected that the lexicalized positions in a *wh*-chain affect prosody. It follows, then, that relevant prosodies provide independent evidence about the positions that are lexicalized in *wh*-chains, and hence, about the current approach to MG *wh*-constructions.

In short, as regards syntax, IQ and EQ *wh*-constructions are ambiguous, mapping to the same ex situ and in situ configurations, and computed on the basis of the same set of (inter-

pretable) features and operations. So, syntax generates interrogatively marked *wh*-structures (‘questions’), which, in turn, may give rise to either ‘information-seeking’ or ‘echo’ readings. These readings are disambiguated via distinct intonation contours, that is, at PF, after Spell-Out. An additional conclusion is that syntax does not control, but appears to affect the prosody of *wh*-constructions, in terms of the positions lexicalized in a *wh*-chain (*ex/in situ*). Under the current view of (non)echo *wh*-questions, it becomes clear that IQs are no less relevant for intonation than EQs, and EQs are no less relevant for syntax than IQs. Hence, I agree, in part, with Cooper’s (1983) intuition that EQs are not strictly speaking syntactic phenomena, as well as, with Carnie’s (2006: 341) claim that EQs are licensed by intonation and stress. Obviously, I do not share Cooper’s (*op. cit.*) idea (as cited by Parker & Pickeral, 1985: 337) that “... the grammatical rules of language should not generate them [EQs—CV]” (see also section 1.1).

3.5.2 From PF to LF

As we have already discussed in chapter 2, section 2.2, IQs and EQs show further differences in meaning. Recall that *wh-ex situ* IQs, unlike their *wh-in situ* counterparts, may be uttered ‘out-of-the-blue,’ as in (43) (from section 2.2, (14)).

- (43) a. Anna, ti jinete (# ti)?
 Anna-voc what-acc is-happening (what-acc)
 “Anna, what’s happening?”
- b. Anna, ti ora ine (# ti ora)?
 Anna-voc what time is (what time)
 “Anna, what time is it?”
- c. Anna, pos pai (# pos)?
 Anna-voc how is-going-3sg (how)
 “Anna, how is it going?”

The same is true with ‘aggressively non-D(discourse)-linked’ phrases, as in (44) (from section 2.2, (15)), where only the *ex situ* occurrences are felicitous.

- (44) a. Pjos sto kalo irthe (# pjos sto kalo)?
 who-NOM to-the good came-3sg (who-NOM to-the good)
 “Who on earth came?”

- b. Ti sto kalo aghorases (# ti sto kalo)?
 what-ACC to-the good bought-2SG (what-ACC to-the good)
 “What on earth did you buy?”
- c. Pos sto kalo ksekinise i fotja (# pos sto kalo)?
 how to-the good started-3SG the fire-NOM (how to-the good)
 “How on earth did the fire start?”

Wh-in situ IQs become felicitous if tied to a micro-discourse. For instance, the value of *ti* (what) in (45b) may range over the available set {*milk, coffee*} in (45a) (from section 2.2, (16)).

- (45) a. *Speaker A*:
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B*:
 Ke o pateras su aghorase ti?
 and the father-NOM yours bought-2SG what-ACC
 “And what did your father buy?”

Likewise, the value of the in situ *ti* (what) in (46b) is accommodated to the micro-discourse (46a) (from section 2.2, (16)).

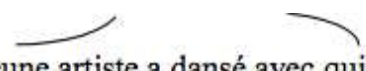
- (46) a. *Speaker A*:
 It is Paul’s birthday next week.
- b. *Speaker B*:
 Ke les na tu aghorasume ti?
 and say-2SG PRT him buy-1PL what-ACC
 “And what do you think we should buy him?”

Turning to *wh*-EQs, irrespective of the site the *wh*-elements may surface in, their values must be ‘prominent’ in a micro-discourse. This is shown in (47) (from section 2.2, (27)), where *ti* (what) (cf., (47b)), being either ex situ or in situ, does not select from the set {*milk, coffee*}, but necessarily maps to a single value, here ‘eggs.’

- (47) a. *Speaker A:*
 My father, my mother and I went to the store to buy eggs, milk and coffee. My mother bought the eggs.
- b. *Speaker B:*
 Ti aghorase i mitera su (ti)?
 what-ACC bought-2SG the mother-NOM yours (what-ACC)
 “Your mother bought WHAT?”


Considering the above interpretational facts in connection with the relevant prosodies, discussed in the previous section, a pattern of mapping appears to arise: each distinct interpretation corresponds to a distinct prosody. We may describe this mapping situation as follows. The ‘*wh*-ex situ-IQ’ (spreading) melody correlates with a ‘non-exhaustive quantification:’ there is no presupposition as to what the value of the *wh*-element is. The ‘*wh*-in situ-IQ’ (shrinking) melody maps to a ‘(strongly) exhaustive quantification:’ the *wh*-element presupposes a restricted set of (alternative) values, and selects only one member of this set, entailing the exclusion of the others (see Karttunen 1977, Berman 1991, Heim 1994, and Beck & Rullmann 1999, among others, for discussions about (non)exhaustivity). Finally, the ‘*wh*-echo’ melody, irrespective of the spreading vs. shrinking effect, relates to an ‘individual reading:’ the *wh*-element does not presuppose a set of values, but a single value, hence, ‘lacks quantification’ (the term ‘individual’ for *wh*-echoes is first used in Tsimpli 1998). In short, the interpretation of the *wh*-elements varies from (non)exhaustive quantification (IQs) to no quantification (EQs), in tandem with the relevant prosodies.

Leaving *wh*-EQs aside for now, let us turn to a relevant discussion about French *wh*-questions. Vergnaud & Zubizarreta (2005) (henceforth, V&Z), argue that there are two versions of French *wh*-in situ questions, each having a distinct prosody and interpretation. To start with the relevant prosodies, consider (48), which corresponds to *theirs*, (3a) & (5a) respectively.

- (48) a.  **La jeune artiste a dansé avec qui?**
- b. La jeune artiste // a dansé avec qui?
 “The young artist danced with whom?”

The question has a rise-fall intonation pattern (cf., (48a)), and is prosodically distinguished between two domains, notationally separated here with the sign ‘//,’ as in (48b) (actually, V&Z distinguish the two domains with the sign ‘#,’ but, in our terms, ‘#’ shows infelicity to context). The two domains are identified by a main and a secondary stress; the main stress is located at the end of the predicate phrase *a dansé avec qui* (danced with whom), while the secondary stress is located at the end of the subject phrase *la jeune artiste* (the young artist).

The second version of *wh*-in situ questions in French is exemplified in (49) (*theirs*, (3b) & (5b) respectively).

- (49) a.  **La jeune artiste a dansé avec qui?**
 b. La jeune artiste a dansé // avec qui?
 “The young artist danced with whom?”

The intonation schema is similar to that of (48a), but the partition of the prosodic domains differs. As in (49b), the main stress includes only the argument PP *avec qui* (with whom), while the secondary stress includes the subject and the predicate (*la jeune artiste a dansé* (the young artist danced)).

Turning to interpretation, V&Z argue that (48) has an (strongly) exhaustive reading, while the reading of (49) is non-exhaustive, and parallels that of normal *wh*-ex situ questions, as shown shortly. This becomes clear in (50), where each question is modified by the non-exhaustivity marker *par exemple* (for example) (*theirs*, (6a,b), (7) & (i):6ff respectively).

- (50) a. Avec qui par exemple (est-ce que) la jeune artiste a dansé?
 “With whom for example (did) the young artist dance?”
 b. ✓ La jeune artiste a dansé // avec qui par exemple?
 “The young artist danced with whom for example?”
 c. * La jeune artiste // a dansé avec qui par exemple?
 “The young artist danced with whom for example?”
 d. ✓ La jeune artiste // a dansé avec qui, par exemple?
 “The young artist danced with whom, for example?”

Similarly to the *wh*-ex situ question (50a), the *wh*-in situ version in (50b), repeated from (49b), is grammatical, but the in situ version in (50c), corresponding to (48b), is not. (50c) becomes grammatical only if *par exemple* (for example) is prosodically detached from *avec qui* (with whom), as in (50d), where the comma marker stands for an intonation gap. In this case, however, the non-exhaustivity marker does not form a prosodic group with the *wh*-element, but is construed with the whole utterance.

In short, V&Z side with the relevant semantic literature (see, e.g., Heim 1994) that (non)exhaustive quantification is not an inherent property of (*wh*-)questions. And, their intuition is that this property, (at least) as regards certain instances of French *wh*-in situ questions, varies in tandem with the relevant prosodic patterns (see Baunaz 2011, for a similar conclusion, regarding French).

As we have already seen, the situation is quite similar with MG *wh*-IQs. This becomes clear below. Consider the sentences in (51a) and (51b) which are comparable to the ones in (50a) and (50c) respectively.

- (51) a. Me pjon ja paradhighma horepse o nearos kalitehnis?
 with whom for example danced-3SG the young artist-NOM
 “With whom for example did the young artist dance?”
- b. *O nearos kalitehnis horepse me pjon ja paradhighma?
 the young artist-NOM danced-3SG with whom for example?
 “With whom for example did the young artist dance?”

The *wh*-in situ IQ in (51b), unlike its *wh*-ex situ counterpart (cf., (51a)), is ungrammatical with the non-exhaustivity marker *ja paradhighma* (for example). It goes without saying that, despite interpretational similarities, the French *wh*-in situ question (48b) may differ prosodically from the MG *wh*-in situ IQs. Also, the intonational experiment that I have conducted (see section 2.3.1) can neither verify, nor exclude the possibility that MG, like French, may prosodically distinguish between two (or, more) types of *wh*-in situ IQs (or, even EQs). For example, Alexopoulou & Baltazani (2012) show that the *wh*-in situ (IQ) melody may be either that of a standard *wh*-ex situ question (as already discussed in section 3.5.1), or that of a declarative utterance, with a falling intonation. In each case, the nuclear stress aligns with the *wh*-element, a result also repeated by our experiment. These issues, however, are tangential to our discussion.

What is crucial is that the (non)exhaustive interpretation of MG and French *wh*-questions considered so far varies in tandem with the corresponding prosodies manifested on each utterance.

In the light of the above clarifications, the next section presents V&Z's formal account of (non)exhaustivity, and then apply the results to MG *wh*-IQs, including a discussion of *wh*-EQs (notice that I will concentrate on these aspects of V&Z's analysis that are most relevant for our discussion, avoiding much technical details). At the end of the discussion, I examine the implications of the current analysis for the minimalist view of the Grammar.

3.5.3 Formal PF-LF mapping (updating the T-model)

V&Z extend Chomsky's (1976a,b), and Jackendoff's (1972) early approaches to presupposition and focus, and propose that there are two types of presuppositions/foci: one is *contrastive*, while the other is *inclusive/informational*, and each type is identified with a distinct prosody. Consider the question-answer pairs in (52) (*theirs*, (17)–(18)).

- (52) a. Did John see Mary or Susan?
b. He saw Mary.
c. Did John see Mary or Susan?
d. He saw Mary.

The disjunctive question (52a) has a rise-fall intonation, rising on *Mary* and falling on *Susan*. The reading of this question is contrastive, and is reflected in its natural answer (52b). That is, (52b) 'excludes' *Susan*, in that it cannot be continued by the string "and Susan." On the other hand, the disjunctive question (52c) has a rising intonation, and its reading is inclusive/informational. This is shown by the fact that its natural answer (52d) may 'include' *Susan* (it may be continued by "and Susan").

In the light of the above discussion, V&Z suggest that the prosodic difference between (52a) and (52c) correlates with a semantic one, and more precisely, with the semantics of the corresponding disjunctions; contrastive in (52a), but inclusive/informational in (52c). Based on these facts, V&Z define the semantics of the disjunctions as in (53) (modeled on *theirs*, (22), (23) & 26).

- (53) a. $\text{OR}^\delta =_{\text{def}}$ ‘contrastive *or*,’ ‘inclusive/informational *or*’ (*c*, *i*)
 b. $\text{OR}^c =_{\text{def}}$ ‘contrastive *or*’
 c. $\text{OR}^i =_{\text{def}}$ ‘inclusive/informational *or*’

The logical operator OR is the disjunction. As in (53a), OR is unspecified (δ), and may be either contrastive (*c*), or inclusive/informational (*i*). In (53b), OR is contrastive, while in (53c), OR is inclusive/informational.

Now, each disjunctive question in (52) has a presupposition and a focus. Since, by the semantics defined in (53) there are two different types of disjunction, then there are two different types of presuppositions, and two different types of focus, corresponding to each question. As V&Z argue, it is natural to assume that the focus of a question coincides with its presupposition. So, the relevant logical structures (LF representations) of the questions are given in (54), where Θ is a question force item, not to be discussed further, and ‘Past’ is the LF representation of Tense.

- (54) a. $[\Theta, ((\text{John Past see Mary}) \text{OR}^\delta (\text{John Past see Suzan}))], \delta = c, i$ (= (52a) & (52c))
 b. $[\Theta, ((\text{John Past see Mary}) \text{OR}^c (\text{John Past see Suzan}))]$ (= 52a)
 c. $[\Theta, ((\text{John Past see Mary}) \text{OR}^i (\text{John Past see Suzan}))]$ (= 52c)

By the definition (53a), the common presupposition/focus of both questions in (52a) and (52c) is the LF in (54a) (from V&Z: 650, (31)), where the disjunction OR is actually unspecified. The LFs of the two questions are distinguished as follows: question (52a) has contrastive presupposition/focus (cf., (54b), and the definition (53b)), while question (52c) has inclusive/informational presupposition/focus (cf., (54c), and the definition (53c)).

With the above definitions in place, let us turn to *wh*-questions. Consider the English example in (55) (V&Z’s (37) & (47) respectively; notice here that I leave out V&Z’s illustration of the natural answer to the *wh*-question—“John saw Mary”—since it is not necessary for our discussion).

- (55) a. Who did John see?
 b. $(\text{John Past see someone}) \text{OR}^\delta (\text{John Past see someone else}), \delta = c, i$

As already discussed, the presupposition of a question correlates with its focus. Following familiar semantic approaches that the semantic contribution of *wh*-questions is a set of alternative propositions (see, e.g., Hamblin 1973, Karttunen 1977, and Berman 1991, Rooth 1985; 1992, and the discussion revolving around (13), section 3.4.1, of the present work), V&Z suggest that the presupposition/focus of *wh*-questions is a disjunction, which is unspecified in (55b).

As the matter now stands, consider the French *wh*-questions in (56), with the relevant LFs ((56a)–(56d) correspond to V&Z’s (63)–(66) respectively).

- (56) a. Avec qui (est-ce-que) Marie a dancé?
 “With whom (did) Marie dance?”
- b. (Marie Past dance with someone) ORⁱ (Marie Past dance with someone else)
- c. Marie // a dancé avec qui?
 “Marie danced with whom?”
- d. (Marie Past dance with someone) OR^c (Marie Past dance with someone else)

The authors propose that the French *wh*-in situ question (56c) (discussed in (48b)), has the LF in (56d). The question is a contrastive disjunction between alternative sets, as opposed to its *wh*-ex situ counterpart in (56a), which is inclusive/informational (cf., (56b)).

Now, recall from section 3.5.2 that, descriptively speaking, the *wh*-in situ question in (56c) has an exhaustive reading, which correlates with a certain prosody, while the interpretation of the *wh*-ex situ counterpart in (56a) is non-exhaustive. So, V&Z argue that the (non)exhaustive (*wh*-)quantification formally corresponds to the distinction between contrastive and inclusive/informational presupposition/focus, as in (57) (modeled on *theirs* (62)).

- (57) a. exhaustive question \Leftrightarrow contrastive presupposition/focus.
- b. non-exhaustive question \Leftrightarrow inclusive/informational presupposition/focus.

Considering the discussion about prosody (see section 3.5.2), (57) actually defines a mapping between the relevant intonation contours (PF) with the corresponding interpretations (LF).

Keeping the above discussion in mind, I want to suggest that a similar mapping takes place in the case of MG *wh*-IQs. Consider (58) with their corresponding LFs.

- (58) a. Me *pjon* horepses?
with whom danced-2sg
“With whom did you dance?”
- b. (You Past dance with someone) ORⁱ (You Past dance with someone else)
- c. Horepses me *pjon*?
danced-2sg with whom
“You danced with whom?”
- d. (You Past dance with someone) OR^c (You Past dance with someone else)

The *wh*-ex situ IQ (58a) has inclusive/informational presupposition/focus (cf., (58b)), while the presupposition/focus of the *wh*-in situ IQ (58c) is contrastive (cf., (58d)). That is, *me pjon* (with whom) in both (58a) and (58c) selects a member from a set of alternatives, but only the *wh*-element in (58c) entails the exclusion of the other members of the set.

Turning to *wh*-EQs, recall that the relevant reading is what we have called ‘individual’ (after Tsimpli 1998), meaning that the *wh*-element does not presuppose any set of alternatives, but maps to a single value. Considering the relation between prosody and interpretation, where the former may affect the latter, I propose that the prosody of *wh*-EQs does not facilitate (or, better, ‘blocks’) the disjunctive/conjunctive interpretation (that is, alternative-set denotation), standardly contributed by *wh*-questions. More precisely, consider (59).

- (59) a. ME *PJON* horepses (ME *PJON*)?
with whom danced-2sg (with whom)
“WITH WHOM (did) you dance(d) (WITH WHOM)?”
- b. (You Past dance with someone)

Me pjon (with whom), either ex situ or in situ (cf., (59a)), has the presupposition/focus (LF representation) (59b), which lacks the logical operator OR^δ. Since OR^δ is the quantification of *wh*-elements, then *wh*-EQs lack quantification, whatsoever, and this, in turn, is caused by the relevant prosody assigned to *wh*-EQs.²¹ In other words, *wh*-EQs pattern, in part, with regular *wh*-questions as regards the formation of an (Q-)operator-variable chain. This explains the ‘question force’ of *wh*-EQs (LF). Other than that, the latter lack quantificational properties as a result of how the prosody affects interpretation. So, the intuitive idea is that there is Q (which

is introduced by syntax, and hence, is available at LF), but there is no disjunction/conjunction (set of alternatives), by virtue of the relevant prosody (PF).

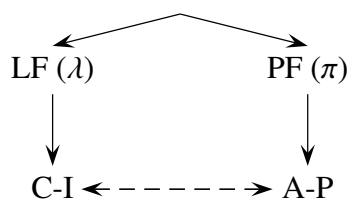
Further support to the current reasoning about *wh*-EQs may provide the example in (60) (repeated from Roussou et al. 2011: (12)).

- (60) a. O Janis dhjavase to periodhiko pu tu edhosa.
 the John-NOM read-3SG the magazine-ACC that him-CL gave-1SG
 “John read the magazine that I gave him.”
- b. O Janis dhjavase to pjo?
 the John-NOM read-3SG the what-ACC
 “John read the WHAT?”

Wh-EQs can be used as partial ‘*wh*-phrases,’ as in (60b), where *pjo* (what) merges with the definite determiner *to* (the) (see also Sobin 2010 for similar data in English). In principle, this is unexpected, on the standard assumption that *wh*-elements, being (focused) indefinites (see section 3.4.1), correspond to sets of alternatives, which is, by definition, incompatible with the definite denotation of the determiner *to* (the). Nonetheless, under the assumption made previously that a *wh*-echo element does not presuppose an alternative set, but maps to a certain ‘individual,’ here, *to periodhiko* (the magazine) (cf. (60a)), it follows that *pjo* (what) may have a ‘definite-like’ reading, compatible with the definiteness of *to* (the).

If the reasoning so far about the direct mapping between prosody (PF) and interpretation (LF) is correct, a theory-internal issue arises. Consider again the minimalist ‘T-model’ of the Grammar, discussed in chapter 1 (section 1.1, (6)), which is given in (61), with some modifications, explained shortly after.

(61) *The Minimalist T-Model of the Grammar (standard):*

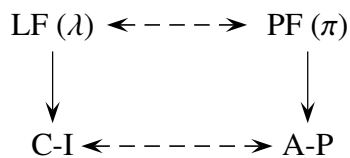


Abstracting away from the relevant computations (between Numeration and Spell-Out), let us restrict attention to the interfaces PF and LF (that is, after Spell-Out). As we may recall, the

T-model excludes the possibility that PF and LF may interact. As Chomsky (1995a: 5ff) argues this is not “. . . of course, to deny that a full theory of performance might involve operations that apply to the (π, λ) pair.” As far as I understand Chomsky’s reasoning here, under the standard assumption that C-I and A-P are ‘performance’ systems, a ‘full theory of *performance*’ might be grounded on the interaction between C-I and A-P, which is what the left-right, arrowed line in (61) is tentatively taken to depict (a rough illustration, but sufficient for our discussion).

The current approach to the MG (and, French) *wh*-questions, however, calls for a restatement of the standard T-model, in the following terms:

(62) *The Minimalist T-Model of the Grammar (updated):*



Since the prosody (PF) of the *wh*-questions considered so far directly correlates with (or, better, affects) their semantics (LF), by operating directly on the logical structure of the disjunction, then it must be the case that LF ‘sees’ PF (and, vice versa; apart from V&Z, see Brody 1995, Culicover & Jackendoff 2005, Roussou 2010a, and Roussou et al. 2011, among others, for similar conclusions). This is illustrated with the left-right, arrowed line mediating the two interfaces in (62). In other words, the updated T-model in (62) does not counter-argue Chomsky’s previously cited claim that ‘a full theory of *performance*’ might involve a relation between C-I and A-P (if this is what Chomsky really implies). What (62) actually alludes to is that ‘a full theory of *competence*’ might also involve a direct relation between PF and LF, a conclusion corroborated by the current approach. Let us clarify this conclusion further.

The distinction between *competence* and *performance*, in its modern linguistic acceptance, is first pursued in Chomsky (1964; 1965), and is actually a methodological distinction that seeks to explain what a linguistic theory is (and should be) about. Competence is concerned with “. . . the speaker’s-hearer’s knowledge of his language (Chomsky 1965: 4),” while performance is concerned with “. . . the actual use of language in a concrete situation (Chomsky 1965: 4).” In this sense, and as Pylyshyn (1973) argues, competence is a term that characterizes a theory (a linguistic theory in our case) which seeks to explain the way a conceptual

system (e.g., natural human language) is represented in the mind. On the other hand, performance is a term which refers to a theory that is concerned with how this system is put to use in a moment-to-moment situation (see also Miller 1975 for a summary of the various re-statements of the ‘competence vs. performance’ distinction). Keeping these clarifications in mind, the T-model in (62) (and (61)) is a theory of competence, since it describes the innate generative capacity of an idealized speaker/hearer (his ‘Grammar’) to produce/understand an infinite number of sentences. Certainly, this process of production/understanding interacts with memory, time, space (see Chomsky 1965: 4), and more generally, with factors that are outside Language. In other words, this process is a matter of performance, and hence, falls outside the scope of the T-model of the Grammar. So, the fact that, as currently proposed, syntax computes ‘*wh*-interrogative’ constructions, while LF and PF distinguish between what we have descriptively coined ‘information-seeking’ from ‘echo’ interrogatives concerns operations that fall within the T-model, and hence, concern the theory of linguistic competence.

Let us emphasize on a related issue. As presently argued, an echo question is the product of the interaction between intonation (PF) and interpretation (LF). This is a matter of linguistic competence. Of course, there may be various reasons one may utter an echo question (see, e.g., Fiengo 2007). For example, an echo question of the form *you bought* WHAT may show either disbelief, or astonishment, or anger, or irritation, and so on, for the purchased object. But, these ‘uses’ (or, speech-acts, in more technical terms) are a matter of linguistic performance. Likewise, the fact that *wh*-in situ alternatives are attested in *wh*-ex situ languages is an issue that concerns a theory of competence. On the other hand, the fact that *wh*-in situ alternatives may not only be used as ‘genuine’ questions, but also as so-called ‘quiz questions’ (see, e.g., Fiengo 2007), where the subject who makes the question already knows the answer (e.g., in TV shows like “Who Wants To Be A Millionaire”) is something that concerns a performance model. To put it differently, the use of a *wh*-in situ form as ‘quiz question’ may raise doubts about treating this form in terms of syntax. However, it should not escape one’s attention that: a) *wh*-ex situ forms may also be used as ‘quiz master’ questions, although no one has suggested treating (MG) *wh*-ex situ questions outside syntax, and b) the mere fact that a *wh*-in situ alternative is grammatical (and, not just ‘(pragmatically) acceptable’) verifies that syntax predicts this form (it is in the untutored knowledge of the speaker/hearer), no matter how this form may be used

(in actual linguistic practice).

3.6 Summary

The present chapter has argued for a certain division of labour between the syntax of (MG) *wh*-questions and PF. That is, syntax alternatively generates *wh*-ex situ and *wh*-in situ constructions on the basis of a restricted set of interpretable features ([Q], [*wh*]), and operations (Merge, Agree), and restricts some aspects of the interpretation of these constructions. Information-seeking and echo meanings are computed after Spell-Out, at PF. Prosody interacts with the syntactic output, and provides further semantically-related information, which means that LF ‘sees’ PF (and, vice versa). This leads, in turn, to a reevaluation of the standard T-model of the Grammar. Of course, the fact that PF may distinguish between interpretations entails that PF actually ‘fills in’ additional (‘missing’) information, not provided by syntax.

The next chapter considers another type of *wh*-construction, in the scope of which both the ‘ex situ vs. in situ’ debate, and the issue regarding the division of labour between syntax and the interfaces, reappear. The characteristic property of this construction, known as ‘sluicing,’ is that ‘surface’ form does not map transparently to the available meaning.

- ¹ The proposal that external arguments first merge at [Spec, v] has come to be known as the PREDICATE-INTERNAL SUBJECT HYPOTHESIS (see Kitagawa 1986, Kuroda 1988, and Koopman & Sportiche 1991, for early discussions).
- ² I will gloss over structural Case (see Chomsky 1981, onwards) and agreement (or, ϕ -)features that are relevant for *wh*-arguments.
- ³ In fact, notice that C has no interpretable [*iwh*] that may agree with and value the [*uwh*] of the *wh*-element. Chomsky (2000: 107) argues that the [*uwh*] is valued in a manner similar to the way the structural Case of nouns is valued. I will return to Case issues more thoroughly in chapter 5. Here, it suffices to point out that the structural Case of nouns, say in the Nominative/Accusative systems, is taken to be a ‘reflex’ of (or, a ‘free-rider’ on) a primitive agreement relation that is established between a noun and either the functional head I or v. That is, Nominative is the reflex of the noun-I agreement, while Accusative is a reflex of the noun-v agreement. Likewise, Chomsky proposes that the valuation of [*uwh*] is a byproduct of the agreement between C and the *wh*-element.
- ⁴ For concreteness, notice that Watanabe’s (2006) analysis assumes one more formal feature, which he coins ‘pied-piper.’ This feature marks the category to be ‘copied’ by pied-piping.
- ⁵ The fact that C has predicate-related properties has been conceptualized under various forms in the relevant literature. For instance, Rizzi (1990) argues for a complementizer feature [+pred], Adger & Ramchand (2005) capture the predicational properties of C under a syntactic feature Λ that translates to a λ -abstractor in semantics, and Manzini & Savoia (2011a) propose that C has verb-specifications. On a related issue, Butler (2004) treats the (generalized) EPP feature of C as a λ -abstract in the semantics. So, EPP is associated with both interfaces. With respect to PF, EPP equals spell-out (triggers lexicalization), and as regards LF, EPP (or, better, the

element that lexicalizes the EPP-site) corresponds to a λ -abstractor. This conception of EPP, which is endorsed in the present study, is inconsistent with Chomsky’s (2000) relevant intuition. Specifically, what Chomsky says is that “...EPP-features are uninterpretable (nonsemantic, hence the name), though the configuration they establish has effects for interpretation (p. 102).” So, the current view of EPP-features is that they are interpretable (i.e., carry instructions for both LF and PF), which is why ‘the configuration they establish has effects for interpretation.’

⁶ See Boeckx (2010) for a thorough discussion of the various (re)incarnations that edge features have taken in the generative literature, and for an interesting proposal along the lines of maintaining and recasting EPP. But see Grohmann et al. (2000) for a number of reasons why EPP, as currently conceived, seems redundant, and hence dispensable.

⁷ For concreteness, it should be mentioned that the analysis of *wh*-interrogatives defended here is directly comparable with Donati & Cechetto’s (2010) labeling approach to relative and *wh*-interrogative clauses. Roughly speaking, the authors argue that in *wh*-constructions of the form (ia) (*theirs* 2010, (54b)), it is C that labels the structure, and not the *wh*-element, here *what* (contrary to what I have been claiming). However, in the relative clause (ib) (*theirs* 2010, (54a)), it is *what* that projects, and turns the clause to a nominal (D)-phrase selected by *read*.

- (i) a. I wonder [_C what [_C you read ~~what~~]]
- b. I read [_D what [_C you read ~~what~~]]

Let us abstract away from (ib), and only concentrate on (ia), which is directly relevant to our present discussion. Donati & Cechetto maintain the standard assumption that predicates like *wonder* (unlike, say, *know* or *ask*) may only select for clausal complements, and not D-elements; hence the necessity of the relevant C-labeling. Nonetheless, as we see in (ii), repeated from Nathan (2006: 42, (24c)), *wonder* selects for *what*, which is a D-element, and the result is grammatical.

- (ii) What is Mary wondering now?

In the light of (ii), then, we can assume that *what* may also label the relevant projection in (ia), on a par with (ib). If true, this would not seriously affect Donati & Cechetto’s account of *wh*-interrogatives, and would provide further support to the present line of reasoning.

- ⁸ See Adli (2006) for a similar approach to (a variety of) French, Manzini & Savoia (2011b) for (dialects of) Italian, and Grohmann & Papadopoulou (2011) for Cypriot Greek.
- ⁹ Moreover, in Vlachos (2010) I propose that in the case of *wh*-in situ, it is v rather than C that has the [Q] feature (quantificational properties). However, this is inconsistent with the standard assumption that quantification relevant for *wh*-questions is encoded in C. Moreover, it does not seem to be empirically supported (see the PF-data in chapter 2, section 2.3).
- ¹⁰ It is worth mentioning here that an additional approach to *wh*-in situ in MG is offered by Vlachos (2008). There, I suggest that a ‘low’ left periphery, in the spirit of Belletti (2004), may project above the V-domain. This periphery incorporates a Focus head (in tandem with Rizzi’s 1990 left periphery) which is lexicalized by *wh*-in situ elements. This approach was influenced by Kato’s (2004) account of *wh*-in situ constructions in Brazilian Portuguese. However, in current terms, such an account of the MG evidence is not only unnecessary (at best), but also expensive, under the availability of Agree. Let alone that a (low) Focus head may not explain the interrogative interpretation of *wh*-in situ elements.

On a related issue, Sinopoulou (2008), in discussing multiple *wh*-questions in MG, adopts Belletti’s (2004) ‘low vP-periphery’ analysis, and argues that ‘in situ’ *wh*-elements move to a (low) Focus position (I’m grateful to Dimitra Theophanopoulou-Kontou, personal communication, for bringing Sinopoulou’s paper to my attention). Unfortunately, I can not do full justice to Sinopoulou’s analysis, since I am not presently concerned with multiple *wh*-questions, yet a brief comment is in order. By and large, Sinopoulou’s analysis unfolds as follows. First, in support of the ‘low’ vP-periphery, she provides evidence, independent to *wh*-questions, which shows that MG may attest ‘low’ focus material (or, ‘clause-internal focus,’ in her terminology). And second, in tandem with the relevant literature, she maintains that MG *wh*-elements are focused elements (as presently assumed, as well). Now, given the availability of the low vP-periphery, and the focused interpretation of *wh*-elements, she proposes that *wh*-in situ is not actually ‘in situ,’ but moves to the relevant ‘low’ Focus head. There are two issues that I wish to address with respect to this line of theorizing. First, under the availability of the Agree operation, as currently argued, there is, in principle, no reason for one to assume that *wh*-in situ ‘moves,’ either in the case of ‘single’ *wh*-questions (the data presently examined), or ‘multiple’ *wh*-questions (Sinopoulou’s data). And second, the question whether there is a

‘low’ vP-periphery in MG, or not, is independent to ones approach to *wh*-in situ questions. One may follow either Sinopoulou (2008), or Roussou & Tsimpli (2006), who argue, on the basis of several arguments (not discussed here), that a certain cluster of (clitic, or clitic-like) heads may expand between the I- and V-domain, but this cluster does not correspond to Belletti’s vP-periphery. In short, as far as I am concerned, the question is not if there is extra ‘space’ between the I- and V-domain in MG, but how this space is conceptualized. Although I will not pick a side on the issue, at present, I am rather skeptical about the presence of a low vP-periphery in MG (*pace* Sinopoulou), on the additional assumption that discourse-oriented heads, like ‘Focus’ (and ‘Topic’), are not necessarily encoded in the linguistic structure, as already mentioned in chapter 1, in the context of Rizzi’s (1990) left periphery.

- ¹¹ The fact that I maintain a specifier position for in situ subjects appears to contradict my argumentation in section 3.3 concerning the absence of specifiers. Nonetheless, I hasten to note that one may simply assume a clitic shell above *v*, in the spirit of either Roussou & Tsimpli (2006) for MG, or of Manzini & Savoia (2007) for Romance. In the previous sense, the in situ subject would lexicalize either a CL₁ position above *v* (in terms of Roussou & Tsimpli 2006), or a D-position (in the spirit of Manzini & Savoia 2007). So, although I will keep referring to [Spec, *v*] only for expository purposes, it does not necessarily mean that this position has to correspond to a specifier.
- ¹² It follows, then, that ‘non-pro-drop’ languages, such as English, are not expected to admit *wh*-in situ subjects, in as much as they do not generally observe in situ subjects (see chapter 1 for evidence that English may also have *wh*-in situ questions). So, although (ia) is grammatical with the object *who* in situ, (ib) is not, if the subject *who* is in situ.
- (i) a. And you saw who?
 b. *And saw who?
- ¹³ Although this is tangential to our current discussion, notice that, under a more recent proposal (see Roussou 2010b), *oti* (that) in (18) does not lexicalize the embedded C, but projects in an independent nominal head, taking C as its complement (akin to the relevant discussion in section 3.3). The same reasoning extends to other complementizers, such as *an* (if). For expository purposes, I will presently maintain the conventional wisdom, but nothing hinges on that.

- ¹⁴ See also Shlonsky (2009) for a similar argument couched in the framework of phases.
- ¹⁵ I should note here that Chomsky (2004: 111) retracts his (2000) conclusion, implicating the existence of covert movement. In particular, he argues that Internal Merge may apply either before or after Spell-Out (see, among others, Cheng & Demirdache 2010, and Lechner, *to appear*, for more recent arguments in favour of covert movement). I am not sure why Chomsky (2004) arrives at the previous conclusion, but *pace* his assumption, I will stick to the null hypothesis that Agree subsumes covert movement.
- ¹⁶ A similar claim (justified on independent grounds) is made by Ramchand & Svenonius (2006: 220): “Thus while we wish to claim that the system constructing syn/sem representations is the same for all languages (a universal computational system), we do not think that this forces the final representations for ‘the same thought’ [e.g., a *wh*-operator-variable concept—CV] to be the same [i.e., externalized in the same way among languages—CV], essentially because of the fact that different lexical ingredients may be available in different languages.”
- ¹⁷ Sobin also examines ‘multiple’ *wh*-questions that I will not discuss.
- ¹⁸ For concreteness, notice that, apart from the approach that I discuss here, Sobin also considers an alternative account of both IQs and EQs, which does not assume a binding function B in the feature bundle of C. Instead, unselective binding is a ‘reflex’ of an Agree relation between C and the *wh*-element. This account is an extension of Chomsky’s (2000) idea that the valuation of the *wh*-feature may be a reflex of the fact that C and the *wh*-element agree, in as much as the (structural) Case of nouns is also a reflex of an Agree operation.
- ¹⁹ An aside: suppose, for the sake of the argument, that one wanted to account for *wh*-ex situ EQs of the form (30a) under Sobin’s approach. Then one would have to assume both [Q] and [*uwh**] in the feature bundle of C_{EQ}, by virtue of the displacement of *did* and *who*. In turn, *wh*-ex situ IQs would be distinguished from *wh*-ex situ EQs only on the basis of the binding function for C. Certainly, Sobin argues that (30a) is a ‘pseudo’ EQ. But, it is not at all clear to me what the difference between ‘pseudo’ and ‘true’ EQs would be. Besides, Sobin himself claims that EQs “. . . are of great interest and relevance to analyses of question formation since they are clearly in the realm of ‘automatic’ and ‘untutored’ knowledge, just the sort of linguistic knowledge that generative grammar has had the aim of explaining since its inception (p. 131).” (see also chapter 2 of the present study). In his terms then *wh*-ex situ EQs, like (30a), should be relevant

for syntax in as much as *wh*-in situ EQs of the form (30b) are.

- ²⁰ A similar line of argument is developed by Tsimpli (1998) for MG. The author proposes that an ‘individual’ (focus) operator in C binds the *wh*-element in *wh*-in situ EQs, while an interrogative (Q) operator binds the *wh*-element in *wh*-ex situ IQs. The Q-operator triggers *wh*-movement, while the individual operator does not.
- ²¹ Although I will not discuss this issue further, under V&Z’s system, the presupposition/focus of an (*wh*-)echo question would amount to the focus (but not to the presupposition) of an *assertion*; see V&Z for an account of assertions.

Chapter 4

Sluicing

4.1 Between ex situ and in situ

In this chapter we turn to a different construction that involves *wh*-elements, namely ‘sluicing.’ As we may recall from chapter 1, section 1.2.2, ‘sluicing’ is the name given by Ross (1969) to constructions of the kind in (1), where a *wh*-element, here *which books*, follows an interrogative predicate, here *wonder*.

(1) She bought some books and I wonder which books.

Sluicing is a prototypical case of ‘ellipsis,’ since, unlike its ‘surface’ form (cf., (1)), its interpretation corresponds to a fully articulated (interrogative) sentence, as in (2).

(2) “She bought some books and I wonder which books she bought.”

Pre-theoretically, one may make the following observation. The form in (1) resembles an ‘in situ’ configuration, in the sense that the *wh*-element (hereafter, SLUICE; a descriptive term I borrow from van Riemsdijk 1978) appears to surface in a predicate-internal site, a position normally reserved for *wh*-in situ elements, as the relevant discussion in chapter 3 has shown. However, the interpretation in (2) suggests that sluicing maps to a full-fledged (embedded) *wh*-configuration, despite its ‘overt’ form (cf., (1)), which means, in turn, that *which books* surfaces ex situ.

By and large, there are two competing families of approaches to the syntax and semantics of sluicing, which may be summarized as an ‘ex situ vs. in situ’ debate. Various details aside, a widely accepted view is that sluicing is an ‘ex-situ’ strategy, in that the structure corresponding

to (1) is actually that in (3), where the SLUICE is part of an underlying *wh*-interrogative clause (see, e.g., Ross 1969, Wasow 1972, Chao 1987, Lobeck 1995, Chung, Ladusaw & McCloskey 1995; 2011, Romero 1998, Merchant 2001, Fox & Lasnik 2003, and Lechner 2004).

(3) She bought some books and I wonder [which books [she bought]].

Part of the structure of (3), here [she bought], does not survive at PF (hence the ‘missing’ form; cf., (1)), but is available at LF (hence the full-fledged interpretation; cf., (2)).

The other line of reasoning adopts an ‘in situ’ strategy, as in (4), where the SLUICE is directly selected by *wonder*, and there is no other structure available, apart from the one that surfaces.

(4) She bought some books and I [wonder which books].

For this view, there is no ‘missing’ structure, but only a ‘missing’ (sentential) interpretation (cf., (2)), which is made available directly at LF (or, better, at this component of the Grammar that is associated with meaning), under a number of semantic/pragmatic operations that are outside syntax (see Jackendoff 1972, Chomsky 1976a, van Riemsdijk 1978, Ginzburg & Sag 2001, Schlangen 2003, Culicover & Janckendoff 2005, and Sag & Nykiel 2011, among others).

In a much broader sense, the debate between the two aforementioned approaches concerns the theoretical question whether portions of meaning can be computed outside syntax (the ‘in situ’ view) or not (the ‘ex situ’ view). And the cases where this question prototypically arises are the ‘elliptical’ constructions, one of which is sluicing. Arguably, an acceptable answer to the above question is not a matter of personal taste, that is, a matter of one’s view of the relation between syntax and the interfaces, but a matter of what the empirical evidence alludes to. To put it simply, if sluicing exhibits the same basic properties that full-fledged *wh*-constructions do, then sluicing is an ‘ex situ’ strategy, so, a ‘truncated’ structure must be assumed. If, however, there are differences between the two constructions, then sluicing calls for an ‘in situ’ analysis, whereby no additional structure is justified. That said, the first goal of the present chapter, taken up in section 4.2, is to compare some aspects of the distribution and interpretation of (MG) sluicing with regular *wh*-constructions. This comparison will lead to a number of interesting, and fundamental, differences between the two constructions, some already discussed in the relevant literature, some not. The second aim of this chapter is to introduce two members of the ‘ex situ’ family of approaches (section 4.3), and two of the ‘in situ’

one (section 4.4), and to present some of the evidence that each approach relies on in order to support the analysis it puts forward. Section 4.5 summarizes the discussion.

4.2 Patterns of distribution and interpretation

In order to set the background for the discussion to come, let us present the typical sluicing pattern as exemplified in English in (5), repeated from Chung, Ladusaw & McCloskey 1995 ((5a) corresponds to *theirs* (4b) & (5a), and (5b) to *theirs* (3c) & (4a); see also Ross 1969, and van Riemsdijk 1978, for early observations).

- (5) a. She's reading (*something*). I can't imagine what.
 b. If Sam was going (*somewhere*), Sally would know where.

The pattern in (5) can be described as follows: the SLUICE relates to an (usually indefinite)¹ argument or adjunct (hereafter, ANTECEDENT), which may be explicit or implicit, and which surfaces in a different clause from the one that hosts the SLUICE (accordingly, I will refer to the clause hosting the ANTECEDENT as 'antecedent clause'). So, both the argument *something* of the verb *reading* (cf., (5a)), and the locative *somewhere* (cf., (5b)), may be lexicalized or not (enclosed in parentheses), and each is understood as the ANTECEDENT of the SLUICE *what* and *where* respectively.

Sluicing in MG appears to fall under the typical pattern sketched above (see also Gianakidou & Merchant 1998, and Merchant 2000; 2001, for discussions). Consider the explicit argument ANTECEDENTS in (6).

- (6) a. Kapjos efije ala dhen ksero pjos.
 someone-NOM left-3SG but NEG know-1SG who-NOM
 "Someone left but I don't know who."
 b. Aghorase ena aftokinito. Kseris pjo?
 bought-3SG a car-ACC know-2SG which-ACC
 "S/he bought a car. Do you know which (car)?"
 c. Edhose xrimata se kapjon ala dhen ksero se pjon.
 gave-3SG money-ACC to someone but NEG know-1SG to who
 "S/he gave money to someone but I don't know to who."

In (6a), *pjos* (who) relates to the subject *kapjos* (someone) in the antecedent clause. In (6b), *pjo* (which) relates to the direct object *ena aftokinito* (a car) of the verb *aghorase* (bought), while *se pjon* (to who), in (6c), to the indirect object *se kapjon* (to someone) of the verb *edhose* (gave).

The same pattern arises with explicit adjunct ANTECEDENTS, as in (7).

- (7) a. Irthe kapja stighmi exthes ala dhen ksero pote akrivos.
 came-3SG some time yesterday but NEG know-1SG when exactly
 “S/he came some time yesterday, but I don’t know when exactly.”
- b. Pije kapu ala dhen ipe pu.
 went-3SG somewhere but NEG said-3SG where
 “S/he went somewhere, but s/he didn’t say where.”
- c. Kapos katafere na episkevasi to podhilato
 somehow managed-3SG PART repair-3SG the bicycle-ACC
 ala dhen ipe pos.
 but NEG say-3SG how
 “S/he managed to repair the bicycle somehow, but s/he didn’t say how.”
- d. Nevriase ja kapjo logho ke anarotieme jati.
 got-angry for some reason and wonder-1SG why.
 “S/he got angry for some reason and I wonder why.”

Pote (when) relates to the time adjunct *kapja stighmi* (some time) (cf., (7a)); *pu* (where) to the place adjunct *kapu* (somewhere) (cf., (7b)); *pos* (how) to the manner adjunct *kaapos* (somehow) (cf., (7c)); and *jati* (why) to the reason adjunct *ja kapjo logho* (for some reason) (cf., (7d)).²

Turning to implicit ANTECEDENTS, consider (8) (for expository reasons, I henceforth indicate implicit terms with a short line ‘—’).

- (8) a. Dhjavazi — ke anarotieme ti.
 is-reading-3SG and wonder-1SG what-ACC
 “S/he is reading — and I wonder what.”
- b. Edhose xrimata — ala dhen ksero se pjon.
 gave-3SG money but NEG know-1SG to who
 “S/he gave money —, but I don’t know to who.”

The sluice *pja* (*valkaniki ghlosa*) (which (Balkan language)) relates to the indefinite *mia valkaniki ghlosa* (some Balkan language), which is inside the relative of the antecedent clause. Although sluicing is grammatical, the *wh-ex situ* counterpart is not, as in (10).

- (10) * [Pja valkaniki ghlosa thelun na proslavun [kapjon
 which Balkan language-ACC want-3PL PART hire-3PL someone-ACC
 [pu na milai <pja valkaniki ghlosa>]]]?
 that PART speaks-3SG
 “*Which Balkan language they want to hire someone who speaks?”

The same is true with adjunct ANTECEDENTS, as in (11).

- (11) a. Idhe [to Niko [pu irthe spiti kapja stighmi]] ala dhen
 saw-3SG the Nick-ACC that came-3SG home some time but NEG
 thimate pote.
 remember-3SG when
 “S/he saw Nick who came home at some moment, but s/he doesn’t remember when.”
- b. *Pote idhe [to Niko [pu irthe spiti <pote>]]?
 when saw-3SG the Nick-ACC who came-3SG home
 “*When did s/he see Nick who came home?”

As in (11a), *pote* (when) relates to the adjunct *kapja stigma* (some time), which modifies the embedded predicate *irthe* (came), while the *wh-ex situ* equivalent is illicit (cf., (11b)).

A second phenomenon that appears to distinguish between MG sluicing and typical *wh-ex situ* configurations is ‘P(reposition)-stranding,’ despite argumentation for the opposite (to which I return shortly). P-stranding is a cover term for cases of (*wh*-)extraction out of phrases headed by prepositions (PPs), as in (12).

- (12) a. *Pjon miluse i Anna [pp me <pjon>]?
 who-ACC was-talking-3SG the Anna-NOM with
 “Who was Anna talking with?”
- b. *Pu aghorase tin pena o Nikos [pp apo <pu>]
 where bought-3SG the fountain-pen-ACC the Nick-NOM from
 “Where did Nick buy the fountain pen from?”

- c. *Pjon edhose to ghrama i Maria [pp se ⟨pjon⟩]?
 who-ACC gave-3SG the letter-ACC the Mary-NOM to
 “Who did Mary give the letter to?”

Unlike the English counterparts (see the corresponding translations), a *wh*-element in MG cannot extract out of a PP, leaving the preposition ‘stranded.’ Instead, the preposition must be ‘piped’ (‘move’ along) with the *wh*-element. This is true with prepositions, such as *me* (with) (cf., (12a)), or *apo* (from) (cf., (12b)), or *se* (to) (cf., (12c)).³

Based on considerations similar to the above, Merchant (2001) draws a parallelism between P-stranding and sluicing, and proposes the generalization in (13) (*his*, (21), p. 92).

(13) *Form-identity generalization II: P-stranding:*

A language *L* will allow preposition stranding under sluicing iff *L* allows preposition stranding under regular *wh*-movement.

To put it simply, (13) predicts that a PP-SLUICE is ungrammatical if the preposition is absent, in languages that do not allow P-stranding with standard *wh*-ex situ constructions. The generalization is empirically tested across a variety of languages, including MG, for which Merchant offers the example in (14a) (*his* (28a), p. 94), marking it as ungrammatical, under the lack of the preposition *me* (with), in tandem with its *wh*-ex situ counterpart in (12a), repeated in (14b), for convenience.

- (14) a. I Anna milise me kapjon, ala dhen ksero [pp *(me) pjon].
 the Anna-NOM spoke-3SG with someone but NEG know-1SG with who
 “Anna spoke to someone, but I don’t know who.”
- b. *Pjon miluse i Anna [pp me ⟨pjon⟩]
 who-ACC spoke-3SG the Anna-NOM with
 “Who Anna spoke to?”

As Merchant notes, his judgements are drawn from 6 MG native speakers, all well versed in linguistics. I have tested (14a) with 15 MG native speakers (some linguistically naive, some aware), all of whom considered (14a) to be grammatical, with or without the preposition, although I hasten to note that all of them showed a preference for the presence of the preposition.⁴

PP-SLUICES appear to fall under a totally different pattern from the one that the generalization in (13) suggests. In order to illustrate this pattern, let us introduce two descriptive terms, whose usefulness will become relevant shortly. So, I will call the bare *wh*-elements of the form *who*, *what*, e.t.c, ‘simplex’ elements. Correspondingly, ‘*which*-NPs’ (e.g., partitives) will be coined ‘complex’ elements. On the basis of this distinction, consider again the ungrammatical sentences in (12), repeated in (15) for convenience, where the relevant *wh*-elements surface as simplex terms.

- (15) a. *Pjon miluse i Anna [pp me <pjon>]?
 who-ACC was-talking-3SG the Anna-NOM with
 “Who was Anna talking with?”
- b. *Pu aghorase tin pena o Nikos [pp apo <pu>]
 where bought-3SG the fountain-pen-ACC the Nick-NOM from
 “Where did Nick buy the fountain pen from?”
- c. *Pjon edhose to ghrama i Maria [pp se <pjon>]?
 who-ACC gave-3SG the letter-ACC the Mary-NOM to
 “Who did Mary give the letter to?”

P-stranding is also ungrammatical with complex *wh*-elements, as in (16).

- (16) a. *Pjon apo tus sigenis tu Jani miluse i Anna
 which from the relatives of John was-talking-3SG the Anna-NOM
 [pp me <pjon apo tus sigenis tu Jani>]?
 with
 “Which of John’s relatives was Anna talking with?”
- b. *Pjo vivliopolio aghorase tin pena o Nikos
 which bookstore bought-3SG the fountain-pen-ACC the Nick-NOM
 [pp apo <pjo vilviopolio>]?
 from
 “Which bookstore did Nick buy the fountain pen from?”

- c. *Pja apo tis files tis edhose to ghrama i Maria
 which from the friend her gave-3SG the letter-ACC the Mary-NOM
 [pp se ⟨pja apo tus files tis⟩]?
 to
 “Which of her friends did Mary give the letter to?”

The partitive *pjon apo tus sigenis tu Jani* (which of John’s relatives) (cf., (16a)) is certainly more complex than the comparable *pjo* (who) in (15a). Yet, both extractions are illicit, and to the same degree. The same holds for *pjo vivliopolio* (which bookstore) in (16b), and for *pja apo tis files tis* (which of her friends) in (16c) (compare with (15b) and (15c) respectively).

Now, let us turn to sluicing, in the scope of the sentences in (17), which are comparable to those in (15).

- (17) a. I Anna miluse [pp me kapjon] ala dhen
 the Anna-NOM was-talking-3SG with somebody-ACC but NEG
 ksero [pp ?(me) pjon].
 know-1SG with whom-ACC
 “Anna was talking to somebody, but I don’t know (with) who.”
- b. O Nikos aghorase tin pena [pp apo kapu] ala
 the Nick-NOM bought-3SG the fountain-pen-ACC from somewhere but
 dhen ksero [pp ?(apo) pu].
 NEG know-1SG from where
 “Nick bought the fountain pen from somewhere, but I don’t know (from) where.”
- c. I Maria edhose to ghrama [pp se kapjon] ala dhen
 the Mary-NOM gave-3SG the letter-ACC to somebody-ACC but NEG
 ksero [pp ?(se) pjon].
 know-1SG to whom-ACC
 “Mary gave the letter to somebody, but I don’t know (to) who.”

The SLUICE *pjon* (who) relates to the PP *me kapjon* (with somebody) (cf., (17a)); *pu* (where) to the PP *apo kapu* (from somewhere) (cf., (17b)); and *pjon* (who) to the PP *se kapjon* (to somebody) (cf., (17c)). The SLUICES in (17), like the *wh*-elements in (15), are simplex terms. Yet, the above sentences, contrary to the ones in (15), do not become ungrammatical if the

corresponding prepositions are absent (put in parentheses), although a preference for the P-version may be available (at least for some speakers, hence the ‘?’ notation).

Next, consider the sentences in (18), which are the sluicing counterparts of those in (16).

- (18) a. I Anna miluse [pp me kapjon apo tus sigenis
 the Anna-NOM was-talking-3SG with someone from the relatives
 tu Jani] ala dhen ksero [pp (me) pjon (apo tus sigenis
 of-the John but NEG know-1SG with whom-ACC from the relatives
 tu Jani)].
 of-the John
 “Anna was talking to some of John’s relatives, but I don’t know (with)
 who(m) (of John’s relatives).”
- b. O Nikos aghorase tin pena [pp apo kapjo vivliopolio]
 the Nick-NOM bought-3SG the fountain-pen-ACC from some bookstore
 ala dhen ksero [pp (apo) pjo (vivliopolio)].
 but NEG know-1SG from which bookstore
 “Nick bought the fountain pen from some bookstore, but I don’t know (from)
 which (bookstore).”
- c. I Maria edhose to ghrama [pp se kapja apo tis files tis]
 the Mary-NOM gave-3SG the letter-ACC to some from the friend her
 ala dhen ksero [pp (se) pja (apo tus files tis)].
 but NEG know-1SG to which of her friends
 “Mary gave the letter to some of her friends, but I don’t know (to)
 which (of her friends)”

The SLUICE *pjon* (which) relates to the PP *me kapjon apo tus sigenis tu Jani* (with some of John’s relatives) (cf., (18a)); *pjo* (which) to the PP *apo kapjo vivliopolio* (from some bookstore) (cf., (18b)); and *pja* (which) to the PP *se kapja apo tis files tis* (to some of her friends) (cf., (18c)). In all instances, lack of both the preposition and the rest of the material that surfaces with the SLUICE (the relevant restrictions, enclosed in parentheses), yields no ungrammaticality, and contrasts with the *wh*-ex situ data in (16), and the sluicing counterparts in (17).

The above sluicing facts show that the degree of grammaticality varies in tandem with the ‘complexity’ of the relevant participants, namely the SLUICE and its ANTECEDENT, which has

nothing to do with standard P-stranding. This becomes clear below. Suppose that the SLICES in (17a) and (18a) do not surface as PPs, but as DPs, as in (19a) and (19b) respectively (the same is true with the rest of the sentences in (17) and (18)).

- (19) a. I Anna miluse [PP me kapjon] ala dhen
 the Anna-NOM was-talking-3SG with somebody-ACC but NEG
 ksero [DP pjon].
 know-1SG whom-ACC
 “Anna was talking to somebody, but I don’t know who.”
- b. I Anna miluse [PP me kapjon apo tus sigenis
 the Anna-NOM was-talking-3SG with someone from the relatives
 tu Jani] ala dhen ksero [DP pjon].
 of-the John but NEG know-1SG whom-ACC
 “Anna was talking to some of John’s relatives, but I don’t know who.”

In (19a), the simplex *pjon* (who) relates to the simplex PP-ANTECEDENT *me kapjon* (with someone), while the simplex *pjon* (who) in (19b) relates to the complex PP *me kapjon apo tus sigenis tu Jani* (with some of John’s relatives). In terms of morphosyntax (and semantics), the partitive PP-ANTECEDENT in (19b) is more ‘informative’ (to be qualified shortly) than the PP-ANTECEDENT in (19a). In particular, as regards morphosyntax, although both ANTECEDENTS in (19) surface inside PPs, the ANTECEDENT in (19b), unlike that in (19a), is further restricted by a PP (*apo tus sigenis tu Jani* (of John’s relatives)). With respect to semantics, partitive NPs, such as *kapjon apo tus sigenis tu Jani* (some of John’s relatives) (cf., (19b)) are discourse-oriented, in the sense that they provide more specific information about the set of suitable referents than bare indefinites, like *kapjon* (someone) (cf., (19a)) (see Pesetsky 1987, and Enç 1991 for relevant discussions).

Keeping the above clarifications in mind, the picture that emerges is this: both sentences in (19) are grammatical, although (19a), with the simplex PP-ANTECEDENT may be degraded for some speakers, on a par with (17a), where the SLICE does not surface inside a PP. On the other hand, (19b), with the complex PP-ANTECEDENT, is not degraded at all, although the SLICE lacks a P (in tandem with (18a)). Therefore, it appears that the more informative—in the sense clarified previously: morphosyntactically more complex, and semantically more specific—the ANTECEDENT becomes, the less informative the SLICE need be.⁵ So, although (19a) may sound

better, for some speakers, with a PP-SLUICE, the presence or absence of a relevant preposition heading the SLUICE in (19b) makes no difference.

The picture just drawn holds the other way round, as well, providing further support to the current reasoning. To be more precise, the less informative the ANTECEDENT is, the more informative the SLUICE need be. We have already seen this in the scope of (19a) above, and it becomes clear in (20), with implicit ANTECEDENTS.

- (20) a. I Anna miluse ___ ala dhen ksero [PP *(me) pjon].
 the Anna-NOM was-talking-3SG but NEG know-1SG with who-ACC
 “Anna was talking ___, but I don’t know *(with) who.”
- b. O Nikos aghorase tin pena ___ ala dhen ksero
 the Nick-NOM bought-3SG the fountain-pen-ACC but NEG know-1SG
 [PP *(apo) pu].
 from where
 “Nick bought the fountain pen ___, but I don’t know *(from) where.”
- c. I Maria edhose to ghrama ___ ala dhen ksero
 the Mary-NOM gave-3SG the letter-ACC but NEG know-1SG
 [PP *(se) pjon].
 to whom-ACC
 “Mary gave the letter ___, but I don’t know *(to) who.”

In all the above sentences, the PP-ANTECEDENTS are implicit, and the corresponding PP-SLUICES must surface with a lexicalized preposition.

Interestingly, a similar situation appears to hold in English, as in (21), modeled on Chung’s (2005: 8, (19)).

- (21) a. They’re jealous ___, but it’s unclear *(of) who(m).
 b. Joe was murdered ___, but we don’t know *(by) who(m).
 c. Last night he was very afraid ___, but he couldn’t tell us *(of) what.

The sentences are ungrammatical with implicit PP-ANTECEDENTS, unless a preposition is lexicalized in the SLUICES.⁶

Recall that English is a P-stranding language, which means that if sluicing was comparable to regular *wh*-constructions, the SLUICES in (21) should be grammatical under the lack of P,

contrary to evidence. Yet, English shows independent properties when it comes to sluicing, and this is further clarified by the following data, where the *wh*-ex situ equivalents of (21) are perfectly formed (cf., (22)).

- (22) a. They're jealous ____, but it's unclear who(m) they are jealous of.
b. Joe was murdered ____, but we don't know who(m) he was murdered by.
c. Last night he was very afraid ____, but he couldn't tell us what he was afraid of.

Of course, as we have already seen in the context of MG sluicing, lack of the preposition in (21) yields no ungrammaticality, if the ANTECEDENT is overt, as in (23).

- (23) a. They're jealous of someone, but it's unclear (of) who(m).
b. Joe was murdered by someone, but we don't know (by) who(m).
c. Last night he was very afraid of something, but he couldn't tell us (of) what.

Putting the discussion about (MG and English) P-stranding together, the conclusion can be drawn that language-specific properties of P-stranding are orthogonal to sluicing, despite appearances for the opposite.⁷ In particular, with respect to full-fledged *wh*-constructions, MG differs from English, in that the latter, unlike the former, attests P-stranding. Yet, in terms of sluicing, both languages appear to fall under the same pattern. That is, the more informative the ANTECEDENT is, the less informative the SLUICE need be, and vice versa. This conclusion is consistent with the observation made at the end of section 4.2 that sluicing amounts to a dependency between two nonadjacent terms, where the nature of the ANTECEDENT affects that of the SLUICE. This brings us to the topic of the next section, where some aspects of the interpretation of this dependency are discussed.

4.2.2 Interpretation

Consider (24), which shows that an ANTECEDENT of a SLUICE may also be a *wh*-element that introduces embedded interrogatives.⁸

- (24) a. I Eleni me rotise [CP *pjos* efije] ala dhen
 the Helen-NOM me asked-3SG who-NOM left-3SG but NEG
 mporusa na tis po *pjos*.
 could-3SG PART her tell-1SG who-NOM
 “Helen asked me who left, but I couldn’t tell her who.”
- b. I Eleni me rotise [CP *pjo* *vivlio* na aghorasi]
 the Helen-NOM me asked-3SG which book-ACC PART buy-3SG
 ala dhen mporusa na tis po *pjo*.
 but NEG could-1SG PART her tell-1SG which-ACC
 “Helen asked me which book to buy, but I couldn’t tell her which.”

In (24a), the SLUICE *pjos* (who) relates to the clausal subject *who* (*pjos*) that heads the embedded clause (see the bracketing). Similarly, in (24b), the SLUICE *pjo vivlio* (which book) relates to the *wh*-object *pjo vivlio* (which book) of the embedded verb *aghorasi* (buy).

The corresponding readings of (24) are given in (25) (in a rough semantic formalization, but sufficient for our discussion; the same mode of illustration is kept throughout).

- (25) a. “Helen asked me for which person (*x*), it is the case that the (*x*) left, but I couldn’t tell her for which person (*x*).”
- b. “Helen asked me for which thing (*x*), (*x*) a book, it is the case that she may buy (*x*), but I couldn’t tell her for which thing (*x*), (*x*) a book.”

(25) says that the ANTECEDENT and the SLUICE each discharge a variable (*x*) that may range over either *persons(x)* (cf., (25a)), or *things(x)* (cf., (25b)).

Turning to *wh*-ajunct ANTECEDENTS, consider (26).

- (26) a. I Eleni ithele na mathi [CP pote efije o Nikos]
 the Helen-NOM wanted-3SG PART know-3SG when left-3SG the Nick-NOM
 ala dhen iksera pote.
 but NEG know-1SG when
 “Helen wanted to know when Nick left, but I didn’t know when.”

- b. O Kostas ithele na mathi [CP pu pigha]
 the Kostas-NOM wanted-3SG PART know-3SG where went-1SG
 ala dhen tu ipa pu.
 but NEG him tell-1SG where
 “Kostas wanted to know where I went, but I didn’t tell him where.”
- c. I mama rotise [CP pos tha pame stin Athina]
 the mammy-NOM asked-3SG how will go-1PL to-the Athens
 ala dhen tis ipame pos.
 but NEG her tell-1PL how
 “Mammy asked how we will go to Athens, but we didn’t tell her how.”
- d. O Eleni ithele na mathi [CP jati efije o Nikos].
 the Helen wanted-3SG PART know-3SG why left-3SG the Nick-NOM
 Kanenas dhen tis ipe jati.
 nobody NEG her tell-3SG why
 “Helen wanted to know why Nick left. Nobody told her why.”

The time adjunct *pote* (when) is construed with the predicate *efije* (left), and relates to the SLUICE *pote* (when) (cf., (26a)). The place adverb *pu* (where) is associated with the verb *pigha* (went), and relates to the SLUICE *pu* (where) (cf., (26b)). The manner adjunct *pos* (how) is construed with the verb *pame* (go), and relates to the SLUICE *pos* (how) (cf., (26c)). And, the reason adjunct *jati* (why), which is associated with the predicate *efije* (left), relates to the SLUICE *jati* (why) (cf., (26d)).

The corresponding interpretations of (26a–d) are given in (27a–d) respectively.

- (27) a. “Helen wanted to know for which time (*x*), it is the case that Nick left in (*x*), but I didn’t know for which time (*x*).”
- b. “Kostas wanted to know for which place (*x*), it is the case that I went to (*x*), but I didn’t tell him for which place (*x*).”
- c. “Mammy asked for which manner (*x*), it is the case that we will go to Athens in (*x*), but we didn’t tell her for which manner (*x*).”
- d. “Helen wanted to know for which reason (*x*), it is the case that Nick left because of (*x*). Nobody told her for which reason (*x*).”

According to (27), the variable (x) of both the ANTECEDENT and the SLUICE may range over either *times* (cf., (27a)), or *places* (cf., (27b)), or *manners* (cf., (27c)), or *reasons* (cf., (27d)).

Keeping the above discussion in mind, consider now the data in (28) which contrast in grammaticality with both (24) and (26).

- (28) a. *O kathighitis astronomias rotise [CP ti itan o Ermis].
 the teacher-NOM astronomy-GEN asked-3SG what was the Hermes-NOM
 Kanenas dhen tu apantise ti.
 nobody NEG him answered-3SG what-ACC
 “*The astronomy teacher asked what Hermes was. Nobody answered him what.”
- b. *O Roben ton dhason rotise [CP pjo itan to onoma tu
 the Robin of-the forest asked-3SG which was the name of-the
 aloghu tu]. Ke egho anarotjeme pjo.
 horse his and I wonder-1SG which-ACC
 “*Robin Hood asked what the name of his horse was. I also wonder what.”
- c. *I Maria rotai [CP pjos itan o Kazantzakis].
 the Mary-NOM is-asking-3SG who-NOM was the Kazantzakis-NOM
 Makari na iksera pjos.
 if-only PART knew-1SG who-NOM
 “*Mary is asking who Kazantzakis was. I wish I knew who.”

In (28a), *ti* (what) relates to the SLUICE *ti* (what). In (28b), *pjo* (which) relates to the SLUICE *pjo* (which), and *pjos* (who), in (28c), relates to the SLUICE *pjos* (who). Although the relevant *wh*-elements head embedded interrogatives, sluicing is ungrammatical.

The interpretations of the sentences in (28a–c) are given in (29a–c) respectively.

- (29) a. *“The astronomy teacher asked for which property (x), it is the case that (x) is predicated of Hermes. Nobody answered him for which property (x).”
- b. *“Robin Hood asked for which property (x), it is the case that (x) is predicated of his horse. I also wonder for which property (x).”
- c. *“Mary is asking for which property (x), it is the case that (x) is predicated of Kazantzakis. I wish I knew for which property (x).”

Each reading above is reminiscent of predicational (copular) clauses of the form ‘*Subject is Predicate*’ (see, among others, Williams 1980), where the predicate denotes a *property* that tells us something *about* the referent of the subject NP (in the sense of Akmajian 1979, Higgins 1979, and Mikkelsen 2005). For example, the intended readings of both the *wh*-ANTECEDENTS, and the corresponding SLICES, *ti* (what), *pjo* (which), and *pjos* (who), in (28a–c), are given in (30a–c) respectively.

- (30) a. Hermes was ‘an Olympian god.’
 b. The name of his horse was ‘*Thunder*.’
 c. Kazantzakis was ‘the writer of *Report to Greco*.’

The property ‘an Olympian god’ is predicated of the subject ‘Hermes’ (cf., (30a)), and would answer to *ti* (what) in (28a); ‘Thunder’ is predicated of ‘the name of his horse’ (cf., (30b)), and would answer to *pjo* (which) in (28b); and ‘the writer of *Report to Greco*’ is predicated of ‘Kazantzakis’ (cf., (30c)), and would answer to *pjos* (who) in (28c).

Interestingly, the ungrammaticality of (28) comes up in sluicing environments only, which is verified by the well-formed *wh*-ex situ counterparts in (31).

- (31) a. ✓O kathighitis astronomias rotise [CP ti itan o Ermis].
 the teacher-NOM astronomy-GEN asked-3SG what was the Hermes-NOM
 Kanenas dhen tu apantise ti itan (o Ermis).
 nobody NEG him answered-3SG what-ACC was (the Hermes-NOM)
 “The astronomy teacher asked what Hermes was. Nobody answered him what he was.”
- b. ✓O Roben ton dhason rotise [CP pjo itan to onoma tu
 the Robin of-the forest asked-3SG which was the name of-the
 aloghu tu]. Ke eghe anarotjeme pjo itan
 horse his and I wonder-1SG which-ACC was
 (to onoma tu aloghu tu).
 the name of-the horse his
 “Robin Hood asked what the name of his horse was. I also wonder what its name was.”

- c. ✓I Maria rotai [CP pjos itan o Kazantzakis].
 the Mary-NOM is-asking-3SG who-NOM was the Kazantzakis-NOM
 Makari na iksera pjos itan (o Kazantzakis).
 if-only PART knew-1SG who-NOM was the Kazantzakis
 “Mary is asking who Kazantzakis was. I wish I knew who he was?”

So, let us put together the readings discussed in this section, under (32).

- (32) a. ✓ $\left\{ \begin{array}{l} \textit{argument} \\ \textit{modifier} \end{array} \right\} \Rightarrow \left\{ \begin{array}{l} \textit{person} \\ \textit{thing} \\ \textit{time} \\ \textit{place} \\ \textit{manner} \\ \textit{reason} \end{array} \right\}$.
- b. **predicate*.

(32a) summarizes the grammatical readings, and says that a SLUICE may be interpreted as an *argument* (denoting either *persons*, or *things*), or a *modifier* (ranging over either *times*, or *places*, or *manners*, or *reasons*) of a predicate. The ungrammatical (32b) says that a SLUICE may not be interpreted as a *predicate* (of a subject NP).

For concreteness, it should be mentioned that adverbs—speaking in terms of their semantic function, and not their syntactic role or position in the clause structure—are usually understood as ‘modifiers of an event,’ in the sense of Sportiche (1988), but let us stress that nothing hinges on that. For example, adverbs have also been treated as ‘semantic predicates’ (see Rochette 1990, Roberts 1985), or ‘operators’ (see Laenzlinger 1996), or ‘arguments’ (see McConnell-Ginet 1982, Larson 1985). The fact that adverbs may correspond to arguments supports the hypothesis that adverbs are actually ‘nominal’ in nature. This idea, which will be adopted for the purposes of the relevant analysis of sluicing, delivered in chapter 5, is consistent with more recent analyses, such as Caponigro & Pearl (2009), and Manzini & Savoia (2011a), which take adverbs to belong to the class of nominal elements. Recall also from the relevant discussion in chapter 3, section 3.4.1, that, in line with Rizzi (1990), and Starke (2001), adverbs may be associated with (generalized) θ -roles, which are construals that typically hold between predicates and arguments. In any case, the true nature of adverbs is orthogonal to our discussion. What is crucial is that a SLUICE can only be interpreted as being *related to* a predicate (argument or adverb), but not *as* a predicate. From this, it follows that the syntax of sluicing

does not provide the ‘missing’ predicative content of the construction, which is available at LF.

To summarize the discussion so far, a SLUICE (in MG) relates to either an argument or adjunct ANTECEDENT that may be explicit or implicit. Unlike typical (*wh*-)filler-gap dependencies, sluicing constructions do not show blocking effects attested with islands, nor are they comparable to (il)legal cases of regular P-stranding. Moreover, the construal between a SLUICE and its ANTECEDENT appears to be affected by morphosyntactic (and, semantic) information, such as the simplicity/complexity of the relevant participants. And, finally, sluicing does not seem to attest all the possible readings available to full-fledged *wh*-constructions.

The aforementioned evidence clearly supports two straightforward conclusions. The first is that since sluicing differs from full-fledged *wh*-constructions, then the syntax of the former is not comparable to the syntax of the latter, in every respect. In other words, although it is unquestionable that sluicing gives rise to a *wh*-interrogative interpretation, it is quite problematic to assume that this meaning maps to a fully articulated structure, part of which is not realized at PF, but is available at LF. This is because the data regarding the immunization to P-stranding, and islandhood, as well as, the relevant restrictions on interpretation strongly point at the absence, rather than the presence, of the relevant structure. The second conclusion is that sluicing assumes some sort of ‘direct’ dependency between two nonadjacent terms, where one depends on the other. This is quite obvious in the case of P-stranding, where the (syntactic/semantic) nature of the ANTECEDENT affects that of the SLUICE. These considerations, coupled with more facts in chapter 5, will support a syntactically oriented analysis of sluicing that partly rests on the formation of *wh*-constructions (without assuming a ‘hidden’ structure), and partly invests on the notion ‘dependency,’ that is, on the relation between the ANTECEDENT and the SLUICE. In short, there are two relations operative in a sluicing construction that any analysis must account for. One of these relations is that holding between a SLUICE and a relevant predicate that selects for it. The other relation is that holding between a SLUICE and an ANTECEDENT. The analysis to be defended will converge with some approaches to sluicing, but diverge from others. So, in order to appreciate the assumptions that will be shared, and the ones which will be dropped, let us draw attention to two competing lines of theorizing about sluicing.

4.3 Members of the ‘ex situ’ family

As mentioned in section 4.1, there are, by and large, two views of sluicing: an ‘ex situ’ and an ‘in situ’ one. Below, I present two examples of the ‘ex situ’ group, while two accounts of the ‘in situ’ family enter the discussion in section 4.4. Notice that, for reasons of consistency, I will occasionally use the terms ANTECEDENT and SLUICE, although some of the accounts to be considered do not make reference to this terminology.

One member of the ‘ex situ’ family, dubbed ‘PF-deletion’ (see Ross 1969), is Merchant’s (2001) approach, which argues that typical cases of sluicing are computed as in (33).

- (33) [CP [IP_β She [VP bought something]]] and I wonder [CP what [~~IP_α she [VP bought~~ <what>]]].

As far as syntax is concerned, sluicing forms a regular *wh*-ex situ construction, whereby the SLUICE *what* is ‘dislocated’ to [Spec, CP] of the embedded clause, leaving a copy in its original site. The ‘ellipsis’ effect is due to the fact that (what I presently notate as) IP_α, and in particular every (non)terminal node that is dominated by this IP, is deleted as soon as the computational output is sent to PF (deletion sites will be shown as strikethroughs). Deletion is regulated under ‘entailment’ between IP_α and IP_β. Roughly speaking, the notion of entailment is (mainly) modeled on Schwarzschild’s (1999) theory of *Givenness*, and predicts that IP_α is deleted if and only if the interpretation of IP_α entails that of IP_β, and vice versa.

That entailment holds at the level of semantics, and not syntax, appears to be a necessary requirement, in virtue of well-formed sluicing sentences, such as (34), where no syntactic identity is sustainable between the relevant IPs (repeated from Ross 1969: 275, (69)).

- (34) [CP [IP_β Bill mentioned his plans to do away with someone]] but he didn’t say [CP who [~~IP_α he was planning to do away with~~ <who>]].

To put it differently, (34) indicates that the interpretation of a SLUICE does not have to map to the same syntactic structure to which the interpretation of its ANTECEDENT maps.⁹

In more technical terms, deletion is regulated by an [E] feature, with properties defined in (35), repeated from Merchant (2004: 670–672; I suspect [E] stands for Ellipsis/Ellision/Elide, though this is not discussed by Merchant, to the best of my knowledge).

- (35) *Properties of [E]:*
- a. SYNTAX: $[E] = [uWh^*], [uQ^*]$
 - b. PHONOLOGY: $[E] = \phi_{TP} \rightarrow \emptyset/E \Delta$
 - c. SEMANTICS: $\llbracket [E] \rrbracket = \lambda p: e\text{-GIVEN}(p) [p]$

As regards syntax (cf., (35a)), [E] projects in C, and must be valued before Spell-Out, being uninterpretable. Furthermore, [E] is strong (indicated through the asterisk (*) notation), and, in virtue of its feature composition, is associated with a *wh*-element, which, in turn, is obligatorily ‘displaced’ to the approximate vicinity of [E] ([Spec, CP]). With respect to phonology (cf., (35b)), PF is instructed not to parse the sister of [E], here IP_α (TP, in Merchant’s notation, but nothing hinges on that). Finally, in terms of semantics (cf., (35c)), the denotation of [E] equals a λ -operator, the argument of which is the SLUICE, and its domain of scope is the proposition denoted by the (deleted) IP_α . So, [E] is a partial identity function over propositions, which is defined only if the proposition [E] is associated with a semantic antecedent (here, IP_β).

In support of the PF-deletion account (and, of the full-structure view, in general), Merchant (2001) presents a number of empirical facts, some of which (in particular, the most severe and recurrent ones) I want to summarize here, because they will lead part of the discussion delivered in chapter 5. The first argument concerns case-marking issues. Consider (36).

- (36) a. Kapjos pire telefono ala dhen ksero $\left\{ \begin{array}{l} \checkmark \text{ pjos} \\ * \text{ pjon} \end{array} \right\}$
 someone-NOM took-3SG telephone-ACC but NEG know-1SG $\left\{ \begin{array}{l} \checkmark \text{ who-NOM} \\ * \text{ who-ACC} \end{array} \right\}$
 “Someone called but I don’t know who.”
- b. ksero $\left\{ \begin{array}{l} * \text{ o tipos} \\ \checkmark \text{ ton tipo} \end{array} \right\}$.
 know-1SG $\left\{ \begin{array}{l} * \text{ the guy-NOM} \\ \checkmark \text{ the guy-ACC} \end{array} \right\}$
 “I know the guy.”

In (36a), repeated from Merchant (2001: 47, (16)), the SLUICE *who* (pjos) appears in Nominative, while Accusative is ungrammatical. However, Nominative of *who* (pjos) cannot be assigned by *ksero* (know) because the latter (usually) assigns Accusative to its object, as in (36b).

Although case-marking matters will be considered more thoroughly in the following chapter, a necessary backdrop is in order. The generative consensus is that case is an abstract syn-

tactic feature (see Chomsky 1981, and Lasnik 2008 for an overview). (Abstract) case is conventionally notated with capital ‘C’, and is distinguished from morphological case (illustrated with lower case ‘c’), which is manifested in languages like MG, and German, among others. In virtue of the fact that Case is relevant only for syntax, and has no interpretational import, it is considered to be ‘radically uninterpretable’ (see Chomsky 2008), and, as such, must be deleted before Spell-Out. This deletion is regulated under (ϕ -feature) Agree, between a local functional head (v or I), and a DP (see Chomsky 2000).

So, to get back to sluicing, in the context of (36), witness (37).

- (37) Kapjos pire tilefono ala dhen ksero [CP pjos
 someone-NOM took-3SG telephone-ACC but NEG know-1SG who-NOM
~~pire~~ — ~~tilefono~~ — ~~<pjos>~~].
 took-3SG telephone-ACC
 “Someone called but I don’t know who called.”

The fact that *pjos* (who), in (36a), surfaces with Nominative is supposed to support the view that the ‘elliptical’ material must assume a *wh-ex situ* structure, which determines the Nominative case of *pjos* (who), as in (37).

A second argument comes from number agreement considerations, as in (38) ((38a) and (38b) correspond to Merchant’s 2001: 42, (12)).

- (38) a. [CP Which problems are solvable] { is/*are} not obvious.
 b. Some of these problems are solvable, but which problems { is/*are} not obvious.
 c. Some of these problems are solvable, but [CP which problems ~~are solvable~~] { is/*are} not obvious.

(38a) is a regular *wh-ex situ* construction, which requires singular agreement on the copula verb ‘be.’ The same effect is observed with the sluicing sentence in (38b). If *which problems* agreed with the copula, the latter would have to appear in plural, contrary to evidence. It seems, then, that the SLUICE is part of an ‘underlying’ clause, with which the copula agrees (cf., (38c)).

Selection issues offer a third argument for a full-structure account. Witness (39).

- (39) a. *I wonder [DP the time].

- b. I wonder [_{CP} what the time is].

It is generally assumed that predicates like *wonder* take only sentential, interrogative complements (cf., (39b)), as shown by the ungrammaticality of (39a) (see Grismhaw 1979 for an early discussion). Likewise, the argument goes, the SLUICE cannot be a DP (cf., (40a)), but a full-fledged CP (cf., (40b)).

- (40) a. John did something and I wonder *[_{DP} what].
 b. John did something and I wonder [_{CP} what ~~John did~~].

The last argument comes from considerations pertaining to the positional distribution of the SLUICE. Consider (41) ((41a,b) correspond to Merchant's 2001: 45, (25), and (41b,c) to *his* (27), p. 46)).

- (41) a. [_{DP} The correct approach] wasn't clear.
 b. *It wasn't clear [_{DP} the correct approach].
 c. [_{CP} Which of these approaches is correct] is not clear.
 d. It is not clear [_{CP} which of these approaches is correct].

The adjectival predicate *clear* does not license the 'extraposition' of a DP, as in (41b)), but only of a CP, as in (41c) and (41d).

Consider now the sluicing sentences in (42) ((42a,b) are Merchant's 2001: 46, (26)).

- (42) a. One of these approaches is correct but [which of them] is not clear.
 b. One of these approaches is correct but it's not clear [which of them].
 c. ... [_{CP} which of them ~~is correct~~] ...

Unlike the DP in (41b), *which of them* in (42a) and (42b) behaves as a normal *wh*-ex situ clause, on a par with (41c) and (41d) respectively. Therefore, the SLUICE is actually a 'truncated' CP of the form (42c).

Let us, finally, see how the PF-deletion approach handles island amnesty. By way of illustration, consider (43), modeled on Merchant (2001: 164, (6a)).

- (43) a. *I don't know [_{CP} how detailed [_{IP} he wants ⟨how detailed⟩ a list]].

- b. He wants a detailed list but I don't know [_{CP} how detailed [_{IP} he wants ~~(how detailed)~~ a list]].
- c. He wants a detailed list but I don't know how detailed.

(43a) is an example of illicit Left Branch extraction. Merchant argues, partly reviving Chomsky (1976a), that Left Branch islands are PF-islands (see also Kennedy & Merchant 2000), literally meaning that deletion at PF repairs the violation caused by *wh*-extraction (cf., (43b)). So, after deletion, what remains is the grammatical (43c).¹⁰

In more general terms, the PF-deletion approach rests on the view that the mapping between form and meaning is transparent, and since syntax mediates between form and meaning, then syntax contains every aspect of meaning, even in the case of 'elliptical' constructions (e.g., sluicing), where 'surface' form is, by definition, 'less' than meaning. To this end, the PF-deletion analysis argues that sluicing corresponds to full-fledged *wh*-constructions, in all respects. Therefore, in case this correspondence fails, as in islands (see, e.g., (43)), the explanation has to come from the way the 'elliptical' material is handled at PF. This is not necessarily problematic, but it should be pointed out that a number of islands traditionally attributed to violations of the 'Empty Category Principle' (ECP; see Chomsky 1981; 1982), which holds at LF, and hence concerns violations associated with interpretation, have to be recast as 'phonological' violations that are remedied under deletion, which is not immediately obvious. Notice at this point that, given the conceptual arguments against the notion of 'government' (see Chomsky 1995b), ECP, which rests on this notion, cannot be maintained as an explanatory device. But this does not necessarily mean that an explanation of the ECP-effects, such as the Left Branch Extraction (or the 'Comp-trace' effects), cannot still be tailored to LF.

What is more, the PF-deletion approach does not seem to predict the P-stranding facts examined in section 4.2.1. To be more precise, for Merchant (2001), P-stranding is ungrammatical in MG sluicing similarly to typical *wh*-constructions (contra the evidence presented in this chapter). As Merchant (2000) argues, this is quite puzzling, if PPs are islands in MG, and deletion can remedy violations caused by islands. The solution that Merchant (2000) arrives at does not involve deletion, but rests on a condition that detects the well-formedness of chains created by 'movement.' The technical details of this analysis are not particularly relevant for our discussion, but what is important is that the explanation offered does not rely on the mech-

anism of deletion. This means, in turn, that the grammatical cases of P-stranding examined in section 4.2.1 cannot be attributed to the beneficial effects of deletion either.¹¹ Even more so, the PF-deletion analysis does not seem to account for the fact that the grammaticality of P-stranding in sluicing depends on both the syntactic/semantic properties of the *SLUICE* and the *ANTECEDENT*. Certainly, one may say that, in the context of the PF-deletion analysis, a relation must hold between a *SLUICE* and an *ANTECEDENT*. This relation is ‘indirect,’ since it is mediated by the ‘elided’ and the antecedent IP. However, what we have seen in the context of P-stranding is that the relation between the *SLUICE* and its *ANTECEDENT* is in fact ‘direct.’¹²

Another problem that the PF-deletion approach seems to face concerns the data we have examined in section 4.2.2. In particular, if it is true that sluicing is a *wh*-interrogative construction, then we should not expect that the interpretations that a *SLUICE* may attest are a subset of these attested by *wh*-elements in full-fledged constructions. But, in fact, this is what we get. As we may recall, a *SLUICE* may only be interpreted as the argument or modifier of a relevant predicate, but not as a predicate itself (in predicational environments). If so, then it is natural to assume that the syntax of sluicing does not seem to make available a predicative content, that is an IP, which contradicts, in turn, the PF-deletion (hypo)thesis about the presence of the additional structure.

Of course, the data that are alleged to support a ‘truncated’ analysis of sluicing, that is, case-marking, number agreement, selection, and positional distribution, are not negligible. As regards number agreement, selection, and positional distribution, a certain pattern is evident, which says that a *SLUICE* appears in contexts where a *wh*-clause (CP) is licensed. But the logic that a *SLUICE* is a ‘truncated’ CP because it appears in the relevant environments is seriously challengeable, once the licensing of a *SLUICE* is put into perspective (see chapter 5). With respect to case-marking, the fact that a *SLUICE* must match in case with its *ANTECEDENT* is unquestionable, and has already been captured by Merchant (2001) as a ‘form-identity’ generalization. What is controversial, however, is the mechanism of case-marking that the PF-deletion approach assumes. Once an alternative reasoning about the case-marking of the *SLUICE* (and, about case-marking, in general) is adopted, there is no need for an ‘underlying’ structure to do the job. In fact, as will be shown in the following chapter, a ‘direct’ view of the relation between a *SLUICE* and an *ANTECEDENT* can capture some case-marking facts more naturally than the PF-deletion

view, despite initial appearances for the opposite.

Let us now turn to a second account that belongs to the ‘ex situ’ family, and is known as ‘LF-copying’ (see Wasow 1972, and Williams 1977), first developed for sluicing by Chung, Ladusaw & McCloskey (1995) (*henceforth*, CLM). The LF-copying approach also maintains the full-structure hypothesis, but argues that syntax makes available a ‘phonetically unfilled,’ non-terminal structure (hence, the ‘ellipsis’ effect), which provides certain information as to what terminals can be hosted, as in (44).

(44) She bought something and I wonder [_{CP} what [_{IP} [_{vP}]]].

The SLUICE *what* is base-generated at [Spec, CP], and as soon as (44) is sent to LF, all the relevant terminal material of the antecedent clause are ‘copied’ to the respective, non-terminal nodes of the ‘elliptical’ IP, as in (45).

(45) She bought something and I wonder [_{CP} what₁^x [_{IP} she [_{vP} bought something₁^x]]].

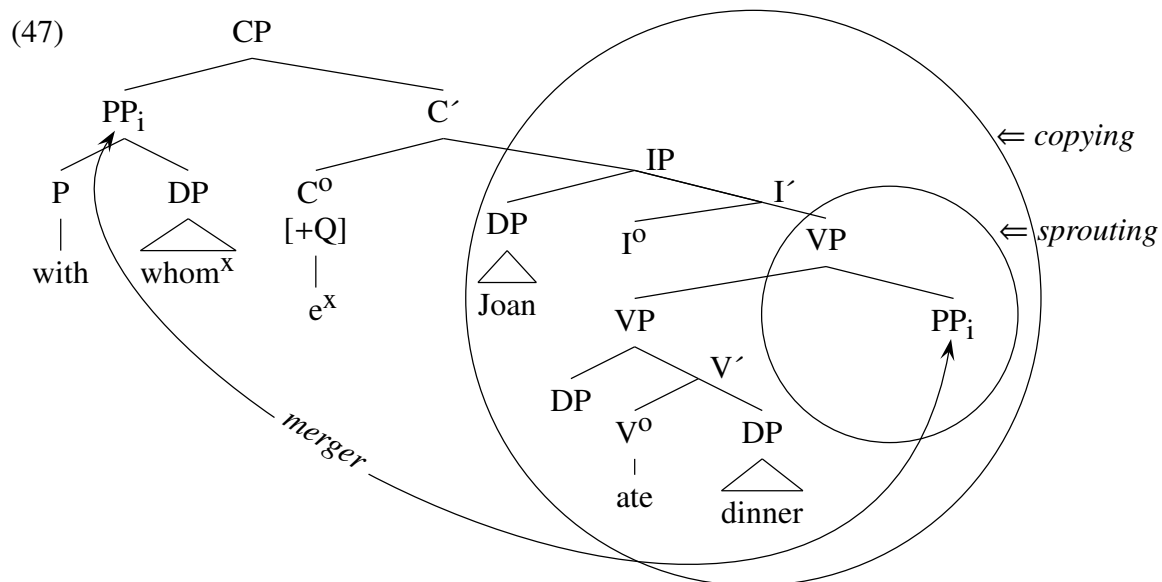
This copying process, dubbed *recycling*, also includes the indefinite *something* in the position that would have otherwise been occupied by the copy of *what*, had ‘displacement’ occurred. CLM side with Kamp (1981) and Heim (1982), who argue that a certain class of indefinites (or indefinite determiners), such as *something*, have no intrinsic quantificational force, but simply provide a free variable, able to be (unselectively) bound by a relevant operator. Thus, in (45), the same *wh*-operator binds both *something* and *what* (also an indefinite), under an operation called *merger*, which reflects both syntactic and semantic binding, and is represented at LF by co-super/subscripting. Technically, syntactic and semantic binding do not take place simultaneously, but are both introduced at LF, where the ‘missing’ structure is made available. What is more, in line with Berman’s (1991) semantics for *wh*-interrogatives, a Q(uestion) operator projects in C (not illustrated in (45)), and provides the necessary interrogative interpretation.

As we may recall, the ANTECEDENT of the SLUICE may also be implicit, as in (46), repeated from CLM: 246, (15)).

(46) Joan ate dinner ___ but I don’t know with whom.

In terms of the LF-copying account, *merger* cannot take place, since there is no indefinite provided by the antecedent clause to be copied at LF. To solve this problem, CLM propose

an additional LF-oriented mechanism, which is termed *sprouting*, and is assumed to come for ‘free’ with *recycling*. Consider (47) that represents only the relevant recycled (see the outer, circled node), and sprouted (see the inner, circled node) material of (46) (modeled on CLM’s: 247, (16)).



Since the antecedent sentence does not contain a PP that can be copied at LF (cf., (46)), *sprouting* ensures that the necessary PP (and, by implication, the VP-adjoined node) ‘grows’ into the appropriate position (adjoined to the copied VP), as it would happen in overt syntax. The PP that is base-generated in [Spec, CP] binds the sprouted PP (see the double arrow line), and LF interprets the ‘displaced’ PP *with whom* as being base-generated in the VP-adjoined site.

LF-copying typically handles immunization to islands, as in (48), which is an example of complex NP island.

(48) They want to hire someone who speaks a Balkan language, but I don’t know [_{CP} [which Balkan language]_i^x [_{IP} they want to hire [_{DP} someone [_{CP} who speaks [a Balkan language]_i^x]]].

Since there is no ‘displacement,’ the indefinite *a Balkan language* is copied into the would-be, base-generated position of *which Balkan language*, and both variables are bound by the same *wh*-operator. Therefore, islandhood is obviated on the assumption that binding is island-free.

The LF-copying analysis, like the PF-deletion one, assumes a complete mapping between sluicing and fully articulated *wh*-constructions. So, a point to be stressed is that the arguments

against this direction raised in section 4.2 above apply to the LF-copying account, as well. Another issue which comes about in the context of the LF-copying approach concerns the way it treats island amnesty. Specifically, as we may recall from chapter 3, section 3.4.3, there is a large amount of literature which shows that blocking effects are not necessarily associated with ‘movement,’ performed in ‘overt’ syntax, but with ‘binding’ construals directly established at LF. This means, in turn, that it is not immediately obvious why the *copying* of an indefinite in the would-be base-generated position of a SLUICE, as in (48), can remedy the relevant violations.

An additional problem concerns the assumption that the *copying* process operates on a string of syntactic terminals. More precisely, witness again (34), in the context of the LF-copying analysis, as in (49) (I gloss over a detailed labeling, since it is not essential for the point to be made).

- (49) a. [CP [IP Bill [vP mentioned his plans to do away with someone]]] but he didn’t say [CP who [IP [vP]]].
- b. [CP [IP Bill mentioned his plans to do away with someone]] but he didn’t say [CP who_i^X [IP he was [vP planning to do away with someone_i^X]]].

In line with the LF-copying account, suppose that, as in (49a), syntax generates a string of non-terminal material that has to be ‘filled in’ at LF. Now, as we see in (49b), what is actually ‘filled in’ in the vP of the sluicing clause is the predicate *planning*, which is not, however, present in the antecedent clause. Instead, the closest candidate for copying is the noun *plans*. So, the question here arises as to if, and if so, why copying can alter the categorial information of a terminal element that is available in the antecedent clause (here, from noun to verb). The simplest assumption is that there is no reason to expect that LF may perform such a task, and, as will become apparent in chapter 5, there is in fact no need to assume that the ‘missing’ meaning in sluicing is encoded in the form of a syntactic construct. In more general terms, the question with the LF-copying account is if LF should be treated as a ‘covert syntactic component,’ whereby operations available to ‘overt’ syntax are replicated. As we have already discussed in chapter 3 (see especially sections 3.4.3 and 3.5.3) this is a redundancy. The analysis, then, to be offered in the next chapter will do away with the idea the LF assumes ‘narrow syntactic operations,’ although the leading idea of the LF-copying view that it is LF, and not PF, which handles the ‘missing’ meaning in sluicing will be left intact.

To say that the ‘missing’ meaning, which is available at LF, does not have to be represented in terms of ‘overt’ syntax, amounts to saying that there is no need to assume an ‘underlying’ structure in order to encode the relevant interpretation. Nonetheless, it should be stressed that this assumption has already been questioned by the LF-copying approach. More precisely, as we may recall from section 4.2.1, islandhood immunization is unquestionable in cases with explicit ANTECEDENTS. On the other hand, as will become obvious shortly, in cases with implicit ANTECEDENTS this is not always true. CLM have been the first to observe that sluicing does exhibit islands effects, in the scope of data like (50) (modeled on *theirs*, (102c,e), p. 279).

- (50) a. *That Tom will win ___ is likely but it’s not clear which race. (sentential subject)
 b. *Bob found a plumber to fix the sink ___ but it’s not clear what with. (Complex NP)

Ungrammatical sentences of the kind in (50) have been used as strong evidence in favour of the idea that there is additional, unpronounced structure in sluicing, on the assumption that islands provide evidence for ‘movement’ (but see chapter 3, and especially section 3.4.3 for criticism). So, the alleged source of ungrammaticality in (50a) falls under the ‘sentential subject’ constraint, where the SLUICE *which race* relates to the implicit object of the verb *win*, and under the ‘complex NP’ constraint in (50b), where *what with* relates to the implicit adjunct that is associated with *fix the sink*.

However, the argument that the sentences in (50) indicate some kind of ‘underlying’ structure that blocks *wh*-extraction (of the SLUICE) does not seem to go through. This is exemplified by the well-formed sentences in (51), modeled on Culicover & Jackendoff’s (2005: 258, 17ff, (iii,iv)), which contrast with these in (50).

- (51) a. ✓A: Does eating ___ at a baseball game interest you?
 B: Depends on what. (sentential subject)
 b. ✓Tony sent Mo a picture that he says he painted ___, but I cant imagine what with, given that Tony cant afford brushes. (Complex NP)

In (51a), *what* relates to the implicit object of *eating*, and in (51b), *what with* to the implicit adjunct associated with the verb *painted*. Clearly, if there was an ‘underlying’ structure, both (51a) and (51b) should be ungrammatical, on a par with (50a) and (50b), contrary to evidence. The source of the ungrammaticality of the sentences in (50), in comparison with the

grammatical examples in (51), is an interesting issue, which requires an investigation into the (syntactic/semantic) properties of implicit ANTECEDENTS. Nonetheless, this investigation will have to wait for another occasion. So, although I will leave this matter open, I will continue to assume that examples of the kind in (50) do not necessarily point at the presence of inaudible structure in the ‘ellipsis’ site.

Overall, and despite their fundamental differences, both analyses presented above share the assumption that sluicing amounts to a ‘dependency.’ More precisely, we may say that, for both accounts, the chunk of structure that is not phonetically realized is ‘anaphorically’ associated with an antecedent sentence, which is what licenses the absence of the structure in question at PF. To repeat for convenience, for the PF-deletion analysis, this association takes place via an [E] feature, and specifically, via a semantic mechanism that is based on the notion of ‘entailment.’ As regards the LF-copying view, this association is reflected through the operation of ‘copying’ (and its derivatives: ‘recycling’, ‘sprouting’). It follows, then, that the dependency between a SLUICE and a relevant (indefinite) ANTECEDENT is ‘indirect,’ since it is mediated by that part of structure (IP) that is common between the clauses containing the SLUICE and the ANTECEDENT. A number of issues arise from the predictions that each approach makes, which have to do with both the presence of the additional, non-surfacing structure, and the way meaning is encoded at LF. Other than that, we may conclude that the shared intuition that sluicing reflects a ‘dependency,’ which seems to be ‘anaphorically’ controlled, is a point that does not accept serious challenge, and is further supported by the empirical evidence examined in section 4.2. This intuition will be sustained, and established on independent grounds, in chapter 5.

4.4 Members of the ‘in situ’ family

Let us turn now to the ‘in situ’ family of approaches, the earliest member of which is van Riemsdijk’s (1978) transformational account. For this view, sluicing (among other ‘elliptical’ constructions) belongs to a class of form-meaning mismatching phenomena that fall under what the author coins ‘connectedness of discourse.’ In his words (p. 236):

“...sluicing... belongs to the class of rules that we may call rules of pragmatic connectedness. While virtually nothing is known (and, perhaps, knowable) about the

properties of such rules, the minimal requirements that the sluicing rule has to meet are fairly obvious: ‘locate a variable in the preceding linguistic or pragmatic context, bind it to the sluice wh-phrase, check if the necessary well-formedness conditions (such as agreement, in gender, person, and number) are met, and interpret as usual.’ Such rules apply to base-generated forms and involve no deletion.”

In other words, the idea is that a SLUICE, which questions a variable introduced in a(n) (extra-)linguistic environment, is an ‘anaphoric-like’ element, in the sense that it meets basic ‘coreference’ requirements, observed in typical environments of anaphora. By way of illustration, consider a typical case of anaphora, as in (52), where the proper names *John* and *Mary* (must) match in ϕ -features with the pronouns *he* and *her* respectively.

(52) John saw Mary but he hesitated to talk to her.

So, van Riemsdijk proposes that a similar situation also holds for sluicing, as in (53).

(53) Someone left and I wonder who.

Who matches in ϕ -features with *someone*, the variable of which is questioned by the SLUICE.

As regards syntax (cf., (54)), *who* is directly selected by *know*, as in (54a), and this selection is governed by the transformational rule given in (54b) (*his*, (44a) & (47) respectively).

(54) a. John met someone, but I don’t [_V know who].

b. know [+V, + _____ [X^{WH} ... WH ...] , ...]

(Where WH must be in the same cyclic domain [*footnotemark omitted*—CV] as the position which the verb is to be inserted).

As in (54a), *who* is base-generated in a predicate-internal site, and there is no additional structure available, apart from the one that ‘surfaces.’ Turning to (54b), this definition relies on the following two premises (I gloss over unnecessary details): a) a relevant predicate, here *know*, selects for a complement that is introduced with a morphosyntactic feature of the form *wh* (namely, the SLUICE), and b) *wh* projects in an environment defined as the complement of this predicate, under the additional assumption that the *wh*-feature is ‘cross-categorial’ in nature, since it may combine with either a DP (e.g., *what*), or a PP (e.g., *to what*), or an AP (e.g., *how tall*), or an AdvP (e.g., *why*). So, the interrogative reading observed in sluicing is a function

between the selectional properties of a relevant predicate, and the *wh*-properties of a SLUICE. Finally, it follows from (54a) that no island violation occurs, since there is no offending structure, while, as regards case-marking, van Riemsdijk concludes that such issues are “. . . neutral with respect to the choice between the deletion [Ross’s (1969) account—CV] and the phrase structure rule analysis of sluicing (p. 246).”

In more general terms, the spirit of van Riemsdijk’s analysis rests on two assumptions. First, it derives the interrogative interpretation of the SLUICE from its association with a relevant predicate, by manipulating the way the selection of interrogative complements was taken to proceed, at the early stages of transformational grammar. The second assumption the author makes is that sluicing appears to rely on mechanisms reserved for typical anaphoric constructions that involve a ‘direct’ dependency between two nonadjacent terms, where one depends on the other for its interpretation. If so, then the SLUICE should be treated on a par with other ‘anaphors,’ where no ‘hidden’ structure is immediately justified. On the other hand, it is also true that van Riemsdijk’s treatment does not provide any discussion about how (and where) the ‘missing’ meaning in sluicing is computed, on the assumption that there is no relevant structure available.¹³ On the basis of the data discussed in section 4.2, coupled with more in chapter 5, the analysis I will defend shares the core assumptions of van Riemsdijk’s approach about the syntactic treatment of sluicing, and attempts to fill the gap regarding the way the interpretation of the SLUICE is encoded.

A similar approach to sluicing is independently developed by Culicover & Jackendoff (2005) (*hereafter*, C&J). C&J’s view of the Grammar is differentiated from the mainstream minimalist syntax in a number of fundamental respects, which I will not do justice here, since it would lead us too far afield. Nonetheless, some useful remarks are in order. C&J’s framework, coined *Simpler Syntax* (see also Jackendoff 1997), gives research priority to the (hypo)thesis summarized in (55) (*theirs*, p. 5).

(55) *Simpler Syntax Hypothesis (SSH)*:

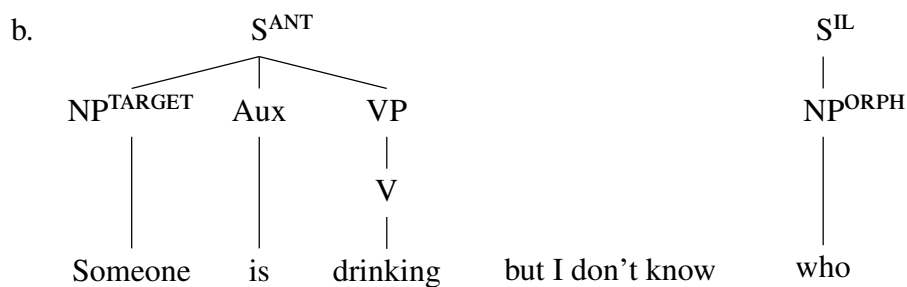
The most explanatory syntactic theory is one that imputes the minimum structure necessary to mediate between phonology and meaning.

(55) takes issue with that part of the generative tradition which postulates that “. . . the syntax-semantics interface is maximally simple in that meaning maps transparently into syntactic

structure; and it is maximally uniform, so that the same meaning always maps onto the same syntactic structure (C&J, p. 6).” In the scope of (55), then, C&J examine a number of (elliptical) constructions, among them sluicing, and claim that “. . . if machinery exists that accounts for the interpretation of a fragment of one type, without appealing to covert syntactic structure containing the fragment, then that machinery is available for all types of fragments and constitutes the default hypothesis (p. 235).”

So, the machinery they propose to account for a typical sluicing sentence, like (56a), is that given in (56b) (modeled on *theirs*, (57), p 270).

(56) a. Someone is drinking, but I don’t know who.



To start with the relevant notation, ‘S’ stands for ‘sentence’, ‘ANT’ for ‘antecedent’, ‘IL’ for ‘indirect licensing’, and ‘ORPH’ for ‘orphan.’ As in (56b), the orphan *who*, which is the focus of an unstated question, is indirectly licensed by an antecedent clause. Notice also that C&J allow for non-binary Merge.

As regards syntax, the orphan is dominated by a sentential node (S), a notation that is meant to capture the clausal distribution of *who* (see section 4.3). Moreover, the ϕ -features and case of *who* are licensed on the basis of the corresponding features of the target, here *someone*. Notice, at this point, that C&J recognize two mechanisms relevant for sluicing (and for a number of (non-)elliptical structures, in general). One is *matching* between an explicit target and an orphan, and the other is *sprouting*, in that the orphan corresponds to an implicit target (the term *sprouting* is borrowed from CLM). Finally, as is also the case with van Riemsdijk’s (1978) approach, no island violation is caused, under the lack of the additional structure.

With respect to semantics, C&J argue that the orphan retrieves (pragmatically and/or semantically) its propositional (P) content from the antecedent sentence. Specifically, *who*, in (56b), is interpreted as in (57) (*theirs*, (57), p. 270).

(57) Semantics: $Qx[\mathcal{F}(x_i)]$

Q is the question operator that binds the semantics of the *wh*-element, and ensures that the interpretation is interrogative, while the subscript *i* of the variable (*x*) is associated with the corresponding subscript of the target (not shown here). The ‘missing’ propositional content of *who* is conceptually supplied by the function \mathcal{F} , under indirect licensing, at a level of semantic representation that C&J term Conceptual Structure (CS). As the authors put it “The indirectly licensed constituent is taken as anaphoric to the antecedent, in that its sense is constructed on the basis of that of the antecedent. The orphan represents a piece of the indirectly licensed constituent that differs from the antecedent—that is, it is a specific part within the anaphoric constituent that is non-anaphoric (p. 265).” In other words, what C&J say is that the *wh*-element may be thought of as consisting of the following two parts: a non-anaphoric one, which lexicalizes the ‘question-like’ interpretation (say, a *wh*-part), and an anaphoric one (say, a pronominal part), which is associated with the interpretation of the target.

There are two points regarding C&J’s analysis, to which I want to draw further attention. The first point to be made concerns their idea about the anaphoric relation between a SLUICE and an ANTECEDENT. In particular, as entailed by the previously quoted passage, the association between the two terms is not based on ‘reference,’ but on ‘sense’ anaphora (a view slightly different from van Riemsdijk’s 1978 ‘coreference’ account; see the relevant discussion above). To understand the distinction between these two types of anaphora, consider (58), repeated from Carlson (2005: 5, (36)).

- (58) a. Lyle drove *a car*. Maria drove *it*, too.
b. Lyle drove *a car*. Maria drove *one*, too.

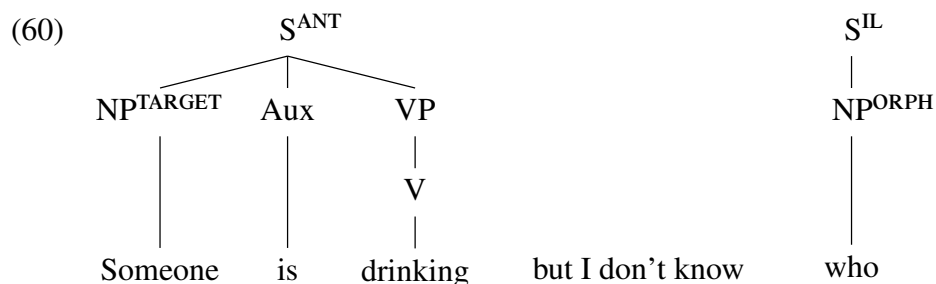
The anaphor *it* is ‘identical to the reference’ of the antecedent *a car*, since *it* refers to the same car Lyle drove (cf., (58a)). On the other hand, the salient reading of the anaphor *one* is ‘identical to the sense’ of the antecedent *a car*, simply because Maria may have not driven the same car as Lyle has (cf., (58b)). Yet, *one* is about (the sense of) *cars*, and not about any other entity; hence, the anaphoric reading of the former.

Keeping the above two notions of anaphora in mind, consider C&J’ analysis of (56a), repeated below as (59), for convenience.

(59) Someone is drinking, but I don't know who.

Who is not a 'reference' anaphor of the form (58a), but a 'sense' anaphor of the kind (58b). Roughly speaking, in the spirit of C&J's reasoning, the situation may be described as follows. The concept *person*, which is lexicalized and questioned by *who*, is associated with the corresponding concept encoded by *someone*, through the 'reuse' of the same propositional content, conceptualized as a function \mathcal{F} . This function, then, which stands for a (generalized) form of anaphora, brings together, in terms of meaning, a pair of syntactic structures, one of which indirectly licenses the other, under sense anaphora.¹⁴ It is useful to notice that the conceptual 'reuse' of a propositional content for reasons of interpretation is also the spirit of CLM's account of sluicing. The crucial difference between the two approaches is that CLM assume the 'reuse' of an inaudible piece of structure (see section 4.3, and Chung, Ladusaw & McCloskey 2011), while C&J the 'sense' of a propositional content. As will become clear in chapter 5, the analysis to be panned out will assume that a Q-operator is directly introduced at LF, and regulates the interrogative interpretation of a SLUICE, which corresponds to a 'sense' anaphor, similarly to C&J's approach (see (57)). Moreover, I will maintain that a 'propositional' content is made available at LF, but I will not adopt C&J's function \mathcal{F} in order to encode this content. The reason is that \mathcal{F} reflects a more general technical apparatus about the interpretation of *wh*-questions proposed in the framework that C&J develop, while the one that I adopt is already presented and established in chapter 3.

The second point that I want to make about C&J's analysis concerns an 'inconsistency' (to be qualified shortly) that appears to hold between their more general assumption about the role of syntax in the mapping between form and meaning, and the notation they use in order to capture the syntax of a typical sluicing construction. To be more precise, witness again the structure in (56b), repeated as (60), for convenience.



Let us concentrate on the syntax of *who*. As we may recall, the S notation is meant to capture the fact that the SLUICE projects a ‘sentential’ node. In terms of C&J’s reasoning, this is required in order to account for the clausal distribution of the SLUICE, as discussed in the context of the PF-deletion approach (see section 4.3). In terms of the technical framework adopted in the present study, it is clear that C&J’s S-node translates to a C-node, that is, to a sentential projection. In other words, what C&J propose is that, although the SLUICE is a non-sentential element, its syntax assumes a sentential node. If what I have just said is on the right track, then it becomes obvious that there is an inconsistency between the form-meaning mapping that C&J assume, in the context of sluicing, and their actual technical proposal. In short, if the idea is that a minimal structure is sufficient to mediate the relevant form-meaning mapping, as the SHH suggests (see (55)), then the fact that the SLUICE projects a sentential node seems an *ad hoc*, and theoretically unmotivated, assumption. Instead, in the context of a minimal syntactic representation, a straightforward assumption is that the SLUICE is a non-sentential element, and hence, projects a non-C-node. Otherwise, an in situ account of sluicing that assumes a C-projection will not be fully consistent with the arguments it is supposed to raise against the ex situ approaches, which rely on the presence of a C-projection. On the empirical side, any approach to sluicing that does not assume C must, of course, account for the clausal distribution of the SLUICE, which is an issue that will be taken up in the following chapter.

In sum, the in situ view suggests that sluicing is a self-sufficient construction, meaning that there is no missing structure. The morphosyntactic properties of a SLUICE do not result from its construal with a relevant predicate, while ungrammatical configurations associated with typical *wh*-clauses are irrelevant for sluicing. More generally, the in situ analyses, like the ex situ ones (see section 4.3), maintain both the idea that the formation of a sluicing sentence rests on mechanisms reserved for typical *wh*-interrogatives, as well as, the ‘anaphoric’ treatment of the relevant dependency. However, the in situ accounts assume a ‘direct’ relation between an ANTECEDENT and a SLUICE, and hence the redundancy of the additional structure. It follows, then, that, for the in situ analyses, syntax mediates between form and meaning, but does not regulate every aspect of meaning, part of which is introduced after narrow syntactic computations. In this respect, C&J’s analysis resembles the LF-copying one, but the former does not assume that the component of the Grammar which is associated with meaning (more broadly, LF) contains

operations that are, in principle, available to ‘overt’ syntax. To repeat for convenience, for the LF-copying approach, the ‘missing’ propositional content is formed at LF in a way that replicates the ‘overt’ syntactic formation of a proposition, while for C&J’ analysis, this content is made available under a function that does not resemble standard syntactic operations.

4.5 Summary

Let us put the discussion in this chapter together. Sluicing is an elliptical *wh*-construction, in that its surface form does not map to every aspect of its meaning. So, the question is what the similarities and differences between sluicing and typical *wh*-configurations are. On the one hand, data regarding islands, P-stranding, and interpretation keep the two phenomena apart. On the other hand, evidence concerning morphosyntactic issues, number agreement, selectional restrictions, and positional distribution, suggest a complete correspondence between the two constructions.

Based on facts of the above kind, the relevant literature offers two mutually exclusive lines of analyses. One family of approaches maintains the view that the mapping between structure and meaning is one to one, so the ‘ellipsis’ effect in sluicing is due to the fact that some portion of structure (computed at either PF or LF) is unpronounced. Another view assumes that structure does not control every aspect of meaning, portions of which can be supplied by other components of the Grammar; hence the ‘ellipsis’ effect in sluicing. Other than that, both views treat sluicing as an ‘anaphoric-like’ construction, whose ‘missing’ meaning depends on the meaning of an antecedent environment.

Compared to the aforementioned set of assumptions, the next chapter focuses (mainly) on MG sluicing, and provides a syntactically oriented analysis that incorporates the intuition of the latter line of reasoning. Namely, that sluicing carries no additional, unpronounced structure, whose ‘missing’ interpretation is computed at LF on the basis of surface syntax. The analysis to be offered will be situated at the Bare Phrase Structure model of the Grammar (see chapter 1), and will maintain that sluicing amounts to ‘a direct (anaphoric) dependency’ that partly assumes mechanisms reserved for the formation of *wh*-constructions. In terms of syntax, the approach may be viewed as a minimalist ‘update’ to (or, a restatement of) van Riemsdijk’s (1978) early

transformational account. As regards semantics, the analysis will maintain C&J's core idea about the 'non-syntactic' nature of the meaning component of the Grammar (broadly, LF), and will make use of the technical apparatus introduced in chapter 3, concerning the interpretation of *wh*-interrogatives. The data discussed in section 4.2 will provide further support to the relevant approach to sluicing, and the ones standardly offered against such an account (see section 4.3) will fall under a different reasoning.

Notes

¹ I say ‘usually indefinite’ since Dayal & Schwarzschild (2010) provide evidence which show that the ANTECEDENT of a SLUICE may also be a definite term. An example is (i), *theirs*, (28), p. 101, where the ANTECEDENT of *which train* is the definite *the train*.

(i) John is going to take the train, but he doesn’t know yet which train.

² Alternatively, *kapos* (somehow), in (7c), may be construed either with the matrix *katafere* (managed) or the embedded verb *episkevasi* (repair).

³ Care must be taken not to exclude the possibility that in the case of (some) PPs that are embedded within other complex PPs, extraction of the innermost PP causes a slight deviancy, but not ungrammaticality. For example, consider (i).

(i) a. (?)*Se pjo dulapi ine [pp mesa [pp <se pjo dulapi>]] to vivlio?*
to which closet is in the book-acc
“Which closet is the book into?”

b. **Pjo dulapi ine [pp mesa [pp se <pjo dulapi>]] to vivlio?*
which closet is in to the book-acc
“Which closet is the book into?”

In (ia), the embedded PP *se pjo dulapi* (to which closet) may be extracted out of the PP headed by *mesa* (in) (see Theophanopoulou-Kontou 1992; 1995, Terzi et al. 2009, and Terzi 2010, for discussions about MG; also, Merchant 2001: 100–102, for interesting cross-linguistic remarks). Of course, extraction of only the DP *pjo dulapi* (which closet) is forbidden (cf., (ib)). So, I am only interested in those cases where preposition pied-piping is obligatory (as with (ib)).

⁴ Similar judgments were elicited from the participants, most of whom were native speakers of MG, of both the workshop “Optionality of *wh*-movement” (International Symposium of The-

oretical and Applied Linguistics (ISTAL) 2009), and the Linguistics Conference for Graduate Students (National and Kapodistrian University of Athens 2009).

- ⁵ The facts presented here, and the reasoning developed so far, side with more recent accounts of sluicing which assume that P-stranding phenomena call for an analysis in terms of processing/parsing, under a psycholinguistic perspective. As Sag & Nykiel (2011: 12) put it “... complex phrases are understood as providing more specific semantic and syntactic information, and thus receive stronger mental representations that are more accessible for subsequent reference. This provides a means of explaining *which N/who* contrasts not by syntactic constraints, but by appeal to memory retrieval.”
- ⁶ A potential, cross-linguistic problem lurks for me here. If the ‘informativeness’ of the ANTECEDENT does play a role in sluicing, and if language-specific properties of P-stranding are orthogonal to sluicing, then the English sentences in (ia,b) should be expected to pattern in grammaticality with the congeneric MG examples (19a,b).

- (i) a. Anna was talking [pp to somebody], but I don’t know (to) who.
b. Anna was talking [pp to some of John’s friends], but I don’t know (to) who.

That is, (ia) should be judged with a question-mark, contrary to evidence. Considerations of this sort would seem to jeopardize the way I have approached the matter so far. Nevertheless, one may argue, by way of a tentative answer to the problem, that MG PPs are indeed expected to block construal relations at LF, as opposed to English PPs, either such construal relations hold of a ‘dislocated’ constituent with its copy (‘*wh*-movement’), or of a SLUICE with its ANTECEDENT.

- ⁷ See Almeida & Yoshida (2007), Szczegielniak (2008), Sag & Nykiel (2011), for similar observations in other languages.
- ⁸ The data discussed in the present section have already been presented in Vlachos (2011). There, I compare sluicing with an anaphoric construction coined Null Complement Anaphora (NCA; see Grimshaw 1979 for an early discussion), among others, and I point at some interesting similarities and differences between the two constructions. For example, the presence of the relevant SLUICES in sentences (24) and (26) is optional, while the sentences in (28) become grammatical only if the corresponding SLUICES are absent. In case the SLUICES are absent, all the relevant constructions, i.e., (24), (26), and (28), resemble NCA anaphoric construals, where the

complement of a predicate is dropped, if it is anaphorically recoverable from the semantic type of the ANTECEDENT. However, although the sentences in (24) and (26) may correspond to either a sluicing construction (with the SLUICE present) or to a NCA one (with the SLUICE absent), the sentences in (28) preclude sluicing, and only admit NCA. The conclusion, then, that I draw is that sluicing may only admit a subset of the interpretations attested in NCA (thanks also to Adrian Brasoveanu, personal communication, for pointing this out to me; his contribution I forgot to acknowledge in Vlachos 2011).

- ⁹ Yet, see Tanaka (2011) for a restatement of the syntactic identity argument.
- ¹⁰ Another class of islands is handled at LF, accordingly termed LF-islands. Since the antecedent and the elided IP must match in interpretation, and do not need to be syntactically isomorphic (as mentioned in the context of (34)), an island, which is represented by the antecedent IP, is not necessarily generated in the sluiced one, as long as both IPs are semantically equivalent.
- ¹¹ In the context of P-stranding, another version of the PF-deletion analysis holds that the ‘elided’ source in sluicing may alternatively amount to a (pseudo-)cleft construction, as in Rodrigues et al. (2009). Glossing over the technical details of this analysis, the core idea is that violations of P-stranding in sluicing, in non-P-stranding languages (e.g., Spanish and Brazilian Portuguese), are only apparent, since the SLUICE is actually a (pseudo-)cleft; hence, there is no P-stranding. Case-considerations argue against treating MG sluicing as a (pseudo-)cleft construction (many thanks to Arhonto Terzi, personal communication, for reminding me this counter-argument, as well as, the (pseudo-)cleft approach to sluicing). That is, a (pseudo-)cleft in MG may only carry Nominative case, while a SLUICE may carry either Nominative, or Accusative, or Genitive (see Merchant 2001 for early arguments, revolving around case, against treating MG sluicing as a (psuedo-)cleft construction; also, Sag & Nykiel 2011 for similar argumentation, independent to MG). Moreover, in the light of the interpretational evidence discussed in section 4.2.2, if sluicing was a (pseudo-)cleft (that is, a predicational) construction, then it should be attested in all sorts of predicational environments, contrary to evidence.
- ¹² See Sag & Nykiel (2011) for a similar point.
- ¹³ It is interesting to mention at this point that this apparent ‘deficiency’ seems to be one of the reasons why analyses of this kind have occasionally been characterized as ‘naive,’ as in Aelbrecht (2010: 3).

¹⁴ See also the relevant discussion in Grinder & Postal (1971) about the distinction between ‘sense’ and ‘reference’, in the scope of anaphoric constructions, including sluicing, although the authors are in favour of a PF-deletion approach to the latter, among others.

Chapter 5

The division of labour between syntax and LF

5.1 The anaphoric pattern of sluicing

A shared intuition among the approaches reviewed in chapter 4 is that sluicing amounts to a construction that makes use of ‘anaphoric-like’ operations (see also Hankamer & Sag 1976, and Sag & Hankamer 1984, for early discussions). We have seen that, for the *ex situ* approaches, these operations concern the way the ‘elided’ structure is recovered from an antecedent one. Instead, for the *in situ* accounts, these operations are reminiscent of mechanisms reserved for general anaphora, and hence, what is actually recovered from an antecedent environment is a portion of meaning that does not map to any syntactic structure.

It goes without saying that one’s view of sluicing as a construction based on anaphora cannot be justified by the analysis one proposes for sluicing, either it is an *ex situ* or an *in situ* analysis. This would actually beg the question. That said, the aim of the present section is to lay independent support to the intuition that sluicing is an anaphoric construction, by looking into a number of similarities between this construction and another anaphoric dependency coined ‘cross-sentential anaphora.’ Such environments are characteristic in that an anaphor is referentially dependent on an antecedent, which appears in a different clause from that which contains the anaphor. Although the literature on pronominal anaphora is immense (see Elbourne 2008 for an overview), here I focus on Williams’s (1997) analysis, because it describes a structural pattern for anaphoric dependencies, against which sluicing can be compared.

To begin with, Williams (1997: 587) argues that the fundamental structural property of anaphora is that “an anaphor must have an antecedent, and that element [i.e., the anaphor—CV] must either follow or be in *a subordinate environment* to the antecedent.” More precisely, the

anaphoric element is licensed by a suitable antecedent under linear ordering, and this linearity is structurally defined as a *General Pattern of Anaphoric Dependence* (hereafter, GPAD), as in (1), where ‘pro’ stands for ‘pronoun’, ‘antec’ for ‘antecedent’, ‘subord’ for ‘subordinate (clause)’ and ‘matrix’ for ‘matrix (clause)’ (repeated from Williams 1997: 588, (26)).

(1) *General Pattern of Anaphoric Dependence (GPAD)*:

- a. [... pro ...]_{subord} [... antec ...]_{subord}
- b. * [... pro ...]_{matrix} [... antec ...]_{matrix}
- c. [... antec ...]_{matrix} [... pro ...]_{subord}
- d. [... antec ...]_{subord} [... pro ...]_{matrix}

(1) says that a pronoun is licensed if it linearly follows its antecedent (cf., (1c,d)), or if it is in a subordinate clause preceding its antecedent (cf., (1a)). If the pronoun precedes the antecedent, and both surface in matrix clauses, ungrammaticality arises (cf., (1b)). Moreover, the case in which the pronoun precedes the antecedent (cf., (1a,b)) is dubbed ‘backward’ dependence, while that in which the antecedent precedes the pronoun (cf., (1c,d)) is an instance of ‘forward’ dependence. As is obvious in (1), forward, unlike backward dependence, is unrestricted.

Let us examine two instances of backward anaphora violation, the first of which is given in (2) (Williams’s (23b)), which falls under (1b).¹

(2) * [He_i won the race]_{matrix} and [we welcomed home JOHN_i]_{matrix}

The pronoun *he* appears inside the first conjunct, and cannot be associated with *John*, which surfaces inside the second conjunct, since both participants are in matrix clauses. Crucially, notice that, in line with Williams, *John* is capitalized in order to show that it itself is not anaphoric to any other NP that has already been introduced in the discourse. Backward dependence, then, requires a relation of true subordination, which is not respected in (2).

A second case of illicit backward anaphora arises when the pronoun is in a subordinate clause, preceding the antecedent, but the clause containing the pronoun is not subordinate to the one that the antecedent appears at, as in (3) (Williams’s (25c,d)).

- (3) a. *If he is there_i, John will try to visit Mary, and John will probably be in NY_i.
- b. * [... there]_{subord} ...]_{conjunct₁} and [... antec_{there} ...]_{conjunct₂}

As schematized in (3b), *there* appears in a subordinate clause in the first conjunct. Because of this, *there* cannot be associated with the antecedent *NY* that surfaces in the second conjunct.

Keeping the above discussion in mind, let us now apply the GPAD to sluicing. I begin with two examples of forward dependence, while the backward cases enter the discussion at the end (the following data are repeated from Vlachos 2011). First, consider (4), where both the ANTECEDENT and SLUICE are *italicized*, for ease of reference.

- (4) [*Kapjos* *paretithike*]_{matrix} ala epemenan [oti akoma dhen prepri na
 someone-NOM resigned-3SG but insisted-3PL that yet NEG must PRT
 mathis *pjos*]_{subord}.
 know-2SG who-NOM
 “Someone resigned, but they insisted that you shouldn’t learn who, yet.”

Pjos (who) appears inside a subordinate clause, and follows its ANTECEDENT *kapjos* (someone), which surfaces in a matrix clause, in line with the GPAD (1c).

Next, consider (5), which corresponds to the GPAD (1d).

- (5) Thelun na proslavun kapjon [pu na milai *mia valkaniki*
 want-3PL PART hire-3PL someone-ACC that PART speaks-3SG a Balkan
ghlosa]_{subord} ala [dhen ksero *pja* (*valkaniki ghlosa*)]_{matrix}.
 language-ACC but NEG know-1SG which Balkan language-ACC
 “They want to hire someone who speaks a Balkan language, but I don’t know which
 (Balkan language).”

Pja (*valkaniki ghlosa*) (which (Balkan language)) is in a matrix clause, and follows *mia valkaniki ghlosa* (a Balkan language) that surfaces in a subordinate clause.

Turning to backward dependence, consider (6).

- (6) *[Anarotjeme *pjos*]_{matrix} ke [*kapjos* efije]_{matrix}.
 wonder-1SG who-NOM and someone-NOM left-3SG
 “*I wonder who and someone left.”

As predicted by the GPAD (1b), (6) is ungrammatical because *pjos* (who) precedes its ANTECEDENT *kapjos* (someone), and both appear in matrix clauses.

Interestingly, no ungrammaticality arises if the SLUICE is in a subordinate clause, and precedes its ANTECEDENT, which also surfaces inside a subordinate clause, as in (7), which abides by the GPAD (1a).

- (7) [An ke dhen thimate *pjos*]_{subord} ine sighburi [oti *kapjos*
if and NEG remember-3SG who-NOM is-3SG certain-NOM that someone-NOM
su telefonise]_{subord}.
you-CL called-3SG
“Although she doesn’t remember who, she is certain that someone called you.”

I assume that *pjos* (who) in (7) superficially precedes *kapjos* (someone), since the left-peripheral position of the clause containing the SLUICE is a ‘derived’ position, which is confirmed by the counterpart in (8).²

- (8) Ine sighburi [oti *kapjos* su telefonise]_{subord} [an ke dhen
is-3SG certain-NOM that someone-NOM you-CL called-3SG if and NEG
thimate *pjos*]_{subord}.
remember-3SG who-NOM
“She is certain that someone called you, although she doesn’t remember who.”

Moreover, in tandem with (3) above, (9) shows that the SLUICE cannot appear inside any subordinate clause, but its clause must be subordinate to the one containing the antecedent.

- (9) a.*[[An ke dhen thimame *pu* akriivos]_{subord} o Janis tha
if and NEG remember-1SG where exactly the John-NOM will
prospathisi na milisi sta pedhja]_{conjunct₁} ke [pithanon na
try-3SG PART talk-3SG to-the guys-ACC and probably PART
vriskete ja lijes meres *kapu* stin Eladha]_{conjunct₂}
be-3SG for few days somewhere in-the Greece
“*Although I don’t remember where exactly, John will try to talk to the guys,
and he will probably be for few days somewhere in Greece.”

b.*[[... *pu* (where)]_{subord} ...]_{conjunct₁} and [... ANTECEDENT *kapu* (somewhere) ...]_{conjunct₂}

As schematized in (9b), *pu* (where) appears in a subordinate clause in the first conjunct, while *kapu* (somewhere) surfaces inside the second conjunct, and the configuration is ungrammatical.

Recall from (7) above that the clause containing the SLUICE is in a ‘derived’ position (cf., (8)). This is also true with *pu* (somewhere) in (9a), as shown in (10a).

(10) a.*[O Janis tha prospathisi na milisi sta pedhja [an ke dhen
 the John-NOM will try-3SG PART talk-3SG to-the guys-ACC if and NEG
 thimame *pu* akrivos]_{subord}]conjunction₁ ke [pithanon na vriskete
 remember-1SG where exactly and probably PART be-3SG
 ja lijes meres *kapu* stin Eladha]_{conjunction}₂
 for few days somewher in-the Greece
 “*John will try to talk to the guys, although I don’t remember where exactly,
 and he will probably be for few days somewhere in Greece.”

b.*[... [...*pu* (where)]_{subord}]conjunction₁ and [... ANTECEDENT_{kapu} (somewhere)...]_{conjunction}₂

As expected, (10a) contrasts in grammaticality with (7). This is because, although the clause containing *pu* (where) is in its ‘canonical’ position in (10a), it is still not subordinate to the clause containing the ANTECEDENT *kapu* (somewhere), as schematized in (10b).

The fact that sluicing complies with the structural pattern attested in cross-sentential anaphora provides independent proof that sluicing contains an ‘anaphor’ licensed by an antecedent. So, the question arises as to what this ‘anaphor’ corresponds to. Specifically, the question is if the anaphor: a) is a ‘chunk of missing structure,’ in which case sluicing equals typical *wh*-constructions, as the *ex situ* approaches suggest, or b) is the SLUICE itself, in which case sluicing is not identical to *wh*-constructions, and its interpretation amounts to a ‘chunk of missing meaning’ that is supplied by means other than syntax, as the *in situ* accounts propound. Taking the lead from the reasoning developed in chapter 4, this chapter argues for the (b) view, and forwards an *in situ* analysis which unfolds as follows. Section 5.2 shows how the SLUICE is syntactically computed, while section 5.3 considers aspects of its interpretation. Several predictions of the system to be developed are presented in section 5.4, while section 5.5 summarizes the discussion.

5.2 Computing the SLUICE

A major conclusion of chapter 4 is that sluicing is differentiated from its full-fledged *wh*-counterparts in a number of fundamental respects that revolve around both distribution and interpretation. This indicates strongly that sluicing does not equal a fully articulated *wh*-construction. Another important observation that is established in the section above is that sluicing patterns with anaphoric constructions that do not (or, at least, not necessarily) assume a ‘hidden’ structure,³ but conform to a ‘base-generation’ analysis, as van Riemsdijk (1978) puts it (see chapter 4, section 4.4).

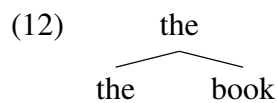
So, following the spirit of the in situ approaches, and to some extent, technically building on van Riemsdijk’s analysis, I suggest that typical sluicing constructions (in MG) are represented as in (11), and computed as follows.

- (11) Kapjos efje ke [I anarotjeme pjos].
 someone-NOM left-3SG and wonder-1SG who-NOM
 “Someone left and I wonder who.”

The *wh*-element *pjos* (who) directly merges with *anarotjeme* (wonder), and there is no other structure available, except for the one that ‘surfaces.’ Let us put this computation into perspective. The leading idea of the proposal to be articulated below is that sluicing reflects two kinds of ‘dependencies.’ One dependency is ‘local,’ in that it takes place between a relevant predicate and the ‘*wh*-property’ of the SLUICE. Hereafter, by *wh*-property, I will refer to the *wh*-feature that a *wh*-element makes available, as already discussed in chapter 3. This section deals with the syntax of this dependency, while section 5.3 considers its semantics. The other dependency, which will enter the discussion in sections 5.2.2 and 5.3.1, is ‘non-local,’ and concerns the construal between an (cross-sentential) ANTECEDENT and the ‘D-properties’ of the SLUICE. I will understand the D-properties as a cover term of both case and ϕ -features (i.e., the inflectional features of a nominal *wh*-element). The driving intuition behind this view of sluicing (the two types of ‘dependencies’) is already mentioned in the scope of the in situ family of approaches (see chapter 4, section 4.4), and concerns the reconciliation of the ‘*wh*-interrogative’ with the ‘anaphoric’ status of the SLUICE.

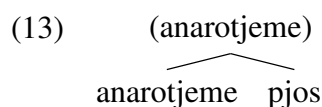
To start with the syntactic aspects of the local dependency that I have in mind, recall from chapter 1 that, in terms of BPS, the operation Merge is a concatenation calculus that

directly evaluates the morphosyntactic information of terminal elements. This is shown in (12), repeated from chapter 1, section 1.1, (2b), for convenience.

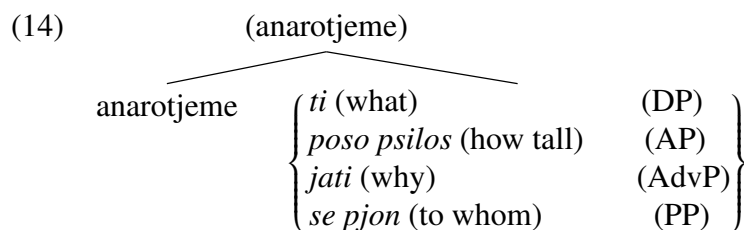


Unlike the conventional X'-theoretic assumptions, merge of *the* with *book* makes no reference to any categorial-oriented information.

Likewise, merge of *anarotjeme* (wonder) with *pjos* (who) in sluicing (cf., (11) above) is possible because the former targets the *wh*-property of the latter. In fact, this Merge is more accurately represented as in (13), where the label *anarotjeme* (wonder) may or may not be present in syntax (enclosed in parentheses; see Collins 2002, and the relevant discussion in chapter 3, section 3.3).



In other words, (13) says that a relevant predicate merges with a *wh*-complement, which, in turn, figures in an environment that is licensed by the predicate. In this sense, van Riemsdijk's (1978) proposal that the *wh*-feature is 'cross-categorial' in nature (see section 4.4), is reconceptualized under BPS, as in (14), where *wh*-adjuncts also project a *wh*-property, as previously mentioned, and the same is true with '*wh*-APs,' as well as, with '*wh*-PPs' (perhaps, under a 'feature-percolation' analysis of *wh*-PPs, in the spirit of Chomsky 1995b). Notice that I enclose the relevant 'categorial' information of the SLUICES in parentheses, for ease of exposition.



(14) says that Merge is satisfied as long as the morphosyntactic feature '*wh*' is detected, no matter what 'category' the *wh*-element belongs to. So, in what follows, I will assume the BPS-style of Merge exemplified in (14), and that this Merge is relevant for any SLUICE, irrespective of its

account of sluicing (especially, of the PF-deletion one; see chapter 4, section 4.3). To put it simply, the argument is that, since *rotisa* (asked) cannot assign Nominative to the SLUICE, then another predicate (*irthe* (came) in (15)), which can assign Nominative, must be available in the ‘elided’ site; hence, the need for the additional structure.

In line with our earlier clarifications about the direction that the current approach to sluicing will take, the D-properties of a SLUICE are not configured ‘locally.’ To this end, I agree with the full-structure analyses of sluicing that the relevant predicate (e.g., *rotisa* (asked)) that selects for the SLUICE (e.g., *pjos* (who)) does not value the case-feature of the latter. However, I differentiate from the aforementioned approaches in assuming that the case (and ϕ -) features of the SLUICE are determined on the basis of a ‘non-local’ dependency, that is, clause-externally. This means that the need for an additional structure will become redundant, and thus dispensable. But, before I show how the relevant dependency is formed, how the inflectional features of the SLUICE are determined, and why the analysis of case-inflections to be favoured is more advantageous than the one pursued by a full-structure account of sluicing (despite standard argumentation for the opposite), I need to clarify how case-features will be treated, under the current line of reasoning. That said, the idea I shall pursue is consistent with the claim made in chapter 3, section 3.3, which says that all features are interpretable at the interfaces. In this respect, the fact that the ϕ -features of the SLUICE are interpretable does not need elaboration, since it is a familiar assumption in the standard minimalist literature (see, for instance, Chomsky 1995b). However, what needs to be qualified is the ‘interpretability’ of case. This is the topic of the next section, which forwards a view of case that is not based on the notion of ‘deletion’ (or, valuation/licensing) by a local predicate, although it must be stressed that the relevant discussion will be far from exhaustive.

5.2.1 C/case considerations

Ever since Chomsky & Lasnik (1977), and Vergnaud (1977), the generative consensus is that there are (or, should be) two distinct, yet, interwoven, notions of case: an ‘abstract’ (syntactic) and a ‘concrete’ (morphological) one. (Abstract) Case is assumed to be an underlying syntactic process, which is available to every language, and involves a ‘case-assigner’ (verb or Tense) and a ‘case-assignee’ (nominal). Case may or may not have an overt realization, and

is distinguished from morphological case, which is assumed to be just a ‘reflex’ of Case. For instance, although Case is a shared property between the MG and English grammars, case is morphologically manifested only in MG nominals, in virtue of the (rich) inflection system of the language.

In the ‘Government and Binding’ framework (see Chomsky 1981; 1982), Case was taken as a property of θ -chains, making an argument ‘visible’ for θ -role assignment (conceptualized as a ‘Visibility Condition;’ see Chomsky 1986b). In the advent of Minimalism (see Chomsky 1995b), Case is reconceptualized as a ‘radically uninterpretable feature’ (not having an interpretable counterpart) on both the ‘case-assigner’ and the ‘case-assignee.’ The reason for this approach stems from a difficulty into conceptualizing Case as an intrinsic characteristic of lexical items, and, thus, as a primitive notion of the Grammar. In particular, on the one hand, Case may not be a feature that is positively specified on nominals, and negatively on verbs, in the same way ϕ -features are. This is because Case is determined relationally, mapping to structural configurations, while ϕ -features are an inherent property of lexical elements. On the other hand, since Case pertains to structural configurations, it may be compared with the inherent property of verbs to assign θ -roles, which also map to structural configurations (see Larson 1988). Nonetheless, θ -roles are not features (see Chomsky 2000), in that they do not have an overt realization, while Case appears to behave like a feature, since it may be morphologically realized on lexical elements. Therefore, Chomsky’s idea of the radical uninterpretability of Case derives from “. . . the deeper difficulty of reconciling its relational core with its feature status,” as Manzini & Savoia (2011a: 244) put it.

In order to correspond to the aforementioned discrepancy, Chomsky (2008), partly reviving the chain-oriented idea of GB (see above), proposes that Case is, strictly speaking, neither a feature in the lexicon (like ϕ -features), nor a primitive relational notion (like θ -roles). Instead, Case is a kind of a ‘free rider’ on an Agree operation, while case (on nominals) is just a ‘reflex’ of this Agree-Case conspiracy. Since Agree is construed between the (interpretable) ϕ -features of a nominal and the (uninterpretable) ϕ -features of a verb or Tense, we may say that Case appears to alternate from a property of θ -construals to a property of what one may call ‘ ϕ -construals.’ That is, although Case is uninterpretable on both the case-assigner and the case-assignee, it is regulated by the construal between the two participants of Agree, which is,

in turn, triggered by the relevant ϕ -features.

However, the idea that morphological case is a ‘reflex’ of an abstract Case-marking mechanism, facilitated by Agree, seems to be counterintuitive in, at least, two respects. More precisely, first, as Manzini & Savoia (2011a) argue, if Case is reducible to Agree, it is not immediately obvious why its morphological instantiation (case) should not directly derive from Agree, but has to be mediated by some notion of abstract Case that operates on Agree. In other words, “. . . what is the difference between a language that has just agreement (say Italian), and a language like Latin which has the ‘case’ reflex of agreement? (p. 245).” On the other hand, an analysis that is not based on Case would lead to the conclusion that languages like Italian and Latin both manifest Agree, while only Latin inflects for case, as a result of its lexicon.

Second, if case is a ‘reflex’ of Case, which is, in turn, configured under Agree, it is not clear how one may account for circumstances where case is visible on a lexical item, although there is no Agree between this item and a functional head like verb or Tense that would facilitate Case. Consider the *italicized* items in (17) ((17a–c) are repeated from Ralli 1999: 115, (2,3)).

- (17) a. *I* *fitites*, *i* *kathijites* *tus* *aghapun olus*.
the-NOM students-NOM the-NOM teachers-NOM them-ACC like-3PL all-ACC
“The teachers, all the students like them.”
- b. *Ton* *Iunio* *tha* *figho* *ja* *tin* *eksoxi*.
the-ACC June-ACC will leave-1SG for the country
“In June I’ll leave for the country.”
- c. *To* *vuno* *Olimpos*.
the-NOM mountain-NOM Olympus-NOM
“The mountain Olympus.”
- d. *I* *mikri* *gremise* *to* *kastro* *apo* *amo* *nevriasmeni*.
the-NOM little-one-NOM destroyed-3SG the castle-ACC from sand angry-NOM
“The little girl destroyed the sandcastle angry.”
- e. *O* *Janis* *ine* *jatros*.
the John-NOM is doctor-NOM
“John is a doctor.”

The left-dislocated *i fitites* (the students) in (17a) lexicalizes the so-called ‘default Nominative’ case, and is associated with the clitic *tus* (them) that appears in Accusative (see Español-

Echevarría & Ralli 2000 for a further discussion of ‘default case’). In (17b), the temporal (nominal) expression *ton Iunio* (the June) surfaces in Accusative, while the Nominative case that appears in (17c) has been attributed to pragmatic factors, that is, to factors that have to do with the extra-linguistic context, and to the way morphosyntactic information (here, the Nominative case) interacts with this context (see Philippaki-Warbuton 1990, and Catsimali 1990, for details; but, see Joseph 1991, and Joseph & Smirniotopoulos 1993, for criticism). (17d) is an instance of so-called ‘depictive modification’ (see Geuder 2000, and Pykkänen 2008), which stands for secondary predication. In particular, the adjectival modifier *nevriasmeni* (angry), which is in Nominative, is construed with, although it does not appear to form any type of constituent with, the noun *i mikri* (the little girl), which also surfaces in Nominative (see also Spyropoulos 2005 for examples of secondary predication in MG). Finally, (17e) is a typical instance of predication, where *jatros* (doctor) is associated with *o Janis* (John), and both match in Nominative. Nevertheless, the Nominative on *jatros* (doctor) cannot be attributed to some sort of assignment by the copula *is* (be), but is most plausibly understood as the result of the association between *o Janis* (John) and *jatros* (doctor). If so, then this association would boil down to an instance of Agree that is not regulated by a functional head (case-assigner). In short, although Nominative and Accusative are usually assumed to be structural Cases in MG, in all the above examples, there does not seem to be a structural explanation—in terms of how Case is assigned, as discussed earlier—for the relevant case-marking of the *italicized* items.

Difficulties that arise for (abstract) Case from considerations revolving around (17), among others, have shifted the focus of attention to (morphological) case, which has been the target of extensive research since Marantz (1991), and Halle & Marantz (1993), and more recently, by Manzini & Savoia (2011a), among others. For these approaches, case is not a ‘reflex’ of an underlying syntactic process (Case), but an inflectional morpheme that merges with nominal constituents, maps to certain structural configurations, and has a particular interpretational import; just like other inflectional features. For the ‘late insertion’ approach of Halle & Marantz, what are traditionally called case terminals are not primitives of the Grammar, but reflect nominal class (gender), and the like. Similarly, for the lexicalist view of Manzini & Savoia, case morphology lexicalizes denotational properties that are morphosyntactically represented. Such terminals are neither ‘assigned’, nor ‘valued’, nor ‘checked’, but partake in the overall agree-

slot. On the other hand, in the context of the present discussion about morphological case, the Nominative of *pjos* (who) is an intrinsic property of its inflectional properties, is interpretable, and comes from the lexicon fully specified. In this sense, there is no need for an underlying structure to value this case. This also means that Nominative on *pjos* (who) yields the illusion that the SLUICE functions as the subject of a relevant clause (while, Accusative, would create the illusion that the SLUICE is the internal argument of a predicate). Likewise, in languages like English, where morphological case is not lexicalized (with the exception of the Accusative case of pronouns), this illusion does not emerge.

Still, the question that needs to be answered is how the morphological case of *pjos* (who) is determined. It is crucial to keep in mind that morphological case does not need ‘licensing,’ but this does not mean that case is not configured relationally, that is, under the association of a lexical item (the carrier of case) with the structural (or, more generally, the linguistic) environment this item joins. In other words, the question for the current view of sluicing is not how the relevant morphosyntactic properties of a SLUICE are ‘licensed,’ but why these properties surface as such. This is the issue I turn to in the next section, where the properties of the ‘non-local’ dependency that was mentioned earlier (see section 5.2) is considered in detail. The leading idea will be that the SLUICE ‘agrees’ with its ‘binder’ (ANTECEDENT), which is what we observe in other instances of anaphora, and this ‘agreement,’ regarding sluicing, regulates the case of the SLUICE.

5.2.2 Formal link

A standard assumption about typical (cross-sentential) anaphoric construals is that pronouns, which belong to the class of D-elements, ‘match’ with their antecedents in ϕ -features. This effect can be tentatively conceptualized as an interface condition, which is imposed on the syntactic output, and is detected on the morphosyntactic properties of the relevant anaphoric elements (a rough description, but it will do for our purposes). Since sluicing is an anaphoric dependency, as shown in section 5.1, and since (nominal) *wh*-elements encode D-properties, just like typical pronouns, as discussed in section 5.2, then we expect that this matching effect is also attested in sluicing. Below, I exemplify this matching requirement in the scope of pronominal anaphora, and then I turn to sluicing. I also consider case-matching, which appears

obligatory in sluicing, but accidental in pronominal anaphora, as will become clear shortly. Some corroborating arguments for the view of case-matching to be pursued, and a discussion of ‘adverbial’ SLUICES, follow at the end. Note that, here and throughout, I will focus on examples of sluicing with OVERT ANTECEDENTS, since the discussion about implicit ANTECEDENTS touches upon more general issues that concern the (syntactic/semantic) status of implicit constituents, which are not examined here.

Keeping these clarifications in mind, consider (19), which is an instance of cross-sentential anaphora.

(19) Kapjos irthe sto bar. Aftos itan
 someone-3P-MASC-SG-NOM came-3P-SG to-the bar he-3P-MASC-SG-NOM was-3P-SG
 pu ksekinise ton kavgha.
 that started-3P-SG the fight-ACC

“Someone came at the bar. He was the one who started the fight.”

As is obvious from the relevant glossing, the (demonstrative) pronoun *aftos* (he) shows the same values (matches) for person, gender, and number, as the (indefinite) pronoun *kapjos* (someone). A plausible hypothesis is that a pronoun matches with its antecedent, at least, in ϕ -features, under the assumption that ϕ -features have semantic import, and as such, restrict the set of suitable antecedents for reasons of anaphora resolution.⁴ To be more precise, whether ϕ -features have semantic import or not depends on the way one may see the relation between syntax and morphology, and how this relation maps to meaning (and sound). Since I assume that items come from the lexicon fully specified (see section 5.2.1), I take it that such features do bear on meaning (but see Heim 2008 for alternatives).

Interestingly, typical anaphoric construals do not necessarily involve case-matching. Although *kapjos* (someone) and *aftos* (he) match in (Nominative) case (cf., (19)), they need not to, as shown in (20), where the (pronominal) clitic *ton* (him) is in Accusative, while its antecedent *kapjos* (someone) surfaces in Nominative.

- (20) Kapjos irthe sto bar, ala dhen ton
 someone-3P-MASC-SG-NOM came-3P-SG to-the bar but NEG him-3P-MASC-SG-ACC
 iha ksanadhi.
 had-1P-SG see-again-1P-SG
 “Someone came at the bar, but I hadn’t seen him before.”

It follows from (19) and (20) that successful anaphoric construals—in the sense intended here: (cross-sentential) anaphoric dependencies, evaluated at the interfaces LF (and, possibly PF)—require some sort of ‘D-link’ (or ‘formal link’; see Heim 1990), with the exception of case, an issue that becomes relevant below.

Consider again the sluicing construction in (18), repeated in (21), for convenience.

- (21) Kapjos irthe sto bar ala dhen rotisa
 someone-3P-MASC-SG-NOM came-3P-SG to-the bar but NEG asked-1P-SG
 pjos.
 who-3P-MASC-SG-NOM
 “Someone came at the bar, but I didn’t ask who.”

The inflectional paradigm of *pjos* (who) matches with that of *kapjos* (someone), including case morphology, and is manifested as 3rd Person, Masculine, Singular, Nominative. In principle, this shows that sluicing, which is anaphora (as the data in section 5.1 strongly suggest), is no exception to the requirement that a D-link must hold between the involved participants, as is true of (19) and (20). Therefore, I share Culicover & Jackendoff’s (2005) (and, ultimately, van Riemsdijk’s 1978) intuition that the pronominal part of the SLUICE—in the sense presently understood: the part that lexicalizes the pronominal D-features—is ‘anaphoric’ (see chapter 4, section 4.4), which, currently means that the SLUICE ‘shares’ properties with its ANTECEDENT.

The example in (21) shows that the inflectional morphology of the SLUICE matches exclusively that of its ANTECEDENT, including case. But, as we saw in (20), case-matching is not a requirement generally observed in anaphora between pronouns and antecedents. Notice that, in (20) (and (19)), the pronoun and the antecedent are each construed with a different predicate. We expect, then, that the inflectional features of the pronoun, and that of its antecedent, are locally computed, that is, determined by the local syntactic configurations to which the two terms join. To put it differently, the fact that case does not need ‘licensing’ does not mean

that case inflections are oblivious to structural configurations. In (21), however, *rotisa* (asked) does not (and, cannot, after all) determine the Nominative case of *pjos* (who). In a system where case does not require ‘local’ licensing, and is tied to the inflectional features of a lexical item, as discussed in section 5.2.1, the Nominative case of the SLUICE can be determined via the anaphoric association between *pjos* (who) and the subject of the antecedent clause, here, *kapjos* (someone). Now, the fact that *pjos* (who) surfaces in Nominative, due to its association with *kapjos* (someone), and on the assumption that Nominative (or, morphological case, in general) has semantic import, just like other inflectional features (a view presently endorsed), creates the illusion of ‘structural ellipsis.’ In particular, the illusion that the SLUICE is the ‘subject of’ a clause (or the ‘object of’ a predicate, in case the SLUICE lexicalizes the Accusative case), which is similar to the clause its ANTECEDENT surfaces in, although there is no relevant structure present. This illusion, of course, is not available in typical anaphora, where the structure that a pronoun joins is present. In short, the shift in the relevant logic presently exercised is that, contrary to deletion-based approaches, the case of a SLUICE is not a ‘reflex’ of a structural configuration, but the ‘illusion’ of a structural configuration.⁵ Moreover, it is crucial to point out that I do not propose that case-matching is an obligatory condition for anaphoric construal, but that anaphoric construal is a sufficient condition for case-matching. In this sense, sluicing is yet another form of anaphora, showing that case-matching may also be configured under anaphora.

In order to illustrate the advantages of the present approach to sluicing, in comparison with the full-structure accounts, let us emphasize on three additional issues that appear to provide further support to the view of case-matching (and, of case, in general) presently taken. First, as we may recall from chapter 4, section 4.3, in terms of a full-structure approach to sluicing, the morphosyntactic information of a SLUICE is locally computed by a relevant head. Interestingly enough, though, van Craenenbroeck (2008), who adopts the PF-deletion analysis, suggests that some sort of morphological matching (‘morphological anchoring’ in his terms, ‘reflected’ in case morphology) between the SLUICE and its ANTECEDENT is also required. Under the PF-deletion approach, this is unexpected, since Merchant (2001) argues that semantic entailment, but not morphosyntactic identity, is all that is required for successful representations of sluicing. For the current account, however, case-matching is not a ‘reflex’ (or, at least, it does not have to be), but a lexicalization process of certain D-features that match between two terms, cross-

sententially construed.

Second, an argument for a ‘direct matching’ view of sluicing, which includes case morphology, is offered by Sag & Nykiel (2011), who are in favour of a similar approach to the one currently assumed, couched in a different framework. Consider the declarative sentence in (22), an example from Hungarian (*theirs*, (19)).

- (22) Maria segített egy fiunak/fiut.
Mary helped-IND a boy-DAT/boy-ACC
“Mary helped some boy.”

The predicate *segített* (helped) may be construed with an object that permits case alternations, figuring as Dative, or Accusative, here *fiunak* (boy), or *fiut* (boy) respectively. How case alternations are explained, and what (if at all) interpretational differences such alternations yield, are matters quite orthogonal to our concerns. For example, Enç (1991) argues that, at least in Turkish, Accusative is associated with specificity. This may also hold for Hungarian, which would mean that in (22) there may be two alternative interpretations at play (on the tentative assumption that Dative is not associated with specificity). In any case, this is not important for the present discussion. What is crucial is the mere possibility that a certain predicate is associated with an object that permits case-alternations.

Keeping the above clarifications in mind, consider the sluicing sentence in (23), repeated from Sag & Nykiel (2011: (20)).

- (23) a. Maria segített egy fiunak de nem tudom hogy kinek/*kit.
Mary helped-IND a boy-DAT but NEG I-know-DEF Q who-DAT/who-ACC
“Mary helped a boy, but I dont know who.”
b. Maria segített egy fiut de nem tudom hogy kit/*kinek.
Mary helped-IND a boy-ACC but NEG I-know-DEF Q who-ACC/who-DAT
“Mary helped a boy, but I dont know who.”

In current terms, (23) shows that no case-mismatching is tolerated between the SLUICE and its ANTECEDENT. As in (23a), *kinek* (who) must ‘directly D-match’ with *fiunak* (a boy), including case morphology, and the same is true with (23b). Under the PF-deletion approach, however, the case-mismatching ungrammaticality observed in (23) is unexpected. This is because the

‘underlying’ predicate *segített* (helped), which would have to be assumed in order to ‘assign’ case to the SLUICE, prior to deletion, could be construed with either *kit* (who) or *kinek* (who), facilitating case alternations, as in (22). The case-mismatching ungrammaticality, then, means that a full-structure analysis also appears to be in need of a ‘direct matching’ operation to account for (23), perhaps in terms of van Craenenbroeck’s (2008) ‘morphological anchoring’ (see above). If so, an additional ‘hidden’ structure that would first determine, and then match the case of the SLUICE with that of its ANTECEDENT would become unnecessary, and redundant, under the independently needed mechanism that detects identity with an ANTECEDENT, coupled with the discussion about abstract Case of section 5.2.1. So, I do not actually agree with van Riemsdijk’s (1978: 246) conclusion that case issues are “. . . neutral with respect to the choice between the deletion and the phrase structure rule analysis of sluicing” (see chapter 4, section 4.4). Instead, case issues favour a non-deletion-based analysis, under a minimalist view of the Grammar, despite appearances for the opposite. Or, as Sag & Nykiel (2011: 9) put it “. . . case matching in sluicing is not an indirect effect, as entailed by the deletion-based analysis. Rather, a grammatical constraint must dictate directly that there be identity of. . . case between the remnant [SLUICE—CV] and its correlate [ANTECEDENT—CV].”

A third argument that provides independent support to the current view of case-matching concerns the two examples of predication that we have seen in (17d,e), repeated in (24), for convenience.

- (24) a. I mikri gremise to kastro apo amo *nevriasmeni*.
 the-NOM little-one-NOM destroyed-3SG the castle-ACC from sand angry-NOM
 “The little girl destroyed the sandcastle angry.”
- b. O Janis ine *jatros*.
 the John-NOM is doctor-NOM
 “John is a doctor.”

(24a) and (24b) show that two constituents may ‘share’ the same denotational properties (including case morphology), although one of them enters no Agree relation with a (functional) head that would ‘license’ case. This is true with *nevriasmeni* (angry) that is construed with *i mikri* (the little girl) (cf., (24a)), and with *jatros* (doctor), which is predicated of *o Janis* (John) (cf., (24b)). This means, in turn, that if case was a ‘reflex’ of an underlying mechanism of

Case, facilitated under Agree with a functional head (I/v), then both (24a) and (24b) should be ungrammatical, contrary to evidence. Of course, at least as regards instances of secondary predication of the kind exemplified in (24a), there are analyses which assume an ‘underlying’ functional structure sufficient to assign the case-feature in question (an example is Spyropoulos’s 2005 approach to MG). Although I will not go into this sort of argumentation here, it is enough to point out that an ‘underlying’ functional structure that encodes the relevant interpretations does not really explain, but actually describes what is to be explained. In particular, what (24a) and (24b) indicate is that the construal between two terms, where one depends on the other for its interpretation (e.g., *nevriasmeni* (angry) depends on *i mikri* (the little one), and not the other way round), is enough to regulate the case-feature of the dependent term. Certainly, the relevant dependencies in (24) are configured clause-internally, and not clause-externally, as we have seen earlier regarding sluicing. But, this should not stand in our way of treating the matching process that holds in sluicing, in similar respects. To repeat for convenience, in sluicing as well, the SLUICE does not merge with a relevant predicate that would ‘license’ case, but is construed with an ANTECEDENT, matching with its inflectional paradigm, with the inclusion of case morphology.

As the matter now stands, the question arises as to how the above matching process can be extended to adverbs, which, strictly speaking, lack specifications associated with case-inflections (broadly, with D-properties). Consider (25), repeated from chapter 4, (7).

- (25) a. Irthe kapja stighmi exthes ala dhen ksero pote akrivos.
 came-3SG some time yesterday but NEG know-1SG when exactly
 “S/he came some time yesterday, but I don’t know when exactly.”
- b. Pije kapu ala dhen ipe pu.
 went-3SG somewhere but NEG said-3SG where
 “S/he went somewhere, but s/he didn’t say where.”
- c. Kapos katafere na episkevasi to podhilato
 somehow managed-3SG PART repair-3SG the bicycle-ACC
 ala dhen ipe pos.
 but NEG say-3SG how
 “S/he managed to repair the bicycle somehow, but s/he didn’t say how.”

- d. Nevriase ja kapjo logho ke anarotieme jati.
 got-angry for some reason and wonder-1sg why.
 “S/he got angry for some reason and I wonder why.”

It is plausible to assume that the ‘D-matching’ requirement, which is observed with both SLUCED and regular (pro)nominals, is actually a ‘variable-matching’ requirement, which is imposed by the interfaces, and lexicalized by the corresponding D-properties. As such, we expect that the anaphoric construal relevant for sluicing may also include variables that are not (usually) lexicalized by pronouns, but are available with *wh*-elements. This is the case with (25), where the ANTECEDENT and the SLUICE ‘match’ in so-called ‘adverbial’ variables that range over either *times* (cf., (25a)), or *places* (cf., (25b)), or *manners* (cf., (25c)), or *reasons* (cf., (25d)). This idea is quite natural on the assumption that ‘adverbial’ SLUCES are ‘nominal’ in nature, as has already been mentioned in chapter 4, section 4.2.2. In short, although it is not clear (at least to me) what kind of ‘variables’ adverbs are, sluicing appears to enrich the palette of the possible anaphoric associations, showing that such construals may concern not only what we may call ‘individual’ variables, regarding (*wh*-)pronouns, but whatever ‘variables’ the relevant participants of the dependencies may discharge. In this respect, I generalize on van Riemsdijk’s (1978) early intuition (see chapter 4, section 4.4, for discussion) that the ‘variable’ of the SLUICE, be it ‘individual’ or ‘adverbial,’ abides by ‘well-formedness’ anaphoric restrictions, imposed by the interfaces, and satisfied morphosyntactically.

Let us put the discussion so far together. A SLUICE directly merges with a relevant predicate, and there is no other structure available, apart from the one that ‘surfaces.’ This type of Merge is quite natural, once we take into consideration the conceptual underpinnings of the Bare Phrase Structure model of the Grammar, which do not make reference to any ‘categorical-like’ information. Sluicing is an anaphoric construction, whereby a SLUICE and its ANTECEDENT match in pronominal (D-)features, which is, in turn, a requirement attested in typical pronominal anaphora, between pronouns (also members of the D-family) and antecedents. As regards sluicing, this matching process also includes case morphology. This is because the D-properties of a SLUICE (to which case-inflections are tied), unlike these of an ordinary pronoun, are anaphorically determined under its association with an ANTECEDENT (thus, clause-externally). It is also shown that case-matching in sluicing appears not only to be compatible with, but also to favour

(considering the case-alternation facts) a non-deletion-based approach, and rests on independent minimalist assumptions which do not view case as an ‘uninterpretable’ feature that requires some sort of ‘syntactic licensing,’ but as a feature that carries denotational properties, in a way similar to the rest of the inflectional paradigm. Finally, ‘adverbial’ SLUICES also appear to fall under a matching pattern, if matching reduces to a LF-requirement that the relevant participants of an anaphoric dependency discharge compatible variables, that is variables which range over similar sets, denoting either *persons*, or *things*, or *times*, or *places*, or *manners*, or *reasons*. Overall, the idea pursued so far, as regards the (morpho)syntactic computation of a SLUICE, relies on the dual nature of the dependency reflected by a sluicing construction. One aspect of this dependency is local, holding between a relevant predicate and a SLUICE, while the other aspect is non-local, and concerns the anaphoric association of a SLUICE with an ANTECEDENT. This dual dependency will also guide us through various issues regarding the interpretation of a SLUICE, which the next section explores.

5.3 From syntax to LF

As we may recall from chapter 4, section 4.1, in a construction like (26a), the SLUICE *pjos* (who) has the force of a ‘question,’ which assumes a ‘propositional’ content, as in (26b).

- (26) a. Kapjos efije ke anarotjeme pjos.
 someone-NOM left-3SG and wonder-1SG who-NOM
 “Someone left and I wonder who.”
 b. “. . . and I wonder who left.”

The question, then, is how both readings surface, and especially the propositional one, despite the lack of the relevant structure. Preliminarily, note that the term ‘proposition’ is presently understood in the standard Fregean sense, whereby a proposition consists of an unsaturated expression (a predicate) that must be construed with an entity expression (an argument) (see Geach et al. 1960). So, for example, as in (26b), *who* is the entity that saturates the open argument slot of the understood predicate *left*, and this function yields the corresponding propositional reading, which is further combined with a question denotation. Of course, one realizes that a distinction between ‘question’ and ‘proposition’ is quite loose. This is because for a

‘question’ to be interpreted as such, a ‘proposition’ is necessary (see, for example, Hamblin 1973, Karttunen 1977, and Berman 1991). In other words, the notion ‘question’ implies the notion ‘proposition.’ Nevertheless, for methodological reasons, these two notions will be treated separately, as the discussion proceeds.

So, let us begin with the ‘question’ force, in the scope of (27).

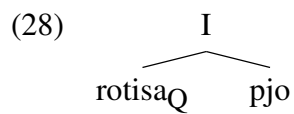
- (27) a. Aghorase kapjo vivlio ke tin rotisa pjo.
 bought-3SG some-ACC book-ACC and her-ACC asked-1SG which-ACC
 “She bought some book and I asked her which (book).”
- b. Aghorase kapjo vivlio ala dhen ksero pjo.
 bought-3SG some-ACC book-ACC but NEG know-2SG which-ACC
 “S/he bought some book but I don’t know which (book).”

In chapter 3, section 3.4.1, we saw that *wh*-elements are (focused) indefinites, the semantics of which remains unspecified for the ‘question’ reading. In other words, the question force is not an intrinsic property of the SLUICE *per se*. Notice that, in (27a), *pjo* (which) merges with *rotisa* (asked), and with *ksero* (know), in (27b). In line with Adger & Quer (2001), Oehl (2007), and Roussou (2010b), among others, predicates like *rotisa* (asked) (and, *anarotjeme* (wonder), as in (13) above) incorporate a ‘Q(uestion)-operator’ in their lexical semantics, while predicates like *ksero* (know) acquire a ‘Q-like’ property in the presence of a facilitating operator, such as *negation* (cf., (26b)). So, it is plausible to assume that the ‘question’ force is a function between the SLUICE and the relevant predicate that selects for it. Let us see how this function pans out.

As in chapter 3, section 3.3, a Q-operator has the status of a feature in syntax (encoded in C), and is interpreted at LF as a λ -abstractor (a predicate) that takes a variable (an argument) as its input in order to be interpreted. This variable is provided by *wh*-elements, while the construal between Q and a *wh*-element is captured as a quantificational operation facilitated by a Probe-Goal relation (Agree). Below, I show that a similar situation holds for sluicing.

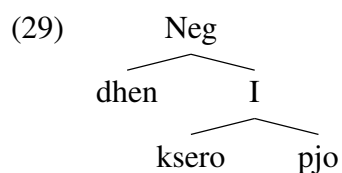
Following, in part, Culicover & Jackenoff’s (2005) semantic analysis of sluicing (see chapter 4, section 4.4), I suggest that the Q-operator relevant for sluicing is directly introduced at LF by predicates like *rotao* (ask) (I return to *ksero* (know) shortly), and has the same (quantificational) function as the one that appears in syntax.⁶ That is, Q predicates the property of ‘question’ over some value for the variable that Q abstracts over, and this variable is, in turn,

provided by the SLUICE (a *wh*-element). This is shown in (28), which is the part of the structure of (26a), relevant for our discussion (recall that the verb in MG V-raises to I).



(28) says that *rotisa* (asked) makes available a Q-operator at LF (subscripted on the predicate, for expository reasons), which abstracts over the variable discharged by *pjo* (which). Although this construal is introduced at LF, it boils down to a Probe-Goal dependency, because it is regulated by the morphosyntactic properties of the relevant participants (to be qualified shortly), and is facilitated by Merge (as discussed in section 5.2). More precisely, the Q-property of the predicate probes for the *wh*-property of the SLUICE (Goal), and this relation is satisfied locally, under selection.⁷

Turning to *ksero* (know), consider (29), which corresponds to (26b).



Ksero (know), unlike *rotisa* (ask) (cf., (28)) does not lexically incorporate a Q-property (see, e.g., Roussou 2010b). At the point, then, where *ksero* (know) merges with *pjo* (which), the relevant question force remains undefined, and subsequent merger of the negative operator *dhen* with *ksero* (know) facilitates the latter to regulate the question force, in association with the SLUICE. So, the construal in (29) is a Probe-Goal relation that actually involves two relations, and is built by successive applications of Merge. These relations are: a) the Probe, which is a function between the negative operator and the predicate, and b) the Goal, which is the *wh*-property of the SLUICE. In short, the Probe-Goal dependency that I am suggesting actually boils down to an Agree operation, assuming that "... Agree is an operation that relates to the interface, is sensitive to successive applications of Merge, and determines which features are compatible with each other for the purposes of interpretation," as Roussou (2010b: 602) independently concludes. Notice also that the way the Probe-Goal relation is differentiated between (28) and (29) is reflected in the relevant interpretation. That is, the association of *ksero* (know)

with *pjo* (which) does not, strictly speaking, correspond to a ‘question,’ which is what we expect, under the assumption that the meaning of a predicate partly determines that of a SLUICE.

Given its merger with a Q-related predicate, the SLUICE (specifically, its *wh*-property) translates to an operator (itself a predicate), which, in turn, must be construed with an argument (a variable). This variable is discharged by the (pronominal) D-features of the SLUICE, which encode denotational information, as extensively discussed in the previous sections. So, the SLUICE itself encodes both the operator and the variable, as is typical of MG *wh*-elements (see chapter 3, section 3.4.4), and in connection with the semantics of the selecting predicate, an ‘operator-variable’ chain is created, which depicts a recursive predicate-argument construal.

So far we have seen how the (local) dependency between a relevant predicate and a SLUICE facilitates the ‘*wh*-question’ interpretation. Let us now turn to the ‘propositional’ content of the SLUICE. Witness again (26), repeated as (30), for convenience.

- (30) a. Kapjos efije ke anarotjeme pjos.
 someone-NOM left-3SG and wonder-1SG who-NOM
 “Someone left and I wonder who.”
 b. “. . . and I wonder who left.”

In simple terms, the comparison between the structure of the SLUICE in (30a) and its interpretation in (30b) leads to an apparent ‘contradiction,’ which can be stated as follows: although the SLUICE is a ‘non-sentential’ constituent, it gives rise to a ‘sentential’ reading.

In order to alleviate the aforementioned ‘conflict,’ in Vlachos (2011) I drew a parallelism between sluicing and certain constructions known as ‘C(oncealed) Q(uestions),’ where a similar effect is attested, as in (31) (repeated from Vlachos 2011: 290, (47)).

- (31) a. I don’t know [_{DP} the time].
 b. I don’t know [_{CP} what the time is].

The DP *the time* in (31a) is construed with *know*, and gives rise to the *wh*-question interpretation, as in (31b). Although there have been analyses, mainly by Baker (1968) and Ross (1971), that treat CQs as deriving from the structure underlying *wh*-questions, there is convincing evidence (to which I will not go through here) that CQs are genuine DPs and not CPs (see Grimshaw 1979, Nathan 2006, and Romero 2005, among others).

Certainly, sluicing and CQs differ in various respects. For instance, CQs, unlike sluicing, may not serve as complements to *wonder*-type predicates, as in (32) (the examples are cited in Vlachos 2011: 296, (48), and are attributed to an anonymous reviewer).

- (32) a. *Steve bought something. I wonder that thing. (CQ)
 b. Steve bought something. I wonder what. (sluicing)

Moreover, CQs, unlike sluicing, are not anaphoric constructions, and the definite DP (e.g., *the time* in (31a)), unlike the (focused) indefinite in sluicing, receives its case from the selecting predicate. But, these issues are orthogonal to our discussion because the argument that in both CQs and sluicing the Grammar predicts that a ‘smaller’ constituent (e.g., SLUICE, DP), by being associated with a relevant predicate (e.g., *know*), is able to yield the interpretation of a ‘larger’ constituent (e.g., *wh*-question), is valid no matter how the two constructions differ.

In the above sense, it is a welcome but not a necessary observation that sluicing and CQs may also pattern, since the interpretation of a SLUICE and that of a DP in CQs is associated with that of a regular *wh*-question. For instance, sluicing in (33a) and the CQ in (33b) appear to approximately equal the paraphrase in (33c) (from Vlachos 2011: 297, (49)).

- (33) a. John said that he will come some time tomorrow but I don’t know what time.
 b. John said that he will come some time tomorrow but I don’t know the time.
 c. ≈ “John said that he will come some time tomorrow but I don’t know what time/the time (he said) he will come tomorrow.”

It appears, then, that merge of a ‘non-sentential’ element with a relevant predicate facilitates a ‘question’ interpretation that is reminiscent of a ‘sentential’ constituent.

Now, although the aforementioned intuition appears to be on the right track, it is still part of the story and not the whole story. To be more precise, as regards sluicing (I remain agnostic about CQs), the SLUICE denotes an ‘entity,’ not a ‘proposition,’ and a standard assumption in the semantics literature is that a Q-operator alone does not supply a ‘propositional’ content (see, for instance, Hamblin 1973, Karttunen 1977, and Berman 1991).⁸ In other words, the local dependency sketched above is not enough to facilitate the available ‘propositional’ reading. The question, then, arises as to how, although ‘surface’ syntax makes available a Q-operator

that takes an ‘entity’ as its input, LF reads-off this structure as if Q returns a ‘proposition,’ as in (30b) above. This is the issue I turn to next.

5.3.1 When less form corresponds to more meaning

The idea this section pursues is twofold. First, it argues that, on the basis of the anaphoric (cross-sentential) dependency between a SLUICE and its ANTECEDENT, LF recovers the missing ‘propositional’ content of the ‘question’ denoted by the SLUICE. Second, the relevant interpretation is represented as a logical, and not syntactic, structure. The analysis to be developed builds on Vergnaud & Zubizarreta’s (2005) (henceforth, V&Z) account of the interpretation of full-fledged *wh*-questions, as already discussed in chapter 3, section 3.5.3. So, for ease of exposition, first, I go over some aspects of this system, and then, I return to sluicing. In the course of the discussion, I also consider a potential counter-example to the analysis that will be proposed, and, at the end of this section, I evaluate how the current system fares with those reviewed in chapter 4.

As already mentioned in chapter 3, section 3.5.3, according to V&Z, a *wh*-question of the form (34a) has the logical structure in (34b) (repeated from chapter 3, section 3.5.3, (55); recall that ‘Past’ is the LF representation of Tense, not to be discussed further).

- (34) a. Who did John see?
 b. (John Past see someone) OR^δ (John Past see someone else), $\delta = c, i$

(34b) says that a ‘(*wh*-)question’ has a *presupposition* and a *focus*, and more precisely, that the presupposition of the question (34a) correlates with its focus. (34b) is a disjunction/conjunction that is represented by the logical operator OR, and holds between alternative propositions (or better, ‘among,’ since OR is actually ‘iterative,’ and involves more than two alternative propositions). The semantics of OR is defined in (35), repeated from chapter 3, section 3.5.3, (53), for ease of exposition.

- (35) a. $\text{OR}^\delta =_{\text{def}}$ ‘contrastive *or*,’ ‘inclusive/informational *or*’ (c, i)
 b. $\text{OR}^c =_{\text{def}}$ ‘contrastive *or*’
 c. $\text{OR}^i =_{\text{def}}$ ‘inclusive/informational *or*’

The logical operator OR is unspecified (δ) in (35a), and may be either contrastive (c), as in (35b), or inclusive/informational (i), as in (35c). In (34b), OR is unspecified.

Let us draw on an additional aspect of V&Z's analysis that will become useful shortly, but was not mentioned in chapter 3, section 3.5.3, since it would have been unnecessarily complicating for the purposes of the relevant discussion. As we may notice in (34b), there is material that is constant across the two disjuncts/conjuncts, namely the LF (John Past see someone). So, V&Z suggest that a rule of Conjunction Reduction obligatorily applies at LF, and turns (34b) to the pair of linked formulae given in (36) (*theirs*, (48)).

(36) <(John Past see someone), (someone = (someone OR $^{\delta}$ someone else))>

The common part of the disjunction/conjunction appears at the left-hand side of the formulae (preceding the comma marker), while the part at the right-hand side (following the comma marker) is the LF of the quantifier *who* of (34a), which is an iterative disjunction/conjunction among sets of 'individual' variables, here realized as 'someone.'

As the matter now stands, consider again the *wh*-question (34a), and its reduced logical structure (36), put together in (37), for convenience.

(37) a. Who did John see?
 b. <(John Past see someone), (someone = (someone OR $^{\delta}$ someone else))>

Maintaining the spirit of V&Z's analysis, it is plausible to assume that the *focus* of the question in (37a) is actually the part at the right-hand side of (37b) (following the comma marker), which is the LF representation of the quantifier *who*. The part at the left-hand side of (37b) (preceding the comma marker) is the *presupposition* of the question, and corresponds to the 'proposition' in (37a), namely 'John saw someone,' over which the quantifier scopes. These clarifications, which will become useful shortly, do not affect V&Z's reasoning, since it is still predicted that the presupposition/focus of the question in (37a) is the logical structure in (37b).

Keeping the above discussion in mind, let us return to sluicing, in the scope of (38). For ease of exposition, the example is given in English, since nothing hinges on that.

(38) a. John saw someone and I wonder who.
 b. (John Past see someone) (AND I wonder (someone = (someone OR $^{\delta}$ someone else)))

(38b) sufficiently captures, for our present purposes, the logical structures of both the antecedent and the SLUICED clause of (38a). In particular, the antecedent clause is represented as (John Past see someone), while the SLUICED one as (AND I wonder (someone = (someone OR^δ someone else))). Moreover, (38b) shows that the SLUICE *who* translates to a quantifier, in virtue of its construal with the predicate *wonder* (see section 5.3 above).

In the context of V&Z's system presented above, the fundamental difference between the interpretation of a full-fledged *wh*-question and that of a SLUICE boils down to this: the SLUICE is a (interrogative) quantifier (the focus of a question) whose domain of scope (the presupposition of a question) is 'missing.' I suggest then, and explain shortly after, that typical sluicing constructions of the form (38) fall under (39).⁹

(39) The SLUICE is the *focus* of a question whose *presupposition* is a piece of logical structure introduced at LF, through anaphora.

To put it simply, (39) says that the SLUICE is a (interrogative) quantifier, whose domain of scope (presupposition) does not correspond to anything in the 'surface' structure of this question, but is 'filled in' at LF. So, the next question is how LF 'fills in' the 'missing' content. The idea is that this is done via anaphora. In particular, since sluicing is an instance of (cross-sentential) anaphora, and the SLUICE relates to an ANTECEDENT, I suggest that part of the interpretation of the ANTECEDENT figures in the interpretation of the SLUICE, as in (40).

(40) a. John saw someone and I wonder who.
 b. (John Past see someone) (AND I wonder <(John Past see someone), (someone = (someone OR^δ someone else))>)

(40a), repeated from (38a), is interpreted as in (40b), where the LF of the antecedent clause turns up in the LF of the SLUICED clause, by virtue of the anaphoric construal between *someone* and *who*. Now, notice that what is actually introduced at the LF of the SLUICE is a 'propositional' content. This explains why, although 'surface' syntax makes available a Q-operator that quantifies over an 'entity,' LF translates this structure as if Q quantifies over a 'proposition', as mentioned in section 5.3. In fact, the LF in (40b) also predicts that Q does not quantify over any 'proposition,' but over one that is already available in the immediate linguistic environment (the antecedent clause). In short, (40b) shows that the presupposition of the question denoted

by the SLUICE is a piece of logical structure that is ‘filled in’ at LF. In this respect, the SLUICE ‘inherits’ the interpretation of its ANTECEDENT, meaning that both terms are interpreted as if they saturate the same argument slot (that is, construed with the same predicate; e.g., *saw* in (40a)). If correct, we expect that every aspect of the interpretation of the ANTECEDENT is ‘inherited’ by the SLUICE. This becomes clear below.¹⁰

Kratzer (1998) examines the interpretation of (a certain class of) indefinites, including those introduced by *some*, and argues that such indefinites are able to yield three possible readings in terms of scope: a) ‘quantificational,’ b) ‘specific,’ and/or c) ‘intermediate.’ When quantificational, *some*-indefinites do not take scope outside their clause; when specific, they appear to instantiate ‘widest-scope’ properties; and when intermediate, they fall under the scope of another quantifier. Here, only the intermediate reading will be discussed, as exemplified in (41) (from Kratzer 1998: 5, (5a)).

(41) Every professor rewarded every student who read *some book* she had reviewed for the *New York Times*.

The (italicized) indefinite *some book* yields a ‘pair-list’ (intermediate) interpretation, where different choices of *professors* correspond to different restrictor sets for *some*. Roughly speaking, Kratzer puts forward a parameterized choice-function approach (building on Reinhart 1995, 2006), arguing that the indefinite determiner *some* equals a free function variable f , which is contextually valued, and applies to the (non-empty) set ‘book,’ returning a member of that set. The presence of the pronoun *she*, which is bound by *every professor*, and surfaces in the restrictive clause of the indefinite *some book*, forces the latter to be anaphorically related to *every professor*. Consequently, the choice from the set ‘book’ depends on the values one may give to *every professor*.

Keeping the above discussion in mind, consider the sluicing equivalent of (41), given in (42), repeated from Vlachos (2011: 295, (45)).

(42) Every professor rewarded every student who read *some book* she had reviewed for the *New York Times*, but I don't know *which book*.

What is relevant for us here is that *which book*, matches with, and ‘inherits’ the interpretation of its ANTECEDENT *some book*. That is, *which book* is interpreted as if its value varies in tandem with the value given to *every professor*, yielding a ‘pair-list’ reading.

The same pattern is observable in case this ‘pair-list’ reading is blocked, as in (43), repeated from Vlachos (2011: 295, (46)).

- (43) a. Every professor rewarded every student who read *some book* I had reviewed for the *New York Times*.
- b. Every professor rewarded every student who read *some book* I had reviewed for the *New York Times*, but I don’t know *which book*.

According to Kratzer, the ‘pair-list’ interpretation of *some book* becomes marginal under the presence of a different pronoun (here, *I*) that cannot be bound by *every professor* (cf., (43a); *hers*, (5b)). This also appears to be the case with the corresponding sluicing sentence in (43b), where the value of *which book*, which matches with *some book*, does not depend on the value assigned to *every professor*. In other words, although there is no relevant structure in (42) (resp. (43b)) that would facilitate (resp. block) a ‘pair-list’ reading,¹¹ the interpretation of the SLUICE matches that of its ANTECEDENT. In short, the data just reviewed provide further support to the assumption that a SLUICE ‘inherits’ a ‘missing’ piece of its interpretation from a relevant ANTECEDENT.

The current idea that a SLUICE ‘matches’ the interpretation of its ANTECEDENT may be challenged by well-formed sluicing sentences of the kind exemplified in (44).

- (44) John saw [Mary]_F but I don’t know [who else]_F.

(44) is an instance of so-called ‘contrast’ sluicing, whereby a SLUICE, here *who else*, actually ‘contrasts’ with the term it relates to, here *Mary*, in the antecedent clause (see Merchant 2001 for a first discussion in the context of the PF-deletion approach). To be sure, the subscript ‘F’ is meant to indicate that *Mary* is intonationally stressed, and so is the SLUICE *who*, which necessarily merges with *else*, and is interpreted in contrast to *Mary*. So, the question arises as to how the SLUICE ‘inherits’ the relevant ‘missing’ meaning from a term it contrasts with. Another question is if the currently pursued idea of ‘matching’ is sustainable, in cases of sluicing where what we actually get is a ‘contrastive’ reading between the two nonadjacent terms.¹² I shall answer both questions starting from the latter one, namely the idea of ‘matching.’

Witness the sluicing sentences in (45).

- (45) a. #Kapjos efije ala dhen ksero [pjos alos]_F.
 someone-NOM left-3SG but NEG know-1SG who-NOM else
 “Someone left but I don’t know [who else]_F.”
- b. [Kapjos]_F efije ala dhen ksero [pjos alos]_F.
 someone-NOM left-3SG but NEG know-1SG who-NOM else
 “[Someone]_F left but I don’t know [who else]_F.”

(45a) sounds odd if *kapjos* (someone) is not contrastively stressed, but *pjos* (who) is. On the other hand, (45b) sounds a lot better if both terms are stressed. So, the observation is that a SLUICE can only be contrastively stressed if its ANTECEDENT is also stressed.

To be sure, under V&Z’s system, the LFs of the antecedent clauses in (45a) and (45b) are disjunctions among alternative propositions, as in (46a) and (46c) respectively, which are illustrated in terms of Conjunction Reduction, and explained shortly after.

- (46) a. LF_{antecedent} (= (45a)):
 <(Someone Past leave), (someone = (someone ORⁱ someone else))>
- b. ORⁱ =_{def} ‘inclusive/informational or’
- c. LF_{antecedent} (= (45b)):
 <(Someone Past leave), (someone = (someone OR^c someone else))>
- d. OR^c =_{def} ‘contrastive or’

(46a) is an inclusive/informational disjunction, as defined in (46b) (repeated from (35c)), while (46c) is a contrastive one, as in (46d) (repeated from (35b)). Keeping this in mind, we see that (45a) is infelicitous, in virtue of the fact that *pjos* (who) is stressed, and gives rise to a contrastive reading that is not attested in the logical structure of *kapjos* (someone) (cf., (46a), where OR is inclusive/informational (*i*)). On the other hand, as shown in (46b), the ANTECEDENT *kapjos* (who) gives rise to a contrastive reading (OR is contrastive (*c*)). (45b) is felicitous because the SLUICE is also contrastive. In short, what the above sentences allude to is that a SLUICE match either the inclusive/informational or the contrastive reading of the term it relates to, and this matching effect is encoded in the semantics of the logical operator OR that is assumed in the LF of both terms. To put it simply, a SLUICE is contrastive (resp. informational/inclusive) in case its ANTECEDENT is contrastive (resp. informational/inclusive).

If the above reasoning is on the right track, the question is which interface, LF or PF, evaluates this matching effect. As we may recall from chapter 3, section 3.5.3, in the context of V&Z's system, intonation (PF) affects the semantics of the logical operator OR. That is, an unspecified OR^δ may be either inclusive/informational (OR^I) or contrastive (OR^C), in virtue of the corresponding intonation. If this is the case, then the matching effect attested in (45b) turns out to be a matching requirement that is actually evaluated at PF. In other words, the intonation (PF) of a SLUICE appears to match the intonation of its ANTECEDENT, and this, in turn, means that the semantics (LF) of a SLUICE match the semantics of its ANTECEDENT. So, the 'contrastive' reading that is evident in (45b) is, in fact, a 'matching' requirement that is imposed on the intonation of the two nonadjacent terms, is evaluated at PF, and affects LF (on the basis of the conclusion drawn in chapter 3, section 3.5.3 that LF and PF talk to each other).

The above discussion brings us to the other question that needs to be dealt with, and was mentioned earlier. In particular, how is it possible for a SLUICE to 'inherit' a piece of its interpretation from a 'contrastive' ANTECEDENT? In the context of the above considerations, the answer is that a SLUICE matches its ANTECEDENT when both terms have either an informational/inclusive reading (as in *someone left but I don't know who*), or a contrastive reading (as in *Mary left but I don't know who else*). So, we expect that a SLUICE 'inherits' part of its interpretation from a relevant ANTECEDENT. We have already discussed how this process takes place in sluicing cases where both nonadjacent terms are inclusive/informational. Below we shall elaborate on 'contrast' sluicing.

Let us consider again the sluicing construction in (44), repeated in (47a) for convenience, and concentrate on the interpretation of the antecedent clause, in the scope of (47b) and (47c).

- (47) a. John saw [Mary]_F but I don't know [who else]_F.
 b. John saw [Mary]_F, not Helen.
 c. #John saw [Mary]_F, and also Helen.

Mary is contrastively stressed, entailing the 'exclusion' of, say, *Helen* (cf., (47b)), as verified by (47c), where a continuation of the form *and Helen* (which implies the 'inclusion' of *Helen*) sounds infelicitous.

In the framework offered by V&Z, the LF and PF of such utterances as (47) are accounted

for in the following terms (note that I will restrict attention to this part of V&Z’s analysis that is most relevant for our discussion):

- (48) a. *Presupposition:*
 (John Past see someone) OR^C (John Past see someone else)
- b. *Conjunction Reduction:*
 <(John Past see someone), (someone = (someone OR^C someone else))>
- c. *Focus:*
 (John Past see someone), (someone = Mary)
- d. PF:
 /John Past see Mary/_{PF}

V&Z propose that the presupposition of “every declarative sentence manifests a choice among explicit or implicit *alternatives* (p. 651).” So, the declarative sentence in (47) has the *implicit* presupposition given in (48a), which is a disjunctive set of alternative propositions (in a way similar to *wh*-questions, as discussed earlier in the present section). Now, as we may recall from chapter 3, section 3.5.3 (mentioned previously, as well), V&Z’s system correlates the prosodic properties of utterances with their semantics. As such, the contrastive reading of the utterance in (47) is reflected in the disjunctive operator OR, which is specified as OR^C, under the definition given in (35b) above, and repeated in (49), for convenience.

- (49) OR^C =_{def} ‘contrastive *or*’

(48b) shows that Conjunction Reduction obligatorily applies at LF, in a way illustrated earlier. (48c) and (48d) will not concern us further, but I have included them for concreteness. The illustration in (48c) says that the focus of an utterance is a subpart of its presupposition, where ‘someone’ equals ‘Mary,’ and this subpart is the one that is realized at PF, as in (48d).

Keeping the above discussion in mind, consider the LF of the sluicing sentence in (47a), as detailed in (50).

- (50) a. John saw [Mary]_F but I don’t know [who else]_F.
- b. LF_{antecedent}:
 <(John Past see someone), (someone = (someone OR^C someone else))>

- c. *Focus*_{antecedent}:
(John Past see someone), (someone = Mary)
- d. *LF*_{SLUICE}:
<(((John Past see someone), (someone = Mary)), (someone = (someone OR^c someone else)))>
- e. *Focus*_{SLUICE}:
(someone else)

(50a) is the sluicing sentence, where both *Mary* and *who else* are contrastively focused. (50b) is the LF of the antecedent clause, showing the presupposition of the sentence (after Conjunction Reduction), and is a contrastive disjunction. (50c) is the focus of the antecedent sentence, where *someone* equals *Mary*. (50d) is the presupposition and focus of the sluiced sentence. In particular, and following our earlier discussion, the SLUICE ‘inherits’ the interpretation of the term it contrasts with, here *Mary*, and assumes the corresponding ‘propositional’ content. In virtue of the contrastive reading of the *wh*-quantifier, which is represented by the logical operator OR^c, the SLUICE is necessarily lexicalized by the string *who else*, as the focus in (50e) shows. In short, the SLUICE ‘inherits’ a piece of the interpretation of the term it contrasts with, and, in virtue of its contrastive focus, the SLUICE yields a set of interpretations that is alternative to the one denoted by the ANTECEDENT term. In more abstract terms, the idea is that the matching requirement between a SLUICE and an ANTECEDENT is not only attested in typical sluicing constructions, but also in cases where the SLUICE appears to ‘contrast’ its ANTECEDENT, on the assumption that such ‘contrast’ is actually a PF-matching effect that is imposed on the way intonation is manifested on both terms. To put it differently, since intonation affects interpretation, as we have been assuming all along, then the ‘contrastive’ reading that is observable at LF, is literally a ‘matching’ effect regulated at PF. If so, we expect that a ‘contrastive’ SLUICE ‘inherits’ its ‘missing’ meaning from a relevant ANTECEDENT at LF, the same way a ‘non-contrastive’ SLUICE does.

In the remainder of this section, let us compare the system developed above with the approaches to sluicing examined in chapter 4. To begin with Merchant’s (2001) PF-deletion approach (see section 4.3), the idea is that the ‘missing’ proposition in sluicing is computed in syntax, and is then deleted at PF. Deletion is a mechanism triggered by a (task-oriented) [E]

feature, which also detects mutual (semantic) entailment between the elided proposition and the one that surfaces in an antecedent clause. In present terms, we have seen that an *in situ* approach to sluicing, if coupled with a semantic system that does not make reference to strings of syntactic structure, is capable of predicting a number of properties of sluicing constructions. It follows, then, that the additional structure is redundant, and thus, dispensable, once a number of independent assumptions about case-marking, and Merge, are also adopted, as extensively discussed in the preceding sections. It is crucial to keep in mind, at this point, that an *ex situ* approach (not just the PF-deletion one) is in need of a mechanism that detects the interpretation of an antecedent clause (e.g., the [E] feature) in as much as an *in situ* approach. So, if both views require such a mechanism, then, an *in situ* account appears to be more economical, since it does not incorporate the extra mechanism of deletion, namely the idea that a syntactic construct may be ‘disposable.’ An additional problem that the PF-deletion view faces stems from the assumption it makes that sluicing is a fully articulated *wh*-clause. As we have already discussed in section 4.2, there is strong evidence, with regard to both distribution and interpretation, against this line of thinking. We will return to this evidence in more detail in section 5.4 below, where a number of arguments against an *in situ* analysis are also considered.

Chung, Ladusaw, and McCloskey’s (1995) (CLM) LF-copying account (see section 4.3) supports a direct comparison between sluicing and *wh*-clauses, as well. Therefore, this account suffers from the same problems that the PF-deletion approach faces. Moreover, an additional issue with the LF-copying view is the assumption that LF is a ‘covert syntactic component,’ where operations available to ‘overt’ syntax take place. As we have discussed in chapter 3, this is a redundancy. Certainly, the proposal defended in the present section establishes a direct comparison with the LF-copying one to the extent that both accounts assume that part of the interpretation of the SLUICE is handled at LF, and not PF. Moreover, what has been described earlier as a process by which the SLUICE ‘inherits’ the interpretation of its ANTECEDENT is certainly reminiscent of CLM’s *copying* process. However, it should not escape one’s attention that the present approach, unlike the LF-copying one, maintains a view of LF as an interpretive component that does not make reference to operations available in ‘overt’ syntax, but to logical constructs. In other words, for the present view, what is ‘filled in’ at LF is not a ‘chunk of syntactic structure,’ but ‘a string of logical constructs.’ In current terms, then, CLM’s assumption

that syntax exceptionally makes available a piece of ‘non-terminal slots’ becomes superfluous, since syntax provides all the necessary information at LF, so that the ‘missing’ interpretation of the SLUICE is recoverable from the immediate linguistic environment.

The proposal that meaning is represented in terms of logical constructs brings the current approach closer to that offered by Culicover & Jackendoff (2005) (C&J; see section 4.4). For this view, as well, the ‘missing’ propositional content of the SLUICE is not represented in syntactic, but in purely semantic terms, and is conceptualized as a propositional function \mathcal{F} . The similarities between the two systems extends to the idea that a Q-operator, which is directly introduced at LF, facilitates the ‘question force’ available in sluicing, as mentioned in section 5.3 above. So, the only difference between the two approaches concerns the framework that each one is couched in, and consequently, the technical apparatus that each one adopts, and develops. To repeat for convenience, the present view of the ‘missing’ interpretation of the SLUICE rests on the framework already adopted for the interpretation of typical *wh*-constructions, and presented in chapter 3. For C&J, the interpretation of *wh*-constructions is captured under a different machinery, which is consistent with that adopted for their analysis of sluicing. Other than that, I share C&J’s intuition that syntax, which mediates between form and meaning, does not (or, at least, does not have to) contain every aspect of meaning. This is the line of reasoning pursued by the present approach to sluicing, which is, by definition, a construction where form does not map to meaning transparently.

Let us put the arguments of this section together. A relevant predicate, either via its lexical semantics, or through its association with a facilitating operator, makes available at LF a Q-operator that probes for the *wh*-property of the SLUICE (the Goal). In turn, this *wh*-property translates to an operator (itself a predicate) that is chain-associated with a variable, where both the operator and the variable are encoded by the SLUICE itself, as is typical of MG *wh*-elements. Although ‘surface’ syntax suggests that a Q-operator quantifies over an ‘entity’ (the SLUICE), LF reads-off this configuration as a typical *wh*-question, with a presupposition and a focus. Specifically, the SLUICE is the focus of a question, whose presupposition is a piece of the logical structure of a relevant ANTECEDENT, which corresponds to the ‘missing propositional’ content of the SLUICE. Under this perspective, it is expected that every aspect of the interpretation of an ANTECEDENT turns up in the interpretation of a SLUICE. This line of reasoning also extends

to cases where the SLUICE ‘contrasts’ with its ANTECEDENT. Comparatively speaking, the present approach to the interpretation of a SLUICE is closer to that presented by Culicover & Jackendoff (2005), although situated in a different framework, and is differentiated from the PF-deletion, and the LF-copying analyses, since, in current terms, there is no reason to assume an additional, unpronounced structure in order to account for the available meaning.

5.4 Predictions

In the light of the data presented in chapter 4, the goal of this section is twofold. On the one hand, it goes through a number of evidence that provides further support to the system developed so far (section 5.4.1). On the other hand, the literature on sluicing has raised various arguments against non-deletion-based approaches of the kind pursued here. Some of these reservations, mainly the most recurrent (and, severe) ones, are taken up in section 5.4.2. There, it is shown that, under an alternative reasoning, the relevant facts do not actually stand against the present approach, but are neutral with respect to a deletion-based vs. a non-deletion-based analysis (if, in fact, not argue in favour of the latter view).

5.4.1 The arguments ‘in favour’

Let us start with the corroborating evidence. Consider (51), repeated from chapter 4, section 4.2, (9) and (10) respectively (one example suffices to illustrate the point).

- (51) a. * [Pja valkaniki ghlosa thelun na proslavun [kapjon
 which Balkan language-ACC want-3PL PART hire-3PL someone-ACC
 [pu na milai ⟨pja valkaniki ghlosa⟩]].
 that PART speaks-3SG
 “*Which Balkan language they want to hire someone who speaks?”

- b. Thelun na proslavun [kapjon [pu na milai mia
 want-3PL PART hire-3PL someone-ACC that PART speaks-3SG
 mia valkaniki ghlosa]] ala dhen ksero pja
 a Balkan language-ACC but NEG know-1SG which
 (valkaniki ghlosa).
 Balkan language-ACC
 “They want to hire someone who speaks a Balkan language, but I don’t know
 which (Balkan language).”

(51a) is an instance of Complex NP violation, while sluicing in (51b) is not, because, in current terms, in the absence of any relevant structure, there is no island.

Since (51b) is not a filler-gap dependency, comparable to (51a), the question arises as to what it is. As we may recall from section 5.1, sluicing is an instance of anaphora, where the clause containing a SLUICE and that containing its ANTECEDENT abide by certain linearity requirements, captured in terms of Williams’s (1997) *General Pattern of Anaphoric Dependence*. So, (51b) above is a case of forward anaphora, where the ANTECEDENT surfaces inside a subordinate clause, and the SLUICE appears in a matrix clause, as in (52), repeated from (5).

- (52) Thelun na proslavun kapjon [pu na milai mia valkaniki
 want-3PL PART hire-3PL someone-ACC that PART speaks-3SG a Balkan
 ghlosa]_{subord} ala [dhen ksero pja (valkaniki ghlosa)]_{matrix}.
 language-ACC but NEG know-1SG which Balkan language-ACC
 “They want to hire someone who speaks a Balkan language, but I don’t know which
 (Balkan language).”

Pja (valkaniki ghlosa) (which (Balkan language)), by virtue of its construal with *ksero* (know), translates to a question, whose propositional reading is ‘missing’ (see section 5.3). The SLUICE matches in D-features with its ANTECEDENT, including case morphology (see section 5.2.2), and the former ‘inherits’ part of the interpretation of the latter. Now, recall from section 5.3.1 that the ‘missing’ meaning at LF is not represented as a syntactic structure. This means, in turn, that what is represented at the LF of the SLUICE in (52) does not contain a ‘gap’ that is ‘filled in’ by a dislocated *wh*-element; hence, the grammaticality of the sentence.

Consider now cases of preposition omission, as in (53) (from chapter 4, section 4.2, (17)).

- (53) a. I Anna miluse [pp me kapjon] ala dhen
 the Anna-NOM was-talking-3SG with somebody-ACC but NEG
 ksero [pp ?(me) pjon].
 know-1SG with whom-ACC
 “Anna was talking to somebody, but I don’t know (with) who.”
- b. O Nikos aghorase tin pena [pp apo kapu] ala
 the Nick-NOM bought-3SG the fountain-pen-ACC from somewhere but
 dhen ksero [pp ?(apo) pu].
 NEG know-1SG from where
 “Nick bought the fountain pen from somewhere, but I don’t know (from) where.”
- c. I Maria edhose to ghrama [pp se kapjon] ala dhen
 the Mary-NOM gave-3SG the letter-ACC to somebody-ACC but NEG
 ksero [pp ?(se) pjon].
 know-1SG to whom-ACC
 “Mary gave the letter to somebody, but I don’t know (to) who.”

As already discussed in chapter 4, a full-structure approach (either PF-deletion or LF-copying) assimilates (53) to some sort of P(reposition)-stranding, comparable to English (cf., the relevant translations). Thus, while MG is a non P-stranding language, it would have to be assumed that the SLICES above surface in left-peripheral positions, leaving the prepositions stranded.

Under the present line of reasoning, (53) is not comparable to the language-specific conditions of the formation of *wh*-questions, such as P-stranding. Instead, the dependence between the SLICE and its ANTECEDENT makes use of the most minimal (morphosyntactic and semantic) resources necessary for the successful interpretation of the anaphoric relationship. For instance, the DP *pjon* (who) in (53a) does not need to project with a P, since there is an OVERT ANTECEDENT DP (*kapjon* (someone)) on which the SLICE anaphorically depends (and the same is true with the rest of the sentences in (53)).¹³

Interestingly, Nykiel & Sag (2009; 2010) (see also Sag & Nykiel 2011), also favouring a non-additional structure account of sluicing, have conducted a number of experiments using Polish stimuli (a non P-stranding language; see Szczegielniak 2008), which show that preposition omission in sluicing “exhibits signs of gradient linguistic knowledge. Preposition omission depends on the ease with which a SLICE’s correlate may be recovered from the pre-

ceding antecedent.” Certainly, such tests strongly suggest that cases like (53) have to do with broader parsing issues involving anaphoric dependencies, and that language-specific conditions on P-stranding are orthogonal to sluicing, despite appearances. That parsing is particularly relevant becomes clear below.

First, as mentioned in chapter 4, section 4.2, the 15 MG native speakers that I have consulted have shown a preference for the use of the corresponding prepositions in (53), while no one has considered their absence ungrammatical. It is true that I have not measured these judgments. Yet, the fact that the relevant speakers, who differ in age, and educational background, and some of them are well-versed in linguistics, while others are not, share the same judgments, is indicative of a parsing issue, and does not seem to point at some sort of ‘stylistic variance.’ Second, the degraded nature of the sentences in (53), in case the prepositions are absent from the SLUICES, is not attested once the relevant ANTECEDENTS become more ‘informative,’ in terms of their morphosyntax and semantics, as in (54) (from chapter 4, section 4.2, (18)).

- (54) a. I Anna miluse [pp me kapjon apo tus sigenis
 the Anna-NOM was-talking-3SG with someone from the relatives
 tu Jani] ala dhen ksero [pp (me) pjon (apo tus sigenis
 of-the John but NEG know-1SG with whom-ACC from the relatives
 tu Jani)].
 of-the John
 “Anna was talking to some of John’s relatives, but I don’t know (with)
 who(m) (of John’s relatives).”
- b. O Nikos aghorase tin pena [pp apo kapjo vivliopolio]
 the Nick-NOM bought-3SG the fountain-pen-ACC from some bookstore
 ala dhen ksero [pp (apo) pjo (vivliopolio)].
 but NEG know-1SG from which bookstore
 “Nick bought the fountain pen from some bookstore, but I don’t know (from)
 which (bookstore).”

- c. I Maria edhose to ghrama [pp se kapja apo tis files tis]
 the Mary-NOM gave-3SG the letter-ACC to some from the friend her
 ala dhen ksero [pp (se) pja (apo tus files tis)].
 but NEG know-1SG to which of her friends
 “Mary gave the letter to some of her friends, but I don’t know (to)
 which (of her friends)”

For example, the ANTECEDENT *me kapjon apo tus sigenis tu Jani* (with some of John’s relatives) in (54a) is a partitive PP, and is more informative than the corresponding ANTECEDENT *me pjon* (with whom) in (53a). In the light of (54), it is plausible to assume that language-specific properties may determine “how much” morphosyntactic/semantic information is needed for successful anaphoric construals between a SLUICE and its ANTECEDENT. In MG (and Polish; or Brazilian Portuguese (see Almeida & Yoshida 2007)), (53) is grammatical, under the absence of P, albeit degraded, because this much information is required by the MG grammar for the dependencies to be interpreted. But equivalents of (53) may or may not be permitted in other grammars.

The final piece of evidence in support of the current approach comes from (il)legal cases of sluicing of the kind in (55), repeated from chapter 4, section 4.2.2, (24a) and (28b) respectively (one minimal pair is enough to illustrate the point).

- (55) a. I Eleni me rotise [CP pjos efije] ala dhen
 the Helen-NOM me asked-3SG who-NOM left-3SG but NEG
 mporusa na tis po pjos.
 could-3SG PART her tell-1SG who-NOM
 “Helen asked me who left, but I couldn’t tell her who.”
- b. *O Roben ton dhason rotise [CP pjo itan to onoma tu
 the Robin of-the forest asked-3SG which was the name of-the
 aloghu tu]. Ke eghe anarotjeme pjo.
 horse his and I wonder-1SG which-ACC
 “*Robin Hood asked what the name of his horse was. I also wonder what.”

As we may recall from the relevant discussion, the variable discharged by a SLUICE may correspond to an argument, as in (55a) (or, a modifier, from which I abstract away, but a similar reasoning applies). However, (55b) shows that a SLUICE, here *pjo* (who), may not realize a predicative reading, which provides further support to the idea that the ‘missing’ meaning in

sluicing does not correspond to an IP, on the standard assumption that an IP stands for a predicate content. To be more precise, the *SLUICE* relates to *pjo* (who) in the antecedent clause, which is the predicate of the subject *to onoma tu aloghu tu* (the name of his horse), and the result is ungrammatical.

Obviously, under a full-structure view of sluicing, (55b) is unexpected. In the light of the current approach, the above minimal pair provides further support to the division of labour between syntax and LF pursued in section 5.3.1. Specifically, syntax makes an entity available, that is *pjos* (who) in (55a), while LF supplies an unsaturated expression (a predicate). The entity saturates an open argument slot of this predicate and the corresponding proposition is formed. By extension, (55b) is ungrammatical because it reverses this separation of tasks. That is, syntax would have to provide a predicate, here *pjo* (who), while LF an entity (e.g., *to onoma tu aloghu tu* (the name of his horse)), which would translate to the subject of this predicate. If this reasoning is correct, the question arises as to why the division of labour between syntax and LF is of the form (55a), and not (55b). At this point, I can only speculate that, if sluicing is an anaphoric dependency comparable to pronominal anaphora (see sections 5.1 and 5.2.2), we may expect that the cross-sentential construals it admits are restricted to ‘variable’ contexts. That is, to associations established between entities, and not predicates, under the standard assumption that predicates do not, strictly speaking, translate to ‘variables.’

5.4.2 Turning the tide of the arguments ‘against’

Let us now turn to the alleged counter-evidence. For convenience, recall how sluicing is computed, in current terms, in the scope of (56).

- (56) *Kapjos* *efje* *ke* [_I *anarotjeme* *pjos*].
 someone-NOM left-3SG and wonder-1SG who-NOM
 “Someone left and I wonder who.”

In line with the relevant discussion in section 5.2, a *SLUICE*, here *pjos* (who), makes a *wh*-property available, which is then targeted by a relevant predicate, here *anarotjeme* (wonder), and there is no other structure present apart from the one that ‘surfaces.’

One of the arguments offered against analyses akin to (56) rests on familiar ideas regarding the selectional requirements of the predicate *wonder*, and draws from evidence of the form (57)

(see also chapter 4, section 4.3).

- (57) a. *I wonder [DP the time].
b. I asked [DP the time].
c. I don't know [DP the time].

In standard terminology, since *wonder* (cf., (57a)), unlike *ask* (cf., (57b)) or *know* (cf., (57c)), does not (usually) select for DPs, here *the time* (and the same holds for the congeneric MG sentences), then it may not select for a DP-SLUICE of the form *who*, as in (56).

As the first step of the argument, notice that the present approach does not assume that a SLUICE, such as *who*, is a DP. Instead, the idea, as mentioned previously, is that a SLUICE projects a *wh*-feature, with which the relevant selecting predicate is construed. One may conventionally 'label' this projection as a 'WhPhrase' (perhaps, in the spirit of Starke's 2004 'labeling' of *wh*-CPs), but, strictly speaking, not as a DP. This is because, under a BPS analysis, there is virtually no relevant 'category' projected for reasons of selection, but solely the morphosyntactic property *wh* (as already discussed in section 5.2). So, (57a) is actually a pseudo-problem for the current approach to sluicing. In fact, this reasoning is directly comparable to that offered by van Riemsdijk (1978: 238–244), who responded to a similar kind of criticism, regarding selectional restrictions, as well. Allow me to emphasize, then, that the argument of the full-structure approaches (specifically, of the PF-deletion one) against van Riemsdijk's early proposal reflects a misconception of what the author actually said about how the SLUICE is selected (and about his argumentation regarding the issue of 'complement selection,' in general).

Now, although the above reasoning appears to be on the right track, it still looks as if I am trying to have my cake and eat it too, because a SLUICE, albeit not a DP, is a non-C element. And, as the ungrammaticality of (57a) indicates, *wonder* does not select for such elements (unless a preposition like *about* is present, as in *I wonder about the time*, which is an issue I return to below).

Arguably, this is not the place one can do full justice to the issue of complement selection. To give a brief historical excursus, this issue goes a long way back into the generative theory. In accordance with an influential proposal made by Grimshaw (1979), complement selection has two facets. One is known as c(ategory)-selection, and is directed to the 'syntactic type' of the

‘selectee,’ while the other, coined s(ematic)-selection, is oriented to the ‘semantic type’ of the ‘selectee.’ Both c- and s-selectional restrictions are assumed to be specified in the lexical entry of the ‘selector,’ in the form of a *subcategorization frame* (see also Chomsky 1965, Bresnan 1972, Pestesky 1982; 1991, and Rothstein 1992, among others). The tension between s- and c-selection has far reaching implications for the BPS view of the Grammar, which I will have to ignore here, concentrating only on some aspects of it (see Collins 2002 for a discussion of this issue).

Keeping the above backdrop in mind, let us get back to sluicing, and concentrate only on *wonder*, whose selectional restrictions seem to be the most troubling. Consider the *italicized* DPs in (58) (the relevant data are inspired by Nathan’s 2006: 42 congeneric English examples, which are, however, captured under a different reasoning, and mentioned for purposes independent to sluicing).

- (58) a. [O Janis anarotjotan [CP pja itan i lisi
the John-NOM was-wondering-3SG which was the solution
tu provlimatos]] ke [i Maria anarotjotan
to-the problem-GEN and the Mary-NOM was-wondering-3SG
[DP *to idhjo praghma*]]
the same thing-ACC
“John was wondering what the solution to the problem was and Mary was
wondering the same thing.”
- b. [O Janis rotise [CP pjos efije]]
the John-NOM asked-3SG who-NOM left-3SG
ke [[DP *afto*] anarotjeme ke egho].
and that wonder-1SG and I
“John asked who left, and I’m wondering that as well.”
- c. [O Janis ipe stin Maria [CP pjos efije]]
the John-NOM told-3SG to-the Mary-ACC who-NOM left-3SG
[[DP *to opio*] anarotjotan gia kaboso kero].
the which was-wondering-3SG for some time
“John told Mary who left, which she had wondered for some time.”

- d. A: Kitazo tis protasis ke anarotjeme.
 looking-1SG the sentences-ACC and wondering-1SG
 “I’m looking at the sentences and I’m wondering.”
- B: [[DP *Ti*] anarotjese]?
 what-ACC wondering-2SG
 “‘What are you wondering?’”
- A: Pja ine i sosti analisi.
 what is the correct analysis-NOM
 “‘What the correct analysis is.’”

In (58a), *anarotjeme* (wonder) selects for the anaphoric *to idhjo praghma* (the same thing); in (58b), for the demonstrative *afto* (that); in (58c), for the free relative *to opio* (which); and in (58d) (see the sentence in B), for the interrogative *ti* (what). Notice that (58d) is a possible dialogue between two speakers (A and B), which is offered here only to make the B-sentence sound more natural. In the light of (58), then, a case can be made that the argument that *wonder* may not select for non-C, and especially, D-complements, relies on incorrect premises.¹⁴

Although the explanation of the above sentences is a topic for a different study, a plausible working hypothesis, to be qualified shortly, is that *wonder* may merge with an *indefinite* complement that has a propositional denotation. To be more precise, *ti* (what) in (58d) is a (focused) indefinite that entails a propositional reading, which is reflected by the answer that speaker A may give to B’s question, i.e., (*I’m wondering*) *what the correct analysis is*. Arguably, the DPs in (58a–c) are neither indefinite terms, nor do they give rise to propositional interpretations, in and of themselves. Nonetheless, they seem to acquire both readings by being related to the corresponding CPs. Specifically, *to idhjo praghma* (the same thing) relates to *pja itan i lisi tu provlimatos* (what the solution to the problem was) (cf., (58a)), while *afto* (that), and *to opio* (which), to *pjos efije* (who left) (cf., (58b) and (58c) respectively).

An interesting question at this point is if *wonder* may also select for non-C complements, then why (57a), repeated in (59a), for convenience, is ungrammatical? This issue is, to some extent, tangential to our discussion, but let us speculate (perhaps rashly) on some possible explanation. Preliminarily, notice that (59a) becomes grammatical if the preposition *about* is present, as in (59b).

- (59) a. *I wonder [DP the time]
 b. I wonder [PP about the time].

Rothstein (1992) (in response to Pesetsky 1982) discusses minimal pairs of the form (59), and argues that the preposition *about* is semantically significant, in that its meaning “. . . indicates the semantic relation ‘concerning’ (p. 122).” For example, (59b) implies a range of semantic readings that may report any inquiry ‘concerning’ the time. That is, “. . . what time it is, whether we will have enough time for some project, how long some event might take, and so on (p. 122).” Suppose then that, in the light of our earlier discussion about the data in (58), the ‘definiteness’ of (59a) is ‘relaxed’ under the presence of the preposition *about* (cf., (59b)), yielding a ‘range of semantic alternatives’ (in Rothstein’s 1992 spirit), hence, an ‘indefinite-like’ interpretation. If correct, this would not only sustain the hypothesis made previously that *wonder* selects for indefinite complements with propositional denotations, but would also predict (58) and (59). In other words, the explanation of (59) does not have to be stated in ‘syntactic,’ and more precisely, ‘categorical’ terms, but in ‘semantic’ terms, which is what the evidence in (58) strongly suggests.

As the matter now stands, a parallelism can be drawn between the evidence in (58) and the present analysis of sluicing. First, in sluicing also, *wonder* selects for a non-C complement, namely, the SLUICE. Second, (58) shows that, under certain circumstances, ‘less’ form may correspond to ‘more’ meaning, since all the relevant DPs translate to *wh*-clauses, which is a situation similar to sluicing, as we have extensively discussed in earlier sections (and this is also the case with ‘concealed questions,’ as mentioned in section 5.3). And, third, the apparent contradiction between (58) and (59a) strongly suggests that complement selection may not operate on the ‘syntactic category’ of the relevant ‘selectee,’ but on its semantic properties, which are evaluated after Spell-Out, at LF. This view of complement selection is also applicable to sluicing (see section 5.2). To abstract over these considerations, it appears that selectional requirements can in fact be stated in terms of s-selection, without the necessary assumption of c-selection (as indeed argued by Pesetsky 1982; 1991).

Whatever the correct analysis of the above facts is, it is clear that arguments against the base-generation view of sluicing that rely on generalizations of the kind “category X does not select for category Y” are problematic. Moreover, let us emphasize that such arguments seem to

tacitly incorporate the long-abandoned (and, for good reason) assumption of the Phrase Structure Rule framework (see Chomsky 1965) that syntactic computations operate on ‘categorical’ distinctions, such as V, N, A, P. In other words, if X' -theory was a first step toward dissociating the lexicon from the computations, leading to context-free Grammars, then, the Bare Phrase Structure framework (presently assumed) is one step further, by assuming that only lexical items (that is, (bundles of) features), are relevant for computations, which are then accessible at the LF interface (see Chomsky 1995a). Actually, what Chomsky (1995a) says about this is that the ‘types’ of lexical items (V, N, A, P) seem to be accessible by the computational system, in virtue of the fact that a noun phrase (N) is interpreted differently from a verb phrase (V). So, the present view could be seen as a more radical restatement of Chomsky’s intuition. That is, only ‘tokens’ (formal features) are accessible by the computational system, because only ‘tokens’ are true primitives of the Grammar. ‘Types,’ like V, N, A, P, are not (or, at least, do not have to be thought of as) primitive concepts, but correspond to meaning postulates that reflect the way LF reads-off a given array of computation. Or, as Manzini & Savoia (2007: 19) put it “The current literature (Marantz 1997) has familiarized us with the idea that a lexical item (e.g. *love*) can correspond equally to the basic predicative content of the sentence [i.e., V—CV] or the noun phrase [i.e., N—CV]; thus verb or noun are not primitive syntactic categories but rather the label we give to the result of embedding such a primitive predicate in a given functional structure.” Under this perspective, the claim made in section 5.2 that a SLUICE may be of any ‘label’ (e.g., N, A, P), as long as the output is interpretable at LF, seems quite natural. And, the facts about the selectional possibilities of *wonder* argue in favour rather than against this view.

A second argument against the present view of sluicing comes from considerations revolving around number agreement facts, as exemplified in (60) ((60b) corresponds to Ross’s 1969: 256, (12)).

- (60) a. [[_{CP} Which problems he’s going to give us] { isn’t/*aren’t} clear].
 b. He’s going to give us some old problems for the test, but [[_{DP} which problems] {isn’t/*aren’t} clear].

As we may recall from chapter 4, section 4.3, the PF-deletion approach maintains that the CP in (60a) occupies a subject position, and that the copula ‘be,’ which must be in singular, agrees with this CP (notice that I revert to conventional labeling for ease of exposition). By

this reasoning, *which problems* (cf., (60b)), which is also in a subject position, must be a CP, in virtue of the fact that the SLUICE is in plural, but the copula must be in singular (akin to (60a)).

The real question here is not why the SLUICE, being the subject of the clause, does not agree with the copula in number, but if both the SLUICE and its clausal counterpart occupy subject positions, in the first place. An alternative analysis of the above facts is offered by van Riemsdijk (1978). Consider again (60a), as in (61), modeled on *his*, (60), p. 247.

(61) ?_{[CP} Which problems he's going to give us, _{[IP} that {isn't/*aren't} clear_{]].}

Van Riemsdijk follows Koster's (1978) approach to 'subject sentences,' and argues that the CP in (61) is not in a subject position, but surfaces in a left-dislocated site, while an anaphoric element *that*, which is usually not lexicalized, occupies the subject slot, and agrees with the copula in number; hence, the ungrammaticality of the plural marking. Notice that the relevant labeling is only meant to depict that the clause in question is outside the I-domain. How (61) is actually derived, and what the arguments in favour of this analysis are (which are, in fact, robust), are beyond the scope of our discussion (see, e.g., Adger 2003, for an 'update' to Koster's account). The crucial point here is that number agreement does not (or, at least, does not have to) reflect a construal between a CP and a copula.

Keeping the above discussion in mind, let us turn to sluicing. It is easy to show that the SLUICE is not the subject of the clause. Consider (62) (from van Riemsdijk 1978: 246).

- (62) a. His house is quite big, but _{[[AP} how big_{]]} isn't clear_{]].}
b. John left, but _{[[PP} with whom_{]]} isn't clear_{]].}

Apart from DPs (cf., (60b)), APs (cf., (62a)) and PPs (cf., (62a)) also appear to occupy subject positions in sluicing, though they (usually) do not project in such positions. It follows then that the SLUICE, in cases like (60b) and (62), also occupies a left-dislocated site, as in (63) (the data are due to van Riemsdijk 1978: 246).

- (63) a. Some problems are solvable, but _{[which problems,} <sub>[that isn't clear_{]].}
b. His house is quite big, but _{[how big,} <sub>[that isn't clear_{]].}
c. John left, but _{[with whom,} <sub>[that isn't clear_{]].}
d. A few more good squibs, that would be nice.</sub></sub></sub>

- e. All those evasive answers, that's where the real danger lies.

As in (63a–c), an anaphoric element *that*, which is present in the above sentences, but does not have to be, as in (62), surfaces in the subject position, agrees with the copula in number, and anaphorically renders the SLUICE as the subject of the clause. (63d,e) show that *that* may also be anaphoric to plural DPs quite independently from sluicing (compare with (63a)). What is more, note that the (short) pause (represented as a comma marker in (63)), which is observable between the left-dislocated SLUICE and the anaphoric *that* is characteristic of left-dislocated (or Topicalized) constituents, and not of ordinary subjects. A similar pause is available in (62), where *that* is not present. This provides further support to the idea that the relevant SLUICES are actually left-dislocated.

Certainly, it should not escape one's attention that even if both CPs and SLUICES do not surface in subject slots, the question as to why a SLUICE behaves like a CP remains. In particular, wouldn't the fact that a SLUICE surfaces in a left-dislocated site, just like a CP, mean that a SLUICE *is* a CP? The answer is that, as we may recall from section 5.3, a SLUICE translates to a *wh*-operator-variable chain. This means, in turn, that a SLUICE surfaces in positions where these chains are normally licensed. So, the fact that a SLUICE does not lexicalize a subject slot, on a par with its CP-counterpart, does not mean that a SLUICE is a CP, but that both elements translate to *wh*-operator-variable chains, and hence, are treated equally in terms of syntax. This point becomes relevant for (and, is further clarified under) the following discussion, where I turn to evidence pertaining to 'positional distribution.'

The third argument that I want to address concerns the distribution of the SLUICE in languages like German.¹⁵ First, consider the multiple *wh*-question in (64), repeated from Merchant (2001: 47–48, (30) & (32b) respectively).

- (64) a. Wann hat Elke gestern [was/welches Auto] repariert?
 when has Elke yesterday what/which car repaired
 "When did Elke fix what/which car yesterday?"
- b. *Wer hat gestern t₂ repariert [welches Auto]₂?
 who has yesterday repaired which car
 "Who fixed which car yesterday?"

(64a) shows that DP-objects, like *was/welches Auto* (what/which car), must precede the verb (OV), here *repariert* (repaired), as verified by the ungrammatical (64b). So, the word order comes out as $SO_{DP}V$.

The reverse pattern is attested with CP-objects, as in (65) (Merchant's: 48, (33a,c)).

- (65) a. Wir haben nicht gewußt, [welches Auto Elke repariert hat]
 we have NEG known which car Elke repaired has
 "We don't know which car Elke has repaired."
- b. *Wir haben nicht [welches Auto Elke repariert hat] gewußt
 we have NEG which car Elke repaired has known
 "We didn't know which car Elke repaired."

Here, the CP follows V (*repariert* (repaired)) (cf., (65a) vs. (65b)). So, the order is SVO_{CP} .

Consider now sluicing, in the scope of (66) (Merchant's: 49, (35) & (35c)).

- (66) [Daß Elke ein Auto repariert hat] haben wir gewußt, aber...
 that Elke a car repaired has have we known but
 "We knew that Elke repaired a car, but..."
- a. wir haben nicht geahnt, [welches].
 we have NEG suspected which
- b. *wir haben nicht [welches] geahnt.
 we have NEG [welches] suspected
 "we had no idea which."

Interestingly, the SLUICE *welches* (which), albeit a DP, attests the SVO_{CP} pattern (cf., (66a)), while the $SO_{DP}V$ is ungrammatical, as in (66b).

Data of the above kind have standardly been alleged to speak in favour of the 'truncated' CP hypothesis. But such facts are also amenable to an alternative reading, consistent with the present analysis. More precisely, since a SLUICE actually translates to a *wh*-operator-variable chain (see the discussion above), *welches* (which) in (66) is placed in a position where syntax encodes the formation of, and LF reads-off, such chains; hence, in a position reserved for *wh*-clauses. The SVO_{CP} pattern, then, that sluicing exhibits in German is simply due to the fact that *wh*-positions are determined on a language-specific basis. That is, a *wh*-operator-variable

chain that is encoded as the complement (O) of a verb (V) in this language occupies a position following (VO), and not preceding (OV) the verb. In other words, both verbs *geahnt* (suspected) (cf., (66a)) and *repariert* (repaired) (cf., (65a)) target the *wh*-property of their complements, i.e., of the SLUICE, and the CP respectively. The only difference between the two construals is that, as regards sluicing, the *wh*-property projects lexically, so to speak, while in the case of CPs, it is further embedded under C.

On the other hand, the association of *repariert* (repaired) with its object *was/welches Auto* (what/which car) in (64a) exhibits the OV pattern. One may also say that this relation corresponds to an operator-variable construal, on the standard assumption that the verb translates to an operator (specifically, a λ -abstractor), and its object to a variable. Nonetheless, this construal, unlike the one relevant for sluicing, holds between a verb that is θ -associated with, and assigns case to, its object. It just so happens, then, that the difference between (66) and (64a) is encoded in the syntax of German, which assigns to the object DP in (66) a position preceding the verb (OV). In short, the current argumentation leads to the conclusion that a base-generation view of sluicing may also account for positional distribution facts, on the alternative assumption that a SLUICE encodes a ‘*wh*-operator-variable’ chain, on a par with *wh*-CPs, and hence, figures in (language-specific) environments that *wh*-construals typically surface.

The fourth, and final, argument against the base-generation view of sluicing concerns cases of ‘extraposition.’ Consider (67), repeated from chapter 4, section 4.3, (41) and (42a,b).

- (67) a. [[_{DP} The correct approach] wasn’t clear].
 b. *[It wasn’t clear [_{DP} the correct approach]].
 c. [[_{CP} Which of these approaches is correct] is not clear].
 d. [It is not clear [_{CP} which of these approaches is correct]].
 e. One of these approaches is correct, but [[_{DP} which of them] is not clear].
 f. One of these approaches is correct, but [it’s not clear [_{DP} which of them]].

The argument goes like this: the DP in (67a), the CP in (67c), and the SLUICE-DP in (67e), are all clausal subjects. Since the adjectival predicate *clear* does not license the extraposition of DPs (cf., (67b)), but only that of CPs (cf., (67d)), then the SLUICE is not a DP, but a CP, because it can be extraposed, as in (67f).

The workings of ‘extraposition’ are tangential to our concerns, so let us restrict attention to the following issues.¹⁶ First, in discussing cases of number agreement earlier, we saw that neither *wh*-clauses of the form (67c), nor SLUICED *wh*-elements, like (67e), actually surface in subject positions. For example, the SLUICE in (67e) is at a left-dislocated site, while the anaphoric *that* (or, perhaps, a dummy *it*) occupies the subject slot, as in (68).

(68) One of these approaches is correct, but [which of them, [that is not clear]].

(68) says that *which of them* is not directly comparable to the DP in (67a), which may occupy the subject slot or be topicalized. Second, related to the previous point, the fact that the SLUICE can be extraposed does not entail that it is a CP. The simplest and most straightforward explanation is that the SLUICE, being a focused constituent (see section 5.3.1), can be realized at extraposed sites, as is typical of prosodically stressed (or, more generally, discourse-related) material (see, among others, Chomsky 1995b; 2008). In other words, the extraposition facts pertaining to sluicing may be accounted for in terms of the syntax-PF interface, in connection with the prosodic properties of the SLUICE. This has nothing to do with its ‘categorical’ status.

In sum, this section has shown how the present analysis accounts for several aspects of sluicing constructions. More precisely, a SLUICE does not occupy subject slots, is a prosodically stressed element that can be extraposed, and is licensed in (language-specific) environments where *wh*-construals typically surface, due to its *wh*-operator-variable status. Moreover, island amnesty follows from the lack of the relevant structure, cases of preposition omission fall under general parsing issues, and interpretation is restricted to contexts that facilitate associations between ‘variables.’ Finally, reservations stemming from the issue of complement selection seem to be misplaced, since it is independently attested in the Grammar that the predicates that select for a SLUICE are generally able to select for non-C complements. Besides, if Merge operates directly on lexical items, ‘category’-oriented considerations seem irrelevant, and a number of exceptions to complement selection (independent from sluicing) may follow.

5.5 Summary

This chapter has argued that sluicing is a ‘hybrid’ phenomenon. On the one hand, it draws from mechanisms reserved for the formation of *wh*-operator-variable chains, and hence, surfaces

in contexts relevant for *wh*-construals. On the other hand, it utilizes anaphoric devices that are facilitated/conditioned by morphosyntactic information, and thus, abides by regularities attested in general anaphora. The question is where such devices operate. Is it in PF, triggering some form of deletion, or in LF (and discourse), presupposing some sort of dependency? An approach based on deletion entails that ‘more’ in syntax may become ‘less’ along the way to the interpretive systems, while an account relying on LF (and discourse) argues for going in the opposite direction, which is the view of sluicing that has been defended here. The following chapter concludes the present study, and, on the basis of the theoretical assumptions made throughout, abstracts over some issues regarding the syntax and interpretation of the three constructions examined so far, namely *wh*-ex situ, *wh*-in situ, and sluicing.

Notes

- ¹ See Christodoulou (2007) for an application of Williams’s GPAD to MG.
- ² See Barros & Vicente (2009) for the same observation, although from the viewpoint of structural ellipsis.
- ³ But see Elbourne (2002) for a deletion-based account of a certain class of anaphoric pronouns, dubbed ‘E-type,’ after Evans (1977a,b).
- ⁴ I thank Andreas Haida (personal communication) for pointing this out to me.
- ⁵ George Kotzoglou (personal communication; Elena Anagnostopoulou also makes the same comment) points out to me that it may be possible for one to assume a *wh*-in situ analysis of sluicing, while maintaining the notion of abstract Case. Although I can not exclude this possibility, I am not sure in what ways this approach to sluicing would be more advantageous from the one presently developed. Arguably, if it turned out that abstract Case is a *sine qua non* postulate of the Grammar (despite the current implications for the opposite direction), then maintaining this postulate in the context of a *wh*-in situ account of sluicing would be imposed by reasons quite independent to sluicing.
- ⁶ In Vlachos (2011) I suggest that the Q-operator relevant for sluicing is made available in the projection of a SLUICE; hence, in syntax. This is superfluous, under the current approach (I also thank Andreas Haida, personal communication, for a relevant comment).
- ⁷ See also Adger (2003) who reduces selection to a Probe-Goal dependency.
- ⁸ I thank Andreas Haida (personal communication) for pointing this out to me.
- ⁹ To some extent, (39) resembles Culicover & Jackendoff’s (2005: 256) claim that “In sluicing, the SLUICED *wh*-phrase is focus of an unstated question, in whose propositional structure the role of the *wh*-phrase is left inexplicit.”

¹⁰ The relevant discussion, in the context of sluicing, first figures in Vlachos (2011), but is treated differently.

¹¹ See Agüero-Bautista (2001; 2007) for a discussion of ‘pair-list’ readings in sluicing in terms of the PF-deletion approach.

¹² In fact, it is interesting to mention that similar kind of puzzling questions arise with respect to other instances of anaphora, such as bound variable anaphora, as exemplified in (i), repeated from Mayr (2010: 2, (1a)).

(i) Every student cut his (own) arm and every TEACHER cut HIS arm.

In (i), the capitalized pronoun *HIS* is focused, is bound by the universal quantifier *every TEACHER* (also focused), and contrasts with the pronoun *his*, in the preceding clause (likewise, *every TEACHER* contrasts with *every student*). The question that comes out from this kind of examples is how contrastive focus on a pronoun, which, by definition, does not facilitate coreference, is compatible with a bound variable reading of the pronoun. Notice, of course, that the sentence in (i) is only meant to indicate (surely, rather grossly, but sufficiently for the point made) that, if sluicing is indeed an instance of (cross-sentential) anaphora, we should expect that it attests readings that are available in other cases of anaphora, such as contrastive readings.

¹³ The fact that the SLUICE must be realized as a PP if its ANTECEDENT is implicit as in “Joe was murdered, but we don’t know *(by) who” (see the relevant discussion in chapter 4) concerns the status of implicit constituents, which are not discussed here. For an account in terms of the PF-deletion approach see Merchant (2007).

¹⁴ A point is relevant about the sentence in (58a). Anna Roussou (personal communication) comments that *to idhio praghma* (the same thing), although ‘categorically’ a DP, may function as resuming a VP. This is because *to idhio praghma* (the same thing) may surface in environments comparable to ‘do so’ anaphora in English, which is a construction that stands in for a full VP, as in (ia,b).

(i) a. Anna left, and I did so, too.

- b. I Anna efije, ke egho ekana to idhio praghma.
the Anna-NOM left-3SG and I did-3SG the same thing-ACC
“Anna left, and I did the same thing.”

I have not examined the distribution of *to idhio praghma* (the same thing), in comparison with the English ‘do so’ anaphora, so as to be sure whether the two constructions are really compatible, or not. If *to idhio praghma* (the same thing) may substitute for a full VP is a welcome hypothesis (and is, in fact, comparable to cases like ‘concealed questions’ where a DP stands in for a *wh*-interrogative construction (CP), as discussed in section 5.3). This, however, does not mean that *to idhio praghma* (the same thing) cannot also function as resuming a *wh*-CP, which is what (58a) shows. The default hypothesis is that *to idhio praghma* (the same thing) is an anaphoric constituent that may stand in for a number of different constructions.

- ¹⁵ The discussion also extends to Dutch and Hindi which show similar properties with German in terms of sluicing (see Merchant 2001 for data).
- ¹⁶ For various issues revolving around ‘extraposition,’ see, among others, Rosenbaum (1967), Ross (1967), Quirk et al. (1985), Authier (1991), Rothstein (1995), Stroik (1990; 1996), Chomsky (1995b; 2008), Jackendoff (2002), Culicover & Jackendoff (2005), and Kim & Sag (2008).

Chapter 6

So, this study was about what (and why)?

This study concentrated on (some aspects of) the syntax and interpretation of *wh*-constructions (in Modern Greek), both of ‘full-fledged’ (*wh*-questions) and ‘elliptical’ (sluicing). On the empirical side, the generative tradition has it that a particular grammar (more broadly, a language) forms *wh*-constructions in either of the following two ways: either by ‘displacing’ the *wh*-element from its original (predicate/V-internal) position (‘ex situ:’ e.g., Modern Greek, English) or not (‘in situ:’ e.g., Japanese, Chinese). On the theoretical side, the ex situ vs. in situ ‘parameter’—namely, the option that each grammar manifests—is fixed on the basis of a (generalized) EPP or Edge Feature (EF). That is, displacement (or, no displacement) occurs if EPP is associated (or, not, for that matter) with a certain functional head, namely C. Specifically, Modern Greek (and English) has EPP for C, and hence, attests displacement, while Japanese (and Chinese) does not, and as such, displacement is precluded. Displacement of a *wh*-element typically constitutes instances of ‘movement,’ which, in current minimalist terms, boils down to the combination of two operations, namely Merge and Agree. Roughly speaking, Merge is associated with argument structure, and Agree establishes a relation between two disjoint lexical items, say between C and a *wh*-element. Under this perspective, if C has EPP, then second (or Internal) Merge of a *wh*-element occurs, and does not otherwise. So, languages like Modern Greek and Japanese pattern to the extent that both of them utilize Agree, but differ with respect to the second instance of Merge (*yes* for Modern Greek vs. *no* for Japanese).

Neat as it may seem, the above picture does not come out that simple. This is because there are many ex situ languages (including Modern Greek and English) that instantiate in situ forms, and a similar situation holds for the in situ languages (e.g., Chinese). At least as regards the ex situ languages, the generative consensus is that the in situ forms do not correspond to, strictly speaking, ‘questions,’ but actually to ‘echo’ questions. In this respect, although it may

look like as if two ‘options’ (ex situ or in situ) are available in the same grammar, appearances are deceptive, since each form maps to a different meaning. Therefore, the ex situ vs. in situ parameter is not at stake, to the extent that form-meaning associations are transparent (and, of course, symmetric). In particular, in languages like Modern Greek, ex situ forms correspond to ‘information-seeking’ questions (approximately, the speaker has no clue about the value of the *wh*-element), while in situ forms map to ‘echo’ questions (roughly, the value of the *wh*-element is already given in the discourse).

The idea (or, perhaps, the ‘tenet,’ given its wide acceptance) that form-meaning associations are transparent consists of an ‘ideal’ scenario about the way syntactic objects are externalized, and is tailored to the minimalist conception of the Grammar. In particular, the idea is that each syntactic object maps to a certain interface representation pertaining to sound (PF) and meaning (LF). In this respect, syntax mediates between form and meaning, relating the former to the latter. So, to get back to the ex situ vs. in situ ‘discrepancy,’ the minimalist consensus is that syntax associates ex situ forms (PF) with information-seeking questions (LF), and in situ forms (PF) with echo questions (LF). Given this conception of things, we should not expect that, in ‘elliptical’ *wh*-constructions (sluicing), where form-meaning ‘opacities’ typically arise, the division of labour between syntax and the interfaces is substantially different. Therefore, a widely endorsed view about sluicing is that syntax assumes a structure identical to that of full-fledged ex situ configurations, and a certain portion of this structure does not survive at PF, but is available only at LF. Here, again, syntax computes form-meaning associations in a transparent (and symmetric) fashion, despite appearances caused by the illusion of the relevant ‘ellipsis.’

It goes without saying that the ideal scenario sketched above would be welcome if the empirical situation was ‘ideal’ too, but, actually, it is not. More precisely, a rough investigation of the relevant literature reveals that, in several (if not in all of the) ex situ languages, *wh*-constructions fall under what one may call a ‘quadratic’ pattern of form-meaning association. That is, an ex situ form may correspond to either an information-seeking or an echo question, and the same is true with an in situ form. The question, then, arises as to if, and if so, to what extent syntax is responsible for mapping the relevant forms with their corresponding meanings. Another question, related to the previous, is if standard ex situ grammars (e.g., Modern Greek)

are in fact so distant from standard in situ ones (e.g., Japanese), as the macro-parameter ‘EPP for C’ (or ‘no EPP for C’) seems to suggest.

The vast majority of the current minimalist responses to the aforementioned situation maintains the ideal scenario. Roughly speaking, since syntax maps form to meaning, then the available variations in this mapping are due to the functional part of the lexicon of each language, and to the way syntax interacts with it. This type of solution is (at best) an alternative, which is packaged with, at least, two necessary assumptions. First, each form must be computed on the basis of task-oriented formal primitives (features). This, in turn, leads to an (over)abundance of features, each of which has a certain task to carry out. And second, each meaning must be encoded in the relevant structures. This means that, in some cases (i.e., remnant movement), syntax is fed by the discourse; in other cases (e.g., covert/feature movement), syntax assumes overlapping operations (e.g., under the availability of Agree); and yet, in other cases (e.g., elliptical *wh*-constructions), syntax creates ‘disposable’ structures.

The inescapable redundancy that the above picture alludes to, as well as, the heavy burden that seems to fall on syntax proper, appears to be relaxed once we shift our attention to the interfaces, and consider their role in the externalization of syntactic structures. More precisely, several evidence, revolving around distribution (syntax), interpretation (LF), and intonation (PF), points at an alternative division of labour between syntax and the interfaces, which diverges from the one that is standardly assumed. This separation of tasks has two facets. First, it argues that syntax ‘restricts’ part of form-meaning associations, so that the mapping between form and meaning is not ‘arbitrary,’ but is regulated by information already encoded in the relevant structures. In this sense, syntax keeps its role as a mediator between the two interfaces, as is typically the case. The other strand of the ‘workload’ falls on the interfaces, which decode the information provided by the syntactic output, and ‘fill in’ the essential ‘missing’ parts of meaning. In this respect, and unlike the currently exercised wisdom, the interfaces acquire a more ‘active’ role, so to speak, in the process of externalizing a syntactic object, since they do not only read-off this object, but also talk to each other. A system of this type has, at least, two consequences and one tentative implication, which, in turn, lead to a number of assumptions, some of which are summarized below.

The first consequence is that syntax is rid of unnecessary (and, hence, redundant) technical

tools. In other words, the inventory of features and operations is restricted to what is ‘virtually conceptually necessary’ for the computation of the relevant *wh*-constructions. So, only Merge and Agree are maintained, while remnant/covert/feature movement is abandoned. The second consequence is that form may be ‘less’ from meaning, on the assumption that the interfaces can actually contribute to meaning. The implication, which is tentatively articulated here, since it requires extensive elaboration in order to be considered seriously, is the following: if the line of theorizing in the present thesis is correct, then it may turn out to be that divergence from the ‘ideal’ scenario of form meaning mapping *is*, in fact, the ‘ideal’ scenario, once the role of the interfaces in the externalization of linguistic structures is put into perspective.

Given the above parsimonious set of assumptions (the implication aside), the questions are how: a) the ‘quadratic’ pattern of form-meaning association, b) the apparent ‘ellipsis’ effects, and c) the parametric variation of languages, can be accounted for. As regards (a), syntax may freely compute either *ex situ* or *in situ* forms, on the assumption that EPP (or, any other relevant notion, for that matter) is not a feature associated with C, but an instruction for lexicalization (PF realization). This instruction is encoded in first Merge, so any instance of additional (second, or more) Merge is not only redundant, but to some extent precluded by definition, on the assumption that the lexicalization of a single element may take place only once in a given structure. What is more, the disambiguation of information-seeking from echo questions takes place at PF, via distinct intonation contours, which, in turn, means that LF ‘sees’ PF, since PF contributes to meaning. With respect to (b), namely the resolution of ‘elliptical’ *wh*-constructions, the idea is that, since the interfaces (LF in our case) add to meaning, then meaning does not have to be encoded in a relevant structure, which is later subtracted. Instead, (morpho)syntax encodes all the essential information, so that LF can recover the ‘missing’ meaning. What is more, this necessarily means that all morphosyntactic information is ‘interpretable’ at the interfaces, and does not need any kind of ‘valuation’ during the syntactic process. Finally, with regard to (c), that is, the issue of the parametric variation, the idea (maintained and extended) is that an invariant computational system (Merge, Agree) operates on a variant lexicon (Modern Greek, Japanese). That is, the instruction that certain interpretations in the clause structure (C/V) be lexicalized is constant between, say Modern Greek, and Japanese. So, the two languages differ as to the lexical ingredients that each has at its disposal in order to satisfy this

instruction. For example, Modern Greek *wh*-elements combine both interpretations associated with C and V, attesting either the ‘ex situ’ or the ‘in situ’ option (since the same *wh*-element cannot surface in both positions simultaneously). On the other hand, Japanese *wh*-elements ‘split’ the two interpretations, manifesting the ‘ex/in situ’ option in the same configuration.

Overall, the present study sides with the ‘reductionist’ perspective of the minimalist approach to natural human language, and in this sense, maintains that a restrictive inventory of formal primitives and operations is not only capable of, but also more efficient in accounting for and predicting the relevant form-meaning associations, in an explanatorily adequate manner.

References

- Adger, D. (2003). *Core Syntax: A Minimalist Approach*. Oxford: Oxford University Press.
- Adger, D. & J. Quer (2001). The syntax and semantics of unselected embedded questions. *Language* 77: 107–133.
- Adger, D. & G. Ramchand (2005). Merge and Move: *Wh*-Dependencies revisited. *Linguistic Inquiry* 36: 161–193.
- Adli, A. (2006). French *wh*-in-situ. Questions and syntactic optionality: evidence from three data types. *Zeitschrift für Sprachwissenschaft*. Walter de Gruyter, 25: 163–203.
- Aelbrecht, L. (2010). *The Syntactic Licensing of Ellipsis*. Linguistik Aktuell/Linguistics Today. Amsterdam: John Benjamins.
- Agouraki, Y. (1990). On the projection of maximal categories: the case of CP and FP in Modern Greek. *UCL Working paper in linguistics* 2: 183–200.
- Agouraki, Y. (1999). Propositional operators. In A. Alexiadou, G. Horrocks and M. Stavrou, (Eds.), *Studies in Greek Syntax*, 23–44. Dordrecht: Kluwer.
- Agüero-Bautista, C. (2001). Cyclicality and The Scope of *Wh*-phrases. Doctoral dissertation, MIT.
- Agüero-Bautista, C. (2007). Diagnosing cyclicality in sluicing. *Linguistic Inquiry* 38: 413–443.
- Akmajian, A. (1979). *Aspects of the Grammar of Focus in English*. New York: Garland.
- Alexiadou A. & E. Anagnostopoulou (1998). Parameterizing Agr: word order, V-movement and EPP-checking. *Natural Language and Linguistic Theory* 16: 491–539.

- Alexiadou A. & E. Anagnostopoulou (2001). The Subject-in-situ generalization and the role of Case in driving computations. *Linguistic Inquiry* 32: 193–231.
- Alexopoulou, T. & F. Keller (2007). Locality, cyclicity, and resumption: at the interface between the Grammar and the Human Sentence Processor. *Language* 83: 110–160.
- Alexopoulou, T. & M. Baltazani (2012). Focus in Greek *wh*-questions. In I. Kucerova and A. Neeleman, (Eds.), *Contrasts and Positions in Information Structure*, 206–246. Cambridge: Cambridge University Press.
- Almeida, D. & M. Yoshida (2007). A problem for the Preposition Stranding generalization. *Linguistic Inquiry* 38: 349–362.
- Anagnostopoulou, E. (1994). Clitic Dependencies in Modern Greek. Doctoral dissertation, University of Salzburg.
- Aoun, J., N. Hornstein, & D. Sportiche. (1981). Some aspects of wide scope quantification. *Journal of Linguistic Research* 1: 69–95.
- Aronoff, M. (1994). *Morphology by Itself*. Cambridge, MA.: MIT Press.
- Arvaniti, A. (2001). The intonation of *wh*-questions in Greek. *Studies in Greek Linguistics* 21: 57–68.
- Arvaniti, A. & M. Baltazani (2005). Intonational analysis and prosodic annotation of Greek spoken corpora. In S.-A. Jun, (Ed.), *Prosodic Typology: The Phonology of Intonation and Phrasing*, 84–117. Oxford: Oxford University Press.
- Arvaniti, A. & D. R. Ladd (2009). Greek *wh*-questions and the phonology of intonation. *Phonology* 26: 43–74.
- Authier, J. M. (1991). V-Governed expletives, Case theory, and the Projection Principle. *Linguistic Inquiry* 22: 721–740.
- Baker, C. L. (1968). Indirect Questions in English. Doctoral dissertation, University of Illinois.
- Baker, C. L. (1970). Notes on the description of English questions: the role of an abstract Q morpheme. *Foundations of Language* 6: 197–219.

- Barros, M. & L. Vicente (2009). Backward... Ellipsis? Manuscript, Rutgers University and Universität Potsdam.
- Baunaz, L. (2005). The syntax and semantics of *wh* in-situ and existentials: the case of French. In B. Arsenijević, N. Elouazizi, F. Landsbergen and M. Salzmann, (Eds.), *Leiden Papers in Linguistics* 2.2: 1–26.
- Baunaz, L. (2011). *The Grammar of French Quantification*. Springer.
- Bayer, J. (2006). *Wh*-in situ. In M. Everaert and H. van Riemsdijk, (Eds.), *The Blackwell Companion to Syntax*, volume V, 376–438.
- Beck, S. (1996). Quantified structures as barriers for LF movement. *Natural Language and Linguistic Theory* 4: 1–56.
- Beck, S. (2006). Intervention effects follow from focus interpretation. *Natural Language and Linguistic Theory* 14: 1–56.
- Beck, S. & H. Rullmann (1999). A flexible approach to exhaustivity in questions. *Natural Language Semantics* 7: 249–298.
- Belletti, A. (2004). Aspects of the low IP area. In L. Rizzi, (Ed.), *The Structure of CP and IP: the Cartography of Syntactic Structures*, 16–51. Oxford: Oxford University Press.
- Benincà, P. (2001). The position of topic and focus in the left periphery. In Cinque, G. and Salvi, G., (Eds.), *Current Studies in Italian Syntax*, volume 3, 39–64. Amsterdam: Elsevier.
- Benincà, P. & C. Polletto (2004). Topic, focus and V2: defining the CP sublayers. In Rizzi, L., (Ed.), *The structure of CP and IP. The cartography of syntactic structures*, volume 2, 52–75. Oxford: Oxford University Press.
- Berman, S. R. (1990). On The Semantics and Logical Form of *Wh*-clauses. Doctoral dissertation, University of Massachusetts, Amherst.
- Bhat, D. N. S. (2000). The indefinite-interrogative puzzle. *Linguistic Typology* 4: 365–400.
- Bhat, D. N. S. (2004). *Pronouns*. Oxford: Oxford University Press.

- Boeckx C. (1999). Decomposing French questions. *University of Pennsylvania Working Papers in Linguistics* 6: 69–80.
- Boeckx, C. (2010). Why edges are needed. In A. M. Di Sciullo and V. Hill, (Eds.), *Edges, Heads, and Projections: Interface Properties*, 11–22. Amsterdam: John Benjamins.
- Bolinger, D. (1978). Asking more than one thing at a time. In H. Hiz, (Ed.), *Questions*, 107–150. Dordrecht: D. Reidel.
- Bolinger, D. (1987). Echoes reechoed. *American Speech* 62: 261–279.
- Borer, H. (1983). *Parametric Syntax. Case Studies in Semitic and Romance Languages*. Dordrecht: Foris.
- Bošković, Ž. (1998). LF movement and the Minimalist Program. *Proceedings of NELS 28*, 43–57. Amherst: GLSA Publications.
- Bošković, Ž. (2000). Sometimes in SpecCP, sometimes in situ. In R. Martin, D Michaels, and J. Uriagereka, (Eds.), *Step by Step: Essays on Minimalist Syntax in Honour of Howard Lasnik*, 53–88. Cambridge, MA.: MIT Press.
- Bresnan, J. (1972). Theory of Complementation in English Syntax. Doctoral dissertation, MIT.
- Brody, M. (1995). *Lexico-Logical Form: A Radically Minimalist Theory*. Cambridge, MA.: MIT Press.
- Brody, M. (1997). Perfect chains. In L. Haegeman, (Ed.), *Elements of Grammar*, 139–167. Dordrecht: Kluwer.
- Brody, M. (2000). Word order, restructuring and mirror theory. In P. Svenonius, (Ed.), *The Derivation of VO and OV*, 27–43. Amsterdam: John Benjamins.
- Brody, M. (2003). *Towards an Elegant Syntax*. London: Routledge.
- Browning, M. (1987). Null Operator Constructions. Doctoral dissertation, MIT.
- Bury, D. (2003). Phrase Structure and Derived Heads. Doctoral dissertation, University College London.

- Butler, J. (2004). On having arguments and agreeing: semantic EPP. In J. Butler, D. Morgan, L. Plug, and G. Walker, (Eds.), *York Papers in Linguistics 2*: 1–27.
- Cable, S. (2007). The Grammar of Q: Q-Particles and the Nature of *Wh*-Fronting, As Revealed by the *Wh*-Questions of Tlingit. Doctoral dissertation, MIT.
- Caponigro, I. & L. Pearl (2009). The nominal nature of *where*, *when*, and *how*: evidence from Free Relatives. *Linguistic Inquiry* 40: 155–164.
- Carlson, G. (2005). Anaphora. In L. Nadel, (Ed.), *Encyclopedia of Cognitive Science*, 1–7. New York: Wiley.
- Carnie, A. (2006). *Syntax. A Generative Introduction*. Oxford: Blackwell.
- Catsimali, G. (1990). Case in Modern Greek: Implications for Clause Structure. Doctoral Dissertation, University of Reading.
- Cecchetto, C. & C. Donati (2010). On labeling: Principle C and Head movement. *Syntax* 13: 241–278.
- Chang, L. (1997). *Wh-in-situ Phenomena in French*. Master's thesis, University of British Columbia.
- Chao, W. (1987). *On Ellipsis*. Doctoral dissertation, University of Massachusetts, Amherst. [Published in 1988 by Graduate Linguistic Students Association, UMass, Amherst].
- Cheng, L. L.-S. (1991). On the Typology of *Wh*-questions. Doctoral dissertation, MIT.
- Cheng, L. L.-S. (2003a). *Wh-in-situ*. *Glott International* 7: 103–109.
- Cheng, L. L.-S. (2003b). *Wh-in-situ*, Part II. *Glott International* 7: 129–137.
- Cheng, L. L.-S. (2009). *Wh-in-situ*, from 1980s to now. *Language and Linguistics Compass*, 3: 767–791.
- Cheng, L. L.-S. & J. Rooryck. (2000). Licensing *wh-in-situ*. *Syntax* 3: 1–20.
- Cheng, L. L.-S. & J. Rooryck. (2002). Types of *wh-in-situ*. Manuscript, University of Leiden.
- Cheng, L. L.-S. & H. Demirdache (2010). Trapped at the edge: On long-distance pair-list readings. *Lingua* 120: 463–484.

- Cheung, C. C.-H. (2008). *Wh-Fronting in Chinese*. Doctoral dissertation, University of Southern California.
- Chomsky, N. ([1955]1975). *The Logical Structure of Linguistic Theory*. Cambridge, MA.: MIT Press.
- Chomsky, N. (1964). *Current Issues in Linguistic Theory*. The Hague-Paris: Mouton.
- Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge, MA.: MIT Press.
- Chomsky, N. (1970). Remarks on Nominalization. In R. A. Jacobs and P. S. Rosenbaum, (Eds.), *Readings in English Transformational Grammar*, 184–221.
- Chomsky, N. (1976a). *Studies on Semantics in Generative Grammar*. The Hague-Paris: Mouton.
- Chomsky, N. (1976b). Conditions on rules of grammar. *Linguistic Analysis* 2: 303–351.
- Chomsky, N. (1977). On *wh*-movement. In P. Culicover, T. Wasow, and A. Akmajian, (Eds.), *Formal Syntax*, 71–132. New York: Academic Press.
- Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. (1982). *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge, MA.: MIT Press.
- Chomsky, N. (1986a). *Barriers*. Cambridge, MA.: MIT Press.
- Chomsky, N. (1986b). *Knowledge of Language: Its Nature, Origins, and Use* (Convergence). New York: Praeger.
- Chomsky, N. (1993). A minimalist program for linguistic theory. In K. Hale and S. J. Keyser, (Eds.), *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberg*, 1–52. Cambridge, MA.: MIT Press. Also in Chomsky, N. (1995b). *The Minimalist Program*. Cambridge, MA.: MIT Press.
- Chomsky, N. (1995a). Bare Phrase Structure. In G. Webelhuth, (Ed.), *Government and Binding Theory and the Minimalist Program*, 385–439. Oxford: Blackwell.
- Chomsky, N. (1995b). *The Minimalist Program*. Cambridge, MA.: MIT Press.

- Chomsky, N. (2000). Minimalist inquiries, the framework. In R. Martin, D Michaels, and J. Uriagereka, (Eds.), *Step by Step: Essays on Minimalist Syntax in Honour of Howard Lasnik*, 89–156. Cambridge, MA.: MIT Press.
- Chomsky, N. (2001). Derivation by phase. In M. Kestowicz, (Ed.), *Ken Hale: A Life in Language*, 1–52. Cambridge, MA.: MIT Press.
- Chomsky, N. (2004). Beyond explanatory adequacy. In A. Belletti, (Ed.), *Structures and Beyond. The Cartography of Syntactic Structures*, volume 3, 104–131. Oxford: Oxford University Press.
- Chomsky, N. (2008). On phases. In R. Freidin, C. P. Otero, and M. L. Zubizarreta, (Eds.), *Foundational Issues in Linguistic Theory. Essays in Honour of Jean-Roger Vergnaud*, 133–195. Cambridge, MA.: MIT Press.
- Chomsky, N. & H. Lasnik. (1977). Filters and control. *Linguistic Inquiry* 11: 425–504.
- Christodoulou, C. (2007). Anaphoric relations with Greek pronouns. In *Proceeding of the 23rd Northwest Linguistics Conference*. Victoria BC CDA.
- Chung, S. (2005). Sluicing and the lexicon: the point of no return. Manuscript, University of California at Santa Cruz.
- Chung, S., W. A. Ladusaw & J. McCloskey (1995). Sluicing and Logical Form. *Natural Language and Linguistic Theory* 3: 239–282.
- Chung, S., W. A. Ladusaw & J. McCloskey (2011). Sluicing (:) between structure and inference. In R. Gutierrez-Bravo, L. Mikkelsen, and E. Potsdam, (Eds.), *Representing Language: Essays in Honour of Judith Aissen*, 31–50. California Digital Library eScholarship Repository. Linguistics Research Center, University of California, Santa Cruz.
- Cinque, G. (1990). *Types of A-bar Dependencies*. Cambridge, MA.: MIT Press.
- Citko, B. (2011). *Symmetry in Syntax: Merge, Move and Labels*. Cambridge: Cambridge University Press.
- Cole, P. & G. Hermon (1994). Is there LF *wh*-movement? *Linguistic Inquiry* 25: 239–262.

- Cole, P. & G. Hermon (1998). The typology of *wh*-movement. *Wh*-question in Malay. *Syntax* 1: 221–258.
- Collins, C. (2002). Eliminating labels. In S. D. Epstein and T. D. Seely, (Eds.), *Derivation and Explanation in the Minimalist Program* (Generative Syntax 6), 42–64. Oxford: Blackwell.
- Cooper, R. (1983). *Quantification and Syntactic Theory*. Dordrecht: Reidel.
- Van Craenenbroeck, J. (2008). More ado about nothing: sluicing, copular clauses, and case. Paper presented at the *Linguistics Colloquium, University of California Santa Cruz*.
- Van Craenenbroeck, J., (Ed.), (2009). *Alternatives to Cartography*. Paris: Mouton De Gruyter.
- Culicover, P. W. & R. Jackendoff (2005). *Simpler Syntax*. Oxford: Oxford University Press.
- Dayal, V. (1991). Subjacency effects at LF: The case of Hindi *wh*. *Linguistic Inquiry* 22: 762–770.
- Dayal, V. (1994). Scope marking as indirect *wh*-dependency. *Natural Language Semantics* 2: 137–170.
- Dayal, V. & R. Schwarzschild (2010). Definite inner antecedents and *wh*-correlates in sluices. In P. Staroverov, D. Altshuler, A. Braver, C. Fasola, and S. Murray, (Eds.), *Rutgers Working Papers in Linguistics*, 3: 92–114.
- Denham, K. (2000). Optional *wh*-movement in Babine-Witsuwit'en. *Natural Language and Linguistic Theory* 18: 199–251.
- Den Dikken, M. & A. Giannakidou (2002). From *hell* to polarity: “aggressively non-D-Linked” *wh*-phrases as polarity items. *Linguistic Inquiry* 33: 31–61.
- Donati, C. & C. Cecchetto (2011). Relabeling heads: a unified account for relativization structures. *Linguistic Inquiry* 42: 519–560.
- Elbourne, P. (2002). E-Type anaphora as NP-deletion. *Natural Language Semantics* 9: 241–288.

- Elbourne, P. (2008). The interpretation of pronouns. *Language and Linguistic Compass* 2: 119–150.
- Enç, M. (1991). The semantics of specificity. *Linguistic Inquiry* 22: 1–25.
- Español-Echevarría, M. & A. Ralli (2000). Case mismatches in Greek: evidence for the autonomy of Morphology. *Acta Linguistica Hungaria* 47: 179–203.
- Etxepare, R. & M. Uribe-Etxebarria (2005). In situ *wh*-phrases in Spanish: locality and masked movement. *Recherches Linguistiques de Vincennes* 33: 9–34.
- Evans, G. 1977a. Pronouns, quantifiers and relative clauses (I). *Canadian Journal of Linguistics* 7: 467–536.
- Evans, G. 1977b. Pronouns, quantifiers and relative clauses (II). *Canadian Journal of Linguistics* 7: 777–797.
- Fiengo, R. (2007). *Asking Questions: Using Meaningful Structures to Imply Ignorance*. Oxford: Oxford University Press.
- Fox, D. (2002). Antecedent-Contained deletion and the Copy Theory of movement. *Linguistic Inquiry* 33: 63–96.
- Fox, D. and H. Lasnik (2003). Successive-cyclic movement and island repair: the difference between sluicing and VP-ellipsis. *Linguistic Inquiry* 34: 143–154.
- Frampton, J. (2004). Copies, traces, occurrences, and all that: evidence from Bulgarian multiple *wh*-phenomena. Manuscript, Northeastern University.
- Fukui, N. (2001). Phrase structure. In M. Baltin and C. Collins, (Eds.), *The Handbook of Contemporary Syntactic Theory*, 374–406. Oxford: Blackwell.
- Gallego, Á. J. (2010). *Phase Theory*. Amsterdam: John Benjamins.
- Gärtner, H. M. (2002). *Generalized Transformations and Beyond: Reflections on Minimalist Syntax*. Akademie Verlag.
- Geach, P. & M. Black, (Eds.), (1960). *Translations from the Philosophical Writings of Gottlob Frege*. Oxford: Blackwell.

- Geuder, W. (2000). Oriented Adverbs. Issues in the Lexical Semantics of Event Adverbs. Doctoral dissertation, Universität Tübingen.
- Giannakidou, A. and J. Merchant. (1998). Reverse sluicing in English and Greek. *The Linguistic Review* 15: 233–256.
- Gibson, E. (1998). Linguistic complexity: locality of syntactic dependencies. *Cognition* 68: 1–76.
- Ginzburg, J. & I. A. Sag (2001). *Interrogative Investigations. The form, Meaning and Use of English Interrogatives*. Stanford, California: CSLI Publications.
- Grimshaw, J. (1979). Complement selection and the Lexicon. *Linguistic Inquiry* 10: 279–326.
- Grinder, J. T. & P. Postal (1971). Missing Antecedents. *Linguistic Inquiry* 2: 269–312.
- Grohmann, K. K. (2003). *Prolific Domains: on the Anti-Locality of Movement Dependencies*. Amsterdam: John Benjamins.
- Grohmann, K. K., (Ed.), (2009a). *InterPhases. Phase Theoretic Investigations of Linguistic Interfaces*. Oxford: Oxford University Press.
- Grohmann, K. K., (Ed.), (2009b). *Explorations of Phase Theory: Features and Arguments*. Paris: Mouton De Gruyter.
- Grohmann, K. K. & J. Drury, and J. C. Castillo (2000). No more EPP. In R. Billerey and B. D. Lillehaugen, (Eds.), *WCCFL 19 Proceedings*, 153–166. Somerville: Cascadilla Press.
- Grohmann, K. K. & E. Papadopoulou (2011). Question(able) issues in Cypriot Greek. *Linguistic Analysis* 37: 11–41.
- Gussenhoven, C. (2002). Intonation and interpretation: phonetics and phonology. In B. Bel and I. Marlien, (Eds.), *Speech Prosody 2002. An International Conference*, 47–57. Aix-en-Provence. Laboratoire Parole et Langage, CNRS and Université de Provence.
- Gussenhoven, C. (2004). *The Phonology of Tone and Intonation*. Cambridge: Cambridge University Press.

- Hagstrom, P. A. (1998). *Decomposing Questions*. Doctoral dissertation, MIT.
- Hale, K. & S. J. Keyser (1993). On argument structure and lexical expression of syntactic relations. In K. Hale and S. J. Keyser, (Eds.), *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberge*, 53–109. Cambridge, MA.: MIT Press.
- Halle, M. & A. Marantz. (1993). Distributed morphology and the pieces of inflection. In K. Hale and S. J. Keyser, (Eds.), *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberge*, 111–176. Cambridge, MA.: MIT Press.
- Hamblin, C. L. (1973). Questions in Montague English. *Foundations of Language* 10: 41–53.
- Hankamer, J. & I. A. Sag (1976). Deep and surface anaphora. *Linguistic Inquiry* 7: 391–424.
- Haspelmath, M. (1997). *Indefinite Pronouns*. Oxford: Clarendon Press.
- Heim, I. (1982). *The Semantics of Definite and Indefinite Noun Phrases*. Doctoral dissertation, University of Massachusetts, Amherst [Published in 1989 by Graland, New York].
- Heim, I. (1990). E-type pronouns and donkey anaphora. *Linguistics and Philosophy* 13: 137–177.
- Heim, I. (1994). Interrogative semantics and Karttunen's semantics for *know*. In R. Buchalla and A. Mittwoch, (Eds.), *The Proceedings of the Ninth Annual Conference*, 128–144. Israel Association for Theoretical Linguistics.
- Heim, I. (2008). Features on bound pronouns. In D. Harbour, D. Adger, and S. Béjar, (Eds.), *Phi Theory: Phi-Features across Modules and Interfaces*, 35–56. Oxford: Oxford University Press.
- Higginbotham, J. & R. May (1981). Questions, quantifiers, and crossing. *Linguistic Review* 1: 41–79.
- Higgins, R. F. (1979). *The Pseudo-Cleft Construction in English*. New York: Garland.
- Hofmeister, P. & I. A. Sag (2010). Cognitive constraints and island effects. *Language* 86: 366–415.

- Honcoop, M. F. (1998). *Dynamic Excursions on Weak Islands*. Doctoral dissertation, Leiden University.
- Horrocks, G. (1994). Subjects and configurationality. *Journal of Linguistics* 30: 81–109.
- Horrocks, G. & M. Stavrou (1987). Bounding theory and Greek syntax: evidence for *wh*-movement in NP. *Journal of Linguistics* 23: 79–108.
- Huang, C-T. J. (1982). *Logical Relations in Chinese and the Theory of Grammar*. Doctoral dissertation, MIT.
- Ishihara, S. (2003). *Intonation and Interface Conditions*. Doctoral dissertation, MIT.
- Jackendoff, R. (1972). *Semantic Interpretation in Generative Grammar*. Cambridge, MA.: MIT Press.
- Jackendoff, R. (1997). *The Architecture of the Language Faculty*. Cambridge, MA.: MIT Press.
- Jackendoff, R. (2002). *Foundations of Language*. Cambridge: Cambridge University Press.
- Jayaseelan, K. A. (2008). Bare phrase structure and specifier-less syntax. *Biolinguistics* 2: 87–106.
- Jespersen, O. (1933/2006). *Essentials of English Grammar*. London: Routledge.
- Jiménez, M. L. (1997). *Semantic and Pragmatic Conditions on Word Order in Spanish*. Doctoral dissertation. Georgetown University.
- Johnson, K. (2010). Towards deriving differences in how *wh*-movement and QR are pronounced. *Lingua* 122: 529–533.
- Joseph, B. (1991). The morphosyntax of the Modern Greek verbal complex as Morphology and not Syntax. *Studies in Greek Linguistics*, 33–45. Thessaloniki: Kyriakides.
- Joseph, B. & J. Smirniotopoulos (1993). The morphosyntax of the Modern Greek verbal complex as Morphology and not Syntax. *Linguistic Inquiry* 24: 388–398.
- Kamp, H. (1981). A theory of Truth and semantic representation. In J. Groenendijk, T. Janssen and M. Stokhof, (Eds.), *Formal Methods in the Study of Language*, 277–321. Amsterdam: Mathematical Centre.

- Karttunen, L. (1973). Presuppositions of compound sentences. *Linguistic Inquiry* 4: 169–193.
- Karttunen, L. (1977). Syntax and semantics of questions. *Linguistics and Philosophy* 1: 3–44.
- Kato, M. (2004). Two types of *wh*-in situ in Brazilian Portuguese. Paper presented at *The Georgetown Roundtable*, Washington DC.
- Katz, J. & P. Postal (1964). *An Integrated Theory of Linguistic Descriptions*. Cambridge, MA.: MIT Press.
- Kayne, R. (1994). *Antisymmetric Syntax*. Cambridge, MA.: MIT Press.
- Kayne, R. (1998). Overt vs. covert movement. *Syntax* 1: 128–191.
- Kellert, O. (2011). *Wh*-in situ in exclamatives? A case study of French. *Linguistic Analysis* 37: 43–78.
- Kennedy, C. & J. Merchant (2000). Attributive comparative deletion. *Natural Language and Linguistic Theory* 18: 89–146.
- Kim, J. & I. A. Sag (2008). Variations in English object extraposition. *Proceedings of the 41st Regional Meeting of the Chicago Linguistics Society*, 41: 251–265.
- Kiss, K. É. (1993). *Wh*-movement and specificity. *Natural Language and Linguistic Theory* 11: 85–120.
- Kitagawa, Y. (1986). Subjects in Japanese and English. Doctoral dissertation, University of Massachusetts, Amherst.
- Klima, E. (1964). Negation in English. In J. A. Fodor and H. Katz, (Eds.), *The Structure of Language: Readings in the Philosophy of Language*, 246–323. New Jersey: Prentice-Hall.
- Koopman, H. & D. Sportiche. (1982). Variables and Bijection Principle. *The Linguistic Review* 2: 139–160.
- Koopman, H. & D. Sportiche. (1991). The position of subjects. *Lingua* 85: 211–258.
- Koster, J. (1978). Why subject sentences don't exist. In S. Keyser, (Ed.), *Recent Transformational Studies in European Linguistics*, 53–74. Cambridge, MA.: MIT Press.

- Kotzoglou, G. (2005). Wh-Extraction and Locality in Greek. Doctoral dissertation, The University of Reading.
- Kratzer, A. (1998). Scope or pseudoscope? Are there wide-scope indefinites? In S. Rothstein, (Ed.), *Events in Grammar*, 109–137. Dordrecht: Kluwer.
- Kratzer, A. & J. Shimoyama (2002). Indeterminate pronouns: the view from Japanese. Paper presented at *The 3rd Tokyo Conference on Psycholinguistics*, 1–34.
- Kuroda, S.-Y. (1965). Generative Grammatical Studies in the Japanese Language. Doctoral dissertation, MIT [Published in 1979 by Graland, New York].
- Kuroda, S.-Y. (1988). Whether we Agree or not: a comparative syntax of English and Japanese. *Linguisticae Investigationes* 12: 1–47.
- Laenzlinger, C. (1996). Adverb syntax and phrase structure. In A.M. Di Sciullo, (Ed.), *Configurations: Essays on Structure and Interpretation*, 99–127. Somerville: Cascadilla Press.
- Lakoff, G. (1971). On generative semantics. In D. Steinberg and L. Jakobovits, (Eds.), *Semantics: an Interdisciplinary Reader in Philosophy, Linguistics and Psychology*, 232–296. Cambridge: Cambridge University Press.
- Larson, R. (1985). Bare-NP adverbs. *Linguistic Inquiry* 16: 595–621.
- Larson, R. (1988). On the double object construction. *Linguistic Inquiry* 19: 335–391.
- Lasnik, H. (2008). On the Development of Case theory: triumphs and challenges. In R. Freidin, C. P. Otero, and M. L. Zubizarreta, (Eds.), *Foundational Issues in Linguistic Theory. Essays in Honour of Jean-Roger Vergnaud*, 17–41. Cambridge, MA.: MIT Press.
- Lassadi, B. (2003). Optional *wh*-movement in French and Egyptian Arabic. *Cahiers linguistiques d'Ottawa* 31: 67–93.
- Lechner, W. (2004). *Ellipsis in Comparatives*. Paris: Mouton De Gruyter.
- Lechner, W. (to appear). Diagnosing covert movement: The Duke of York and reconstruction. In L. L.-S. Cheng, and N. Corver (Eds.), *Diagnosing Syntax*. Oxford: Oxford University Press.

- Lewis, D. (1979). Scorekeeping in a language game. *Journal of Philosophical Logic* 8: 339–359.
- Lobeck, A. (1995). *Ellipsis. Functional Heads, Licensing, and Identification*. Oxford: Oxford University Press.
- Mahajan, A. (1990). The A/A-bar distinction and movement theory. Doctoral dissertation, MIT.
- Mahajan, A. (1994). Against the relevance of Subjacency at LF: The case of Hindi *wh*. *Linguistic Inquiry* 25: 171–178.
- Manzini, R. & L. M. Savoia (2004). Uninterpretable features are incompatible in Morphology with other minimalist postulates. *Quaderni del Dipartimento di Linguistica*, Università di Firenze, 14: 13–33.
- Manzini, R. & L. M. Savoia (2007). *A Unification of Morphology and Syntax. Investigations into Romance and Albania Dialects*. London: Routledge.
- Manzini, R. & A. Roussou (2011). “Movement”: a view from the left. Paper presented at the *Workshop on Parallel Domains*, University of Southern California.
- Manzini, R. & L. M. Savoia (2011a). *Grammatical Categories. Variation in Romance Languages*. Cambridge: Cambridge University Press.
- Manzini, R. & L. M. Savoia (2011b). *Wh*-in situ and *wh*-doubling in northern Italian varieties. *Linguistic Analysis* 37: 79–113.
- Marantz, A. (1991). Case and licensing. Proceedings of ESCOL, 234–53. Distributed by Ohio State University Department of Linguistics. [Reprinted in E. Reuland, (Ed.), 2000. *Arguments and case: Explaining Burzio’s Generalization*. Amsterdam: John Benjamins].
- Marantz, A. (1997). No escape from syntax: don’t try morphological analysis in the privacy of your own Lexicon. Manuscript, MIT.
- Mathieu E. (1999). French *wh*-in-situ and the intervention effect. *UCL Working Papers in Linguistics* 11: 441–472.

- Mathieu, E. (2004). The mapping of form and interpretation: the case of optional *wh*-movement in French. *Lingua* 114: 1090–1132.
- Mayr, C. (2010). Contrastive salient alternatives: focus on bound pronouns. In *Proceedings of SALT 20*: 1–15.
- McCawley, J. (1982). Parentheticals and discontinuous constituent structure. *Linguistic Inquiry* 13: 91–106.
- McConnell-Ginet, S. (1982). Adverbs and Logical Form. *Language* 58: 144–184.
- Merchant, J. (2000). Islands and LF-movement in Greek sluicing. *Journal of Greek Linguistics* 1: 41–64.
- Merchant, J. (2001). *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.
- Merchant, J. (2004). Fragments and Ellipsis. *Linguistics and Philosophy* 27: 661–738.
- Merchant, J. (2007). The syntactic representation of implicit arguments. Paper presented at *The “Funny” Indefinites Workshop*, Zentrum für Allgemeine Sprachwissenschaft.
- Mikkelsen, L. (2005). *Copular Clauses: Specification, Predication and Equation*. Amsterdam: John Benjamins.
- Miller, G. A. (1975). Some comments on competence and performance. *Developmental Psycholinguistics and Communication Disorders* 263: 201–204. Annals of the New York Academy of Sciences.
- Miyagawa, S. (2001). The EPP, scrambling, and *wh*-in situ. In Kenstowicz, M., (Ed.), *Ken Hale: A Life in Language*, 293–338. Cambridge MA: MIT Press.
- Munaro, N. (1997). Proprietà distribuzionali dei sintagmi interrogativi in alcuni dialetti veneti settentrionali. *Quaderni di Lavoro dell’ASIS* 1: 63–74.
- Muysken, P. (1982). Parametrizing the notion “Head.” *Journal of Linguistic Research* 2: 57–75.

- Nathan, L. E. (2006). *On the Interpretation of Concealed Questions*. Doctoral dissertation, MIT.
- Nishigauchi, T. (1990). *Quantification in the Theory of Grammar*. Dordrecht: Kluwer.
- Nissenbaum, J. (2000). *Investigations of Covert Phrase Movement*. Doctoral dissertation, MIT.
- Nykiel, J. & I. A. Sag (2009). Preposition omission under sluicing. Paper presented at *The Fourth Brussels Conference On Generative Linguistics: Ellipsis (GCGL 4)*, Brussels (HUB).
- Nykiel, J. & I. A. Sag (2010). Sluicing and stranding. Manuscript, University of Silesia and Stanford University.
- Obenauer, H.-G. (1994). *Aspects de la Syntaxe A-barre*. These de Doctorat d'Etat, Université de Paris VIII.
- Oehl, P. (2007). Unselected embedded interrogatives in German and English. S-selection as dependency formation. *Linguistische Berichte* 212: 403–437.
- Oiry, M. (2011). A case of true optionality: *wh*-in situ patterns like long movement in French. *Linguistic Analysis* 37: 115–142.
- Ouhalla, J. (1996). Remarks on the binding properties of *wh*-Pronouns. *Linguistic Inquiry* 27: 676–707.
- Oushiro, L. (2011). *Wh*-interrogatives in Brazilian Portuguese: the influence of Common Ground. *University of Pennsylvania Working Papers in Linguistics* 17: 145–154.
- Parker, F. & J. Pickeral (1985). Echo questions in English. *American Speech* 60: 337–347.
- Pesetsky, D. (1982). *Paths and Categories*. Doctoral dissertation, MIT.
- Pesetsky, D. (1987). *Wh*-in-situ: movement and unselective binding. In E. Reuland and A. ter Meulen, (Eds.), *The Representation of (In)Definiteness*, 98–129. Cambridge, MA.: MIT Press.
- Pesetsky, D. (1991). *Zero syntax*, vol. II. Manuscript, MIT.
- Pesetsky, D. (2000). *Phrasal Movement and Its Kin*. Cambridge, MA.: MIT Press.

- Philippaki-Warbuton, I. (1985). Word order in modern Greek. *Transactions of the Philological Society 1985*, 113–143.
- Philippaki-Warbuton, I. (1987). The theory of empty categories and the pro-drop parameter in Modern Greek. *Journal of Linguistics 23*: 289–318.
- Philippaki-Warbuton, I. (1990). The analysis of verbal complex in Modern Greek. In *Studies in Greek Linguistics 10*: 119–139.
- Philippaki-Warbuton, I. (2001). Γλωσσολογική θεωρία και σύνταξη της Ελληνικής: η ποικιλία στη σειρά των όρων της πρότασης. [Linguistic theory and Greek syntax: variation in clausal word order] In *Proceedings of the 4th International Conference on Greek Linguistics*, 217–231. Thessaloniki : University Studio Press.
- Pierrehumbert, J. (1980). The Phonetics and Phonology of English Intonation. Doctoral dissertation, MIT.
- Pires, A. & H. L. Taylor (2007). The syntax of *wh*-in situ and Common Ground. Paper submitted to: P. Masullo, (Ed.), *Romance Languages: Structure, Interfaces, and Microparametric Variation*. Amsterdam: John Benjamins.
- Platzack, C. (2001). Multiple interfaces. In U. Nikanne & E. van der Zee, (Eds.), *Cognitive Interfaces: Constraints on Linking Cognitive Information*, 21–53. Oxford: Oxford University Press.
- Poletto, C. & J.-Y. Pollock (2004). On *wh*-clitics and *wh*-doubling in French and some north eastern Italian dialects. *Probus 33*: 241–272.
- Pylkkänen, L. (2008). Mismatching meanings in brain and behavior. *Language and Linguistics Compass 2*: 712–738.
- Pylyshyn, Z. W. (1973). The role of competence theories in Cognitive Psychology. *Journal of Psycholinguistic Research 2*: 21–50.
- Quirk, R., S. Greenbaum, G. Leech, & J. Svartvik. (1985). *A Comprehensive Grammar of the English Language*. London: Longman.

- Ralli, A. (1999). Inflectional features and the Morphological Module Hypothesis. In A. Kakouriotis and V. B. Mavrides, (Eds.), *Working Papers in Theoretical and Applied Linguistics*, 111–141. Aristotle University of Thessaloniki.
- Ramchand, G. & P. Svenonius (2008). Mapping a parochial Lexicon onto a universal semantics. In T. Biberauer, (Ed.), *The Limits of Syntactic Variation*, 219–244. Amsterdam: John Benjamins.
- Reglero, L. (2007). *Wh*-in situ questions in Spanish. *Probus* 19: 267–297.
- Reglero, L. & E. Ticio (2008). *Wh*-in situ and the Spanish DP: movement or no movement? *Proceedings of the 31st Annual Penn Linguistic Colloquium*, 14: 311–324.
- Reinhart, T. (1995). Interface strategies. *OTS Working Papers*. Institute for Language and Speech, Utrecht University.
- Reinhart, T. (1998). *Wh*-in situ in the framework of the minimalist program. *Natural Language Semantics* 6: 29–56.
- Reinhart, T. (2006). *Interface Strategies*. Cambridge, MA.: MIT Press.
- Richards, N. (1997). What Moves Where When in Which Language? Doctoral dissertation, MIT.
- Richards, N. (2010). *Uttering Trees*. Cambridge, MA.: MIT Press.
- Van Riemsdijk, H. C. (1978). *A Case Study in Syntactic Markedness*. Lisse: The Peter De Ridder Press.
- Rizzi, L. (1990). *Relativized Minimality*. Cambridge, MA.: MIT Press.
- Rizzi, L. (1997). The fine structure of the left periphery. In Haegeman, L., (Ed.), *Elements of Grammar: A Handbook of Generative Syntax*, 281–337. Dordrecht: Kluwer.
- Rizzi, L. (2001). On the position “int(errogative)” in the left periphery of the clause. In Cinque, G. and Salvi, G., (Eds.), *Current Studies in Italian Syntax*, volume 14, 267–296. Amsterdam: Elsevier.

- Rizzi, L. (2006). On the form of chains: criterial positions and ECP effects. In L. L.-S. Cheng and N. Corver, (Eds.), *Wh-Movement: Moving On*, 97–133. Cambridge, MA.: MIT Press.
- Roberts, I. (1985). *The Representation of Implicit and Dethematized Subjects*. Dordrecht: Foris.
- Roberts, I. & A. Roussou (1997). Interface interpretation. Manuscript, University of Stuttgart and University of Cyprus.
- Roberts, I. & A. Roussou (2003). *Syntactic Change: A Minimalist Approach to Grammaticalization*. Cambridge: Cambridge University Press.
- Rochette, A. (1990). The selectional properties of adverbs. In M. Ziolkowski, M. Noske, and K. Deaton, (Eds.), *Papers from the 26th Regional Meeting of the Chicago Linguistics Society*.
- Rodrigues, C., A. I. Nevins, & L. Vicente (2009). Cleaving the interactions between sluicing and P-stranding. In D. Torck, and W. L. Wetzels, (Eds.), *Romance Languages and Linguistic Theory: selected papers from 'Going Romance,'* 175–198. Amsterdam: John Benjamins.
- Romero, M. (1998). Focus and Reconstruction Effects in *Wh*-Phrases. Doctoral dissertation, University of Massachusetts, Amherst.
- Romero, M. (2005). Concealed questions and specificational subjects. *Linguistics and Philosophy* 28: 687–737.
- Rooth, M. (1985). Association with Focus. Doctoral dissertation, University of Massachusetts, Amherst.
- Rooth, M. (1992). A theory of focus interpretation. *Natural Language Semantics* 1: 75–116.
- Ross, J. R. (1967). Constraints on Variables in Syntax. Doctoral dissertation, MIT.
- Ross, J. R. (1969). Guess who? In R. I. Binnick, A. Davison, G. M. Green, J. L. Morgan et al., (Eds.), *Proceedings of the Fifth Regional Meeting of the Chicago Linguistic Society*, 252–286. Chicago, Illinois: Chicago Linguistic Society, University of Chicago.

- Ross, J. R. (1971). Conjunctive and disjunctive questions. Manuscript, MIT.
- Rossenbaum, P. S. (1967). The Grammar of English Predicate Complement Constructions. Doctoral dissertation, MIT.
- Rothstein, S. D. (1992). Case and NP licensing. *Natural Language and Linguistic Theory* 10: 119–139.
- Rothstein, S. D. (1995). Pleonastics and the interpretation of pronouns. *Linguistic Inquiry* 26: 499–529.
- Roussou, A. (2010a). Subjects on the edge. In E. P. Panagiotidis, (Ed.), *The Complementizer Phase: Subjects and Operators*, 76–116. Oxford: Oxford University Press.
- Roussou, A. (2010b). Selecting complementizers. *Lingua* 120: 582–603.
- Roussou, A. & I.-M. Tsimpli (2006). On Greek VSO again! *Journal of Linguistics* 42: 317–354.
- Roussou, A., C. Vlachos, & D. Papazachariou (2011). In-situ, ex-situ and (non)echo questions. Paper presented at the *20th International Symposium on Theoretical and Applied Linguistics*.
- Sabel, J. (2003). Malagasy as an optional multiple *wh*-fronting language. In C. Boeckx and K. K. Grohmann, (Eds.), *Multiple Wh-Fronting*, 229–254. *Linguistik Aktuell/Linguistics Today*, Amsterdam: John Benjamins.
- Sabel, J. & J. Zeller (2006). *Wh*-questions in Nguni. In J. Mugane et. al., (Eds.), *Proceedings of the 35th Annual Conference on African Linguistics*, 271–283.
- Saddy, D. (1991). *Wh*-scope mechanisms in Bahasa Indonesia. In L. Cheng and H. Demirdache, (Eds.), *MIT Working Papers in Linguistics* 15: 183–218.
- Sag, I. A. & J. Hankamer (1976). Toward a theory of anaphoric processing. *Linguistics and Philosophy* 7: 325–345.
- Sag, I. A. & J. Nykiel (2011). Remarks on sluicing. In S. Müller, (Ed.), *Proceedings of the HPSG11 Conference*. CSLI Publications.

- Sato, Y. & D. H. Yulliani (2008). *Wh*-in situ in Bahasa Indonesia and Choice Function. In *Kansas Working Papers in Linguistics* 30: 272–286.
- Schlangen, D. (2003). A Coherence-Based Approach to the Interpretation of Non-Sentential Utterances in Dialogue. Doctoral dissertation, University of Edinburgh.
- Schwarzschild, R. (1999). Givenness, AvoidF and other constraints on the placement of accent. *Natural Language Semantics* 7: 141–177.
- Seely, T. D. (2006). Merge, derivational c-command, and subcategorization in a label-free syntax. In C. Boeckx, (Ed.), *Minimalist Essays*, 182–217. Amsterdam: John Benjamins.
- Shimoyama, J. (2001). *Wh*-Constructions in Japanese. Doctoral dissertation, University of Massachusetts, Amherst.
- Shimoyama, J. (2006). Indeterminate phrase quantification in Japanese. *Natural Language Semantics* 14: 139–173.
- Shlonsky, Ur. (2009). Notes on *wh*-in situ in French. To appear: In L. Brugè. et. al., (Eds.), *A Festschrift for Guglielmo Cinque*. Oxford: Oxford University Press.
- Sinopoulou, O. (2008). Multiple questions and apparent *wh*-in situ: evidence from Greek. In *Proceedings of ConSOLE XV*, 223–246.
- Sinopoulou, O. (2009). Απλές ερωτήσεις με ερωτηματική λέξη in situ: η περίπτωση των Ελληνικών. [Simple questions with *wh*-in situ: the case of Greek] *Proceedings of the 8th International Conference on Greek Linguistics*, 1118–1132.
- Sobin, N. (1978). On echo questions in English. In D. Lance and D. Gulstad, (Eds.), *Papers from the 1977 Mid-America Linguistics Conference*, 247–259. Columbia: University of Missouri, University Extension Division.
- Sobin, N. (1990). On the syntax of English echo questions. *Lingua* 81: 141–167.
- Sobin, N. (2010). Echo questions in the Minimalist Program. *Linguistic Inquiry* 41: 131–148.
- Sportiche, D. (1988). A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19: 425–449.

- Sportiche, D. (1998). *Partitions and Atoms of Clause Structure: Subjects, Agreement, Case and Clitics*. London: Routledge.
- Spyropoulos, V. (2005). Agreement and multiple case licensing. In M. Stavrou and A. Terzi, (Eds.), *Advances in Greek Generative Syntax*, *Linguistik Aktuell/Linguistics Today*, 15–39. Amsterdam: John Benjamins.
- Stainton, R. (2006). *Words and Thoughts. Subsentences, Ellipsis and the Philosophy of Language*. Oxford: Oxford University Press.
- Stalnaker, R. (1973). Presuppositions. *Journal of Philosophical Logic* 2: 447–457.
- Stalnaker, R. (1999). *Context and Content. Essays on Intentionality in Speech and Thought*. Oxford: Oxford University Press.
- Stalnaker, R. (2002). Common ground. *Linguistics and Philosophy* 25: 701–721.
- Starke, M. (1997). LOC: a sketch with special reference to anaphora. Manuscript, Université de Genève.
- Starke, M. (2001). Move Dissolves into Merge: a Theory of Locality. Doctoral dissertation, Université de Genève.
- Starke, M. (2004). On the inexistence of specifiers and the nature of heads. In A. Belletti, (Ed.), *Structures and Beyond. The Cartography of Syntactic Structures*, volume 3, 252–268. Oxford: Oxford University Press.
- Starke, M. (2009). Nanosyntax. A short primer to a new approach to language. *Nordlyd* 36: 1–6.
- Stavrakaki, S. & I.-M. Tsimpli (1999). The effects of a morphosyntactic deficit in the determiner system: The case of Greek SLI child. *Lingua* 108: 31–85.
- Stroik, T. S. (1991). Expletives revisited. *Linguistic Analysis* 21: 23–33.
- Stroik, T. S. (1996). Extraposition and expletive-movement: a minimalist account. *Lingua* 99: 237–251.

- Szabolcsi, A. (2006). Strong vs. weak islands. In M. Everaert and H. van Riemsdijk, (Eds.), *The Blackwell Companion to Syntax*, volume V, 479–531.
- Szabolcsi, A. & F. Zwarts (1993). Weak islands and an algebraic semantics for scope taking. *Natural Language Semantics* 1: 235–284.
- Szabolcsi, A. & M. den Dikken (2002). Islands. In L. Cheng and R. Sybesma, (Eds.), *The Second State-of-the-Article Book*, 213–240. Paris: Mouton De Gruyter.
- Szczegielniak, A. (2008). Islands in sluicing in Polish. In N. Abner and J. Bishop, (Eds.), *Proceedings of the 27th West Coast Conference on Formal Linguistics*, 404–412. Somerville: Cascadilla Press.
- Tanaka, H. (2011). Voice mismatch and syntactic identity. *Linguistic Inquiry* 42: 470–490.
- Tang, C.-C. J. (1988). Wh-topicalization in Chinese. Manuscript, Cornell University.
- Terzi, A. (2010). Locative prepositions and place. In G. Cinque and L. Rizzi, (Eds.), *Mapping Spatial PPs: The Cartography of Syntactic Structures*, volume 6, 196–224. Oxford: Oxford University Press.
- Terzi, A., I. Kondyli, & E. Stefani (2009). Prepositions in Broca’s aphasia. In *Proceedings of the 8th International Conference on Greek Linguistics*, 461–472.
- Theophanopoulou-Kontou, D. (1992). Οι σύνθετες προθετικές φράσεις της ΝΕ και η δομή τους. [The complex prepositional phrases of Modern Greek and their structure] *Studies in Greek Linguistics* 13: 311–330.
- Theophanopoulou-Kontou, D. (1995). Σύνθετες προθέσεις της Νέας Ελληνικής: μια προβληματική κατηγορία. [Complex prepositions of Modern Greek: a problematic category] *Studies in Greek Linguistics* 16: 233–244.
- Tsai, W.-T. (1994). On Economizing the Theory of A-bar Dependencies. Doctoral dissertation, MIT.
- Tsimpli, I.-M. (1990). The clause structure and word order of Modern Greek. In *UCL Working Papers in Linguistics* 2: 226–255.

- Tsimpili, I.-M. (1995). Focusing in Modern Greek. In E. K. Kiss., (Ed.), *Discourse Configurational Languages*, 176–206. Oxford: Oxford University Press.
- Tsimpili, I.-M. (1998). Individual and functional readings for focus, *wh*- and negative operators: evidence from Greek. In G. Horrocks, B. Joseph and I. Philippaki-Warbuton, (Eds.), *Themes in Greek Linguistics 2*: 197–227. Amsterdam: John Benjamins.
- Tsimpili, I.-M. (1999). Null operators, clitics and identification: a comparison between Greek and English. In A. Alexiadou, G. Horrocks, M. Stavrou, (Eds.), *Studies in Greek syntax*, volume 43 of *Studies in Natural Language and Linguistic Theory*, 241–262. Dordrecht: Kluwer.
- Uribe-Etxebarria, M. (2002). In situ questions and masked movement. *Linguistic Variation Yearbook 2*: 215–255.
- Vergnaud, J.-R. (1977). Letter to Noam Chomsky and Howard Lasnik on “Filters and Control.” Manuscript. [Reprinted in R. Freidin, C. P. Otero, and M. L. Zubizarreta, (Eds.), *Foundational Issues in Linguistic Theory. Essays in Honour of Jean-Roger Vergnaud*, 3–15. Cambridge, MA.: MIT Press].
- Vergnaud, J.-R. & M.-L. Zubizarreta (2005). The representation of focus and its implications: towards an alternative account of some ‘intervention effects.’ In H. Boekhuis, N. Corver, R. Huybregts, U. Kleinhenz, and J. Koster, (Eds.), *Organizing Grammar. Studies in Honour of Henk van Riemsdijk*, 641–678. Paris: Mouton De Gruyter.
- Vlachos, C. (2008). *Wh*-in situ inquires in a *wh*-movement language: the case of Greek. Manuscript, University of Patras.
- Vlachos, C. (2010). *Wh*-in situ: the case of Greek. In V. Torrens, L. Escobar, A. Gavarró, and J. Gutiérrez, (Eds.), *Movement and Clitics: Adult and Child Grammar*, 84–111. Cambridge: Cambridge Scholars Publishing.
- Vlachos, C. (2011). The Mechanics of Sluicing. *Linguistic Analysis* 37: 273–314.
- De Vries, M. (2009). On multidominance and linearization. *Biolinguistics* 3: 344–403.

- Wahba, W. A.-F. B. (1991). LF movement in Iraqi Arabic. In C.-T. J. Huang and R. May, (Eds.), *Logical Structure and Linguistic Structure*, 253–276. Dordrecht: Kluwer.
- Wasow, T. (1972). Anaphoric Relations in English. Doctoral dissertation, MIT. [Published in 1979, as *Anaphora in Generative Grammar*, by E. STORY-SCIENTIA P.V.B.A.].
- Watanabe, A. (1992). Subjacency and S-Structure movement of *wh*-in situ. *Journal of East Asian Linguistics* 1: 255–291.
- Watanabe, A. (2003). *Wh* and operator constructions in Japanese. *Lingua* 113: 519–558.
- Watanabe, A. (2006). The Pied-Piper feature. In L. L.-S. Cheng and N. Corver, (Eds.), *WH-Movement: Moving On*, 47–70. Cambridge, MA.: MIT Press.
- Williams, E. (1977). Discourse and Logical Form. *Linguistic Inquiry* 8: 101–139.
- Williams, E. (1980). Predication. *Linguistic Inquiry* 11: 203-238.
- Williams, E. (1997). Blocking and anaphora. *Linguistic Inquiry* 28: 577–628.
- Wu, J. (1999). Syntax and Semantics of Quantification in Chinese. Doctoral dissertation, University of Maryland, College Park.
- Yeo, N. (2011). Explaining and unifying optional *wh*-movement. *Linguistic Analysis* 37: 143–187.