MULTIPLE SPELL-OUT APPROACH TO WH-FRONTING

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ABSTRACT

This thesis adopts the framework of the Phase Theory as outlined in Chomsky (2000; 2001) and puts forward a novel approach to wh-question formation. It compares a single wh-fronting language (English) with a multiple wh-fronting language (Polish) and provides a unified account of the derivation of wh-questions in the languages under consideration. I argue that the differences in structural representations of multiple wh-questions between Polish and English are attributed to the differences in mapping to PF. The assumption is adopted that Spell-Out does not apply in a uniform manner across languages. More specifically, while Polish is subject to multiple Spell-Out, which applies at the level of every strong phase (v*P and CP), in English, Spell-Out is based on convergence and applies once the syntactic derivation is completed.

This work adopts a split-CP approach to clause structure (Rizzi 1997; 2001) and argues that features participating in wh-movement in Polish and English involve [Wh; Q], an assumption which has recently been challenged in the literature.

Finally, the phenomenon of Sluicing is investigated and it is illustrated that the asymmetries in Superiority effects between fully-fledged wh-questions and multiple sluicing constructions in Polish follow from particular properties of the C system; more specifically, the absence of TopP in sluicing structures in Polish.

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AUTHOR'S DECLARATION

This thesis has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree other than Doctor of Philosophy of the University of York. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by explicit references.

I hereby give consent for my thesis, if accepted, to be made available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

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The analysis advocated in chapter four, also parts of chapter three and five, were presented in the paper "Wh-Questions in Polish and English: A Unified Account" at the *5th Conference on Syntax, Phonology and Language Analysis* (SinFonIJA 5), held on 27-29 September 2012 at the University of Vienna.

Some parts of chapter two were presented in the paper "Derivation of Multiple Wh-Questions in Polish" at *the BASEES (The British Association for Slavonic and East European Studies) Annual Conference*, held on 2-4 April 2011 at the University of Cambridge, Fitzwilliam College.

INTRODUCTION

Wh-questions have been an extensively investigated topic in Generative Grammar due to their varying nature across languages. This thesis is devoted to a minimalist study of wh-constructions in languages which are subject to obligatory overt wh-movement. Set within the framework of the Phase Theory as outlined in Chomsky (2000; 2001), this thesis is an attempt to provide a comprehensive explanation for the derivation of wh-questions in Polish, a language which exhibits multiple wh-fronting in surface form.

Polish is an interesting language for linguistic investigation as it allows a great many word order permutations including a number of different possibilities for the order of wh-elements in multiple wh-questions. Traditionally, Polish has been classified as a language in which movement of all wh-phrases to the left periphery of a sentence, to multiple specifiers of CP or CP and TP, is obligatory (Wachowicz 1974; Toman 1981; Cichocki 1983; Rudin 1988) (with the exception of d(iscourse)-linked wh-phrases in multiple wh-questions). More recent research, however, has demonstrated that movement of the non-initial wh-phrase in Polish is compulsory but only to the pre-verbal position (Dornisch 1998; Lubańska 2005). Consequently, Polish differentiates between two patterns of forming multiple wh-questions consisiting of non-d-linked wh-phrases: one in which all wh-phrases are raised to the clause-initial position (example (1)), and one in which the sequence of fronted wh-phrases is interrupted by a grammatical subject (example (2)).

(1) *Co   komu*   Monika powiedziała?
     what to whom Monica   said
     'What did Monica say to whom?

(2)   *Co*   Monika *komu*   powiedziała?
      what Monica to whom   said
      'What did Monica say to whom?'

   Previous analyses of formation of (multiple) wh-questions in Polish have concentrated on comparing Polish to other multiple wh-fronting languages (Rudin 1988; Citko 1997; Lubańska 2005). This thesis compares Polish with English, a single wh-fronting language, and attempts to provide a unified explanation for wh-question formation in the languages in question. Adopting the framework of Phase Theory (not applied previously to the study of wh-constructions in Polish), this thesis aims to assess the explanatory potential of 'the derivation by phase' model (Chomsky 2000 *et seq*.) by comparing two languages with siginificantly different surface structures in wh-questions.

   This thesis touches upon a question, which is central to the study of language and linguistic theory, i.e., the locus of syntactic variation. A widespread belief about syntactic parameters (i.e., points of variation) in generative theory is that they are restricted to the lexicon (e.g. Borer 1984; Chomsky 1995; 2000; 2001; 2004; 2005), more specifically, to the featural properties of items in the lexicon. In the analysis developed in this thesis, I argue that points of variation may also exist outside the lexicon. Various proposals which diverge from the conjecture that the roots of parametric variation are in the lexicon have already been put forward (see Baker 2008; Richards 2008; Fukui 2006, among others). For example, as expressed by Baker (2008:354), the fact that we find cross-linguistic syntactic differences rooted in the lexicon does not necessarily entail that the latter is the (sole) locus of parametric variation. This is simply because linguistic investigation pursues the methodology

which presupposes that variation lies in the lexicon and aims to find parameters of this particular type.

The analysis put forward in this thesis, which compares two types of language (Polish vs. English) that differ significantly in their linguistic structures of wh-questions, is centred on the idea that there is also variation in the grammar proper. The hypothesis explored in detail is that variation exists among languages in the input/mapping to Phonetic (also called Phonological) Form (PF), more specifically, in the number of applications of Spell-Out. The fact that languages may differ on whether they have single Spell-Out (applying at the end of the syntactic derivation) or multiple Spell-Out (applying at specific points in the derivation) follows from the settings of Universal Grammar (UG). UG is a linguistic theory, which contains a set of universal principles that are considered to be innate to human beings and shared by every human language, as well as parameters, the latter can be understood as those grammatical options that are not specified by UG (see Roberts & Holmberg 2010), and are fixed in the process of grammar acquisition. Cross-linguistic variations in syntax are attributed to the choice of values of these parameters. In this work, I postulate that there exist grammatical options determined by UG, such as the existence of single Spell-Out vs. multiple Spell-Out, which are responsible for cross-linguistic variations in syntax.

There is no undisputed answer to the question about the roots of linguistic variation. Furthermore, as expressed by Boeckx (2011:205), "[t]here is [..] very little substantive discussion of the issue of linguistic variation in the context of the Minimalist Program." This thesis aims to contribute to the discussion of this issue.

This thesis is organised as follows. Chapter 1 presents important facts about Polish and English sentence structure. It introduces the phenomenon of wh-movement and provides examples from Polish and English wh-constructions, based on which the goals

of this dissertation are set out. The second part of the chapter establishes the theoretical framework adopted in this thesis.

Chapter 2 is devoted to multiple wh-fronting, focusing on a critical examination of previous approaches to wh-question formation in Polish. I argue that none of the existing analyses offers a satisfactory explanation for the derivation of wh-constructions in Polish. Consequently, although widely discussed in the literature, the mechanisms underlying the formation of (multiple) wh-questions in Polish are yet to be discovered.

Chapter 3 investigates the left periphery of a sentence, specifically the interaction of wh-fronting with topicalized and focused constituents both in Polish and English. Adopting the split-CP approach as proposed by Rizzi (1997; 2001), I argue that both in Polish and English, wh-fronting is related to the [Q; Wh]-feature checking, contra some of the recent proposals (cf. Lubańska 2005; Den Dikken 2003).

Chapter 4 puts forward a proposal which aims at explaining structural variations between Polish and English short- and long-distance wh-constructions. The hypothesis explored in detail is that Spell-Out (the point of sending a syntactic structure to PF) is subject to cross-linguistic variation. Natural languages differ as to whether they are subject to single Spell-Out or multiple Spell-Out. I argue that English is a language in which Spell-Out applies once at the end of the syntactic derivation. Polish, on the other hand, is a language in which Spell-Out occurs cyclically, at the points referred to as strong phases, v*P and CP (Chomsky 2000 *et seq.*). The analysis advocated in chapter 4 argues that movement out of a domain of an intermediate phase head is independent of the Phase Impenetrability Condition (PIC) and the EPP-feature (cf. Chomsky 2000 *et seq.*). It follows from PF considerations, and more specifically from the application of multiple Spell-Out. Given the proposal that Spell-Out does not apply in a uniform manner in Polish and English, the discrepancies in syntactic representations of multiple

wh-questions between Polish and English are attributed to the differences in mapping to PF.

Chapter 5 is devoted to the phenomenon of Superiority effects and wh-intervention effects. The locality in movement both in Polish and English is derived by the Minimal Link Condition (MLC) (Chomsky 1995), which relies on the concept of Closeness. Following Wiland (2009), I argue that the requirement that an element be active (i.e., possess an uninterpretable feature) is what contributes to the evaluation of minimality, and therefore should be incorporated into the definition of Closeness. I illustrate that differences in the linear order of wh-phrases between Polish and English follow from independent properties of Polish and English syntax. More specifically, the absence of Superiority effects in fully-fledged wh-questions in Polish and the presence thereof in English is due to the existence of VP-internal scrambling and the presence of an escape hatch for a wh-phrase within split-CP in Polish but not in English.

Chapter 6 provides a comprehensive overview of judgments on Superiority effects in multiple wh-questions in Polish as found in the literature. A thorough background on Superiority effects is necessary in order to highlight the exact differences in the linear order of wh-phrases between fully-fledged wh-questions and multiple sluicing constructions in Polish, the latter phenomenon being the focus of chapter 7. The conclusion drawn from the judgments in the literature is that Polish does not exhibit Superiority effects in fully-fledged wh-questions, neither in main nor in embedded contexts. However, there is a pragmatic factor which reduces the acceptability of object-subject wh-order when the two wh-phrases refer to animates.

Chapter 7 introduces the phenomenon of (multiple) sluicing. In contrast to non-elided wh-questions, wh-phrases in sluicing contexts in Polish are subject to strict ordering constraints. The claim that Superiority effects exist under multiple sluicing in

Polish is based on the results of a controlled experimental study, which was conducted in the framework of this research. The existence of ordering constraints in sluicing is syntactically derived. More specifically, I argue that Spec-TopP is not an available landing site for a fronted wh-phrase in sluicing, unlike in fully-fledged wh-questions, which (along with the 'tuck-in' approach to movement, Richards 1997; 2001) is what accounts for the differences in Superiority effects between non-elided wh-questions and multiple sluicing constructions in Polish.

The final part is a Conclusion of the thesis.

CHAPTER 1

The Morpho-syntax of Polish and English

This chapter concentrates on the investigation of Polish and English morpho-syntax. The languages in question differ from each other with respect to the structural realizations of multiple wh-questions, the type of constructions which constitute the focus of this thesis. The final part of the chapter describes the theoretical framework adopted in this thesis, concentrating on those aspects of the theory, which will be crucial to the analyses discussed in subsequent chapters.

1.1   An Overview of Polish vs. English Morphosyntax

1.1.1   Basic Word Order in Monotransitive Constructions

Polish is a West Slavic Language. The basic word order is SVO (Subject-Verb-Object), as illustrated in (1a). Polish displays a great flexibility with respect to word order. Based on (1a), five word order alternations are allowed (Siewierska 1993), as exemplified in (1) b-f:

(1)   a. Ewa   kupiła   ten dom.   SVO
          Eva$_{NOM}$ bought this house$_{ACC}$

       b. Ewa   ten dom   kupiła.   SOV
          Eva$_{NOM}$ this house$_{ACC}$ bought

       c. Ten dom   Ewa   kupiła.   OSV
          this house$_{ACC}$ Eva$_{NOM}$ bought

d. Ten dom   kupiła Ewa.   OVS
   this house$_{ACC}$ bought Eva$_{NOM}$

e. Kupiła Ewa   ten dom.   VSO
   bought Eva$_{NOM}$ this house$_{ACC}$

f. Kupiła ten dom   Ewa.   VOS
   bought this house$_{ACC}$ Eva$_{NOM}$

   'Eva has bought this house.'

The sentence in (1a) reflects the unmarked word order in which none of the constituents carries a prosodic prominence with respect to the other elements in the sentence. Structures in (1) b-f, derived from (1a), are not encountered equally frequently and the displacement of constituents results in different semantics related to e.g. focusing, topicalization, and is dependent on the discourse. For instance, the natural answer to the question in (2a) has an SVO word order (see (2b)), whereas the answer to the question in (3a) has an OVS word order (see (3b)).

(2)   a. Co   Maria   kupiła?
          what$_{ACC}$ Mary$_{NOM}$ bought
          'What did Mary buy?'

       b. Maria   kupiła sukienkę.
          Mary$_{NOM}$ bought dress$_{ACC}$
          'Mary bought a dress.'

(3)   a. Kto   odwiedził Tomka?
          who$_{NOM}$ visited   Tom$_{ACC}$
          'Who visited Tom?'

       b. Tomka   odwiedził Janek.
          Tom$_{ACC}$ visited   John$_{NOM}$
          'John visited Tom.'

An exception to the canonical SVO order are sentences containing a negative, personal or indefinite pronoun. These tend to occur pre-verbally, otherwise the sentence is marked, as illustrated by the question marks in (4)-(6):

(4)   Janek **nic**   nie kupił (??nic).
      John   nothing Neg bought (nothing)
      'John has not bought anything.'

(5)   Jola **go**   odwiedziła (??go).
      Jola him$_{CL}$ visited   (him$_{CL}$)
      'Jola has visited him.'

(6)   Janek **coś**   przygotował (??coś).
      John something prepared   (something)
      'John has prepared something.'

However, the pronouns can be licensed in a post-verbal position when followed by another constituent. Consider (7)-(9):

(7)   Janek nie kupił nic   dla Ewy.
      John Neg bought nothing for Eva
      'John hasn't bought anything for Eva.'

(8)   Jola odwiedziła go   w szpitalu.
      Jola visited   him$_{CL}$ in hospital
      'Jola visited him in the hospital.'

(9)   Janek przygotował coś   na kolację.
      John   prepared   something for dinner
      'John has prepared something for the dinner.'

English patterns with Polish in exhibiting SVO as an unmarked word order. Contrary to Polish, however, English is a relatively strict SVO language. The

corresponding structures of (1) b-f in English are all ungrammatical.[1] In order to mark certain constituents as more prominent than others, English employs the following strategies: topicalization, left-dislocation, cleft and pseudocleft, examples of which are provided in (10), (11) and (12) a-b, respectively.

(10) This song, I really like.

(11) (As for) This song, I really like it.

(12) a. It was Tom who bought the car.

   b. What Tom did was buy the car.

1.1.2 Basic Word Order in Ditransitive Constructions

Ditransitive constructions in English come in two varieties: those which take a DP and a PP argument (see (13)) and those which take two DP arguments (see (14)). The structure with two DP arguments is a double object construction, also referred to as double object dative. Apart from the double-object dative, English also allows two types of prepositional datives depending on the verb: those which take theme and goal arguments (*to*-datives) (see (15)), and those which take theme and benefactive arguments (*for*-datives) (see (16)).

(13) Peter put the jar on a table.

(14) John gave Mary a book.

(15) John gave a book to Mary.

(16) Mark bought the book for Sue.

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[1] The equivalent of the Polish example in (1c) is acceptable in English in the following context:

   (i) This house Eva bought, that one Frank bought.

While with some verbs the presence of the PP is obligatory, as in (13) and (15), it is sometimes unclear whether the PP is a complement or an adjunct, as in the case of (16). If optionality is used as a diagnostic for argument/adjunct distinction, then the PP in (16) functions as an adjunct, since its presence is not required for the sentence to be grammatical.

There is a controversy with respect to the derivation of sentences such as (14) vs. (15). For example, according to Larson (1988), the double object construction in (14) and the *to*-dative structure in (15) are transformationally related and the V-DO-IO (verb – direct object – indirect object) order is the base order, whereas the order V-IO-DO is derived via a syntactic operation. An opposing view is expressed in Pesetsky (1995) and Harley (1996; 2002), as reported in Kim (2008). These authors argue that the sentences in (14) and (15) have independent underlying representations. The question whether the structures in (14) and (15) are derivationally related will not be pursued here. The aim of this discussion is to illustrate whether/how ditransitive constructions in English differ from the ones in Polish.

Ditransitive constructions in Polish also fall into two types: those that take two DP arguments and those that take a DP and a PP complement, as illustrated in (17) and (18), respectively.

(17) Piotr   dał Marysi   książkę.
     Peter$_{NOM}$ gave Mary$_{DAT}$ book$_{ACC}$
     'Peter gave Mary a book.'

(18) Piotr   położył dokumenty   do szuflady.
     Peter$_{NOM}$ put   documents$_{ACC}$ to drawer$_{GEN}$
     'Peter has put the documents into the drawer.'

With respect to (18), it is assumed that the V-DP-PP order (verb - a nominal object (marked for Accusative) - Prepositional Phrase) is the basic one, and the reverse order (given in (19)) is derived by movement (A-type scrambling, according to Witkoś 2008).

(19) Piotr   położył do szuflady dokumenty.
      Peter$_{NOM}$ put   to drawer$_{GEN}$ documents$_{ACC}$
      'Peter has put the documents into the drawer.'

Polish does not allow a *to*-dative counterpart of (17), which differentiates Polish from English (cf. (14) and (15)), as illustrated by the ungrammaticality of (20).

(20) *Piotr   dał książkę do Marysi.
      Peter$_{NOM}$ gave book$_{ACC}$ to Mary
      'Peter gave a book to Mary.'

There are verbs, however, which allow Polish analogues of the English *to-* and *for-*dative constructions. In such contexts, the preposition *do* (to) and *dla* (for) are used, respectively, and the Case on the DP headed by the preposition is Genitive (Dąbrowska 1994). Consider (21) a-c:

(21) a. Ewa   wysłała Piotrowi zaproszenie.
         Eva$_{NOM}$ sent   Peter$_{DAT}$ invitation$_{ACC}$
         'Eva sent Peter an invitation.'

      b. Ewa   wysłała zaproszenie   do Piotra.
         Eva$_{NOM}$ sent   invitation$_{ACC}$ to Peter$_{GEN}$
         'Eva sent an invitation to Peter.'

      c. Ewa   wysłała zaproszenie   dla Piotra.
         Eva$_{NOM}$ sent   invitation$_{ACC}$ for Peter$_{GEN}$
         'Eva sent an invitation for Peter.'

There is, however, a subtle difference in meaning between the example in (21a) and its *to-* and *for-*dative equivalents given in (21b)-(21c). (20a) means that Peter is the person invited by Eva and the invitation is addressed to him; In (21b), Peter is the addressee of Eva's invitation, but he may not be the (only) person mentioned in the invitation; (21c) means that it is Peter who Eva invites, however it is possible that the invitation is not sent to Peter directly, but to someone else who will pass the invitation to him.

The basic order in double object constructions between indirect object IO (marked for Dative) and direct object DO (marked for Accusative) in Polish has been a subject of dispute. According to Dornisch (1998), the basic order is S-V-DO-IO. Tajsner (1998) proposes that direct and indirect objects can appear underlyingly in either order and both V-IO-DO and V-DO-IO are the result of base-generation. There is, however, strong evidence provided in the literature that the basic order in double object constructions in Polish is S-V-IO-DO (Witkoś & Dziemianko 2006; Witkoś 2007).

The first piece of evidence for S-V-IO-DO order as basic in Polish ditransitive constructions comes from idiomatic expressions. As pointed out by Witkoś & Dziemianko (2006) and Wiland (2009), the basic order of Polish idioms is V-(IO)-DO, as given in (22) a-b, and according to Larson (1988), among others, idioms exhibit unmarked word orders.

(22) a. masz ci   los
         have you$_{CL,DAT}$ fate$_{ACC}$
         'what bad luck'

      b. połknąć bakcyla
         swallow bug$_{ACC}$
         'become interested in something'

The V-IO-DO order is the only one attested in discontinuous idioms (see (23)). Witkoś & Dziemianko (2006) and Witkoś (2007) observe that idiomatic expressions in Polish include obligatorily a verb and a DO, as illustrated in (23), whereas the open position (the DP in brackets) hosts an IO, which precedes the DO.

(23) oddać (komuś) przysługę

give away (someone$_{DAT}$) favour$_{ACC}$

'do someone a favour'

Concomitantly, idioms with an open position hosting a direct object instead of an indirect object are unattested in Polish.

Another argument for the S-V-IO-DO order as unmarked comes from pronominal clitics. Witkoś (2007) reports that when weak (clitic) pronouns co-occur, the IO clitic must precede the DO clitic, as illustrated in (24) a-b (the examples along with the judgments are cited from Witkoś 2007:460):

(24) a. Jan **mu** **go** oddał przed miesiącem.

John$_{NOM}$ him$_{DAT}$ it/him$_{ACC}$ returned before a month

'John returned it/him to him a month ago.'

b. ?*Jan **go** **mu** oddał przed miesiącem.

John$_{NOM}$ it/him$_{ACC}$ him$_{DAT}$ returned before a month

Witkoś (2007) adopts Richards' (1998; 1999) hypothesis of feature checking which relies on the notion of 'tuck-in'. The result of the 'tuck-in' approach to movement is that the order of the moved constituents reflects the order in which they were first merged (i.e., their underlying order). Consider the positions that the clitics occupy with respect to each other prior to and after movement, as illustrated in (25) a-b, for the examples in (24) a-b, respectively.

(25) a. Jan mu$_i$ go$_j$ oddał t$_i$ t$_j$ przed miesiącem.
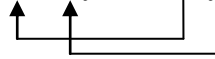
b. ?*Jan go$_j$ mu$_i$ oddał t$_i$ t$_j$ przed miesiącem.
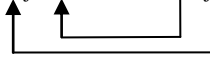
In (25a), the movement proceeds in a tuck-in fashion, producing crossing paths, unlike in (25b), where the paths are nested. Assuming the tuck-in approach to movement, Witkoś (2007) takes the contrast in grammaticality between (25a) (=24a) and (25b) (=24b) as an indication that the underlying order of the vP-internal arguments (objects) is IO-DO.[2]

Another argument for the S-V-IO-DO order as unmarked and the reverse to be derived by scrambling is found is Wiland (2009). Wiland (2009) observes that when both IO and DO are quantificational, and the former precedes the latter, only the surface scope interpretation obtains. Consider (26) (Wiland 2009:99).

(26) Piotr dał   [$_{DAT}$ jakiemuś chłopcu] [$_{ACC}$ każdą naszą monetę]
       Peter gave   some boy   each coin of ours
       'Peter gave some boy each coin of ours.' $\exists > \forall$; *$\forall > \exists$

However, when the DO precedes the IO, the inverse scope reading arises, as illustrated in (27). Wiland (2009:99) concludes that the scope ambiguity in (27) is possible since the IO c-commands the trace (lower copy) of the DO, the latter has scrambled/moved from its base position across the former.

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[2] It should be noted, however, that nested paths are generally preferred to crossing paths. Consider the English examples in (i)-(ii) here:

(i)   [Which violin]$_j$ is [this sonata]$_i$ easy to play t$_i$ on t$_j$?

(ii) *[Which sonata]$_i$ is [this violin]$_j$ easy to play t$_i$ on t$_j$?

The sentence in (i), where the movement of *this sonata* and *which violin* produces nested dependencies, is grammatical as opposed to the sentence in (ii), in which movement of the DPs: *which sonata* and *this violin* results in crossing paths, and makes the sentence ungrammatical.

(27) Piotr dał   [$_{ACC}$ każdą naszą monetę]$_i$ [$_{DAT}$ jakiemuś chłopcu] t$_i$.
Peter gave   each coin of ours   some boy
'Peter gave each coin of ours to some boy.' $\forall > \exists$; $\exists > \forall$

The scope patterns observed in (26)-(27) are also reflected in (28)-(29), where the quantificational IO is universal, whereas the DO is existential (the example and judgment in (28) is attributed to Citko 2011:142).

(28) Nauczyciel zadał   [$_{DAT}$ każdemu studentowi] [$_{ACC}$ jedno zadanie].
teacher   assigned   every student   one problem
'The teacher assigned every student one problem.' $\forall > \exists$; *$\exists > \forall$

(29) Nauczyciel zadał   [$_{ACC}$ jedno zadanie]$_i$ [$_{DAT}$ każdemu studentowi] t$_i$.
teacher   assigned   one problem   every student
'The teacher assigned one problem to every student.' $\exists > \forall$; $\forall > \exists$

The sentence in (28), where the IO precedes the DO, has only a surface scope reading. (29), on the other hand, in which the DO scrambled across the IO, exhibits ambiguity (to my judgement), which confirms the claim (Wiland 2009; Witkoś 2007) that V- IO-DO is the base order in Polish double object constructions, whereas the V-DO-IO is derived.

It should be noted that the scope ambiguities observed in (27) and (29) challenge the claim, put forward by Tajsner (1998), that the order between direct and indirect objects is free and both V-IO-DO and V-DO-IO are base-generated. As pointed out by Wiland (2009), if the V-DO-IO order was the result of base–generation, the quantifier scope in example (27) (and accordingly in (29)) should be frozen, i.e., only the surface reading should obtain (similarly to (26) and (28)), contrary to fact.

Tajsner (1998) argues that both V-IO-DO and V-DO-IO orders are base-generated by appealing to binding phenomena. Consider the sentence in (30) (Tajsner 1998:148):

(30)   *Porywacze oddali   [$_{ACC}$ ich chłopca]$_i$ [$_{DAT}$ Marka$_i$ rodzicom]
        kidnappers returned   their boy   to Mark's parents
        'The kidnappers returned Mark's parents their boy.'

The sentence in (30) is a Condition C violation, where the accusative DP binds the R-expression *Marka*. Tajsner points out that the Condition C violation should not occur on the assumption that the base order in double object constructions in Polish is IO-DO, and the DO-IO word order is derived. He thus concludes that the underlying order between the IO and DO is free.

However, there is an independent ban on backward pronominalization in Polish, which holds in the context of A-movement (see (31a)) but is obviated in A-bar contexts (see (31b)), as observed by Wiland (2009:98).

(31)   a. ??[Jego$_i$ nowy wykładowca] pokazał studentowi$_i$ podręczniki.
            [his new lecturer]$_{NOM}$ showed student$_{DAT}$ coursebooks$_{ACC}$
          'His$_i$ new lecturer showed the coursebooks to the student$_i$.'

       b. To [jego$_i$ nowego wykładowcę]$_j$ Piotr   pokazał [studentowi$_i$] t$_j$.
          it [his new lecturer]$_{ACC}$ Peter$_{NOM}$ showed student$_{DAT}$
         *'It is his$_i$ new lecturer that Peter showed to the student$_i$.'

In (31a), the co-indexed pronoun *jego* is embedded in the subject DP, which occupies an A-position, whereas in (31b), the pronoun is embedded in the clefted DP-object, which has undergone an A-bar movement. Since the prohibition against backward pronominalization holds in A-contexts, and the DO with the co-indexed pronoun in (30) occupies an A-position, the sentence in (30) is correctly ruled out.

Wiland (2009:98) argues that the sentence in (30) does not support the base-generation hypothesis in double object constructions in Polish as advocated by Tajsner (1998), but instead the example in (30) implies that the DO has scrambled to an A-position. According to Wiland (2009), the V-DO-IO order in (30) is derived from V-IO-DO by A-scrambling, and as pointed out by Witkoś (2007:466), Condition C can be violated by A-type antecedents.

To conclude, I follow Witkoś (2007), Witkoś & Dziemianko (2006) and Wiland (2009) and assume that the base order in Polish double object constructions is S-V-IO-DO.

1.1.3   Subject Position

It is a standard assumption that the subject DP in English sentences originates in the Spec-vP (Verb Phrase) and raises to Spec-TP by S-structure (Baker 2002; Chomsky 2000 *et seq*., among others), or to Spec-Agr$_S$P in the earlier formulations of Minimalism (Chomsky 1995). Consider the structure of a declarative sentence in (32), which will be adopted in this thesis.

(32)

```
          TP
         /  \
            T'
           /  \
          T    vP
              /  \
            Sub   v'
                 /  \
                v    VP
                    /  \
                  IO    V'
                       /  \
                      V    DO
```
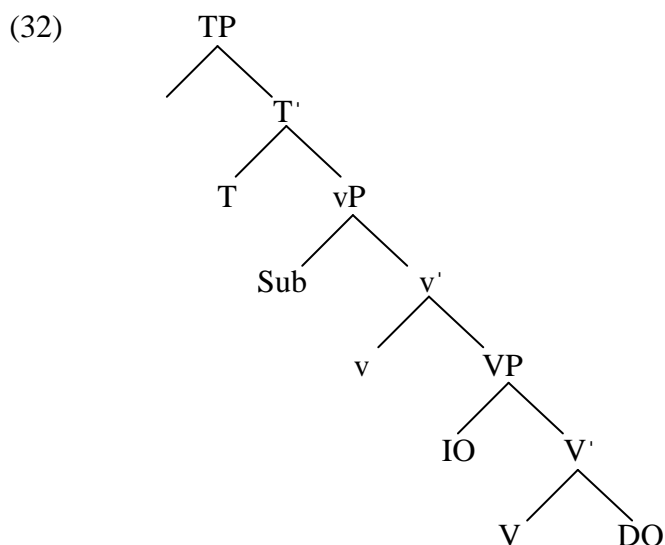
Subject is often referred to as an external argument (as opposed to internal arguments - objects). The terms *subject* and *external argument* will be employed in this thesis as alternatives. The presence of a grammatical subject in English is obligatory. When the subject DP is absent, as for example in the existential construction in (33), an expletive *there* must be used. English possesses two types of expletives: *there* and *it*.

(33)   There are dogs in the backyard.

Polish does not possess expletives since it is a pro-drop language. When the subject is overtly pronounced, it occurs in Nominative Case and agrees with the verb in Person, Number and Gender, as demonstrated in (34) a-c:[3]

(34)   a. Piotr   posz-*edł*   na zakupy.
        Peter$_{NOM,3,Sg,M}$ went$_{3,Sg,M}$ on shopping
        'Peter went shopping.'

       b. Ewa   posz-*ła*   na zakupy.
        Eva$_{NOM,3,Sg,Fm}$ went$_{3,Sg,Fm}$ on shopping
        'Eva went shopping.'

       c. One   posz-*ły*   na zakupy.
        they$_{NOM,3,Pl,Fm}$ went$_{3,Pl,Fm}$ on shopping
        'They went shopping.'

It should be noted that when the verb is in the present tense, the agreement between the verb and the external argument is exhibited in Person and Number only, as illustrated in (35) (whereas if the verb is in the past tense it agrees with the subject in Person, Number and Gender (cf. (34) a-c).

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[3] Polish differentiates between seven Cases: Nominative, Genitive, Dative, Accusative, Instrumental, Locative and Vocative.

(35) On/ ona idzie   do domu.
    he/ she goes$_{3,Sg}$ to home
    'He/she is going home.'

In unaccustaive constructions, the Nominative Case is marked on the object and agreement between the verb and the object holds. Consider (36):

(36) Nadchodzi zima.
    come$_{3,Sg}$ winter$_{NOM,3,Sg}$
    'The winter is coming.'

There is evidence that in unmarked SVO sentences in Polish, the subject raises obligatorily from Spec-vP to Spec-TP.[4] Wiland (2010) observes that in unmarked declarative sentences which include for example sentential adverbs, modal auxiliaries, modal particles and sentential negation, all these constituents follow the subject and precede the verb. Consider the contrast between (37a) and (37b). In the grammatical example (37a) the subject occupies Spec-TP, whereas in the ungrammatical sentence (37b), the subject stays in situ, in Spec-vP.

(37) a. **Piotr** by   nigdy nie   okłamał przyjaciół.
       Peter Cond.Aux never Neg lied   friends
      'Peter would never lie to his friends.'
     b. *By nigdy nie okłamał **Piotr** przyjaciół.

Dornisch (1998) provides two arguments for the claim that the subject raises to Spec-TP overtly in Polish. First, based on the discussion of subject placement in Diesing (1992), Dornisch (1998:121) establishes that in the Polish example in (38), the

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[4] Wiland (2009) argues that the subject DP in Polish originates in the Spec-VoiceP, which is the projection immediately dominating vP. Whether the subject is generated in Spec-vP or Spec-VoiceP in Polish is not, however, relevant to the present discussion, which aims to establish that the subject raises obligatorily to Spec-TP in Polish.

subject can receive either a generic or a specific interpretation, but not an existential interpretation.

(38) Gdzie kiedy strażacy chętnie pracują?
      where when firemen gladly   work
      'Where do firemen work gladly when?'

According to Diesing (1992), if a subject is placed outside of VP, it can receive a generic or a specific interpretation. If, on the other hand, subject is VP-internal, it can only be assigned an existential interpretation. Since in (38) the existential interpretation does not obtain, Dornisch concludes that the subject must be outside of the Verb Phrase.

Secondly, in example (39b), the direct object has scrambled to the pre-verbal position. Since the subject *Piotrek* precedes the scrambled DP object *książkę*, Dornisch (1998:121) surmises that the subject must have moved out of the Verb Phrase (to Spec-TP).

(39) a. Komu   Piotrek   kupił   **książkę**?
         whom$_{DAT}$ Peter$_{NOM}$ bought book$_{ACC}$
         'Who did Peter buy a book for?'
       b. Komu Piotrek **książkę$_i$** kupił *t$_i$* ?

Furthermore, as reported in Witkoś (2008), a subject situated in Spec-TP displays three characteristic properties: full agreement with the verb, anaphoric binding and control into the adjunct, whereas subjects placed within the Verb Phrase are defective with regard to at least one of these properties. As demonstrated by the example in (40), the subject *Piotr* fully agrees with the verb, binds the anaphor (the subject-oriented reflexive pronoun) and controls into the adjunct clause, which confirms that it is situated in Spec-TP.

(40) Piotr$_i$ złamał sobie$_i$ rękę [PRO$_i$ aby uzyskać odszkodowanie].

  Peter$_{NOM}$ broke$_{3,Sg,M}$ self$_{DAT}$ hand$_{ACC}$ to collect$_{INF}$ insurance

  'Peter has broken his arm to collect the insurance.'

Given the arguments presented in this section, I assume that the subject DP in Polish is overtly realized in Spec-TP.

1.1.4 The Internal Structure of Verb Phrase (VP)

1.1.4.1 Inventory of Auxiliaries

English possesses a large number of auxiliary verbs (verbs which occur in addition to the main/lexical verb in a sentence), which include the whole class of modal verbs (e.g. *must, can, shall, will*) and also dummy *do*, *to be* and *to have*. The latter two can function either as auxiliaries or main verbs. For example, in (41a), the verb *to have* is used as an auxiliary, whereas in (41b), it functions as a lexical verb:

(41) a. They have bought a car.

  b. They have a car.

It is assumed that modal verbs and the auxiliary *do* are directly inserted into T^0 in English, whereas *be* and *have* are generated in their own projections.

The structural positions of auxiliary verbs and their inventory differ between English and Polish. Most English modal verbs have counterparts in Polish, for example *móc* (can, be able to), *musieć* (must). However, modal verbs in Polish originate low in the syntactic structure, in the VP area (Błaszczak 2009).[5]

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[5] This conclusion is supported by the fact that in Polish, negation must precede the modal verb. Consider the contrast in (i) a-b.

The most common auxiliary verb in Polish is the future auxiliary *być* (to be), which is actually realised by the present tense morphology and occurs in imperfective future constructions (Błaszczak 2009:455). It can be followed either by an infinitive or a past participle form that inflects for number and gender (the meaning of the sentence in both cases is identical), as exemplified in (42) a-b:[6, 7]

(42) a. Ola   będzie   czytać   /(*przeczytać) książkę.
     Ola_{NOM} $be_{3,Sg,Fut.Aux}$ $read_{Imperf,INF}$ /($read_{Perf,INF}$) $book_{ACC}$
     'Ola will be reading a book.'

    b. Ola   będzie   czytała   /(*przeczytała)   książkę.
     Ola_{NOM} $be_{3,Sg,Fut.Aux}$ $read_{Imperf,Past-Part,Sg,Fm}$ /($read_{Perf,Past-Part,Sg,Fm}$) $book_{ACC}$
     'Ola will be reading a book.'

Apart from the auxiliary *być*, Polish also possesses the conditional auxiliary *by* (would), which is morphologically marked by person and number agreement with the subject (see (43)), and a perfect auxiliary (see (44)) (following the terminology in

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(i) a. Maria *nie* musi   dziś gotować.
    Mary Neg $must_{3,Sg}$ today $cook_{INF}$
    'Mary does not need to cook today.'
   b. *Maria musi *nie* dziś gotować.

Negation will be discussed in the next section.

[6] There are also constructions with a past form of the auxiliary *być* ('past auxiliary' which form the so-called pluperfect constructions, Błaszczak 2009:455), as in (i) below, as well as past conditional structures, as in (ii):

(i) Czytał+em   był   książkę.
   $read_{Past-Part,\ Sg,M}+1,Sg$ $be_{Past-Part,Sg,M}$ $book_{ACC}$
   'I had read/ been reading a book.'

(ii) Był+bym   przyjechał.
   $be_{Past-Part,Sg,M}$ $+Cond.Aux_{1,Sg}$ $come_{Past-Part,Sg,M}$
   'I would have come.'

These constructions, however, are rather obsolete in modern Polish (Błaszczak 2009:455).

[7] The auxiliary *być* inflects for person and number, as illustrated in (i).

(i)	Singular	Plural
1st person	będ-ę	będzi-emy
2nd person	będzi-esz	będzi-ecie
3rd person	będzi-e	będ-ą

Borsley & Rivero 1994), the latter traditionally referred to as 'the inflectional endings', as reported in Błaszczak (2009:455).

(43) Odwiedził+**by**+**m**   Piotra.
visit$_{Past-Part,Sg,M}$ + Cond.Aux+1,Sg Peter$_{ACC}$
'I would visit Peter.'

(44) Obejrzał+**em**   film.
watch$_{Past-Part,Sg,M}$ +1,Sg movie$_{ACC}$
'I watched a movie.'

The original positions of auxiliaries have been a matter of dispute. According to Borsley & Rivero (1994), the future auxiliary is generated in the VP area, whereas the conditional and perfect auxiliaries are generated in the inflectional head. For Witkoś (1998), the conditional auxiliary *by* (would) originates in T^0 (=I^0), whereas the person/number suffixes ('perfect auxiliaries' in Borsley & Rivero's (1994) terminology) are generated in AgrS^0 (the head which projects AgrSP and immediately dominates TP), provided that they are not incorporated into lexical verbs (cf. (45)); when incorporated into the lexical verb (cf. (46)), Witkoś (1998) argues that perfect auxiliaries are not formed in syntax but rather they are taken from the lexicon as a single word, in which case they originate in VP.[8]

(45) Ty+**ś**   **zjadł**   ciasto.
you+2,Sg eat$_{Past-Part,Sg,M}$ cake$_{ACC}$
'You ate a/the cake.'

(46) **Zjadł**+**eś**   ciasto.
eat$_{Past-Part,Sg,M}$ +2,Sg cake$_{ACC}$
'You ate a/the cake.'

---

[8] Dornisch (1998:71) also argues that perfect auxiliaries are selected from the Numeration along with the lexical verb, with which they form a single morphological word (contra Borsley & Rivero 1994).

On the contrary, Dornisch (1997) assumes that the conditional auxiliary is generated in Mod^0, the head of ModP, which dominates AgrSP. The perfect auxiliary is generated in $AgrS^0$, whereas the future auxiliary originates in T^0 (but see Błaszczak (2009:462) for a critical review of the future auxiliary being generated in the T head position).

Although the base positions of auxiliaries differ according to the authors, the fact is that the future auxiliary is generated lower than the conditional and perfect auxiliaries, as pointed out by Błaszczak (2009:459). This conclusion is important both in order to establish the position of NegP in the syntactic structure in Polish and with respect to the movement possibilities of the lexical verb, which will be discussed in turn in the following sections.

1.1.4.2 Negation

Both sentential and constituent negation in English are canonically realized by a morpheme *not* (the cliticised form in the case of sentential negation is *n't*). The sentential negation (see (47)) denies the truth value of the entire sentence, whereas the constituent negation (see (48)) maintains that the proposition is true except for the negated constituent (*John*).[9]

(47)   He has not come yet.

(48)   He met not John but Paul.

The sentential negative marker *not* has been regarded as a functional head Neg^0, which projects NegP (Pollock 1989; Chomsky 1991).[10] NegP is situated between TP and vP (or between TP and AgrP in earlier Minimalism (Pollock 1989; Chomsky 1993))

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[9] In what follows, only sentential negation will be taken into account.

[10] In contrast, Baker (1991) and Ernst (1992) argue that *not* is a pre-verbal adverb; hence there is no NegP in English.

in English, as illustrated in (49) (assuming the more recent version of Minimalism, Chomsky 1995, ch. 4; Chomsky 2000).

(49)

```
        TP
       /  \
          T'
         /  \
        T   NegP
            /  \
              Neg'
             /   \
            Neg   vP
                 /  \
                    v'
                   /  \
                  v    VP
```
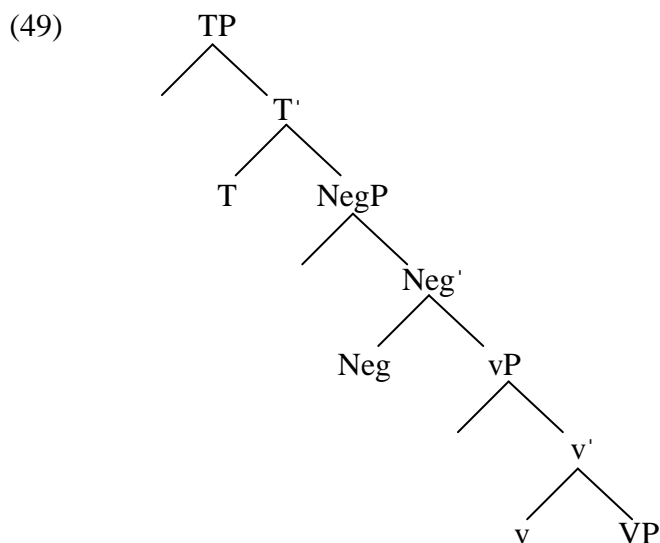
With respect to Polish, the morpheme *nie* (not) marks both the sentential and constituent negation. A strict adjacency is required between the negation and the verb in the case of sentential negation, as illustrated in (50). With respect to the constituent negation (see (51)), the negative marker *nie* occurs directly in front of the negated constituent.

(50) Maria go   nie (*go)   spotkała.
     Mary him$_{CL}$ not (him$_{CL}$) met
     'Mary didn't meet him.'

(51) Janek pracuje nie w banku, tylko w biurze rachunkowym.
     John works   not in bank   but in tax office
     'John doesn't work in a bank, but in a tax office.'

According to Witkoś (1996) and Wiland (2009) among others, and as extensively argued by Błaszczak (2001; 2009), the negative marker *nie* heads its own functional

projection, NegP in Polish.[11] In order to establish the position of NegP in the syntactic hierarchy in Polish, let us consider the position that negation occupies with respect to auxiliary verbs. The grammaticality contrast between (a) and (b) sentences in (52)-(54) below illustrate that negation in Polish must precede the lexical auxiliary (cf. (52)),[12] but follow obligatorily the conditional auxiliary (cf. (53)) and the perfect auxiliary (cf. (54)).

(52) a. Jola **nie będzie**   dziś   tańczyć.

   Jola Neg $be_{3,Sg,Fut}$ today $dance_{INF}$

   'Jola will not dance/be dancing today.'

b. *Jola będzie nie dziś tańczyć.

(53) a. Piotr **by**   **nie** odwiedził   swoich dziadków.

   Peter Cond.Aux Neg $visit_{Past-Part,Sg,M}$ [his grandparents]$_{GEN}$

   'Peter would not visit his grandparents.'

b. *Piotr nie by odwiedził swoich dziadków.

(54) a. Wy+**ście nie** kupili   mieszkania.[13]

   you+2,Pl Neg $buy_{Past-Part,Pl,M}$ $flat_{GEN}$

   'You didn't buy a/the flat.'

b.*Wy nie ście kupili mieszkania.

---

[11] According to some authors, *nie* is a prefix which attaches onto the verb in the lexicon forming a single morphological unit (Dornisch 1997; Przepiórkowski & Kupść 2002, among others), but see Błaszczak (2009) for a critical review of *nie* being base-generated under the verb node.

[12] The examples where negation follows the lexical auxiliary can only be interpreted as contrastive negation, as opposed to sentential negation (Błaszczak 2009), and they require a continuation, as for example in (i):

(i) Jola będzie   nie dziś   tańczyć, tylko jutro.
    Jola $be_{3,Sg,Fut}$ Neg today $dance_{INF}$ but   tomorrow
    'Jola will not dance today but tomorrow.'

[13] Recall from the previous section (cf. examples in (45)-(46)) that when the person/number suffixes are not incorporated into the verb, they originate in $AgrS^0$, and negation obligatorily follows the suffix, as illustrated in (54) above. If, on the other hand, the suffix is incorporated into the verb, they originate as a single lexical verb in the VP and negation immediately precedes the verb, as illustrated in (i) below:

(i) a. Wy nie kupili+ście   mieszkania.
       you Neg $buy_{Past-Part,Pl,M}$+2,Pl $flat_{GEN}$
       'You didn't buy a/the flat.'
    b. *Wy kupili nie ście mieszkania.

Since negation follows the conditional and perfect auxiliaries (cf. (53) and (54)), which are situated in the inflectional area (as discussed in the previous section), it follows that NegP is situated below TP. Since negation precedes the future auxiliary (cf. (52)), and the latter selects a verbal phrase as a complement (Dziwirek 1998, as reported in Błaszczak 2009:461), NegP is generated above vP. The position that NegP occupies in the syntactic structure in Polish is illustrated in (55) (see also Błaszczak 2009:463 and Wiland 2009:59):[14]

(55) (...) TP > NegP > (...) > vP > VP

The following section will address the (im)mobility of the lexical verb in the syntax of Polish and English.

1.1.4.3 The Position of Lexical Verbs in the Syntactic Structure

One of the parameters that distinguishes natural languages is the position the main verb occupies in a clause. On the one hand, there are languages like French, in which a main verb raises from v^0 to T^0. On the other, there exist languages like English, where a lexical verb does not raise to T^0 (overtly) (Pollock 1989; Chomsky 1995). Furthermore, there are verb second languages like German, where the verb is assumed to reside in the CP area. The possibilities of verb movement in natural languages started to be expanded with the introduction of the Split-INFL hypothesis (Pollock 1989).

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[14] It should be noted that Polish lexical verbs can be preceded by affixes, which originate above the verbal phrase. They will be discussed in §1.1.4.3 on verb movement. What is crucial for the present discussion is the fact that NegP originates between TP and vP.

A traditional method in establishing whether the lexical verb raises out of vP is to examine adverb placement. Consider the contrast in (56) in English:[15]

(56)   a. John often listens to the music.

     b. *John listens often to the music.

The adverb *often* is assumed to adjoin to/within vP in the syntactic structure. The grammaticality contrast in (56) indicates that the verb (sometimes also referred to as the *predicate*) must stay within vP (it cannot cross the adverb). If the verb moves out of vP (across the adverb), the sentence is ungrammatical, as illustrated in (56b).

The Polish counterparts of (56a) and (56b) are both well-formed. Consider (57a) and (57b):

(57)   a. Jan   często słucha muzyki.
       John often listens music

    b. Jan   słucha często muzyki.
       John listens often   music

    'John often listens to the music.'

If the ungrammaticality of (56b) in English is taken to result from the immobility of the lexical verb out of vP, then the grammaticality of (57b) in Polish (the equivalent of English example in (56b)) suggests that the verb raises out of vP to a higher functional projection. Indeed, according to Borsley & Rivero (1994) and Szczegielniak (1997), among others, the main verb in Polish can occupy a position in the inflectional (TP) area.

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[15] I follow a standard assumption that a lexical verb raises obligatorily from V^0 to v^0 in English. With respect to Polish declarative clauses, see Wiland (2008:444) and Witkoś (2007) for arguments in favour of obligatory V^0-to-v^0 raising.

On the contrary, Wiland (2009:52) argues that adverb placement does not serve as a reliable diagnostic for verb mobility since adverbs can scramble to different positions in Polish, which restricts their potential in determining the position the finite verb occupies in a sentence. Consider (58):

(58) Szybko$_i$ Ewa   t$_i$ ugotowała obiad.
     quickly Eva$_{NOM}$ cooked   dinner$_{ACC}$
     'Eva cooked dinner *quickly*.' (emphatic)

Furthermore, Wiland (2009) provides an argument from sentential negation and argues that the main verb in Polish does not raise to T^0 (at least not obligatorily, Wiland 2009:55). Wiland points out that head movement (cf. the *Head Movement Constraint*, Chomsky 1995:49) would require that the main verb, located in v^0, adjoin to Neg^0 on the way to T^0 (see the hierarchy of functional projections in Polish in (55) above). Verb raising to negation and subsequent movement of the Neg^0+v^0 complex to T^0 has the consequence that Neg^0 becomes an embedded subconstituent. This derivation ought, however, to be ruled out, since negation can outscope the main verb in Polish (see (59a) and (59b)), cited from Wiland (2009:58), which is possible only if negation is a free standing head (not an embedded subconstituent).[16]

(59) a. Jan   *(nie) widział nikogo.
        John$_{NOM}$ Neg saw   nobody$_{GEN}$
        'John didn't see anybody.

---

[16] Polish is a negative concord language (see (i) below), in which negative phrasal constituents and the negative particle are interpreted as a single instance of negation. Hence the negative constituent *nikogo* in (59a) is required.

   (i) Ewa nikomu nic   nie powiedziała.
      Eva nobody nothing Neg said
      'Eva did not say anything to anyone.'

b. Jan   *(nie) spotkał żadnych znajomych.

John$_{NOM}$ Neg met   no   friends$_{GEN}$

'John didn't meet any friends.'

The fact that negation can license the negative polarity items (*NPIs*) *nikogo* and *żadnych* in (59a) and (59b), respectively, indicates that negation has scope over the predicate (assuming that scope is established via c-command, Wiland 2009:58).

The conclusion drawn by Wiland (2009) from the data in (57)-(59) is that lexical verbs in Polish do not raise to T^0, similarly to English. However, Polish differs from English in that the former, but not the latter, has a fairly rich and complex system of Aspect. In what follows, the syntax of Aspect in Polish will be discussed, which will turn out to have consequences for verb movement in this language.

Aspectual prefixes on the verb in Polish (and other Slavic languages) fall into two categories: lexical (LP) and superlexical (SLP) (Svenonius 2004). The two groups differ syntactically and semantically. The next paragraph will present some of the syntactic and semantic differences between LP and SLP prefixes, however for a detailed discussion on Polish aspectual prefixes see Wiland (2009); on Russian see for example Dyakonova (2009).

LP prefixes (e.g. in Polish: *wy-* 'out', *w-* 'in', *prze-* 'through') have spatial or idiosyncratic meaning (Svenonius 2004). SLP prefixes (e.g. in Polish *po-* 'after', *na-* 'on', etc.), on the other hand, display aspectual and quantificational meaning.

A crucial difference between LP and SLP prefixes is encountered in argument structure. Whereas the former require a selection of a specific DP object (see (60)), and can trigger a grammatical change on the post-verbal object (cf. (61a) vs. (61b)), the

latter neither require a selection of a DP object (see (62)), nor do they result in a grammatical change on the post-verbal object (see (63a) and (63b)).

(60) bić → **wy**-bić szybę (cf. *bić szybę)
     beat   out-beat glass   beat glass
     'beat'   'break a glass'

(61) a. stać w/na miejscu
      stand in/on place
     'stand in a place'
    b. **w**-stać z miejsca
      in-stand from place
     'stand up (from a place)'

(62) czytać → **po**-czytać (gazetę)
     read   after-read (newspaper)
     'read'   'read a newspaper'

(63) a. stać w/na miejscu
      stand in/on place
     'stand in a place'
    b. **po**-stać w/na miejscu
      after-stand in/on place
     'stand in a place'

When both LP and SLP prefixes co-occur, the former must precede the latter. Consider (64):

(64) a. wieszać (pranie) → *wy*-wieszać (LP) → *po-wy*-wieszać (SLP-LP)
      hang up (washing) → hang out   → hang out
    b. wieszać (pranie) → *po*-wieszać (SLP) → **wy-po*-wieszać (LP-SLP)
      hang up (washing) → hang out

The semantic and syntactic differences between lexical and superlexical affixes are encoded in the structural positions they are generated in. LP prefixes originate within vP, whereas SLP prefixes are generated outside the vP domain (Svenonius 2004). Lexical prefixes are assumed to originate as PPs (Prefixal Phrases), which raise from the vP-internal domain (from the complement of a 'Result Projection' in Svenonius' (2004) analysis) to the specifier of AspP, the projection immediately dominating vP. Superlexical affixes, being inherently aspectual, originate in the specifier of AspP. Movement of LP prefixes from the vP-internal domain to AspP proceeds in a tuck-in fashion (Richards 1997), targeting positions below the base positions of SLP prefixes. That accounts for the data in (64), which illustrate that SLP prefixes must precede the LP prefixes.

As pointed out in Dyakonova (2009:32) for Russian, in order for the lexical verb to form a single morphological unit with the affixes, the verb must raise overtly from v^0 to Asp^0. The same movement is also expected for Polish. Furthermore, given the strict adjacency between the negative morpheme *nie* and a lexical verb in Polish (§1.1.4.2, ex. (50)), the latter raises overtly to Neg^0 (Błaszczak 2009). Owing to the fact that negation is always the most external element on the finite verb, followed by SLP and LP prefixes (see the contrast between (65a) and (65b)-(65c)), this results in the syntactic structure in (66).[17]

(65) a. *Nie-po-wy*-rzucałeś   śmieci.
        not-after-out-throw$_{2,Sg,M}$ rubbish$_{GEN}$
       'You didn't throw away the rubbish.'
      b. **Po-nie-wy*-rzucałeś śmieci.

---

[17] It should be noted that Lexical and Superlexical affixes are treated as phrasal constituents (Svenonius 2004), which combine with the lexical verb in the process of morphological word formation. Relevant to the present discussion is the fact that the lexical verb in Polish raises out of vP (to Neg^0). See Wiland (2009:68-71) for the exact details of forming a 'prefix-verb' constituent in Polish.

c. *Po-wy-nie-rzucałeś śmieci.

(66)

```
              TP
             /  \
                 T'
                / \
               T   (NegP)
                   /   \
                    (Neg')
                    /  \
                 (Neg)  (AspP)
                        /   \
                       (Asp')
                       /  \
                    (Asp)  vP
                          /  \
                              v'
                             /  \
                            v    VP
                                /  \
                                    V'
                                   /  \
                                  V    ...
```
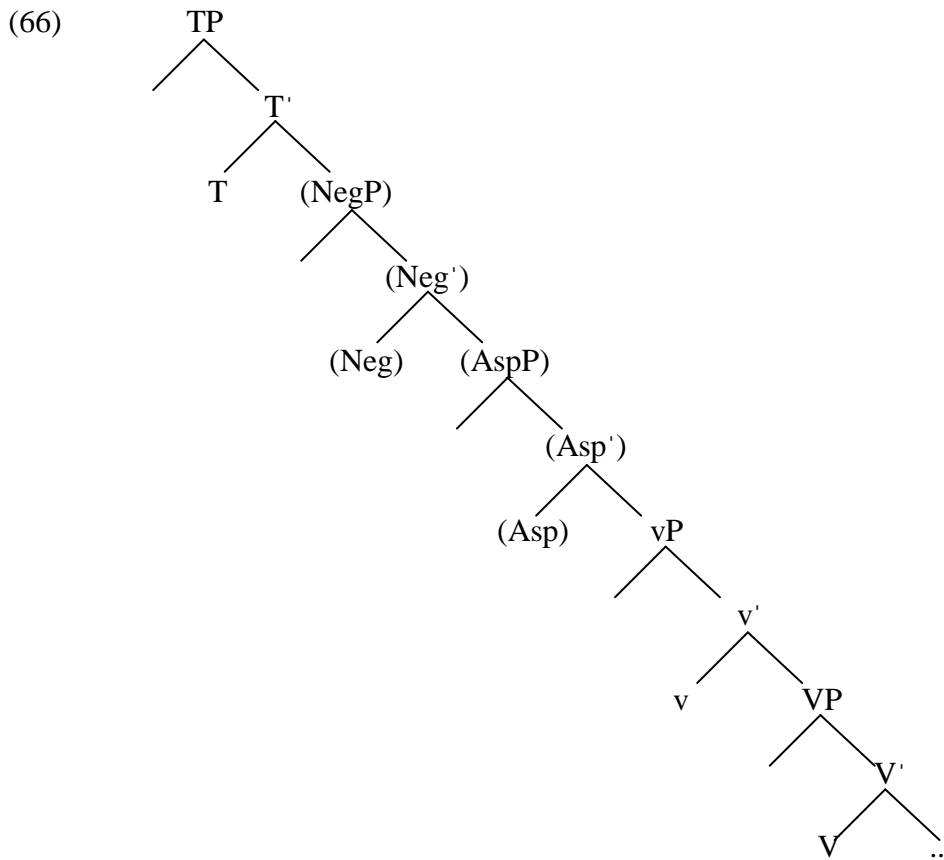
The discussion thus far has established that the lexical verb in Polish raises out of vP to AspP - and NegP - domains, if AspP and NegP are present. Wiland (2009) argues that lexical verbs in Polish do not raise higher than Neg^0. An argument for this claim comes from scope interaction between negation and the main verb, as discussed in §1.1.4.2 (see (59)). Wiland argues that the Neg^0+v^0 complex, in which the Neg-node projects the label, cannot move to T^0, since then Neg^0 would become an embedded subconstituent, not able to license the negative polarity items. However, it seems plausible that when Neg^0+v^0 complex raises to T^0, it is the copy of the head in NegP which licenses the negative polarity items.[18]

---

[18] As pointed out by Ian Roberts (p.c.), a contracted negation (*n't*) in English which raises and attaches to the auxiliary verb (see the example in (i) below) licenses the NPI (*anyone*), despite being an embedded subconstituent.

Furthermore, the position of the lexical verb with respect to auxiliaries points towards the conclusion that the lexical verb can overtly move to T^0 in Polish. Consider (67):

(67) a. Piotr *by*   kupił   samochód.
         Peter Cond.Aux buy$_{Past-Part,3,Sg,M}$ car$_{ACC}$
       b. Piotr kupił*by*   samochód.
         Peter buy$_{Past-Part,3,Sg,M}$ Cond.Aux car$_{ACC}$

       'Peter would buy a car.'

Recall from §1.1.4.1 that the conditional auxiliary *by* (would) originates in the inflectional area (an alternative account is that it raises obligatorily to T^0, as argued by Dornisch 1998). There is also a general consensus in the literature on Polish (Borsley & Rivero 1994; Witkoś 1998; Dornisch 1998) that the incorporated into the verb conditional auxiliary (cf. (67b)) is formed in syntax (i.e., the verb and *by* do not enter the derivation as a single word). Consequently, in order to derive (67b), the verb must have undergone v^0-to-T^0 raising.

In what follows, the assumption is adopted that the lexical verb in Polish can optionally raise to T^0 (following Borsley & Rivero 1994; Szczegielniak 1997; Dornisch 1998; contra Wiland 2009), unlike in English, where the main verb resides in v^0 (and does not raise to T^0 (overtly)).

The following syntactic structure, given in (68), is adopted in the thesis. Based on this structure, we will examine wh-question formation in Polish and English.

(i) Didn't anyone tell you about it?

(68)

```
CP
 \
  C'
 /  \
C    TP
      \
       T'
      /  \
     T   (NegP)
            \
            (Neg')
           /    \
        (Neg)    vP
                   \
                    v'
                   /  \
                  v    VP
                        \
                         V'
                        /  \
                       V    ...
```
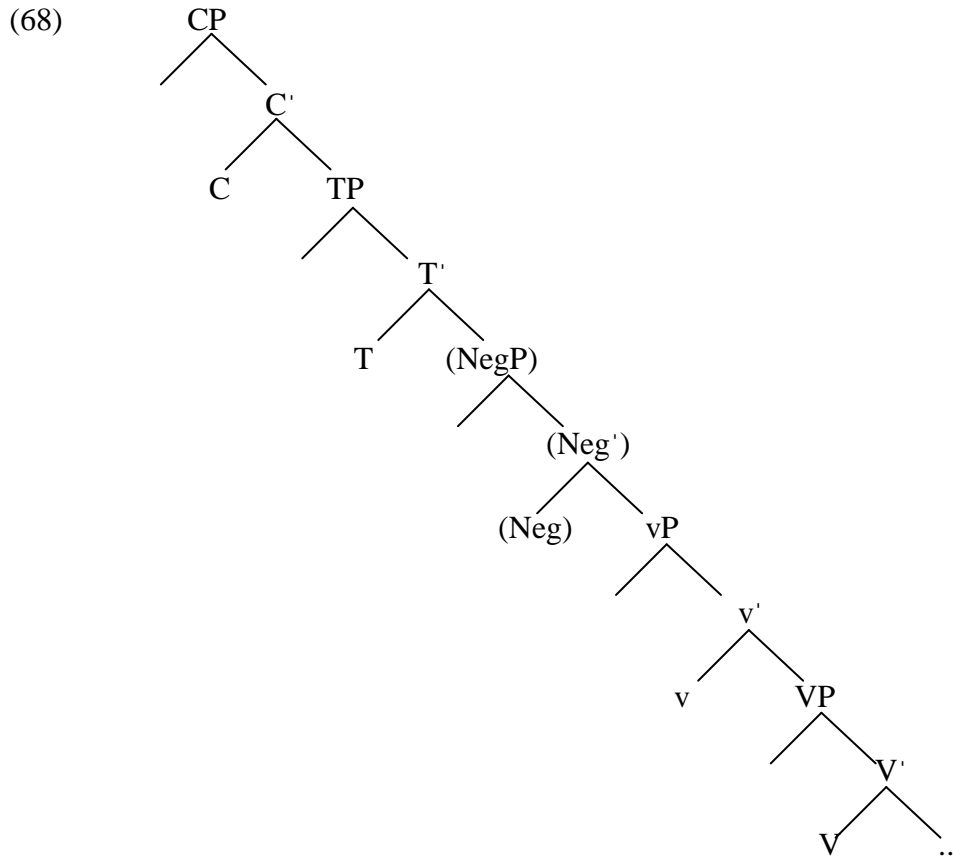
1.2   Wh-question Formation

There exist different strategies of question formation in natural languages. The typological divisions differentiate between *Yes/No*-questions vs. *wh*-questions, *echo* vs. *non-echo* questions, and finally between *direct* vs. *indirect* questions. Since *wh*-questions are the focus of this thesis, this section is devoted to the introduction of this type of interrogative.

The question in (69) in English begins with a wh-word, hence the term *wh*-question.

(69)   What$_i$ did Peter buy t$_i$?

In the Polish counterpart of (69), given in (70), the same strategy as in English is employed, i.e., the interrogative word moves obligatorily from the vP-internal position to the clause-initial position.[19]

(70) a. Co_i Piotr kupił t_i?

   what Peter bought

   'What did Peter buy?'

   b. *Piotr kupił co?

Natural languages differ with respect to the structural realizations of wh-questions. Polish and English are examples of wh-fronting languages.[20] The wh-word in a single wh-question in English and Polish must raise obligatorily from its base (in-situ) position to the left periphery of the sentence. English and Polish thus belong to the class of *wh-ex-situ* languages. In contrast, there are languages which allow the wh-phrase to stay in its base position. Consequently, they are referred to as *wh-in-situ* languages and include, among others, Chinese, Japanese and Korean. An example of a wh-question in Japanese (a head final language) is given in (71) (Nishigauchi 1990:6).

(71) John-wa   nani-o   tabe-masita-ka?

   Mary-Top what-Acc eat-past   -Q

   'What did John eat?'

Furthermore, there exist languages which exhibit both in-situ and ex-situ strategy of forming wh-questions (i.e., optional wh-fronting languages). French is an example, as illustrated in (72) a-b (Aoun *et al*. 1987:558).

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[19] The example in (70b) is unacceptable on a genuine wh-question reading, however it is well-formed as a surprise echo question (Lubańska 2005:67). Echo questions will be disregarded in the thesis.

[20] Throughout this work I will use the terms *wh-fronting* and *wh-raising* interchangeably to refer to the contexts/languages in which a wh-word has raised overtly from its base position, regardless of its final landing site, i.e., whether it is Spec-FocP, Spec-TP or Spec-CP; the term *wh-movement*, on the other hand, will only be employed to refer to the contexts/languages in which the wh-word has undergone substitution into Spec-CP (and movement involves checking of a Q feature), overtly or covertly, which is a standard use of this term.

(72) a. Tu as vu qui?

    you saw whom

'Who did you see?'

   b. Qui as-tu vu?

    whom you saw

'Who did you see?'

This thesis is concerned with wh-ex-situ languages, which are subject to obligatory syntactic wh-fronting. Within this group, a further variation arises when multiple wh-questions (i.e., questions containing more than one wh-word) are taken into account. The classification is into: *single wh-fronting* languages (for example English, German, Greek, among others), and *multiple wh-fronting* (including all Slavic languages and Romanian). The example of a multiple wh-question in English is given in (73):

(73) Who bought what?

The focus of this thesis is placed particularly on one of the multiple wh-fronting languages, Polish. Traditionally, Polish has been classified (along with other Slavic languages) as a language which displays obligatory multiple wh-fronting to the sentence-initial position (Wachowicz 1974; Rudin 1988). More recently, however, it has been observed that the position of the non-initial wh-phrase (also referred to as post-initial wh-phrase or WH_2) in Polish can vary and it can either be sentence-initial, in which case all the wh-phrases in a sentence precede the subject (see (74a)), or immediately pre-verbal, where the WH_2 follows the subject (see (74b)) (Dornisch 1998; Lubańska 2005). Leaving the second wh-phrase in situ is ungrammatical (see (74c)).[21]

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[21] Leaving a wh-phrase in situ as in (74c) would be acceptable if the in-situ wh-phrase was either focalised (Dornisch 1998; see also chapter 2, §2.2.2, ex. (33)) or interpreted as d(iscourse)-linked (Pesetsky 1987), cf. also Wachowicz (1974:159) who classifies examples similar to (74c) as acceptable only in a particular context (not as a genuine request for information), and refers to such sentences as

(74) a. **Co   komu**   Ewa   obiecała?

       what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised

    b. **Co**   Ewa   **komu**   obiecała?

       what$_{ACC}$ Eva$_{NOM}$ whom$_{DAT}$ promised

    c. ****Co**   Ewa   obiecała **komu**?

       what$_{ACC}$ Eva$_{NOM}$ promised whom$_{DAT}$

    'What did Eva promise to whom?'

This thesis aims to provide a syntactic explanation for the patterns of multiple wh-questions in Polish, and account for structural variations between Polish (cf. (74)) and English (cf. (73)), within the framework of Phase Theory (Chomsky 2000 *et seq.*). In Phase Theory, wh-movement proceeds obligatorily through the edge of vP. The investigation into what forces multiple wh-fronting versus single wh-fronting and allows a post-initial wh-phrase in Polish to remain in the pre-verbal position (as illustrated in (74b)) will turn out to have important consequences for the conceptions of phase and the Spell-Out domain in Phase Theory.

Particular attention will be devoted to the phenomenon of Superiority effects in multiple wh-questions. Whereas in English wh-phrases are subject to strict ordering constraints, i.e., the language exhibits Superiority effects (cf. (75a) vs. (75b)), Polish lacks Superiority effects in fully-fledged multiple wh-interrogatives (cf. (76a) and (76b)). However, with respect to Polish, an experimental study has revealed that wh-phrases must appear in a strict order under multiple sluicing. It is, thus, important to investigate the properties of sluicing and provide an explanation for the asymmetries in

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clarifying questions. As a regular wh-question, (74c) is ungrammatical (see also Citko (1997:97), ex. (1b)).

Superiority effects between fully-fledged wh-questions and multiple sluicing constructions in Polish.

(75) a. Who bought what?

    b. *What did who buy?

(76) a. Kto co   przyniósł?
      who what brought
    'Who brought what?'

    b. Co   kto przyniósł?
      what who brought
   '*What did who bring?'

The next section will describe the theoretical framework adopted in this thesis, highlighting those aspects of Minimalism that will be crucial to the analyses of wh-questions in subsequent chapters.

1.3   Theoretical Background

1.3.1   The Minimalist Program (Chomsky 1993; 1995)

The question of how the grammar of a language works and what factors are responsible for cross-linguistic variations with respect to surface structure representations has been studied extensively and resulted in the emergence of different approaches within generative syntax, including Government and Binding (GB) theory (Chomsky 1981) and the Minimalist Program (Chomsky 1993; 1995). This thesis adopts the framework of the Minimalist Program (Chomsky (1993; 1995), specifically the most recent development in terms of phase-based derivations (Chomsky 2000; 2001).

The core aim of the Minimalist Program is to explain syntactic variations in natural languages with the minimal set of theoretical and descriptive apparatus. The Minimalist Program (Chomsky 1993; 1995) assumes that language is composed of a lexicon and a computational system (C_{HL}), the latter derives items from the lexicon to generate linguistic expressions. A linguistic expression consists of a pair: (π, λ), where π is a representation of sound, a Phonetic Form (PF), whereas λ represents meaning, a Logical Form (LF). PF and LF are the interface levels of syntactic representations, which provide instructions for the articulatory-perceptual (A-P) and conceptual-intentional (C-I) systems, respectively.[22] Parts of the C_{HL} are relevant either to π (PF) or λ (LF). The point at which a syntactic structure is sent to PF (i.e., it is pronounced) is called *Spell-Out*. Spell-Out applies once during the derivation. There are two computational cycles: i) overt cycle, where syntactic operations occur prior to Spell-Out (referred to as *overt syntax*); ii) covert cycle, where operations take place after Spell-Out (i.e., in LF) (referred to as *covert syntax*). The latter do not affect the surface structure representations. Once Spell-Out applies, the computational system has no further access to the lexicon.

The notion of feature checking is central to the Minimalist Program. One of the feature distinctions relates to *strength*: features are either weak or strong. The latter trigger overt operations (before Spell-Out). Since strong features are illegitimate PF-objects, they must be checked and deleted before Spell-Out, otherwise the derivation crashes. Chomsky (1995) proposes that strong features are located on functional categories (functional heads). That proposal has certain implications; for example, wh-

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[22] In earlier models of Generative Grammar it was assumed that there is an additional level between the lexicon and the computational system, the D(eep)-Structure. The computational system maps D-Structure to S-Structure, and subsequently proceeds to PF (the PF component) and LF (the LF component), independently. The Minimalist Program dispenses with D-Structure and S-structure representations, thereby reducing the number of levels to PF and LF only.

elements can be assumed to form a morphologically coherent class (cf. Dayal 2006:299), i.e., there is no distinction between wh-phrases into those that carry a strong feature and thus undergo overt displacement, and those which carry a weak feature and therefore stay in situ in overt syntax.

In Minimalism lexical items (LIs) are assumed to possess three types of features: phonological, semantic and formal (syntactic). Phonological features are stripped away by Spell-Out. Semantic and formal features continue to exist in the derivation after Spell-Out and they intersect. Since formal and semantic features intersect, the former fall into two types: formal features with semantic content and formal features without semantic content. Features with semantic content are interpretable at LF, while those lacking semantic content are LF-uninterpretable. The latter must be eliminated (checked and deleted) before the derivation reaches LF, in conformity with the principle of Full Interpretation (Chomsky 1995), according to which every element in a structure must receive an appropriate interpretation. The derivation converges at LF if there are no uninterpretable features at LF.

The Minimalist Program is based on derivational economy, which can be represented in a number of aspects. One of them relates to movement as *Last Resort*, which requires that Move occurs only when necessary, i.e., when driven by morphological feature-checking requirements. In this respect the Minimalist Program differs from the Principles and Parameters framework, where movement was available unless it resulted in a violation of some principle of grammar. *Shortest Move* places the requirement that an element that undergoes movement must raise to the closest available landing site (the nearest target). From the point of view of the attracting head (the target), the Shortest Move principle requires that it is the closest element with a matching feature that raises to check the strong feature on the functional head (cf. the

Minimal Link Condition, Chomsky 1995:311). According to the notion of *Greed*,[23] a constituent should move only if forced by the need to satisfy its morphological properties (and not the properties of some other element). The intuition behind *Procrastinate*, the last principle of economy, captures the distinction between grammatical features. Strong features must be checked in overt syntax (and they require pied-piping of a full category for PF convergence, cf. Chomsky 1995:290), whereas weak features are transferred to LF (they are satisfied in covert syntax). Procrastinate states that movement should be postponed as late as possible, which consequently prohibits weak features being checked in overt syntax.

The trigger for wh-movement in the Minimalist Program (1995) is attributed to the presence of an operator feature on C^0. Wh-phrases possess a feature F_Q (called the wh-feature, Chomsky 1995:289) which satisfies the relevant feature on the C head. Feature checking requires strict locality: Spec-head configuration, therefore wh-phrases raise to Spec-CP, where they also satisfy their scopal properties. Wh-movement (movement to Spec-CP) occurs either before or after Spell-Out. The former results in overt displacement of the wh-phrase (as in English), whereas the latter in covert wh-movement (as in Chinese), i.e., the wh-phrase is pronounced in situ. The distinction between overt and covert wh-movement is dependent on feature strength: strong [Q] feature on C^0 results in overt wh-movement, while weak [Q] feature on C^0 is satisfied at LF (by covert feature movement), in accordance with Procrastinate.

The Minimalist Program is based on the assumption that derivations generated by the computational system are driven by morphological properties, to which parametric differences across languages are restricted (Chomsky 1995:192).

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[23] The principle of *Greed* was formulated in Chomsky (1993), and subsequently replaced in Chomsky (1995, ch.4) with the notion of Attract by a functional head (i.e., movement can only take place to satisfy the requirement of the target).

1.3.2 Phase Theory (Chomsky 2000 *et seq.*)

1.3.2.1 Phase-based Model (Chomsky 2000; 2001)

In *Minimalist Inquires* (MI) (Chomsky 2000) and *Derivation by Phase* (DbP) (Chomsky 2001), Chomsky proposes that sentences are derived in small stages, called phases. Phase is a syntactic object, which is constructed from an individual lexical sub-array, the latter derived from a numeration/lexical array (LA). Phases are propositional. Chomsky (2001) distinguishes between strong and weak phases. The former include CP and vP with full argument structure (marked as v*P in Chomsky (2001 *et seq.*)), while the latter TP and unaccusative/passive Verb Phrases.[24]

Once a phase is completed, the internal domain of a phase head (i.e., the complement of a phase head) is sent to Spell-Out (PF). As pointed out in Grewendorf & Kremers (2009:388), sending a completed syntactic object cyclically to PF results in imbalance between the sensory-motor (S-M) system (A-P system in Chomsky 1995) on the one hand, and the conceptual-intentional system (C-I) system, on the other hand. Whereas the S-M system receives the structure in stages, the C-I system receives the structure as a whole, once the derivation is completed.[25]

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[24] In what follows, the distinction between strong and weak phases will be disregarded and the term 'phase' will be used to refer only to strong phases. Furthermore, the notation vP will be used instead of v*P.

[25] It is not explicitly clear in *MI* and *DbP* (Chomsky 2000; 2001) whether the syntactic object (phase) is sent cyclically only to PF or both to PF and LF. There are different interpretations in the literature. For example, Csirmaz (2005:23, fn. 6) points out that in Chomsky's (2000) system, a syntactic object undergoes cyclic transfer only to PF, but not to LF (see also Grewendorf & Kremers 2009:388/389, among others). On the other hand, according to Doggett (2004:140) and Rezac (2004:29), in Chomsky's (2000; 2001) model, both PF and LF are accessed cyclically (see also Grohmann 2009:12; Felser 2004:546, among many others).

More recently (Chomsky 2004; 2005; 2006), an operation Transfer is assumed to occur at every phase level, which sends the completed syntactic object both to PF and LF.[26]

With the introduction of a multiple/cyclic Spell-Out, there is no longer an overt/covert level of syntactic representations. There is only a single narrow-syntactic cycle and all operations of the C_{HL} are assumed to proceed in parallel. In Chomsky (1993; 1995), LF was a level of representation mapping syntax to the C-I interface. Most recently (Chomsky 2005; 2006), the term LF has been utilized to refer to the C-I interface itself. This most recent usage will be adopted in the present work.[27]

In order to ensure that movement is strictly cyclic, Chomsky (2000:108) formulates the *Phase Impenetrability Condition* (PIC), given in (77):

(77) PIC (*Phase Impenetrability Condition*)

In phase α with head H ([α [H β]]), the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations [the edge refers either to specifiers or elements adjoined to αP]

The PIC requires that movement proceed through the edge of every phase: CP and vP. Movement through the phase edge is allowed by the presence of an EPP-feature (a formal uninterpretable feature), which can be optionally assigned to phase heads (Chomsky 2000:109). The EPP-feature must be satisfied by movement within the phase.

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[26] In what follows, the term *Spell-Out* will be used to refer to the point at which a completed syntactic object/phase is mapped to PF, as originally in Chomsky (1993; 1995). The term *Transfer* will be used to refer to the operation of mapping a syntactic object to LF.

[27] In Chomsky (2000 *et seq.*), there is a phonological component (PC) and a semantic component (SC) (Chomsky 2005) between narrow syntax and the interfaces. Following Hicks (2006), I assume that syntactic objects are mapped directly to the interfaces, without recourse to any additional components or mechanisms.

Under the PIC in (77), the edge of a phase is accessible to syntactic operations in the higher/next phase. Spell-Out applies to vP and CP, once they are completed.[28]

Chomsky (2001) proposes that Spell-Out should apply uniformly at the next higher phase, and formulates a principle in (78) (Chomsky 2001:14), where Ph_1 and Ph_2 are phases:

(78) Ph_1 is interpreted/evaluated at Ph_2.

An element that is to undergo successive-cyclic movement is first raised to the edge of vP, however Spell-Out of the internal domain of vP occurs at the level of CP, i.e., upon completion of CP (Felser 2004:547). The PIC now falls under (78), and is restated as in (79) (Chomsky 2001:13/14):

(79)   a. $[_{ZP}$ Z...TP.. $[_{HP}$ α [H YP]]]

b.   The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations (where HP corresponds to vP and ZP to CP).

Under the revised version of the PIC in (79), the head T^0 can probe into the domain of HP, i.e., YP. However, for an XP to be attracted by Z $(= C^0)$, the XP must first move to/ stop at the edge of HP. H and its edge are accessible for extraction to Z. Z, being the next higher phase head, cannot access YP. The complement of Z, TP, is immune to extraction by a higher phase beyond ZP.

The operations *Merge*, *Agree* and *Move* constitute a derivational apparatus in Phase Theory. Merge takes two syntactic objects α and β to form a new syntactic object γ. Agree is a feature matching operation involving a probe – goal relation, and it is driven by the requirements of the probe. Move is contingent on Agree and is induced by the

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[28] In root cases, the entire phase is spelled out. In non-root cases, only the complement domain of the phase head is spelled out (Chomsky 2004).

presence of an EPP-feature on the functional heads (C, T, v), when Merge is inapplicable (Merge of arguments is inapplicable in non-theta positions, Chomsky 2000:106).

In Phase Theory, there is no distinction between strong and weak features. Features of lexical items are either interpretable (legible to SM and C-I interface systems) or uninterpretable. Chomsky (2001) links the concept of feature interpretability to valuation. Interpretable features come from the lexicon with values, while uninterpretable features enter the derivation unvalued and their values are determined by Agree. Valued features are PF- and LF-interpretable, while unvalued features are always illegible, hence uninterpretable at both PF and LF. Once uninterpretable features are assigned values under Agree, they are deleted from narrow syntax; however they remain available for phonology, as they may have a phonetic effect (see a detailed discussion on features in chapter 4, §4.2.4). The derivation converges if there are no uninterpretable features at the interfaces.

Unvalued features implement syntactic operations and they get valued (checked) under Agree.[29] For Agree to take place, the following conditions must be fulfilled: i) both probe and goal must be active (i.e., both must contain an uninterpretable feature); ii) the features of the probe and the goal must match (i.e., the probe possesses an unvalued feature, while the goal a corresponding valued feature); iii) the goal is in the domain of the probe (i.e., the goal is c-commanded by the probe), where the domain of the probe includes its complement, but not its specifiers (Chomsky 2000:135)); iv) both probe and goal are in a proper local domain (phase) and v) there is no other potential goal (active or inactive) with relevant matching feature closer to the probe. The latter

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[29] In the Minimalist Program (MP) (Chomsky 1995), the counterpart of Agree is feature movement.

condition is subsumed under the *Defective Intervention Constraint* (DIC) (Chomsky 2000:123), given in (80), which restricts the locality between the probe and the goal.

(80) DIC (*Defective Intervention Constraint*)

In a structure α > β > γ, where > is c-command, β and γ match the probe α, but β is inactive so that the effects of matching are blocked.

The goal remains active until its uninterpretable features are valued (checked) under Agree. Once the uninterpretable features on the goal are checked, the goal is *frozen* in place, i.e., it is unable to act as a goal in further syntactic operations and undergo Agree or Move. It can, however, induce an intervention effect under the DIC.

Wh-movement in Phase Theory proceeds phase-by-phase, as illustrated in (81b), for the wh-question in (81a) (irrelevant details omitted):

(81) a. Who did John see?

b. $[_{CP}$ **who$_i$** $[_C$ $[_{TP}$ John$_j$ $[_{vP}$ **t$_i$**′ $[_{vP}$ t$_j$ $[_v$ see **t$_i$**$]]]]]]$?

The wh-phrase in (81b) moves through the edge of the lower phase (vP) prior to reaching the specifier of the higher phase, CP, where it is pronounced. A detailed discussion of the exact mechanism of this movement will be postponed till chapter 4, where a proposal of the derivation of wh-questions in English and Polish within the Phase Theory of Chomsky (2000; 2001) will be put forward.

1.3.2.2 Modifications to the Phase Theory (Chomsky 2005; 2006)

In Chomsky (2005; 2006), certain modifications are introduced within the Phase Theory. As outlined in *On Phases* (Chomsky 2005), every lexical item (LI) possesses an

edge-feature (EF), by virtue of which the LI can be merged with a syntactic object. There are two kinds of Merge: i) *External Merge*, which refers to the merge of X with Y, and X is external to Y; ii) *Internal Merge* (the counterpart of Move), where X is part of Y.

Chomsky proposes that syntactic operations (along with Transfer) apply only at the phase level, and are triggered by phase heads. An innovation is the fact that T^0 and V^0 do not enter the derivation with φ-features, but instead inherit them from C^0 and v^0, respectively. To take for example C^0, it possesses two probes: the edge-feature (EF) and an Agree-feature (φ-features) (Chomsky 2005:15). The former triggers an A-bar movement (including wh-, focus- and topic-movement), while the latter an A-movement (movement of a DP to Spec-TP). Since the φ-features on T^0 are derivative from C^0, the former can no longer act as an independent probe. Consequently, the revised version of the PIC (cf. (79)) on which T^0 can probe into the domain of vP does not hold, and the original version of the PIC (cf. (77)) automatically follows.

The edge-feature (EF) of a phase head is 'indiscriminate' (Chomsky 2005:18), i.e., it can search for any goal/any element in its domain. Consequently, there is no feature-matching in EF-driven approach to movement (i.e., in A-bar movement), and hence no Agree operation. As pointed out by Chomsky (2005:18), an advantage of the EF-driven approach to A-bar movement is the fact that there is no need to postulate uninterpretable features on probes. A-bar movement into Spec-CP is simply triggered by C's property (EF), which allows internal merge in Spec-CP. No uninterpretable [Wh] or [Q] feature is involved. However, as pointed out by Grewendorf & Kremers (2009:409), given that a wh-phrase does not possess any uninterpretable features other than Case, once the latter is checked, the wh-phrase should be rendered inactive, i.e., 'frozen in place', and hence it should be unavailable for movement to Spec-CP.

Another problem with respect to the EF-feature approach to movement has been noted by Chomsky (2005:18) himself. In a multiple wh-question, either of the two wh-phrases can be targeted by the edge-feature on v^0 (since EF is indiscriminate). For example, the EF on v^0 could target and raise the wh-word *what* to the vP-edge (see (82b)), followed by subsequent movement of *what* to Spec-CP, resulting in the surface representation in (82c). Consequently, we should not encounter any Superiority phenomena in English, i.e., both (82a) and (82c) should be equally well-formed, contrary to fact.

(82) a. Who bought what?

b. $[_{CP}$ **what$_j$** $[_C$ did $[_{TP}$ who$_i$ $[_{vP}$ **t$_j$**′ $[_{vP}$ who$_i$ $[_v$ buy **t$_j$**$]]]]]$?

c. *What did who buy?

Some other problems with the EF-driven approach to wh-movement are also identified in Slioussar (2007). To mention one of them, Slioussar (2007:34) observes that if there is no feature matching and wh-movement is driven purely by EF, "it will be difficult to connect a wh-phrase to a particular head in the C-domain (or to a particular feature of C itself). Thus, an additional interface rule will have to be introduced." The latter would be an undesired outcome for the theory, whose main objective is to minimize the theoretical apparatus.

Furthermore, considering that EF can attract any element in the clause (located in its search domain), it is possible that in wh-fronting languages such as English, a non-wh-phrase will be attracted by EF to the clause-initial position (instead of a wh-phrase). Conversely, in wh-in-situ languages, for example Chinese, the wh-phrase may incorrectly be attracted by EF to the clause-initial position in a wh-question. According to Chomsky (2005), the interpretation of a sentence and its potential 'deviance' is

determined at the S-M and C-I interface. However, allowing the EF (which is not specified for wh-, focus-, or topic- features) to be the trigger for A-bar movement results in excessive optionality and over-generation of ill-formed structures, again an undesired outcome for the syntactic theory.

In this thesis, I adopt the version of the Phase Theory as it is outlined in Chomsky (2000; 2001), whose central component is feature checking via Agree. The derivation of wh-questions in Chomsky's (2000; 2001) model faces a number of problems, which will be discussed in chapter 4. Chapter 4 will be devoted to a comparative study of multiple wh-constructions in Polish (cf. (74) & (76)) vs. English (cf. (75) a-b) and it will offer a novel approach to wh-question formation.

The next chapter is devoted to the phenomenon of wh-fronting in Polish, focusing on a critical examination of previous and current approaches that have been put forward in the literature.

CHAPTER 2

Previous Approaches to Multiple Wh-fronting in Polish

This chapter reports and evaluates major proposals of multiple wh-fronting in Polish, which have been put forward in the literature. First, the discussion concentrates on the pre-Minimalist approaches. Subsequently, more recent proposals are discussed, with a particluar emphasis on two current competing approaches. The evaluation will illustrate that both the focus approach (Lubańska 2005) and the quantifier raising approach (Dornisch 2000; 2001) to wh-fronting in Polish give rise to a number of empirical and theoretical problems. Consequently, I will argue that neither focalisation nor quantification can be the trigger for obligatory multiple wh-fronting in Polish.

2.1   Typological Variation in Multiple Wh-questions

Natural languages differ with respect to the formation of multiple wh-questions. For example, there are languages which do not exhibit syntactic wh-movement, i.e., all wh-phrases remain in situ, as illustrated in example (1) from Japanese. On the other hand, there are languages where one wh-expression moves to the scope position and the remaining wh-phrases stay in situ. An example from English which belongs to that category is given in (2). The third group comprises languages which front overtly all wh-phrases to the clause-initial position. This is demonstrated by example (3) from Bulgarian.

(1) Taroo-ga dare-ni nani-o ageta no?

    Taroo   who   what   gave Q

    'Who did Taroo give what?'

(2) Who gave what to whom?

(3) Koj kogo vižda?

    who whom sees

    'Who sees whom?'

In addition to the aforementioned strategies of forming multiple wh-questions, there exist languages in which multiple wh-constructions are unavailable, as well as languages in which wh-fronting is optional. The former include Irish (McCloskey 1979) and Italian (Rizzi 1982), the latter for example French (Aoun *et al*. 1987), Egyptian Arabic and Palauan (Dayal 2006). In optional fronting languages, only one wh-expression can appear clause-initially. No language has been attested to allow optional multiple wh-fronting (Dayal 2006:290-1).[1]

2.2   Multiple Wh-fronting in Polish

Until the mid 1970s, the assumption was that languages split only into two categories with respect to multiple wh-question formation (Baker 1970; Bach 1971, among others): those in which wh-phrases remain in situ (e.g. Chinese) and those which move only one wh-element to the sentence-initial position (e.g. English). It was standardly assumed that in multiple wh-questions, only one wh-phrase could appear clause-initially (in Spec-CP). Put differently, there can only be a single overt wh-movement in a sentence. That claim was subsequently challenged by Wachowicz (1974) who demonstrated that all wh-phrases in multiple wh-questions in languages like Polish and

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[1] See Sabel (2003) who reports that Malagasy is an optional multiple wh-fronting language.

Russian move to the left periphery of the sentence and that this movement is obligatory. This is illustrated in examples (4)-(5) from Polish (Wachowicz 1974:160/161).[2]

(4) **Co   komu**   Monika   dała?
what$_{ACC}$ whom$_{DAT}$ Monica$_{NOM}$ gave
'What did Monica give to whom?'

(5) ***Co**   Monika   **komu**   dała?
what$_{ACC}$ Monica$_{NOM}$ whom$_{DAT}$ gave
'What did Monica give to whom?'

In (4) both wh-phrases move to the left periphery of the sentence, unlike in example (5), where the second wh-phrase raises only to the pre-verbal position and follows the subject. The judgement in (5) is cited from Wachowicz (1974). However, according to other authors (Dornisch 1998 and Lubańska 2005), and to my judgement as well, both (4) and (5) are well-formed wh-questions in Polish.

Since the recognition of overt multiple wh-fronting (Wachowicz 1974), this phenomenon has been extensively investigated. A number of proposals have been put forward in the literature, the earliest dating back to Toman (1981) and Rudin (1988), the more recent ones are due to Richards (1997; 2001), Grewendorf (2001) and Bošković (1997b; 1998a; 1998b; 2002a).

The following section will present a number of analyses from the literature, which aim to explain multiple wh-fronting in Polish. Subsequently, two current approaches to wh-fronting in Polish will be discussed, and a critical evaluation will reveal their empirical and theoretical inadequacies.

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[2] An exception to the obligatory (multiple) wh-fronting constitute clarifying questions (Wachowicz 1974:159), in which the wh-phrase can appear in situ (cf. chapter 1, §1.2, fn. 21).

2.2.1 Early Proposals

Wachowicz (1974) speculates that there are two types of movement which could be responsible for fronting the second wh-phrase (WH_2) in Polish (and Russian): wh-movement and pronoun-movement. The hypothesis that pronoun movement could drive the fronting of the WH_2 in a multiple wh-question in Polish stems from the fact that interrogative words are regarded as pronouns or pronominal adverbs. Wachowicz examines the hypothesis that WH_2 moves for the same reason as pronouns do by juxtaposing multiple wh-questions with sentences containing pronouns. Wachowicz (1974:160) observes that pronouns in Polish can optionally be fronted to the pre-verbal position, as the examples in (6) a-b below illustrate. She compares the examples in (6) a-b with the wh-questions in (4) and (5) and observes that unlike pronouns (cf. (6a)), the WH_2 cannot stay in the pre-verbal position (cf. (5)), but instead it must move to the sentence-initial position (cf. (4)).[3]

(6)   a. Monika to   widziała.
          Monica this saw
        'Monica saw this.'
      b. Monika widziała to.

Furthermore, Wachowicz (1974:160) notes that the movement which drives post-initial wh-fronting is capable of moving not only wh-pronouns but also full DPs. Consider the example in (7), where the full DP *jakim sposobem* is fronted.

(7)   Kto jakim sposobem uciekł   z   więzienia?
       who what manner   escaped from prison
       'Who escaped from prison in what manner?'

---

[3] In chapter 1, §1.1.1, examples of monotransitive constructions with the pronoun occurring in the post-verbal position are marked. To my judgment, the sentence in (6b) is also degraded; it becomes fully well-formed when the pronoun is followed by another constituent or if the pronoun receives a heavy stress.

Based on these observations, Wachowicz (1974:160/1) concludes that: i) the WH$_2$ and pronouns in Polish (and Russian) do not undergo the same type of movement (pronoun movement) and ii) fronting of all wh-phrases in Polish (and Russian) results from the application of multiple wh-movement (*question movement* in Wachowicz's (1974) terminology).

Wachowicz (1974) does not establish the identity of the landing sites of fronted wh-phrases. However, Toman (1981) hypothesizes that if wh-movement involves substitution to COMP (understood as Spec-CP in current syntactic terminology), and Polish exhibits multiple wh-movement (as concluded by Wachowicz 1974), then COMP in Polish should be subject to multiple wh-filling. The hypothesis of *multiple COMP-filling* (Toman 1981:295), however, is rejected by Toman (1981). The author observes that if a sequence of fronted wh-phrases occupied a single COMP, they should form a single complex constituent. However, the clitic *się* (a reflexive pronoun), which must occur after a first major constituent in Polish (as estblished by Toman 1981:296), can disrupt the sequence of fronted wh-phrases (see (8a)). Furthermore, the conditional auxiliary *by* (see (8b)) can also split the sequence of fronted wh-phrases (Toman 1981:296). The data in (8) a-b indicate that the fronted wh-phrases do not form a single constituent in Polish, and consequently there cannot be multiple wh-movement to COMP.

(8) a. Kto **się** komu podoba?
     who$_{NOM}$ Refl whom$_{DAT}$ likes
     'Who likes who?'

   b. Gdzie **by** kto poszedł?
     where would who$_{NOM}$ went
     'Who would go where?'

Based on the lack of constituency of fronted wh-phrases in Polish, Toman (1981) rejects the possibility of multiple wh-movement to COMP or multiple adjunction to COMP and puts forward two hypotheses, which address the question of the landing sites of fronted wh-phrases in Polish (and Czech, the two languages Toman investigates). Toman speculates that fronted wh-phrases in Polish either iteratively adjoin to S (IP/TP in current terminology) (a hypothesis also maintained in Przepiórkowski 1994), or move to separate COMPs. The latter has been termed *the Comp-proliferation hypothesis* (Cichocki 1983:54). The structure Toman (1981:300) assumes for the Comp-proliferation hypothesis is given in (9). Toman assumes that COMPs can be projected arbitrarily. The translation of (9) into the Minimalist framework, which can be represented in two different ways, is given in (10)-(11), based on Dornisch (1998:34; 40); cf. Rudin (1988:384) and Przepiórkowski (1994:9):

(9)

$$
\begin{array}{l}
S' \\
\quad \diagup \diagdown \\
COMP \quad S \\
wh_i \quad \diagup \diagdown \\
\quad COMP \quad S \\
\quad wh_j \quad \diagup \diagdown \\
\quad \quad COMP \quad S \\
\quad \quad wh_k \quad t_{i..}\, t_{j..}\, t_k
\end{array}
$$

(10)

```
              CP
             /  \
          whᵢ    C'
                /  \
             whⱼ    C'
                   /  \
                whₖ    C'
                      /  \
                     C    TP
                          /\
                       tᵢ..tⱼ..tₖ..
```

(11)

```
              CP
             /  \
          whᵢ    C'
                /  \
               C    CP
                   /  \
                whⱼ    C'
                      /  \
                     C    CP
                         /  \
                      whₖ    C'
                            /  \
                           C    …
```
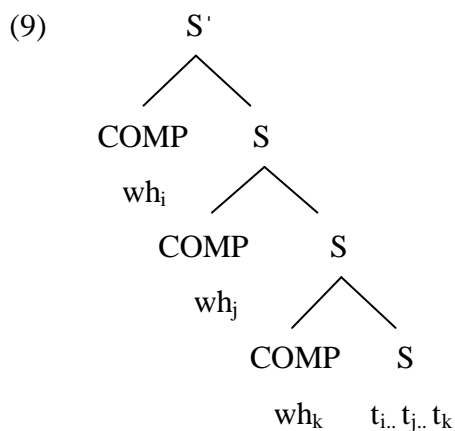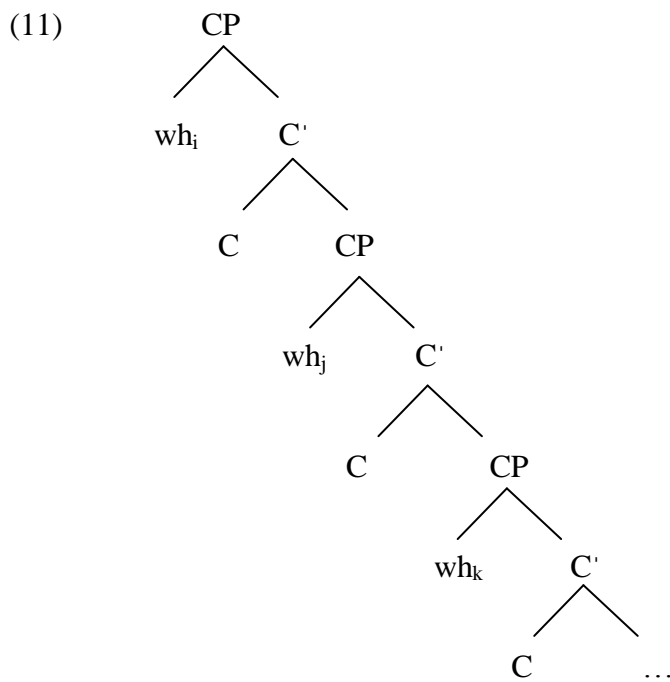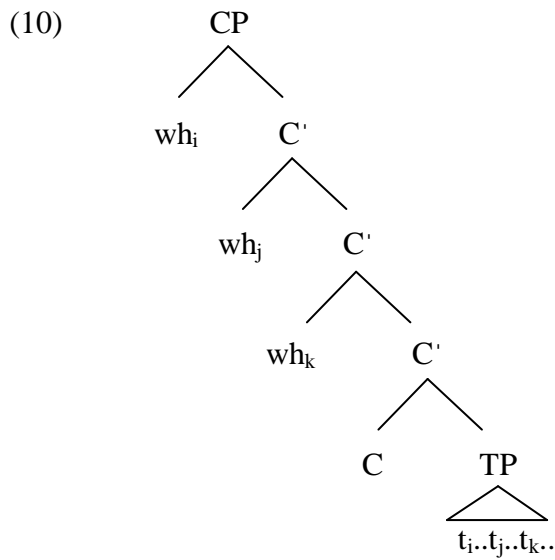
The tree in (10) is a multiple Spec-CP structure, whereas (11) represents multiple CP projections. The structure in (11) is to be preferred to (10), since the latter does not straightforwardly account for the facts in (8), where the clitic appears within the sequence of fronted wh-phrases.

The Comp-proliferation hypothesis is subsequently challenged by Cichocki (1983), who argues for a *'Two-Comp'*-structure in Polish multiple wh-questions. By

constructing a variety of examples with clitics, conjunction, parentheticals and extraction, Cichocki postulates that there are two Comp nodes in Polish: $Comp_1$ which serves as an extraction site and hosts one wh-phrase, and $Comp_2$ which accommodates all post-initial wh-phrases. The Two-Comp structure proposed by Cichocki (1983:67) is given in (12). More updated versions of (12) are given in (13)-(14) (Rudin 1988:485); Przepiórkowski (1994:19).[4]

(12)

```
                    S'
         ┌──────────┼──────────┐
      Comp₁       Comp₂          S
        │        ╱  │  ╲        ╱  ╲
      whᵢ      whⱼ whₖ whₗ   ...tᵢ tⱼ tₖ tₗ...
```

(13)

```
                 CP
            ┌─────┴─────┐
          Spec          C'
            │         ┌──┴──┐
          whᵢ       Comp    TP
                   ╱  ╲      │
                 whⱼ   whₖ  ..tᵢ.. tⱼ.. tₖ ..
```

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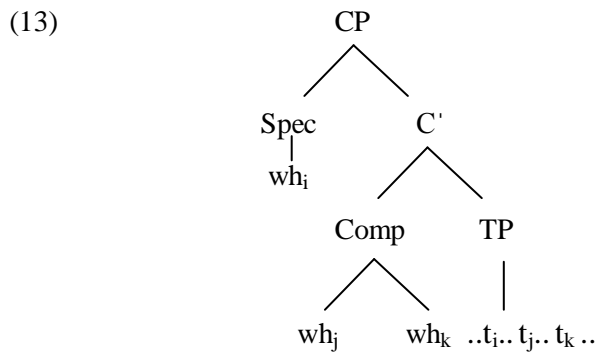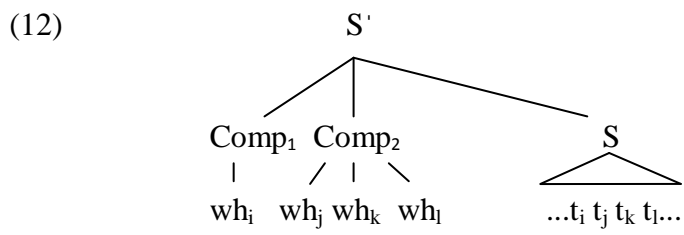
[4] Rudin (1988:485) proposes that $Comp_1$ may be identified with Spec-CP and $Comp_2$ with Comp (head of CP). The structure proposed by Cichocki (1983) violates a *'Doubly-Filled Comp Filter'*, the condition which requires that either Spec-CP or the complementizer position of the same clause remain empty (Rudin 1988:487).

Chomsky & Lasnik (1977:436) propose the surface filter in (i) (referred to as Doubly-filled Comp filter, cf. Rudin 1988, among others), according to which COMP (CP) cannot contain both a wh-phrase and a complementizer in a single clause (only one of them is allowed):

(i)   * [COMP wh-phrase complementizer]

The Doubly-filled Comp Filter is a language specific rule. As pointed out by Chomsky & Lasnik (1977), the constraint was not observed in Middle English. According to Rudin (1988), Polish (and other languages belonging to –*MFS* group (see Rudin 1988) obey the Doubly-filled Comp Filter.

(14)

```
                    CP
                   /  \
                Spec   C'
                 |    /  \
               wh_i  Comp  TP
                    /   \   |
                 Comp   wh_k .. t_i.. t_j.. t_k ..
                 /  \
             (Comp)  wh_j
```
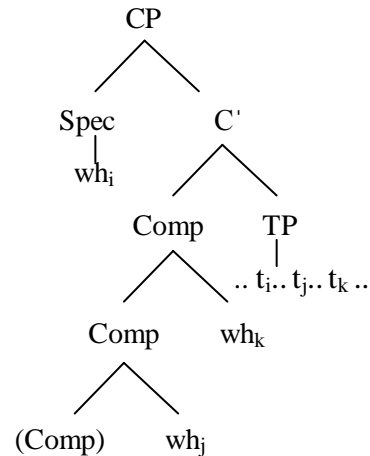
Cichocki's (1983) proposal of the Two-Comp-structure for Polish is based on the observation that the clitic *się* (reflexive), auxiliary *by* (would) and parentheticals can follow either the first wh-phrase or the whole sequence of wh-phrases, but not the second wh-phrase. Consider, for example, the contrast in (15) where the auxiliary *by* (would) is used (the judgments and examples are cited from Cichocki 1983:57):

(15) a. [Kto **by**   komu jaką]   napisał książkę?
         who would whom what kind wrote   book
        'Who would write what kind of book for whom?'
      b. ?*[Kto komu **by** jaką] napisał książkę?
      c. [Kto komu jaką **by**] napisał książkę?

Przepiórkowski (1994), however, re-examines Cichocki's (1983) data and argues that the judgment in (15b) does not hold, i.e., (15b) is an acceptable sentence (along with other examples provided by Cichocki, where the sequence of three wh-phrases is interrupted after the second wh-phrase), and consequently rejects the proposal of the Two-Comp structure for Polish multiple wh-questions.

Rudin (1988) develops a proposal, based on Lasnik & Saito (1984), according to which in languages like Polish, multiple wh-fronting involves substitution of a wh-phrase to Spec-CP, followed by TP-adjunction of post initial wh-phrases. Rudin (1988)

argues that multiple wh-fronting languages fall into two categories with respect to the landing sites of fronted wh-phrases: those which move all wh-words to Spec-CP (by means of substitution into Spec-CP and then multiple adjunction to Spec-CP) and those which move only one wh-phrase to Spec-CP and adjoin the other wh-word(s) to TP (IP). The first group of languages (including Bulgarian and Romanian) are referred to as [+MFS] (for Multiply-Filled Spec-CP), whereas the second group (comprising Czech, Polish and Serbo-Croatian) fall under [−MFS] languages. The structural characteristics of [+MFS] and [−MFS] languages are given in (16) and (17), respectively (Rudin 1988:480/486).[5]

(16)

```
                    CP
                   /  \
              SpecCP   TP
              /   \
         SpecCP    wh
         /   \
    SpecCP    wh
       |
      wh
```

(17)

```
                CP
               /  \
          SpecCP   C'
             |    /  \
            wh  Comp  TP
                     /  \
                   wh    TP
                        /  \
                      wh    TP
```

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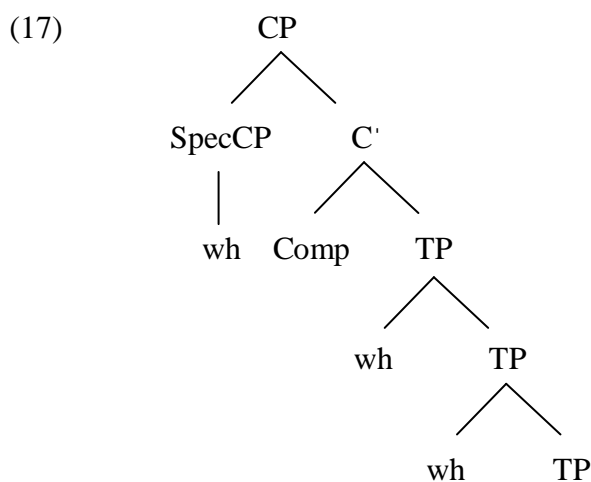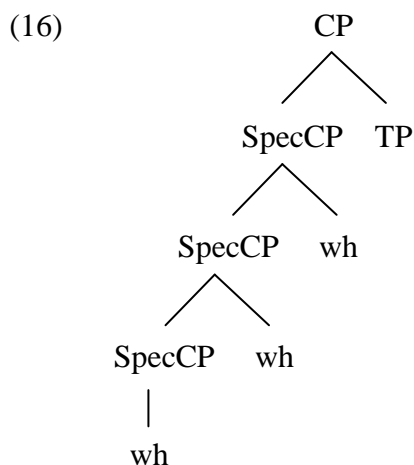
[5] *Comp* in the diagram in (17) stands for the head of CP (Rudin 1988:482).

Rudin's (1988) division into [+MFS] and [–MFS] is based on language-specific properties. First, only [+MFS] languages allow multiple wh-extraction from an embedded clause and out of wh-islands. Examples of a multiple wh-extraction from a clause in Bulgarian ([+MFS] language) and Serbo-Croatian ([–MFS] language) are given in (18)-(19), respectively (Rudin 1988:450/454). (19b) illustrates that a single long-distnace wh-extraction is grammatical in Serbo-Croatian, whereas multiple wh-extraction in not, as shown by the ungrammaticality of (19a).

(18) **Koj$_i$ kǔde$_j$** misliš   [če t$_i$ e   otišǔl t$_j$]?
who where think$_{2,Sg}$ that   has gone
'Who do you think (that) went where?'

(19) a.***Ko$_i$ šta$_j$** želite   [da vam t$_i$ kupi t$_j$]?
who what want$_{2,Pl}$ to you   buy
'Who do you want to buy you what?'

   b. **Ko$_i$** želite   [da vam **šta$_j$** t$_i$ kupi t$_j$]?
who want$_{2,Pl}$ to you what   buy
'Who do you want to buy you what?'

Secondly, clitics, parentheticals and adverbs can follow the first fronted wh-phrase in Czech, Polish and Serbo-Croatian ([–MFS] languages), whereas they cannot split the sequence of wh-words in Bulgarian and Romanian ([+MFS] languages). Compare the example in (20) from Czech, in which a pronominal clitic intervenes between the fronted wh-phrases, with the examples in (21) from Bulgarian, which illustrate that the sequence of wh-phrases cannot be interrupted by clitics (Rudin 1998:461/466).

(20) **Kdo** ho **kde**   videl je nejasné.
who him where saw   is unclear
'Who saw him where is unclear.'

(21) a.***Koj** ti e **kakvo** kazal?

    who you has what told

    'Who told you what?'

  b. **Koj kakvo** ti e kazal?

Based on the data such as (20)-(21) Rudin concludes that all fronted wh-phrases in [+MFS] languages form a constituent, unlike wh-phrases in [–MFS] languages. Accordingly, [+MFS] languages have multiply-filled Spec-CP at S-structure, whereas [–MFS] languages can move overtly only one wh-phrase into Spec-CP.

Rudin (1988) argues that the structural differences between multiple wh-fronting languages as well as the cross-linguistic distribution of multiple wh-questions can be attributed to the level at which adjunction to Spec-CP takes place. Rudin (1988) appeals to a universal principle on wh-movement, the *Condition on Comp Adjunction* (CCA), proposed by Adams (1984), which prohibits adjunction to Comp at a particular level of the grammar. Rudin reformulates the CCA into the *Condition on SpecCP Adjunction* (CSA), according to which nothing can adjoin to Spec-CP. The difference in, for instance, wh-island violations between the two groups of [MFS] languages depends on the level at which the CSA condition applies. Since [+MFS] languages violate wh-islands and allow multiple wh-extractions (both of which involve adjunction to Spec-CP), the CSA cannot operate at S-structure, whereas [–MFS] languages, which do not violate wh-islands nor allow multiple wh-extractions, must observe the CSA at Surface form. Furthermore, both [+MFS] and [–MFS] languages allow multiple wh-constructions, which indicates that the CSA is not operative at LF (Rudin follows the standard assumption that wh-movement exists at LF). On the other hand, the CSA must be obeyed at LF in languages which do not allow multiple wh-constructions, like Irish

and Italian. Rudin's proposal, thereby, subsumes cross-linguistic differences in multiple wh-questions under the level of application of a single constraint.

2.2.2 Multiple Wh-fronting within the Minimalist Program

Based on Rudin's (1988) observations of multiple wh-fronting languages and the partition into two major clusters ([+MFS] and [−MFS]), Richards (1997; 2001) proposes a division that holds for all categories of languages, i.e., those which exhibit multiple overt wh-movement (including Bulgarian, Serbo-Croatian and Polish, among others), those which have only covert wh-movement (like Chinese, Japanese, Korean) and finally those languages which perform wh-movement at two levels, both in overt and covert syntax (for instance English). Richards suggests that multiple wh-fronting is an instance of either movement to multiple specifiers of CP (alternatively multiple adjunction to CP) or to multiple TP projections.[6] Accordingly, he classifies languages into 'CP-absorption' and 'TP-absorption' ones, the former including Bulgarian, Chinese and English and the latter Hungarian, Japanese and Polish, for example. The distinction into CP- and TP-absorption languages has been based on their identical behaviour towards wh-islands, scrambling, superiority and WCO effects.

Concurrently, Richards (2001) points out that TP-absorption languages do not form a homogenous group, noting that while in some languages, for example in Serbo-Croatian, a single wh-word must land in Spec-CP, other languages, for instance Hungarian, allow wh-words to move only as far as TP-adjoined positions (apart from long-distance wh-questions). Richards (2001:33) speculates that the difference may lie in the strength of the [Wh] feature on C^0, however he leaves this option unexplored.

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[6] Adjunction to CP is prohibited when CP is selected by a lexical head (Chomsky 1986:6; McCloskey 1996), but allowed when CP is a root node (de Cuba 2006; McCloskey 1996).

More recently, a proposal has been put forward to account for the differences between [+MFS] and [−MFS] languages (Rudin 1988). Citko (1997) introduces a new functional projection located between CP and TP, termed Op(erator) P(hrase), and argues that any parametric differences between Polish ([−MFS] language) and Bulgarian ([+MFS]) stem from whether multiple specifiers are projected in CP or OpP. The structures for Polish and Bulgarian wh-questions are given in (25) and (26) below, accordingly.

Citko (1997) argues for the existence of OpP based on the behaviour of indefinite and negative pronouns in Polish and Bulgarian. Indefinite and negative pronouns in Polish and Bulgarian move to the front of a sentence, which is illustrated in (22)-(23) for Polish.[7]

(22) a. **Ktoś   coś**   zobaczył.
     someone something saw
     'Someone saw something.'
    b. ?***Ktoś** zobaczył **coś**.

(23) a. **Nikt   nic**   nie widział.
     nobody nothing Neg saw
     'Nobody saw anything.'
    b. ?***Nikt** nie widział **nic**.

Since the only legitimate trigger for movement in Minimalism is morphological feature checking, the natural conclusion is that indefinite and negative pronouns move to a specifier of a functional projection, termed the OpP (Citko 1997), to check strong

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[7] As Citko (1997:102) points out, the judgements in (22)-(23) are subject to individual variation. According to the author, the examples in (22b) and (23b) are acceptable if the in-situ indefinite and negative pronouns are focused.

Operator features.[8, 9] Consider the example in (22a) and its structural representation in (24) (Citko 1997:103) (Op^{max} and T^{max} stand for OpP and TP):

(24)

```
                    Op^max
                   /      \
              ktoś_i       Op'
                          /    \
                      coś_j     Op'
                               /    \
                            Op^0     T^max
                                    /‾‾‾\
                               t_i zobaczył t_j
```
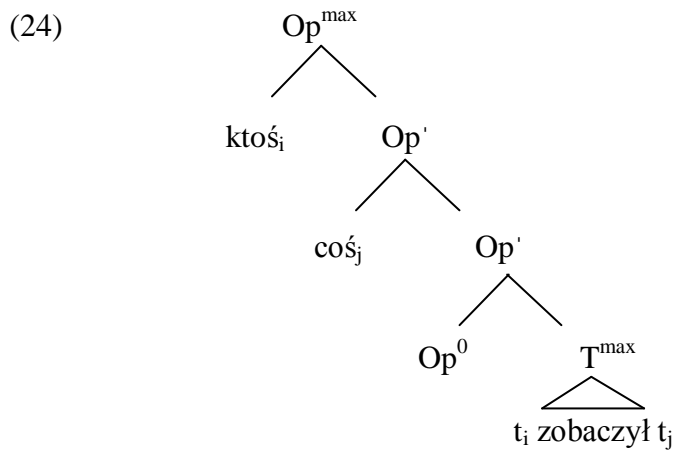
Considering that all wh-phrases in Polish and Bulgarian must front, Citko (1997) assumes that wh-words, on a par with indefinite and negative pronouns, move to specifiers of OpP to check strong Operator features.[10]

Citko assumes that wh-phrases in Polish and Bulgarian check two types of features: the [Q] feature on C^0 and a [Op] feature on a wh-phrase. In Polish, one wh-word raises to Spec-CP (C^{max} in Citko's terminology) to satisfy the [Q] feature of C^0, and the remaining wh-words stay within OpP, where they have moved to check the [Op] feature. The diagram in (25) illustrates this derivation (Citko 1997:103).

---

[8] In early Minimalism (Chomsky 1995) it was *strength* (i.e., strong features) that initiated movement, as opposed to Chomsky (2000 *et seq.*), where it is an *unvalued* feature that triggers syntactic operations. In what follows, I will use the terminology specific to the proposal in question.

[9] Citko (1997) does not articulate explicitly that indefinite/negative pronouns possess a strong feature; it is stated that the pronouns move to Spec-OpP to check strong Operator features, and I assume that the author locates the strong [Op] feature on the pronouns, on a par with wh-phrases, which in Citko's (1997:99) account possess a strong [Op] feature.

[10] Citko (1997) also highlights the fact that wh-phrases and indefinite/negative pronouns in Polish (and other Slavic languages) are morphologically related. Indefinite and negative pronouns in Polish are built on wh-stems, for example *kto* (who) -*ktoś* (somebody), *gdzie* (where) -*gdzieś* (somewhere), *gdzie* (where) -*ni*gdzie (nowhere), etc.

(25)

$$
\begin{array}{l}
\text{C}^{\text{max}} \\
\quad \text{Wh}_{[Q]} \quad \text{C'} \\
\qquad \text{C}^{0} \quad \text{Op}^{\text{max}} \\
\qquad\quad \text{Wh}_{[Op]} \quad \text{Op'} \\
\qquad\qquad \text{Wh}_{[Op]} \quad \text{Op'} \\
\qquad\qquad\quad \text{Op}^{0} \quad \text{T}^{\text{max}}
\end{array}
$$
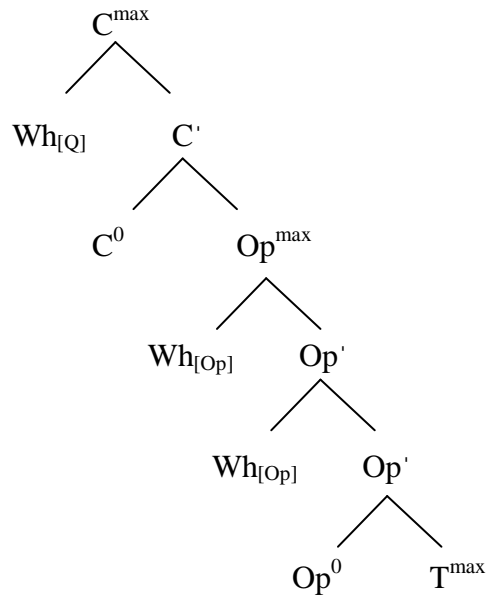
In Bulgarian, the head movement of Op^{0}-to-C^{0} takes place, and consequently wh-phrases check the [Op] features within the CP projection, as illustrated in (26) (Citko 1997:104).[11]

(26)

$$
\begin{array}{l}
\text{C}^{\text{max}} \\
\quad \text{Wh}_{[Q+Op]} \quad \text{C'} \\
\qquad \text{Wh}_{[Op]} \quad \text{C'} \\
\qquad\quad \text{Wh}_{[Op]} \quad \text{C'} \\
\qquad\qquad \text{C}^{0} \quad \text{Op}^{\text{max}} \\
\qquad\qquad \text{C}^{0}\ \text{Op}^{0}\ \ \text{Op}^{0}\quad \text{T}^{\text{max}}
\end{array}
$$

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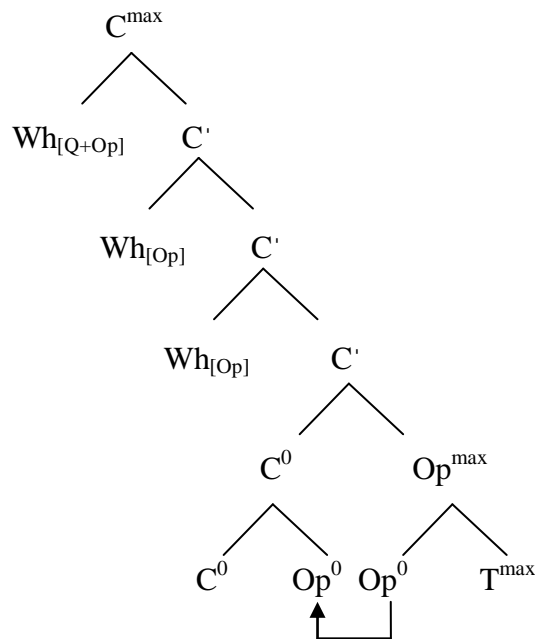
[11] Citko (1997) proposes the multiple specifier structure for Bulgarian in line with the assumption that multiple specifier positions are available (Chomsky 1995, among others).

In Polish, as illustrated in (25), wh-phrases raise to check [Op] and [Q] features located on two distinct heads. Consequently, wh-fronting in this language is two-phased. First, wh-phrases raise to OpP to check the [Op] features. Being subject to *Attract* (Chomsky 1995:297), the highest wh-phrase raises first to Spec-OpP, followed by movement of the remaining wh-phrase(s) (driven by *Greed* (cf. Chomsky 1995:201)), which land in outer specifiers of OpP. In the second phase, one of the wh-phrases moves/ is attracted to Spec-CP to satisfy the [Q] feature on C^0. Since all the wh-phrases in OpP are in the same minimal domain and hence they are equidistant from the attractor (Chomsky 1995),[12] either wh-phrase can raise to Spec-CP, obviating Superiority effects. The lack of Superiority effects in Polish is illustrated in (27) a-b, where both sentences are equally acceptable and their derivations are schematized in (28) a-b, respectively.[13]

(27) a. **Kto   co**   zobaczył?

    who$_{NOM}$ what$_{ACC}$ saw

    'Who saw what?'

    b. **Co kto** zobaczył?

---

[12] Two elements (α and β) are equidistant from γ iff α and β are in the same minimal domain (Chomsky 1995:184), and "the *minimal domain* Min (δ(CH)) of CH is the smallest subset K of δ(CH) such that for any γ ϵ δ(CH), some β ϵ K reflexively dominates γ " (Chomsky 1995:299).

[13] According to the *Superiority Condition* formulated in Chomsky (1973:246), it is the structurally higher wh-phrase in a multiple wh-question that must raise to Spec-CP. While some languages such as English display Superiority effects, others, like Polish, do not.

(28) a.

C^{max}

kto_i C'

　　C^0 Op^{max}

　　　　co_j Op'

　　　　　　t_i Op'

　　　　　　　　Op^0 T^{max}

　　　　　　　　　　t_i zobaczył t_j

b.

C^{max}

co_j C'

　　C^0 Op^{max}

　　　　t_j Op'

　　　　　　kto_i Op'

　　　　　　　　Op^0 T^{max}

　　　　　　　　　　t_i zobaczył t_j
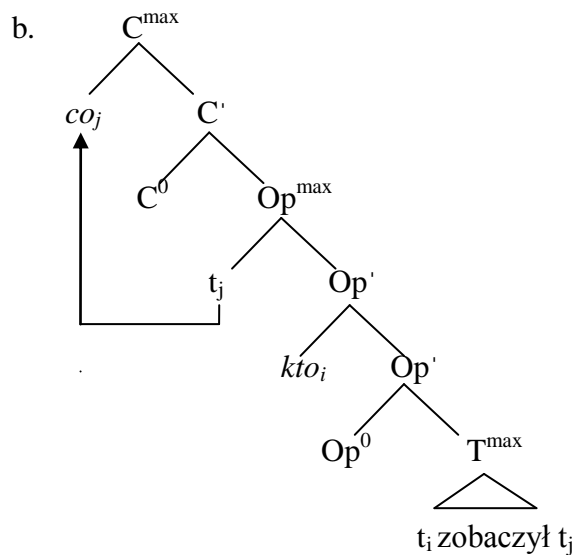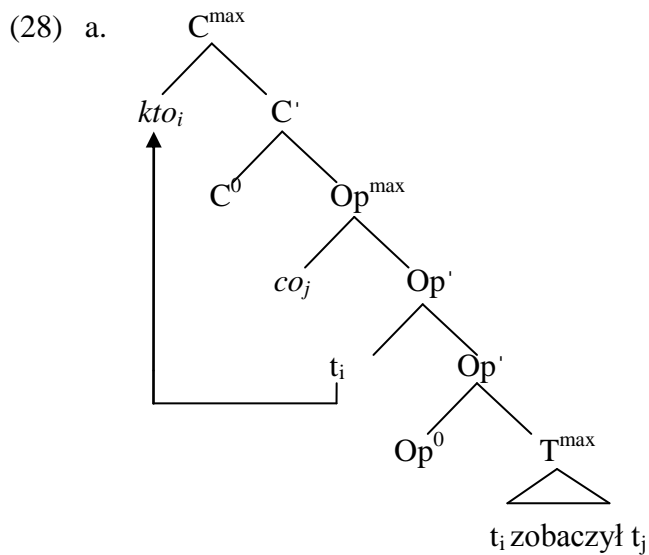
The presence of Superiority effects in Bulgarian, on the other hand, illustrated by the contrast in grammaticality between (29a) and (29b) results from obligatory Op^0-to-C^0 raising. The derivations corresponding to (29a) and (29b) are given in (30a) and (30b), accordingly.

(29) a. **Koj   kogo**   vižda?
　　　　who$_{NOM}$ who$_{ACC}$ sees
　　　　'Who sees whom?'
　　　b. ***Kogo koj** vižda?

(30) a.

b.
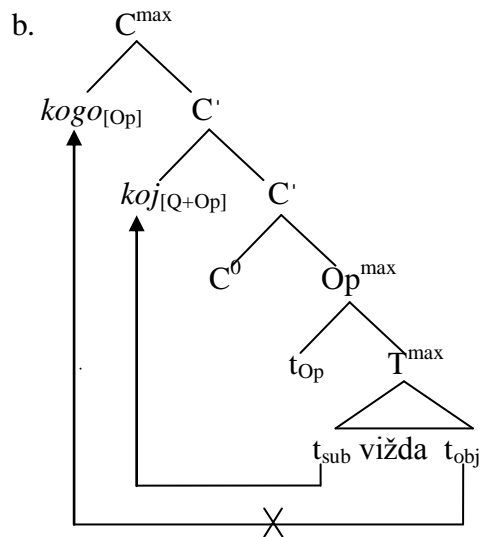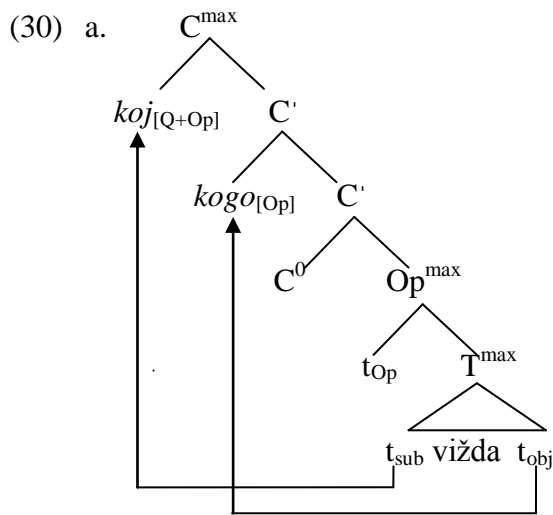
The result of Op^0-to-C^0 raising in Bulgarian is that Spec-OpP positions are not projected. Consequently, wh-phrases move straight to the specifiers of CP. The *Attract* principle requires that the highest wh-phrase *koj* move first. Citko (1997) assumes that the wh-object *kogo* moves to the inner Spec-CP (cf. (30a)). That movement violates the *Extension Condition* (see Chomsky 1995:190/1). Citko (1997), however, argues that the requirement that *kogo* move to the inner (not outer) Spec-CP (cf. (30b)) follows from the Condition on LF Absorption (Higginbotham & May 1981; Kitahara 1993). In order that *kogo* undergoes Absorption with *koj*, the latter must c-command the former.

Consequently, (30a) is the licit derivation (with *koj* c-commanding *kogo*), which produces the surface structure in (29a), whereas (30b) (where *koj* does not c-command *kogo*) is an illicit derivation, hence the ungrammaticality of (29b).

Citko's (1997) analysis suffers from a couple of problems. What follows from Citko's account is that in order to produce the grammatical surface order in Bulgarian (compare (29a) with (29b)), movement of the WH_2 to Spec-CP, driven by Greed (as it takes place to satisfy the strong [Op] feature on the wh-phrase) must follow the movement of the WH_1 to Spec-CP, which is driven by Attract (it takes place to satisfy the strong feature on C^0). Put differently, the wh-subject *koj* in (30) must move first, attracted by the strong feature on C^0, followed by movement of the wh-object *kogo* (to the inner Spec-CP), the latter raises to satisfy its strong [Op] feature; consequently, it follows that *Attract* must precede *Greed*. Attract as well as Greed are economy principles of grammar, which are not subject to any precedence, but can apply independently from each other and in either order. Consequently, when multiple wh-fronting to a single projection is driven by both Attract and Greed in a particular language (e.g. Bulgarian), that language should not exhibit Superiority effects, contrary to fact (see (29b)).[14]

Another problem with Citko's (1997) account is identified by Dornisch (1998). Dornisch observes that while negative and indefinite pronouns in Polish undergo raising, they do not need to move as high as the sentence-initial position above TP (contra Citko 1997). The relevant example, which illustrates that the negative pronoun

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[14] Citko's (1997) proposal encounters an identical problem as Bošković's (1998b). Bošković (1998b) argues that all wh-phrases in Bulgarian move to the specifiers of CP. The first step of movement takes place to satisfy the strong feature on C^0 (driven by *Attract*), whereas movement of other wh-phrases occurs in order that the wh-phrases satisfy their strong focus feature (hence this movement is driven by *Greed*). C^0 in this theory is the licensor of both wh- and focus-movement. To explain the presence of Superiority effects in Bulgarian, Bošković (1998b) can only stipulate that wh-movement must precede focus movement.

does not move clause-initially but instead lands in a pre-verbal position and follows the subject DP, is given in (31) (derived from Dornisch 1998:49):

(31) Premier   **nic**   na to nie powiedział...
   prime minister nothing to that Neg said
   'The prime minister said nothing to that...'

Furthermore, Dornisch (1998) challenges all previous analyses of multiple wh-fronting proposed for Polish on the basis of examples such as (32):[15]

(32) **Co**   by   Anna   **komu**   poleciła?
   what$_{ACC}$ Cond.Aux Anna$_{NOM}$ whom$_{DAT}$ recommended
   'What would Anna recommend to whom?'

The example in (32), where the WH$_2$ is situated between the lexical verb and the subject, shows that it is not obligatory to move all wh-phrases in a multiple wh-question in Polish to the sentence-initial position (above TP). Consequently, none of the previous proposals of multiple wh-fronting in Polish either in terms of multiple TP adjunction (cf. Toman 1981; Przepiókowski 1994) or wh-movement to Spec-CP followed by adjunction to OpP (Citko 1997) or TP (cf. Lasnik & Saito 1984; Rudin 1988; Cheng 1991) can derive the surface order in (32).

It should be highlighted that sentences like (32) do not involve prosodic focalisation (Dornisch 1998). They are considered as neutral, unmarked wh-questions in Polish. As pointed out by Dornisch (1998:124), the wh-pronoun *komu* can occur in situ when it carries heavy, focal stress (consider (33)).

---

[15] The sentence in (32) corresponds to the example in (5), §2.2, which according to Wachowicz (1974), is an ungrammatical sentence in Polish. I agree with Dornisch's (1998) and Lubańska's (2005) judgments, and maintain that (32), and accordingly (5), are fully acceptable wh-questions in Polish.

(33) **Co**   by   Anna   poleciła   **KOMU**?

  what$_{ACC}$ Cond.Aux Anna$_{NOM}$ recommended whom$_{DAT}$

  'What would Anna recommend to whom?'

In order to account for the surface structure representation in (32), Dornisch (1998) proposes that wh-fronting in Polish involves two steps: first, all wh-phrases raise to a pre-verbal position,[16] and subsequently one wh-phrase moves to Spec-CP (attracted by a strong [Q] feature of C^0). Following Collins (1996), Dornisch (1998) assumes that VP in Polish is immediately dominated by a Tr(ansitivity) P(hrase).[17] Dornisch (1998) proposes that the head Tr^0 in Polish is the locus of a [wh] feature, and consequently wh-phrases move to the (outer) specifiers of TrP.[18] Dornisch (1998) also assumes that every verbal element in a sentence (both lexical verbs and auxiliaries) project their own VP-TrP complex, which consequently results in multiple layers of TrP. Consider the multiple wh-question in (32) and its derivation illustrated in (34), as proposed by Dornisch (1998:147).[19]

---

[16] In what follows, the term *pre-verbal* will be used to refer to the positions at the edge of vP (the *edge* includes both specifiers of vP and adjunction to vP). In negative contexts, the term *pre-verbal* will refer to the edge of NegP, the projection to which the lexical verb raises obligatorily in Polish (see chapter 1, §1.1.4.3).

[17] The existence of a projection above VP has been acknowledged cross-linguistically, and has also been referred to as Light Verb Phrase (vP) (Chomsky 1995) or Predicate Phrase (PredP) (Kratzer 1994).

[18] As pointed out by Dornisch (1998), the fact that the projection dominating VP can host wh-phrases has been independently argued for in other languages, for example Hungarian (cf. Horvath 1986), however in Hungarian the movement to the pre-verbal position is recognized as an instance of focus movement.

[19] Dornisch (1998) assumes that the base order in double object constructions in Polish is S-V-DO-IO, contrary to the assumptions adopted in this thesis (see chapter 1, §1.1.2).

(34)

```
                      CP
                    /    \
                 co_i     C'
                        /    \
                     C[Q]     TP
                      |      /    \
                     by   Anna    T'
                               /     \
                              T       TrP
                                    /     \
                                 t_i''     Tr'
                                         /     \
                                    t_sub'      Tr'
                                              /     \
                                         Tr[wh]      VP
                                                   /     \
                                                  V       TrP
                                                  |      /    \
                                                 Aux  komu_j   Tr'
                                                             /     \
                                                          t_i'      Tr'
                                                                  /     \
                                                             t_sub      Tr'
                                                                       /     \
                                                                  Tr[wh]      VP
                                                                            /     \
                                                                          t_i      V'
                                                                                 /    \
                                                                                V      t_j
                                                                             poleciła
```
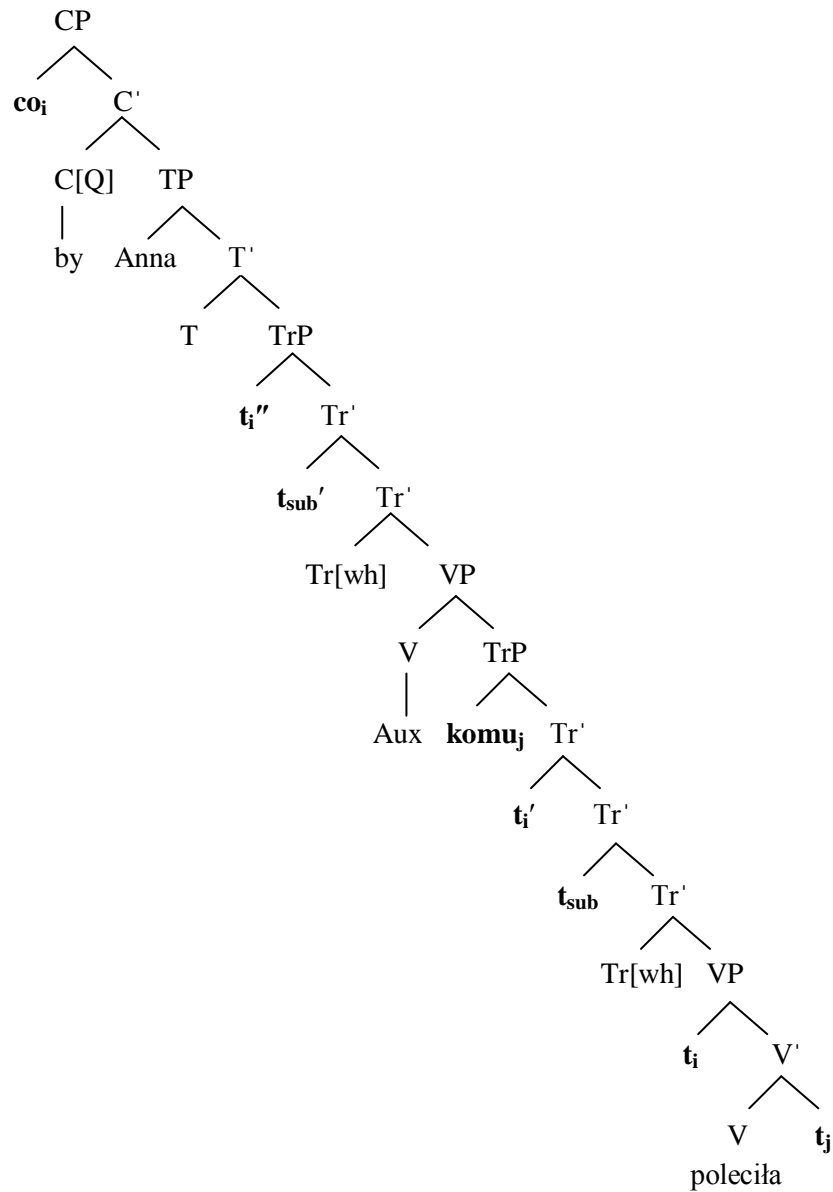
According to Dornisch (1998), wh-phrases in Polish raise to the (outer) specifiers of TrP in order to check their strong [+wh] feature against the head Tr^0, which also bears a strong [+wh] feature.[20] The fact that it is the [+wh] feature that is responsible for the obligatory movement of the wh-phrases to the pre-verbal position is drawn from the contrast between (35) and (36):

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[20] Positing a strong [wh] feature uniformly on Tr^0 accounts for successive movement of the wh-phrase from the lower Spec-TrP through the higher Spec-TrP (as illustrated for the wh-phrase *co* in (34)).

(35) Piotr ukrył to **przed nią**.

Peter hid it from her

'Peter hid it from her.'

(36) Co Piotr **przed kim** ukrył?

what Peter from who hid

'What did Peter hide from whom?'

The movement of the PP *przed kim* to the pre-verbal position in (36), as opposed to the lack of movement of the PP *przed nią* in (35) (which does not contain a wh-phrase) suggests that it is the [wh] feature that triggers the wh-raising in (36). Dornisch (1998) assumes that weak pronouns in Polish such as *whom*, *what*, etc, have a strong [+wh] feature which needs to be checked against a strong [+wh] feature on the functional head (Tr^0). Lexical DPs, on the other hand, including *which DPs* and *what kind of DPs*, have a weak [+wh] feature and hence they are allowed to stay in situ, as illustrated in (37) (Dornisch 1998:118):

(37) **Kogo** by pozbawił **jakich przywilejów**?

who$_{ACC}$ Cond.Aux. deprived what privileges

'Whom would he deprive of what privileges?'

On the assumption that the [+wh] feature of Tr^0 is a multiply checked (interpretable) feature, it remains accessible to computation throughout the derivation. Furthermore, the interpretable [+wh] feature on wh-pronouns allows them to enter into multiple checking relations, as illustrated in (34) for the wh-pronoun *co* (what). Dornisch argues that the [Q] feature of C^0 is strong in Polish, and therefore wh-movement must be overt (i.e., a wh-phrase must always raise to Spec-CP at S-structure). In (34), either *co* (what) or *komu* (whom) can raise from the Spec-TrP position to Spec-CP (through the specifier

of the higher TrP) since both wh-phrases are in the same minimal domain, and hence they are equidistant from the attractor (Chomsky 1995).

It should be noted that on the assumption that wh-phrases check their strong [+wh] feature against the Tr head, movement from the specifier of the lower TrP to the specifier of the higher TrP of a WH_2 in a multiple wh-question should not occur as it lacks a trigger. We can, however, construct acceptable examples in which the WH_2 occupies the specifier of the higher TrP. Consider the example in (38) and its derivational representation in (39) (movement of the DP subject omitted):

(38) Dokąd Janek   kogo   będzie odwoził?
      where John$_{NOM}$ who$_{ACC}$ Fut.Aux took$_{3,Sg,M}$
      'Where is John going to take who?'

(39) [$_{CP}$ **Dokąd$_j$** [$_{TP}$ Sub [$_{TrP2}$ **t$_j'$** [$_{TrP2}$ *kogo$_i$* [$_{VP2}$ będzie [$_{TrP1}$ [$_{TrP1}$ *t$_i'$* [$_{VP1}$ odwoził *t$_i$*]] **t$_j$**

]]]]]]?

Dornisch (1998:77) assumes that every verbal element in a clause projects its own VP-TrP complex. Hence, the future auxiliary *będzie* projects its own VP-TrP complex (VP$_2$-TrP$_2$) in (39). Movement of the WH_2 *kogo* (who) from Spec-TrP$_1$ to Spec-TrP$_2$ in (39), illustrated by italics, is unexpected since the strong [+wh] feature of the wh-phrase *kogo* has already been checked by the head Tr$_1$ (in Spec-TrP$_1$), and movement of the wh-phrase *dokąd* (where) through Spec-TrP$_2$ has already satisfied the strong [+wh] feature on the head Tr$_2$. Since movement of the WH_2 (*who*) from Spec-TrP$_1$ to Spec-TrP$_2$ in (39) lacks a trigger, sentences like (38) should be ruled out, contrary to fact. Consequently, it appears that the structure proposed by Dornisch (1998) including multiple VP-TrP layers along with checking of a strong feature against Tr^0 make

incorrect predictions with respect to surface representations of multiple wh-questions in Polish.

Furthermore, considering that a functional head Tr^0 in Dornisch's (1998) account, which takes VP as a complement, possesses a strong [+wh] feature, the question arises as to how this feature is checked in non-interrogative contexts. While we can assume that CP (with C^0 containing a strong [Q] feature) in root declarative sentences may be absent or inert, TrP (vP in Chomsky 1995 *et seq.*) is projected obligatorily both in declarative and interrogative contexts.

2.2.3 Overt Quantifier Raising (Dornisch 2000; 2001)

More recently, Dornisch (2000; 2001) postulates that movement of the wh-phrases to the pre-verbal position in Polish multiple wh-questions is the result of overt Quantifier Raising (QR), followed by subsequent single wh-movement to Spec-CP.[21]

The fact that quantifiers front in Polish was first observed by Citko (1997) (cf. examples (22)-(23) in §2.2.2). Dornisch (2000; 2001) notes that negative and existential quantifiers in Polish must move as high as the pre-verbal position in neutral/unmarked contexts, as illustrated in (40a)-(41a):[22]

(40) a. Anna   nikogo   nie widziała.
         Anna$_{NOM}$ nobody$_{GEN}$ Neg saw
        'Anna didn't see anybody.'
      b. ^{M}Anna nie widziała NIKOGO.

---

[21] The term QR (Quantifier Raising) was introduced by May (1977).

[22] The notation (^{M}) in the (b)-examples in (40)-(41) is cited from Dornisch (2001:201) and it implies that unlike (40a) and (41a), the (b)-sentences are marked. However, Dornisch (2000; 2001) acknowledges that the contrast illustrated in (40)-(41) is subject to individual variation and both (a) and (b) sentences in (40)-(41) are well-formed on a neutral reading for some native speakers of Polish.

(41) a. Anna   coś   widziała.

      Anna$_{NOM}$ something$_{ACC}$ saw

     'Anna saw something.'

  b. ^{M}Anna widziała COŚ.

Dornisch (2000; 2001) draws a comparison between overt Quantifier Raising (cf. (40)-(41)) and wh-raising to the pre-verbal position (cf. (32)) in Polish. Since the feature responsible for overt Quantifier Raising cannot be [wh], Dornisch (2000; 2001) attributes both overt QR and wh-fronting to the pre-verbal position to the presence of a strong [quant] feature (cf. Chomsky 1995).[23] As indicated by Dornisch (2000), the fact that wh-phrases are quantifiers has been independently argued by Pesetsky (1987), Chomsky (1995) and Huang (1995), among others, which entails that wh-phrases may possess the same type of feature ([quant]) as quantifiers. Furthermore, Karnowski & Meyer (2000) illustrate that on a semantic level, wh-phrases in Polish should be regarded as quantifiers since wh/quantifier interaction in Polish is influenced by the same scope-relevant factors as quantifier/quantifier interaction.

2.2.3.1 Problems with the Overt QR Approach to Multiple Wh-fronting

The claim that quantified phrases raise obligatorily to the pre-verbal position in Polish is challenged by the data in (42)-(43) below. (42) is an example of a double object construction, whereas (43) is an example of a Yes/No-question in Polish.[24] Both in (42) and (43), the quantified DP appears in a post-verbal position, and the sentences are fully

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[23] Chomsky (1995:377) assumes that quantifiers carry a quantificational ([quant]) feature and covert QR takes place due to this feature raising. Dornisch (2000; 2001) adopts the term [quant], however she neither discusses in detail nor provides a structure for wh-questions in Polish. The author only makes a reference to the proposal put forward by Kiss (1992) for Hungarian, according to which overt QR takes place to the VP-adjoined position.

[24] In Yes/No-questions in Polish, word order permutations from the base SVO order are not necessary; the difference between a declarative and a Yes/No-question is a raising contour at the end of the sentence in the case of the latter. Sometimes a particle *czy* (if) is used to form Yes/No-questions in Polish; in Yes/No-questions beginning with the particle *czy* an SVO order still holds.

acceptable.[25] That contrasts with multiple wh-questions, in which a wh-phrase cannot stay in a post-verbal position (cf. (74c) §1.2).

(42) Janek   sprzedał **komuś**   swój samochód.
     John$_{NOM}$ sold   someone$_{DAT}$ his   car$_{ACC}$
     'John has sold his car to someone.'

(43) (Czy) Jola   zamówiła **coś**   z   tego magazynu?
      (if) Jola$_{NOM}$ ordered   something$_{ACC}$ from this magazine
     'Did Jola order anything from this magazine?'

Another argument against overt Quantifier Raising approach to multiple wh-fronting in Polish comes from a quantifier scope interaction between *some* and *every*. Kiss (1992:125) observes that Quantifier Raising to the pre-verbal position in Hungarian fixes scope between the quantifiers, i.e., only surface interpretation is possible. The author takes it as an indication that it is an instance of a true operator movement, in line with a general principle of scope interpretation for operators, given in (44) (Kiss 1992:111):

(44) An operator c-commands its scope.

According to the principle in (44), the scope order of quantifiers is determined by their surface order.[26]

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[25] As pointed out in Karnowski & Meyer (2000:96), the position of a bare quantifier in Polish (i.e., pre-verbal vs. VP-internal) generally depends on the focus-background structure of the sentence, and not on intrinsic properties of quantifiers.

[26] In this work, the standard definition of c-command is adopted, as given in (i) (Reinhart 1976:32):

(i) A c-commands B iff
    - the first branching node which dominates A also dominates B; and
    - neither A nor B dominates the other

The above formulation of c-command entails that A c-commands B iff A's sister is B or contains B.

In Polish, movement of quantified phrases to the pre-verbal position does not always fix their scope, as the example in (45b) illustrates (cited from Wiland 2009:99), cf. also examples (26)-(29), chapter 1, §1.1.2.[27]

(45) a. Piotr [DAT jakiemuś chłopcu]$_i$ [ACC każdą naszą monetę]$_j$ dał t$_i$ t$_j$.

       Peter   some boy   each coin of ours   gave

       (lit.) 'Peter gave some boy each coins of ours.'   ∃ > ∀ ; *∀ > ∃

     b. Piotr [ACC każdą naszą monetę]$_j$ [DAT jakiemuś chłopcu]$_i$ dał t$_i$ t$_j$.

       Peter   each coin of ours   some boy   gave

       (lit.) 'Peter gave each coin of ours to some boy.'   ∀ > ∃ ; ∃ > ∀

The sentence in (45a) can only be understood as there is one boy who received every coin, whereas (45b) is ambiguous between the reading on which there is one boy who received every coin and the reading where for every coin there was one boy (a different one) who received it. The fact that the scope ambiguity arises in (45b) may suggest that the movement of quantifiers to the pre-verbal position in Polish is scrambling rather than a true operator movement.[28] Since scrambling has been widely considered to be an optional movement process (Saito 1992; Fukui 1993, among others), the obligatory wh-raising to the pre-verbal position in multiple wh-questions in Polish must follow from something other the quantificational status of wh-phrases.

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[27] It should be noted that it is not the case that the order in which a universal quantifier precedes an existential quantifier automatically entails the availability of inverse scope reading in Polish. Example in (i) in which *every* precedes *some* can only have a surface interpretation (see Cegłowski & Tajsner 2006):

    (i)   Każdy   coś   napisał.

         everyone$_{NOM}$ something$_{ACC}$ wrote

         'Everyone wrote something.   ∀ > ∃ ; *∃ > ∀

The only meaning of (i) is distributive: 'For each x, x a person, x wrote some y.' See also the example in (28), §1.1.2.

[28] The proposal that QR is in fact a scrambling operation has been outlined in Miyagawa (2006) and references therein (see also Johnson 2000).

The final argument against the overt Quantifier Raising approach to wh-fronting in Polish comes from Weak Crossover (WCO). Consider first the contrast in (46) from English.

(46) a. Everyone$_i$ loves his$_i$ parents.

   b. *His$_i$ parents love everyone$_i$.

It was a standard assumption in the Government and Binding Theory as well as in the Minimalist Program (Chomsky 1995) that quantifiers undergo covert A-bar movement (see May 1985) for scope purposes. Hence, in (46b), the quantifier *everyone* raises covertly to the sentence-initial position from which it can take wide scope, as illustrated in (47).

(47) *Everyone$_i$ [his$_i$ parents love t$_i$].

After the application of (covert) QR, the quantifier in (47) binds two variables (where variable is understood as a locally A-bar-bound pronoun or a trace located in an A-position): the trace *t* and the pronoun *his* embedded in the DP subject. However, when an operator c-commands two variables which are co-indexed with it (hence binds the variables), with no other co-indexed DP c-commanding either of the variables and neither of the variables c-commanding the other, *the Bijection Principle* (Koopman & Sportiche 1982) is violated. The Bijection Principle states that every variable can be locally bound by one and only one A-bar position and every A-bar position can locally bind one and only one A-position (Koopman & Sportiche 1982:146).[29] The covertly raised quantifier in (47) binds two variables, in violation of the Bijection Principle, and consequently the sentence in (46b) is excluded. (46b) is an example of what has

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[29] Local binding is defined as follows: α locally binds β iff α binds β and there is no γ such that α binds γ and γ binds β (Chomsky 1981:185).

traditionally been termed Weak Crossover (WCO). The Bijection Principle is one of a number of constraints proposed in the generative literature to account for the WCO phenomenon, the others including for example the *Leftness Condition* (Chomsky 1976) and Hornstein's (1995) constraint on pronominal binding.

Let us consider again the English sentences in (46) a-b, and their representations after the application of (covert) QR, given in (48) a-b, respectively.

(48) a. Everyone$_i$ t$_i$ loves his$_i$ parents.

b. *Everyone$_i$ his$_i$ parents love t$_i$.

In (48a), the quantifier undergoes covert A-bar movement which leaves a trace in the subject position (t$_i$). The trace becomes a variable and is locally A-bar bound by the operator. The trace of the quantifier, located in an A-position, c-commands the co-indexed pronoun *his*, hence the former A-binds the latter. The Bijection Principle is observed since the quantifier binds only one variable, and the corresponding example in (46a) is well-formed. In (48b), on the other hand, the A-bar raised quantifier binds two variables: the pronoun *his* embedded in the DP subject and the trace of the quantifier. Since the Bijection Principle is violated, the corresponding sentence in (46b) is consequently ruled out.

Let us now turn to Polish, which, as argued by Dornisch (2000; 2001), exhibits overt Quantifier Raising to the pre-verbal position. As illustrated by the acceptability of the example in (49), movement of the quantifier to the pre-verbal position in Polish does not result in WCO.

(49) Porywacze [każde dziecko$_i$] odesłali jego$_i$ rodzicom t$_i$.
      kidnappers [every child$_{ACC}$]   sent   [his parents $_{DAT}$]
      'The kidnappers sent every child$_i$ back to his$_i$ parents.'

Considering that the basic order in double object constructions in Polish is S-V-IO-DO (see chapter 1, §1.1.2), the A-bar movement of the direct object quantifier to the pre-verbal position in (49) violates the Bijection Principle: the quantified DP locally A-bar binds two variables: the pronoun *jego* and the trace of the quantifier. Contrary to predictions, the sentence in (49) is well-formed. This suggests that the movement of the quantifed DP *każde dziecko* in (49) from the post-verbal to the pre-verbal position is not the same type of operation that applies in the English example in (48), and consequently excludes (46b).

Since, according to Dornisch (2000; 2001), wh-phrases in Polish undergo (overt) Quantifier Raising to the pre-verbal position, we should expect that this movement results in WCO, on a par with the English examples discussed above (in which covert QR has occurred). Although such examples are difficult to construct, they are nevertheless possible. As illustrated in (50) (example cited from Dornisch 1998:159) and (51), wh-raising to the pre-verbal position does not induce WCO effects in Polish, which consequently implies that the movement in question is not an instance of QR.

(50) Kiedy Piotr [przed kim$_i$] schował jego$_i$ klucze t$_i$?
    when Peter from whom   hid   his keys
    'When did Peter hide his$_i$ keys from whom$_i$?'

(51) Kiedy Piotr kogo$_i$ przedstawił jego$_i$ nowemu przełożonemu t$_i$?
    when Peter who$_{ACC}$ introduced [his   new   boss]$_{DAT}$
    'When did Peter introduce who$_i$ to his$_i$ new boss?'

The aim of this section was to argue, contra Dornisch (2000; 2001), that wh-phrases in Polish do not raise to the pre-verbal position as a result of overt QR. First, I illustrated that quantifiers do not raise obligatorily to the pre-verbal position in Polish, as evidenced by the grammaticality of the examples in (42)-(43). This contrasts with

wh-questions in Polish (see (74c), §1.2), where no wh-phrase can remain in a post-verbal position. Secondly, the absence of WCO effects in examples (50)-(51) is unexpected if we were to follow Dornisch (2000; 2001) and assume that the movement of wh-phrases to the pre-verbal position in Polish is a QR operation (cf. (48)).

The WCO facts in Polish wh-questions (see the examples in (50)-(51)) are of particular interest since they carry implications about the type of movement of the wh-phrase to the vP-edge. Consider again the wh-question in (51). It is a well-established fact in Generative Grammar that A-movement cancels WCO. Hence, one could claim that the wh-phrase *kogo* in (51) has undergone an A-movement from the post-verbal to the pre-verbal position, which results in the lack of WCO effects. Another possibility, which I will explore here, is to assume that the wh-phrase *kogo* undergoes VP-internal scrambling (scrambling to Spec-VP) followed by subsequent A-bar movement to Spec-vP, as illustrated in (52) (irrelevant details omitted).[30]

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[30] See chapter 5, §5.2, for further arguments for the existence of VP-internal scrambling in Polish.

(52)

```
                    CP
                 ╱     ╲
              kiedy     C'
                      ╱    ╲
                    C       TP
                          ╱    ╲
                        Sub     T'
                              ╱    ╲
                            T       vP
                                  ╱    ╲
                              kogo_i    vP
                                      ╱    ╲
                                  t_sub    v'
                                         ╱    ╲
                                       v       VP
                                             ╱    ╲
                                          t_i′     VP
                                                 ╱    ╲
                                               DP      V'
                                              ╱△╲     ╱  ╲
                                      jego_i nowemu   V    t_i
                                       przełożonemu
```
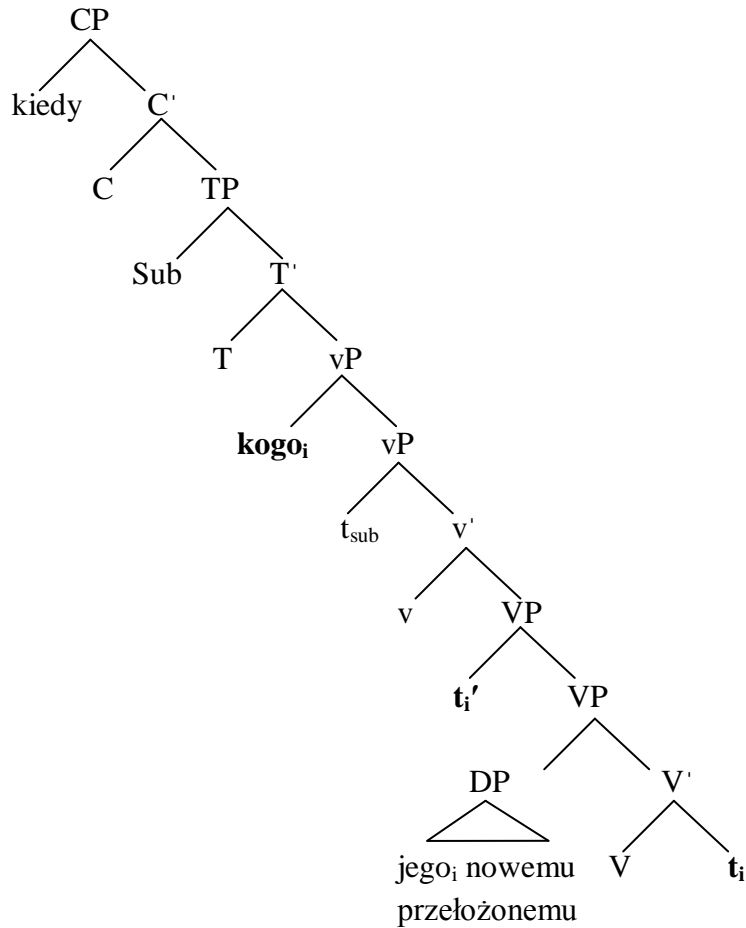
As illustrated in (52), movement of the wh-phrase *kogo* from V-complement position to Spec-vP proceeds via Spec-VP. VP-internal scrambling, as A-movement (see Wiland 2009), leaves behind a trace which is free from the WCO constraint and serves as a new binder. The wh-phrase *kogo* located in the outer Spec-vP locally binds one variable: the trace of the wh-phrase located in Spec-VP. The trace ($t_i′$), in turn, binds the pronoun *jego* embedded in the indirect object, thereby cancelling the WCO effects in (51).

An argument in support of the claim that movement of wh-phrases to the vP-edge in Polish is indeed an A-bar movement comes from parasitic gaps. Consider the example of a parasitic gap in Polish multiple wh-question in (53) (quoted from Dornisch 1998:160):

(53) Za co   by   Piotr kogo$_i$ wyrzucił   t$_i$, nie wysłuchawszy e$_i$ przedtem?

for what Cond.Aux. Peter whom threw out   Neg listen$_{Perf.Part.}$ before

'Why would Peter throw out whom$_i$ without having listened to e$_i$?

Since licensing of parasitic gaps is characteristic of A-bar positions, the fact that in (53) the wh-phrase *kogo* licenses the parasitic gap implies that the wh-phrase occupies an A-bar position. Consequently, I conclude that wh-fronting to the vP-edge in Polish is an instance of A-bar movement (see also Dornisch 1998).

2.2.4   Focus Fronting (Lubańska 2005)

The most recent approach to multiple wh-fronting in Polish has been put forward by Lubańska (2005). Lubańska (2005) develops an account in line with Bošković's (1997a; 1997b; 1998a; 1998b; 2002a) and argues that wh-fronting in Polish is an instance of focus movement.[31]

Lubańska proposes that wh-phrases in Polish possess a strong focus feature which is checked by the corresponding weak feature of the licensor, either under Spec-head agreement or via adjunction to the maximal projection headed by the licensor. Lubańska adopts an earlier version of Minimalism (Chomsky 1993; 1995), where the basic structure of the clause looks as follows (see (54)) (Chomsky 1995:173):

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[31] The assumption that wh-words are inherently focused actually dates back to the 1970s (Rochemont 1978, 1986; Horvath 1986, among others), and the proposal that wh-phrases undergo focus movement has already been put forward for other multiple wh-fronting languages including Bulgarian (Bošković 1998a; 1998b; 2002a), Russian (Stepanov 1998), and Serbo-Croatian (Stjepanović 1995; 2003; Bošković 1998a; 1998b).

(54)

```
                      CP
                    /    \
                 Spec     C'
                        /    \
                       C     AgrₛP
                            /    \
                         Spec    Agrₛ'
                                /    \
                             Agrₛ     TP
                                    /    \
                                   T     Agr_OP
                                        /    \
                                     Spec    Agr_O'
                                            /    \
                                         Agr_O    VP
```
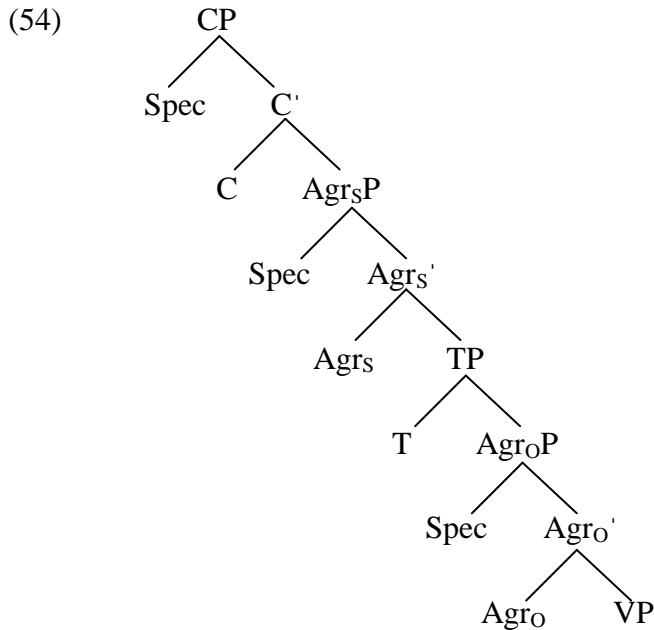
According to Lubańska (2005), there are two focus-licensing positions in Polish: Agr$_S$P and Agr$_O$P. The claim that wh-phrases in Polish are inherently-focused is established on the basis of a wide range of data. Lubańska (2000; 2005) observes that fronted non-wh-constituents in Polish receive a contrastive interpretation (they are contrastively focused), and subsequently draws a parallelism between fronted non-wh-elements and wh-phrases.[32] In what follows, the data will be presented based on which Lubańska (2005) argues that wh-fronting in Polish is the result of focus movement. Then the next section will evaluate Lubańska's (2005) proposal, arguing against the focus movement approach to wh-fronting in Polish.

To begin with, both contrastively focused non-wh-constituents and wh-phrases occur clause-initially (compare (55a) with (55b)).[33] Lubańska observes that in both

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[32] In the literature, foci are divided into information focus and contrastive focus (also referred to as presentational and identificational focus, respectively, Kiss 1998). The former introduces new information, without juxtaposing it with any other (old or new) information; contrastive focus is used to contrast with the presupposition (put differently, the clause containing contrastive focus is perceived in specific contrast to other information (either old or new); it is in opposition to the previous utterance).

[33] All the examples in (55)-(60) are cited from Lubańska (2005:68-70).

contexts fronting to the clause-initial position is not compulsory, as illustrated in (56a) for a non-wh-constituent and in (56b) for a wh-phrase.

(55) a. [Samochód]$_i$ Janek   kupił t$_i$.
          car$_{ACC}$ John$_{NOM}$ bought
          'John bought a car.'

    b. Co$_i$ Janek   kupił t$_i$?
        what$_{ACC}$ John$_{NOM}$ bought
        'What did John buy?'

(56) a. To jest [mojego dziecka]$_i$ zabawka t$_i$.
          this is   my   child$_{GEN}$ toy
          'This is my child's toy.'

    b. A   ty   gdzie idziesz?
        and you where   go
        'Where are you going?'

Secondly, fronted non-wh-elements and wh-phrases in Polish are subject to the same constraints, including Sentential Subject Island (57), Complex NP (58) and Wh-islands (59):

(57) a. *Jana$_i$ [[to, że   Marysia   uderzyła t$_i$] zaskoczyło nas].
          John$_{ACC}$ it that Mary$_{NOM}$ hit   surprised us
          '*John that Mary hit surprised us.'
          'We were surprised that Mary hit John.'

    b. *Kogo$_i$ to [$_{C'}$ [że   Maria   uderzyła t$_i$]] zaskoczyło ich?
        who$_{ACC}$ it   that Mary$_{NOM}$ hit   surprised   them
        '*Who did that Mary hit surprise them?'
        'They were surprised that Mary hit who?'

(58) a. *Jana$_i$ [czytałem książkę, [która krytykowała t$_i$]]

      John$_{ACC}$ read$_{1,Sg,M}$ book   which   criticised

      '*John I read a book which criticised.'

      'I read a book which criticised John.'

     b. *Kogo$_j$ przeczytałeś [$_{NP}$ książkę która$_i$ t$_i$ krytykowała t$_j$]]?

       who$_{ACC}$ read$_{2,Sg,M}$ book   which   criticised

       '*Who did you read a book which criticise?'

       'Who did the book that you read criticise?'

(59) a. *Jana$_i$ [oni zastanawiali się [kto t$_i$ odwiedza t$_i$]]?

      John$_{ACC}$ they wondered   Refl   who   visits

      '*John they wondered who visited.'

      'They wondered who visited John.'

     b. *Jak$_j$ Jan   kazał Marii   [co$_i$ ugotować t$_i$ t$_j$]?

       how John$_{NOM}$ ordered Mary$_{DAT}$ what   cook$_{INF}$

       'What did John order Mary to cook in what way?'

Furthermore, neither wh-phrases nor fronted non-wh-elements form a single complex constituent. Examples (60a) and (60b) illustrate that the subject DP (see (60a)) and a parenthetical (see (60b)) can intervene between the fronted focused non-phrases and the fronted wh-words.

(60) a. [Tą sukienkę]$_i$ *mama*   [dla mnie]$_j$ uszyła t$_i$ t$_j$ na bal.

       this dress$_{ACC}$ mother$_{NOM}$ for me   sewed   for party

      'My mother sewed this dress for me for a party.'

     b. Kto$_i$ *według ciebie*   co$_j$ t$_i$ kupi   dla Marii t$_j$?

       who   according to you   what   will buy   for Mary

      'Who, in your opinion, will buy what for Mary?'

On the basis of the parallelism between contrastively focused non-wh-elements and wh-phrases illustrated in (55)-(60), Lubańska (2005) concludes that wh-phrases in

Polish are inherently focused. They contain a strong focus feature, and consequently undergo obligatory focus movement. Lubańska argues that wh-phrases in Polish raise to Agr_OP and Agr_SP to check their strong focus feature against a weak focus feature on the Agr head.

Furthermore, assuming that Superiority effects always co-occur with wh-movement (i.e., movement to Spec-CP which is driven by the strong feature of C^0, Lubańska 2005:54-56, based on Bošković 1997a; 1998a), Lubańska attributes the lack of Superiority effects in multiple wh-questions in Polish (cf. (76), §1.2) to the fact that C^0 in Polish carries a weak [Q] feature, and concludes that wh-fronting in this language does not target Spec-CP. The highest projection that hosts a fronted wh-phrase in Polish is Agr_SP.

The focus movement approach to wh-fronting in Polish as put forward by Lubańska (2005) faces a number of empirical and theoretical problems, which will be addressed in the next section.

2.2.4.1 The Focus Approach and its Challenges

According to Lubańska (2005), constituent displacement results in contrastive focalization/interpretation in Polish. Lubańska (2005) does not address the question of what triggers the displacement of focused constituents in Polish. Instead, her argument goes as follows: "fronted non-wh-elements [..] are almost always focused. When non-wh-elements separate from their heads, the displacement is viewed as a case of scrambling. [..] scrambling in Polish is rarely neutral, and usually requires contrastive

interpretation" (Lubańska 2005:68).[34] Given the syntactic parallelism between wh-phrases and contrastively focused non-wh-elements (discussed in the previous section) and the fact that wh-phrases possess a focus feature universally (cf. Horvath 1986), Lubańska (2005:70) concludes that wh-fronting in Polish is an instance of focus movement.

One of the criticisms of Lubańska's (2005) account is the lack of specification as to what triggers the displacement of contrastively focused non-wh-constituents in Polish. Given the syntactic parallelism between contrastively focused non-wh-elements and wh-phrases in §2.2.4, if the trigger for wh-fronting is a strong focus feature on wh-phrases (Lubańska 2005), the natural conclusion is to assume that the trigger for displacement of contrastively focused non-wh-constituents is their strong focus feature. On a par with wh-phrases, we expect to encounter contrastively focused non-wh-constituents in a designated focus licensing position, Spec-AgrP (under Lubańska's (2005) account). However, as the example in (61) illustrates, a contrastively focused non-wh-constituent (marked by capital letters) can be fully licensed in situ in Polish (see Lubańska 2005:68):[35]

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[34] Contrastive interpretation seems to accord with Chomsky's (2000; 2001) observations that, while some semantic/discourse effects may involve displacement, the latter cannot be triggered by semantic/discourse properties. As Chomsky (2001:32) puts it: "A 'dumb' computational system shouldn't have access to considerations […] typically involving discourse situations and the like. These are best understood as properties of the resulting configuration."

[35] In that respect, Polish differs from other Slavic and non-Slavic languages (e.g. Russian (Stepanov 1998), Serbo-Croatian (Stjepanović 1995), Hungarian (Kiss 1998), among others), in which contrastively focused non-wh-constituents cannot be licensed in their base positions. For instance, consider the examples in (i) from Russian (Stepanov 1998:461), which illustrate that the contrastively focused element cannot appear in situ:

(i)   a. Ivan KNIGU kupil.
          Ivan book   bought
          'Ivan bought a book.'
       b. (Eto) KNIGU Ivan kupil.
       c. ??Ivan kupil KNIGU.

(61) Janek   kupił   SAMOCHÓD.
       John$_{NOM}$ bought   car$_{ACC}$
       'John bought a car.'

The grammaticality of (61) indicates that contrastively focused non-wh-constituents in Polish carry a strong focus feature optionally. The same cannot be true with respect to wh-phrases in Polish, which are subject to obligatory fronting. Despite the syntactic parallelism between wh-phrases and contrastively focused non-wh-elements (highlighted by Lubańska (2005) and reported in the previous section), a crucial difference remains: wh-questions require obligatory wh-fronting whereas movement of contrastively focused non-wh-elements is not obligatory.

Furthermore, given the claim that wh-fronting is an instance of focus movement (Lubańska 2005), we expect that wh-phrases and focused non-wh-constituents, when they co-occur, can switch positions and produce acceptable sentences. This expectation does not seem to be fulfilled. Consider the contrast in acceptability in (62):

(62) a. Co$_j$ Janek   Marysi$_i$ kupił t$_i$ t$_j$ na urodziny?
         what$_{ACC}$ John$_{NOM}$ Mary$_{DAT}$ bought   on birthday
         'What did John buy Mary for her birthday?'

      b. *Marysi$_i$ Janek co$_j$ kupił t$_i$ t$_j$ na urodziny?

In (62), the contrastively focused DP *Marysi* co-occurs with a wh-phrase *co*. Example (62a), in which the wh-phrase occupies sentence-initial position and the focused phrase is in a pre-verbal position is grammatical, whereas switching the orders between the wh-phrase and the focused DP *Marysi*, as in (62b), results in ungrammaticality. If wh-phrases undergo focus movement on a par with focused non-wh-elements, as claimed

by Lubańska (2005), both wh-questions in (62) should be equally well-formed, contrary to fact.

Lubańska (2005) reports that fronted non-wh-constituents and wh-phrases in Polish are subject to the same island constraints (cf. (57)-(59)). This fact is supposed to strengthen the parallelism between wh-fronting and fronting non-wh-elements. It should be noted, however, that Polish generally prohibits long-distance extraction (the exception are subjunctive clauses). Consequently, it may not be an island violation but rather a ban on extraction across a clause boundary that makes sentences in (57a)-(59a) ungrammatical. Consider the following examples in (63) (based on (57a)):

(63) a. Zaskoczyło ich (to), że Marysia uderzyła Jana.
surprised them it that Mary$_{NOM}$ hit John$_{ACC}$
'It surprised them that Mary hit John.'

b.*Jana$_i$, zaskoczyło ich (to), że Marysia uderzyła t$_i$.
John$_{ACC}$ surprised them it that Mary$_{NOM}$ hit
'John, it surprised them that Mary hit.'

Although (63b) does not involve extraction out of a sentential subject (cf. (57a)), the sentence is still ungrammatical. The contrast in (63) illustrates that Polish does not allow long-distance extraction. Consequently, the ungrammaticality of (57a) (as well as (57b)) may not follow from the violation of a sentential subject island, but rather from an independent factor, which is a prohibition against long-distance extraction from a finite clause in Polish. Thereby, the fact that wh-phrases and focused non-wh-elements pattern together with respect to extraction out of islands (Lubańska 2005; Willim 1989) does not seem to be a valid argument in support of the claim (Lubańska 2005) that wh-raising and fronting non-wh-elements result from the single type of movement - focalisation.

Furthermore, a number of theoretical problems arise with regard to AgrP as a focus licensing position for wh-phrases in Polish. Assuming that both Agr_O^0 and Agr_S^0 are the focus licensing heads, it remains unexplained why Agr_O^0 cannot check the focus feature on the wh-phrase unless there is a focus-checked wh-element in Spec-Agr_SP. The example in (64) (although grammatically acceptable) is excluded as a regular wh-question (it is possible only on an echo reading, see Lubańska 2005:73), since there is no focus-checked wh-phrase by Agr_S^0.[36]

(64) [$_{AgrSP}$ Janek [$_{AgrOP}$ **co$_i$**   zrobił   t$_i$]]?
          John$_{NOM}$ what$_{ACC}$ did
          'What did John do?'

Note that the equivalent of (64), given in (65), where the contrastively focused DP *samochód* (car) is licensed in Agr_OP is fully acceptable. The example is cited from Lubańska (2005:68):

(65) Janek [$_{AgrOP}$ samochód]$_i$ kupił   t$_i$.
          John$_{NOM}$ car$_{ACC}$ bought
          'John bought a car.'

Furthermore, assuming that both Agr_OP and Agr_SP are the focus licensing positions in Polish wh-questions, and focus is the only trigger for wh-fronting in Polish, the question also arises as to what drives the movement of the first and the second wh-phrase *co* and *komu*, respectively, from the lower focus licensing position, Agr_OP (see

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[36] Lubańska (2005:73), following Bošković (1997a), assumes that in order to type the question in (64) as a genuine wh-interrogative, the wh-phrase must front to the highest projection, which is Agr_SP, as in (i) here.

(i) [$_{AgrSP}$ **Co$_i$** [$_{TP}$ Janek   zrobił   t$_i$]]?
              what$_{ACC}$ John$_{NOM}$ did
              'What did John do?'

However, considering that (obligatory) movement in Minimalism is triggered by feature checking, the mechanism responsible for the movement of the wh-phrase from Agr_OP to Agr_SP in Lubańska's account remains unexplained.

(66a)), to the higher one, Agr$_S$P (see (66b)) (ignoring the order of movement of the wh-phrases here).[37]

(66) a. [$_{AgrSP}$ **Co$_j$**   [$_{TP}$ Jan [$_{AgrOP}$ t$_j'$ **komu$_i$**   dał t$_i$ t$_j$]]]?

             what$_{ACC}$ John$_{NOM}$ whom$_{DAT}$ gave

             'What did John give to whom?'

     b. [$_{AgrSP}$ **Co$_j$ komu$_i$** [$_{TP}$ Jan [$_{AgrOP}$ t$_j'$ t$_i'$ dał t$_i$ t$_j$]]]?

Lubańska (2005) also argues that wh-fronting to the clause-initial position is not always obligatory in Polish (cf. (56b)). It is important, however, to note that in (56b) the subject is topicalized. As pointed out by Dornisch (1998:122), when a subject functions as a contrastive topic, it must be preceded by the particle 'a', as is the case in (56b). If the particle is omitted, the sentence becomes strongly degraded, as illustrated in (67):

(67) *?Ty gdzie idziesz?
        you where go
        'Where are you going?'

The possibility of topicalized elements preceding wh-phrases in Polish as well as the positions the wh-phrase and the topicalized phrase occupy with respect to each other will be discussed in the next chapter.

Taking into account the identified theoretical and empirical problems that Lubańska's (2005) proposal encounters, I conclude that a focus feature cannot be the trigger for obligatory wh-raising in Polish.[38] I do not contradict the claim that wh-phrases contain a focus feature (universally), but I argue that the feature in question

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[37] The position that the fronted wh-phrases occupy with respect to each other and the order in which they move in multiple wh-questions in Polish will be the focus of chapter 5.

[38] The fact that focus cannot be the trigger for wh-fronting in Polish has also been argued independently by Dornisch (1998; 2000).

cannot be the determining factor of obligatory wh-fronting in the language under consideration.

2.3   Conclusions

The chapter has concentrated on the evaluation of proposals, put forward in the literature, which aim to explain patterns of multiple wh-questions in Polish. The proposals put forward in the 1980s and 1990s encounter a number of problems, which were pointed out by other authors and reported here. A particular attention was devoted to two current, competing, approaches to multiple wh-fronting in Polish, one in terms of overt Quantifier Raising and the other in terms of Focus movement. Pointing out their inadequacies, the conclusion was drawn that neither quantification nor focalisation can be the trigger for wh-raising in Polish.

The phenomenon of multiple wh-fronting in Polish has been extensively studied in Generative Grammar. However, as the discussion thus far has demonstrated, none of the existing proposals provides a satisfactory explanation for the mechanism(s) responsible for the derivation and patterns of wh-questions in Polish, as illustrated in (68) (cf. (74), §1.2).

(68) a. **Co   komu**   Ewa   obiecała?
          what$_{ACC}$ whom$_{DAT}$ Ewa$_{NOM}$ promised

      b. **Co**   Ewa   **komu**   obiecała?
          what$_{ACC}$ Ewa$_{NOM}$ whom$_{DAT}$ promised

      c. *__Co__   Ewa   obiecała **komu**?
          what$_{ACC}$ Ewa$_{NOM}$ promised whom$_{DAT}$

      'What did Eva promise to whom?'

The question of what forces obligatory multiple wh-fronting in Polish and results in the patterns in (68) a-b appears to be still unanswered, and hence is in need of further exploration. The aim of the subsequent chapters is to address this question and provide a plausible explanation.

Prior to that, the aim of the next chapter is to evaluate the arguments based on which a claim was made that wh-movement does not exist in Polish. Put differently, according to some authors (Przepiórkowski 1994 and Lubańska 2005, among others), the clause-initial wh-phrase in Polish does not move to Spec-CP and wh-fronting is not driven by [Q] feature checking. Instead, the landing site of the clause-initial wh-phrase in Polish is the specifier of a projection which C^0 takes as a complement. A critical evaluation of this claim will be the focus of the next chapter.

CHAPTER 3

Wh-Movement to the Left Periphery

This chapter concentrates on establishing the landing site of fronted wh-phrase(s) in English and Polish. According to some authors (Przepiórkowski 1994; Lubańska 2005, among others), wh-fronting in Polish does not target Spec-CP and movement is not driven by [Wh/Q] feature checking. The discussion in this chapter aims to dismiss this claim. I will illustrate that the clause-initial wh-phrase in Polish resides in the CP area. The Split-CP approach (Rizzi 1997; 2001) is adopted, and it is argued that wh-fronting both in Polish and English targets Spec-IntP (except for embedded wh-questions in English), one of the maximal projections located within the C system. Finally, the discussion will concentrate on identifying the exact landing site of WH_2 in Polish, given the possibility of the post-initial wh-phrase occupying either the pre-verbal or pre-subject position.

3.1   Wh-movement in Polish

The landing site of a clause-initial wh-phrase (WH_1) in Polish has been a matter of dispute in the literature. While, according to some authors (Citko 1997; Dornisch 1998; among others), the clause-initial wh-phrase occupies Spec-CP, others argue that wh-substitution to Spec-CP does not take place in Polish; instead, the wh-phrase targets the specifier of a projection immediately dominated by CP (Przepiórkowski 1994; Lubańska 2005, among others), and movement is driven by feature other than [Q/Wh].

There are two main sets of data based on which the claim was made that wh-fronting in Polish does not target CP. The first argument comes from the interaction between wh-fronting and topicalization, more specifically the fact that a fronted topic can precede a wh-phrase. The second argument is based on the position which the fronted wh-phrase occupies with respect to the complementizer in embedded clauses. The aim of the following sections is to re-examine the data in light of the split-CP structure proposed by Rizzi (1997; 2001), adopted in the present work.

3.1.1 Wh-fronting and Topicalization

Topics are constituents which generally express old information, i.e., the information that is available in the discourse and is familiar to the interlocutors. One of the criteria in the literature to define Topic is to put it in opposition to *comment*, a part of the sentence which includes new information. An example of a topic-comment opposition in Polish is provided in (1) (cited from Cegłowski & Tajsner 2006:106):

(1)   A. A co z Tomkiem, co on dał Ani?
         'And what about Tom, what did he give Anna?

     B. [On]$_{TOPIC}$ [dał jej bransoletkę]$_{COMMENT}$.
         He   gave her a bracelet

Focalized elements, unlike topics, are usually associated with new information and they carry a nuclear stress (hence the *comment* will include focus). Foci fall into two types: information and contrastive (see fn. 32, §2.2.4).

3.1.1.1 Topicalization in Matrix Wh-questions

Constituents moved to the sentence-initial position in Polish can optionally be followed by an indicative particle (a lexical marker) *to* (it), (Cegłowski and Tajsner 2006), see (2), which, as argued by Tajsner (2008), spells out the head of TopP in Polish.[1]

(2) Ten zamek   *to* my   już   zwiedziliśmy.
     [This castle]$_{ACC}$ it$_{PRT}$ we$_{NOM}$ already visited
     'We have already visited that castle.'

Tajsner (2008) argues that TopP, whose head is overtly realized by the particle *to* (it), dominates FocP in Polish, given Rizzi's (1997) multiple layer approach to the left periphery (i.e., the C system).[2] Consider the hierarchy of projections within the C system in (3), as proposed by Rizzi (1997:297).

(3)   ForceP > (TopP*) > (FocP) > (TopP*) > FinP > TP

According to (3), the CP ('left periphery') is decomposed into ForceP and FinP, the former determines clause type (e.g. declarative, interrogative, relative etc.), while the latter contains the mood and tense specification and distinguishes whether the clause is finite or non-finite. FocP and recursive TopP (recursiveness is symbolized with a star

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[1] The discussion on the particle *to* in this section is based on Tajsner (2008) and Cegłowski & Tajsner (2006). Cegłowski & Tajsner (2006) differentiate between two types of topicalization in Polish: True Topicalization (TT), which triggers obligatory overt displacement and is associated with the presence of the lexical marker *to,* and Object Fronting (OF), which does not require overt displacement of the topicalized element, unlike TT. The authors illustrate that in the case of OF, the constituent designated as topic may appear either in a sentence-initial, sentence-internal or an in-situ position. Since the discussion in this section will concentrate on establishing the landing site of the fronted wh-phrase with respect to TT, i.e., with relation to the particle *to*, the second type of topicalization (OF) will be disregarded.

[2] The following terminology: *split-CP*, *C system* and *the left periphery* will be used interchangeably.

symbol) are present/ activated in a structure only when a constituent bears topic or focus features, which are checked in a Spec-head configuration.[3]

The support for the claim that the particle *to* spells out the head of TopP in Polish comes from examples such as (4) (cited from Cegłowski & Tajsner 2006:124).

(4) *JANKA to   Ania   zaprosiła na urodziny.
     John$_{ACC}$ it$_{PRT}$ Ania$_{NOM}$ invited   on birthday
     'As for John, Anna invited him to her birthday party.'

As illustrated in (4), the fronted focalised DP precedes the particle *to* and the sentence is infelicitous, which indicates that the particle cannot spell out Foc^0. On the other hand, when a focalised constituent follows the particle, the sentence is fully acceptable (cf. (5)) (Cegłowski & Tajsner 2006:125):

(5) Janka   to   ANIA   zaprosiła na urodziny.
     John$_{ACC}$ it$_{PRT}$ Anna$_{NOM}$ invited   on birthday
     'As for John, it was Anna who invited him to her birthday party.'

In (5), the preposed constituent *Janka* is understood as a topic (Tajsner 2008; Cegłowski & Tajsner 2006). Russian, for example, also possesses a discourse particle *to*, which designates the constituent with which it co-occurs as a topic, the latter carrying contrastive interpretation (see Dyakonova 2009). Contrastive topic refers to a constituent, which is taken from a closed set of known entities and juxtaposed with the other members of the set. In the Polish example in (5), the topic phrase *Janka* followed by the particle *to* is in opposition to the other members of the set, hence it functions as a contrastive topic.

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[3] Based on data from Italian, Rizzi (1997:290) establishes that only one focalised element is permitted in a sentence (but there are exceptions to this rule cross-linguistically, for example Hungarian allows multiple (contrastive) foci (Surányi 2007), whereas topics can be recursive.

Cegłowski & Tajsner (2006) (2006:121) establish, using the 'aboutness' test, presented in (6), that the projection whose head is overtly realized by the particle *to* is the only topic position in the sentence in Polish.

(6) a. A co z Anią? ('And what about Anna?')

b. [Anię]$_T$ **to** Janek   zaprosi   osobiście.

Ania$_{ACC}$ to Janek$_{NOM}$ will invite personally

'Janek will invite Ania personally.'

c. *Janek **to** [Anię]$_T$ zaprosi osobiście.

d. *Janek **to** zaprosi [Anię]$_T$ osobiście.

e. *Janek **to** zaprosi osobiście[Anię]$_T$.

The contrast in the acceptability between (6b), on the one hand, and (6) c-d, on the other hand, being all answers to the question in (6a), illustrates that only the position immediately preceding the lexical marker *to* is the topic position in the sentence in Polish. I interpret these facts, given the structure of the split-CP in (3), that the Topic projections in Polish are not recursive. Consequently, I assume that there is no TopP below FocP in Polish, as illustrated in (7):

(7) ForceP > (TopP) > (FocP) > FinP > TP

A wh-phrase, which co-occurs with the particle *to*, can either precede or follow the particle. Consider (8a) and (8b):[4]

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[4] As pointed out in Wiland (2009:139, fn. 81), who attributes this observation to Tajsner (2008), if the wh-phrase falls under the scope of the particle *to*, the wh-question is interpreted as a 'polarity wh-question.' Consider (i) a-b below.

(i) a. Marka   to   gdzie Anna   spotkała?
      Mark$_{ACC}$ it$_{PRT}$ where Anna$_{NOM}$ met
      'As for Mark, where did Anna meet him?'

(8) a. [$_{TopP}$ Ewa$_i$ [$_{Top}$ to [$_{αP}$ **kiedy** [$_{TP}$ t$_i$ [$_{vP}$ wyjechała]]]]]?

   Eva$_{NOM}$ it$_{PRT}$ when   left

   'As for Eva, when did she leave?'

   b. [$_{TopP}$ **Kiedy** [$_{Top}$ to [… [$_{TP}$ Ewa   [$_{vP}$ wyjechała]]]]]?

   when   it$_{PRT}$ Eva$_{NOM}$ left

   'When was it that Eva left?'

The wh-phrase in (8a) is located between TopP and TP projections, which I tentatively

label αP. The example in (8b) illustrates that the wh-phrase can replace the topicalized

phrase in Spec-TopP, and function as a contrastive topic. It could be hypothesized that

the wh-phrase in (8b) actually resides in Spec-ForceP, the projection which dominates

TopP (see the syntactic hierarchy of projections in (7)). However, the ungrammaticality

of the sentences in (9) below demonstrates that there can only be one constituent in the

pre-*to* position (see also Cegłowski & Tajsner 2006:126):

(9) a. *[Ewa [$_{TopP}$ kiedy [$_{Top}$ to   [$_{vP}$ wyjechała]]]]?

   Eva   when   it$_{PRT}$ left

   b. *[$_{ForceP}$ Kiedy [$_{TopP}$ Ewa [$_{Top}$ to   [$_{vP}$ wyjechała]]]]?

   when   Eva   it$_{PRT}$ left

The fact that the wh-phrase and the topicalized element cannot co-occur in front of the

particle *to* in (9) implies that: i) there can only be one topicalized phrase in the pre-*to*

position; and ii) there is no movement to the projection above TopP (i.e., ForceP). If

wh-movement to Spec-ForceP were licit, the example in (9b) would be grammatical,

contrary to fact. Consequently, the conclusion follows that Spec-TopP is the highest

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   b. Gdzie Anna   spotkała Marka?
      where Anna$_{NOM}$ met   Mark$_{ACC}$
      'Where did Anna meet Mark?'

Sentence in (a) is understood as 'where of the specified locations did Anna meet Mark'. That contrasts
with a wh-question without the particle *to* (example (b) here), which is licensed by a wh-pronoun in the
sentence-initial position and the sentence is interpreted as: 'in which location did Anna meet Mark.'

projection that can host the fronted wh-phrase (cf. (8b)). The movementof a wh-phrase to Spec-TopP is, however, optional (compare (8a) with (8b)).

The investigation of the syntactic behaviour of a fronted wh-phrase with respect to a topicalized constituent reveals that: i) the wh-phrase can optionally move to Spec-TopP (cf. (8a) vs. (8b)); ii) the fronted wh-phrase cannot move above Spec-TopP (cf. (8b) vs. (9b)); iii) the projection in the left periphery to which the wh-phrase raises obligatorily is αP (cf. (8a)), situated below TopP. According to Rizzi's structure given in (3) (see also (7)), the position which TopP dominates is FocP. However, in §2.2.4.1, I argued against the focus movement approach to wh-questions in Polish; consequently, the option that the fronted clause-initial wh-phrase moves to Spec-FocP must be rejected.

Prior to addressing the nature of the αP projection, which hosts the fronted wh-phrase in Polish, let us also look at the interaction between wh-fronting and topicalization in embedded contexts.

3.1.1.2 Topicalization in Subordinate Clauses

The example in (10) illustrates that the fronted wh-phrase can appear in the pre-*to* position in embedded interrogative clauses. Movement of a non-wh XP to the pre-*to* position in embedded interrogative contexts is, however, ungrammatical in Polish (compare (10) with (11)).

(10) Już   wiem   **kogo**   *to*   Ewa   zaprosiła   na bal maturalny.
     already know$_{1,Sg}$ who$_{ACC}$ it$_{PRT}$ Eva$_{NOM}$ invited$_{3,Sg,Fm}$ for prom
     'I already know who it is that Eva invited to the prom?'

(11) *Już   wiem **Ewa** *to* kogo zaprosiła na bal maturalny.
     already know$_{1,Sg}$ Eva$_{NOM}$ it$_{PRT}$ who$_{ACC}$ invited$_{3,Sg,Fm}$ for prom
     'I already know who Eva invited to the prom.'

The ungrammaticality of the example in (11) is attributed to the fact that Polish does not allow pre-posing in embedded interrogative clauses. Consider (12) (Meyer 2003:72):

(12) *Już   wiesz**,** *nową szkołę* gdzie/ czy   budują?
     already know$_{2,Sg}$ new school$_{ACC}$ where/ whether build$_{3,Pl}$
     'Do you know where / whether they are building a new school?'

Compare (12) with (13), which shows that XP pre-posing in matrix clauses, is possible.

(13) *Nową szkołę*   gdzie budują?
     new school$_{ACC}$ where build$_{3,Pl}$
     'Where are they building a new school?'

The sentence in (13), unlike the example in (12), is well-formed, although it carries an echo-interpretation, not a regular wh-question reading (cf. also example (64), §2.2.4.1).

   The fact that a wh-element can precede the particle *to* in embedded clauses (cf. (10)) correlates with the behaviour of the fronted wh-phrase in matrix clauses (cf. (8b)). The inability of moving a non-wh XP to the pre-*to* position in embedded clause in (11), as opposed to the matrix sentence in (8a), is, I propose, due to the selectional requirements of the verb in the matrix clause. Given the hierarchy of projections in (7), I assume that the matrix verb in (10)-(12) selects an interrogative ForceP which in turn selects an interrogative XP.[5]

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[5] The ungrammaticality of the sentence in (i) here, with two elements occupying the pre-*to* position, suggests that there is no movement above Spec-TopP, i.e., to Spec-ForceP, in embedded interrogative clauses in Polish, similarly to root wh-questions (cf. (9b)).

   (i) *Już   wiem *kogo Ewa*   to zaprosiła na bal maturalny.
       already know$_{1,Sg}$ who$_{ACC}$ Eva$_{NOM}$ it$_{PRT}$ invited   for prom

I assume that in embedded interrogative clauses like (14) below, and matrix wh-questions like (15), the landing site of the wh-phrase is the same, which has tentatively been labelled αP (see the previous section). The movement of the wh-phrase from Spec-αP to Spec-TopP, when its head is overtly realised by the particle *to*, is possible in matrix wh-questions and obligatory in embedded wh-contexts (cf. (8) a-b and (10)-(11)).[6]

(14) Już   wiem,   gdzie budują   nową szkołę.
     already know$_{1,Sg}$ where build$_{3,Pl}$ new school$_{ACC}$
     'I already know where they are building a new school.'

(15) Gdzie budują   nową szkołę?
     where build$_{3,Pl}$ new school$_{ACC}$
     'Where are they building a new school?'

The next section will address the nature of the projection labelled αP.

3.1.2   Split-CP and Wh-movement to Spec-IntP

More recently, Rizzi (2001) introduces a modification to the C system proposed in Rizzi (1997). The revised structure of the left periphery is provided in (16), (cf. (3)), (Rizzi 2001:289):

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[6] The fact that Top^0 may not be phonetically realized in Polish comes from examples such as (i) below. The constituent fronted to the clause-initial position is understood as a contrastive topic, although it may not be followed by the particle *to* (cf. §2.2.4, ex. (56b) and (67)).

(i) A Monika   (to) co   kupiła?
     and Monica$_{NOM}$ it$_{PRT}$ what bought$_{3,Sg,Fm}$
     'And as for Monica, what did she buy?'

(16)   ForceP
```
(16)        ForceP
             /\
           Force'
            /\
        Force  (TopP*)
                 /\
              (Top')
               /\
           (Top)  IntP
                   /\
                 Int'
                  /\
               Int  (TopP*)
                      /\
                   (Top')
                    /\
                (Top)  FocP
                        /\
                      Foc'
                       /\
                    Foc  (TopP*)
                           /\
                        (Top')
                         /\
                     (Top)  FinP
                             /\
                           Fin'
                            /\
                          Fin  TP
```
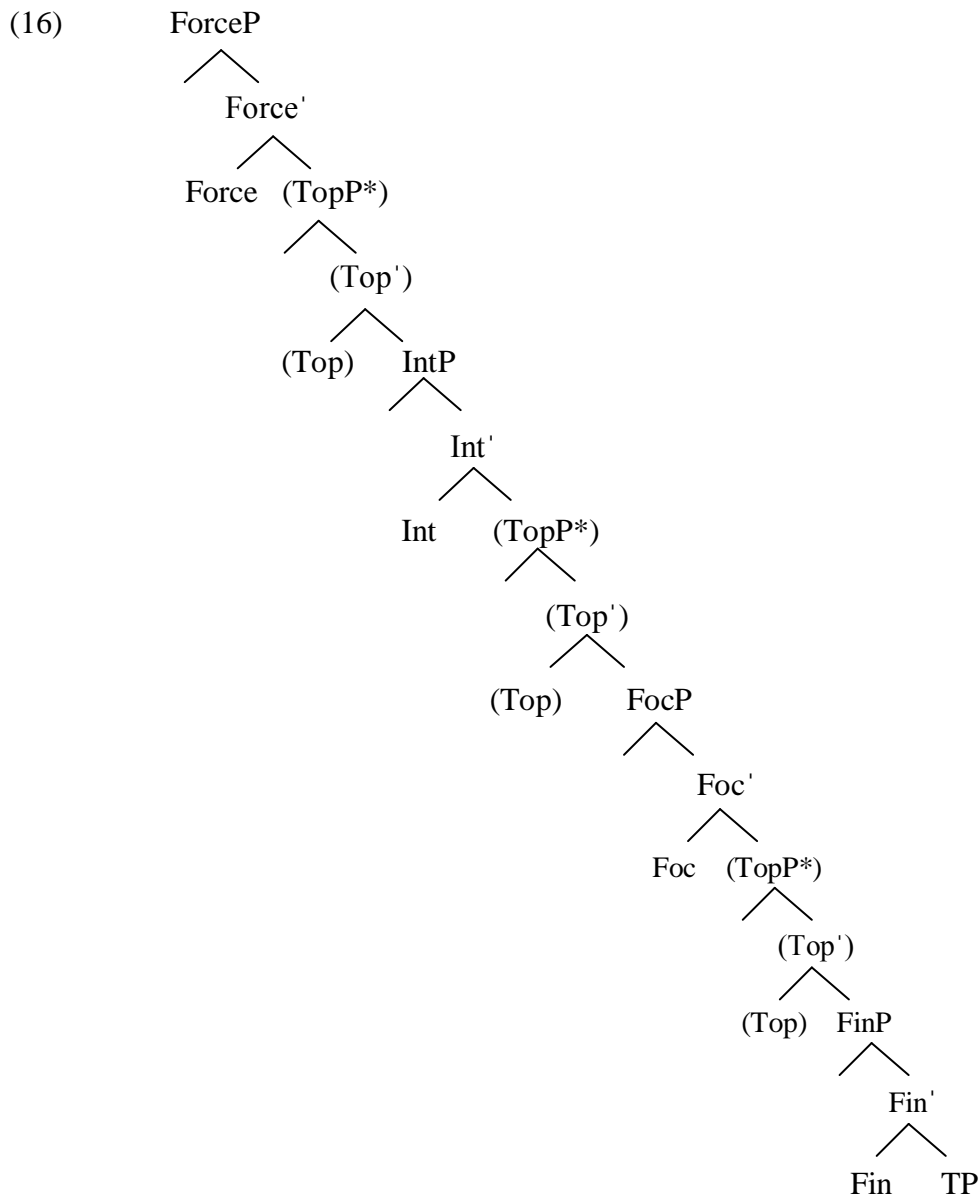
Rizzi (2001) argues for the presence of an additional projection in the left periphery of the clause – Int(errogative)P.[7] He demonstrates that IntP cannot host wh-elements in Italian (apart from sentential wh-adjuncts: *perché* (why) and *come mai* (how come), which are base-generated in Spec-IntP in main clauses). The argument is based on the fact that, while the complementizer *se* in Italian, which spells out Int^0, can co-occur with

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[7] The reason for introducing IntP into the structure is based on the observation that two types of complementizer in Italian: *che* (that) and *se* (if) have different distributional properties, and hence occupy distinct syntactic positions. The declarative complementizer *che* occupies $Force^0$ (Rizzi 1997; 2001), while the interrogative complementizer *se*, which introduces embedded *yes/no* questions in Italian, expresses Int^0 (Rizzi 2001).

focus and the order is strict (cf. (17a) and (17b)), the fronted wh-phrase and a focalized constituent are in complementary distribution, i.e., they cannot co-occur (cf. (18a) and (18b)), which signals that the wh-phrase occupies Spec-FocP, and thereby competes for this position with a focused element (examples in (17)-(18) are cited from Rizzi 2001:289/290).[8] The focus position in the left periphery of the clause in Italian corresponds to contrastive focus (Rizzi 1997:286).

(17) a. Mi domando se QUESTO gli volessero dire (non qualcos' altro)
          'I wonder if THIS they wanted to say to him, not something else.'

      b. *Mi domando QUESTO se gli volessero dire (non qualcos' altro)
          'I wonder THIS if they wanted to say to him, not something else.'

(18) a. *A chi QUESTO hanno detto (non qualcos' altro)?
          'To whom THIS they said (not something else)?

      b. *QUESTO a chi hanno detto (non qualcos' altro)?
          'THIS to whom they said (not something else)?

Assuming that scrambling to the left periphery in Polish is driven by contrastive focalisation (Lubańska 2000; 2005) (on a par with Italian), the fact that the fronted DP *Tomka* in the matrix clause in (19) and in the embedded clause in (20) can co-occur with the wh-phrase, differentiates Polish (cf. (19)-(20)) from Italian (cf. (18)). The examples in (19)-(20) are cited from Cegłowski & Tajsner (2006:116).[9]

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[8] In embedded wh-questions in Italian, unlike in root wh-questions, the wh-phrase does not move to Spec-FocP. In embedded contexts, the wh-phrase can co-occur with a focalised element, and the order of constituents is: Focus > Wh-phrase (Rizzi 2001:291). Embedded clauses in Italian exhibit the following syntactic hierarchy: Force .. Int .. Foc ..Wh. Rizzi (2001) does not discuss the identity of the projection which hosts the wh-phrase.

[9] According to Cegłowski & Tajsner (2006), fronting a non-wh-constituent as in (19)-(20) and also in (i) below is regarded as a subcase of Topicalization, referred to as Object Fronting (OF) by the authors. Cegłowski & Tajsner (2006) assume that OF does not involve movement to TopP (unlike True Topicalization marked by the overt particle *to* (it)), but instead it is a dislocation to the outer Spec-TP.

(19) Komu *Tomka* Ania przedstawiła?

whom$_{DAT}$ Tom$_{ACC}$ Anna$_{NOM}$ introduced$_{3,Sg,Fm}$

'To whom did Anna introduce Tom?'

(20) Spytałam komu *Tomka* Ania przedstawiła?

asked$_{1,Sg,Fm}$ whom$_{DAT}$ Tom$_{ACC}$ Anna$_{NOM}$ introduced$_{3,Sg,Fm}$

'I asked to whom Anna introduced Tom?'

The co-occurrence of a wh-phrase and a focalised constituent in the left periphery indicates that the two constituents occupy distinct positions.[10] Given the revised structure of the C system in (16), the focalised element (*Tomka*) in (19)-(20) would be located in Spec-FocP, whereas the wh-phrase (*komu*) would occupy Spec-IntP. That, I propose, is indeed the case in Polish.

There is another piece of evidence to support the claim that focus and wh-phrase do not occupy the same position (Spec-FocP) in the C system in Polish. As pointed out in Dyakonova (2009:143), if the left-peripheral wh-phrase and a focalised element were subject to the same type of movement, i.e., focus movement (to Spec-FocP), the wh-phrase and the focalised constituent should display the same distributional properties. However, we have already seen that focus is incompatible in the Spec-TopP position (cf. (4)), whereas the wh-phrase can move freely to Spec-TopP (cf. (8b)). I interpret these facts as follows, given (21): a focalised constituent in the left periphery of a clause has undergone focus movement to Spec-FocP, while a clause-initial wh-phrase has

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(i) Piotra$_i$ Ewa spotkała t$_i$ w kinie.
Peter$_{ACC}$ Eva$_{NOM}$ met$_{3,Sg,Fm}$ in cinema
'Peter, Eva met in the cinema.'

Under Rizzi's (1997; 2001) split-CP proposal adopted in the present work, free/optional adjunction to TP is prohibited (Rizzi points out that syntactic movement must be triggered either by the satisfaction of a focus/ topic criterion (Rizzi 1997) or by feature checking (in Chomsky's (1995) terminology).

[10] Another example illustrating the co-occurrence of a wh-phrase and a focused phrase in the left periphery is given in (i) (Tajsner 2008:370):

(i) Kogo ANIA spotkała w kinie?
who$_{ACC}$ Ania$_{NOM}$ met$_{3,Sg,Fm}$ in cinema
'Who did Ania meet in the cinema?'

undergone wh-movement to Spec-IntP (and can subsequently undergo movement to Spec-TopP) in Polish.

I follow Rizzi's (2001) proposal and adopt the structure to the left periphery for Polish, as given in (16). However, since TopP does not iterate in Polish (see §3.1.1.1), the structure I propose for the left periphery in Polish, based on (16), is provided in (21). I assume that the clause-initial wh-phrase in Polish wh-questions, both in root and embedded clauses, moves to Spec-IntP.

(21)

```
        ForceP
          /\
        Force'
         /\
    Force  TopP
            /\
          Top'
           /\
        Top  IntP
              /\
            Int'
             /\
          Int  FocP
                /\
              Foc'
               /\
            Foc  FinP
                  /\
                Fin'
                 /\
              Fin  TP
```
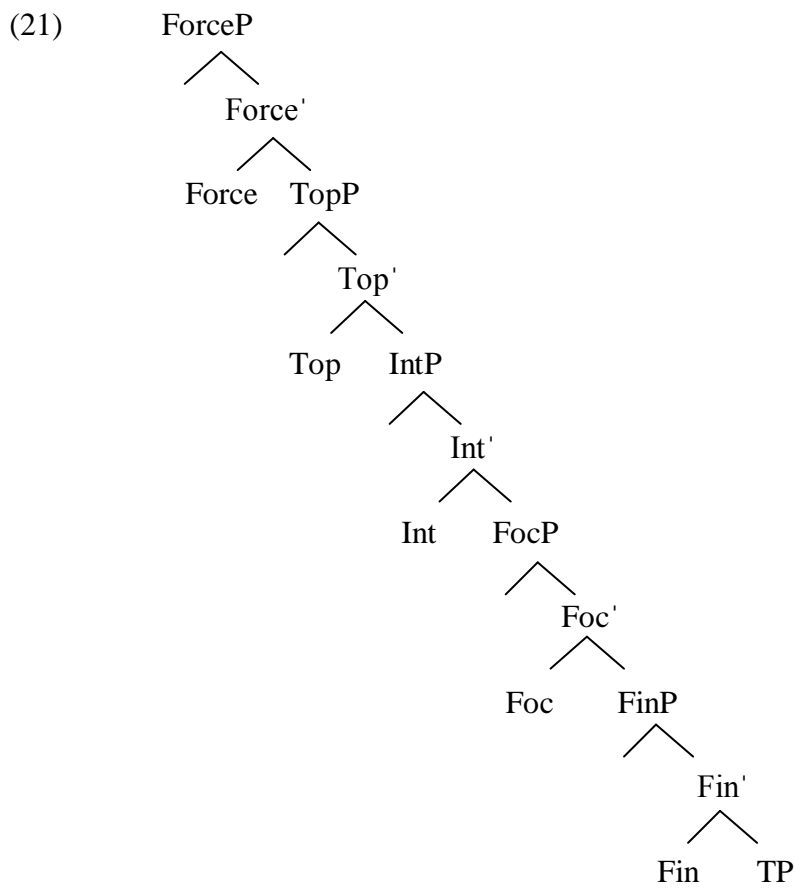
This work assumes that the fronted, clause-initial wh-phrase in Polish occupies Spec-IntP. Consequently, the clause typing head (in the sense of Cheng 1991) in Polish

is Int^0.[11] According to Rizzi (1997; 2001), $Force^0$ is the head of the C system which determines clause type (e.g. declarative vs. interrogative). Consequently, it should be $Force^0$, not Int^0, which enters into the agreement relation with the feature on the wh-phrase. However, we have already seen that, cross-linguistically, wh-phrases can target different positions in the left periphery. For example, in Italian (Rizzi 1997; 2001), the fronted wh-phrase moves to Spec-FocP (in main clauses). In Polish, it is Spec-IntP, as illustrated in the discussion above. Following Dyakonova (2009) and Aboh & Pfau (2011), I assume that Int^0 ($Inter^0$ in their terminology), possesses an interrogative force.[12] Similarly to the analysis of Russian wh-movement proposed in Dyakonova (2009), I conclude that the feature responsible for agreement relation and attraction in wh-questions is located on Int^0 in Polish. The exact mechanism of deriving wh-questions in Polish will be put forward in the next chapter.

3.1.3   The Application of Split-CP in Subordinate and Relative Contexts

Another argument, which can be found in the literature, for the lack of wh-movement to Spec-CP in Polish comes from the grammaticality contrast between (22a) and (22b).

(22)   a. Marek myślał, **że   co**   Piotrek przeczytał?
          Mark thought that what Peter   read
          'What did Mark think that Peter read?'
       b. *Marek myślał, **co że** Piotrek przeczytał?

As the examples in (22) illustrate, the complementizer *że* must precede the fronted wh-phrase in embedded questions. Since *że* occupies the C^0 head position, the conclusion

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[11] Cheng (1991:30) formulates a Clausal Typing Hypothesis (CTH) which reads as follows: "Every clause needs to be typed. In the case of typing a wh-question, either a wh-particle in C^0 is used or else fronting of a wh-word to the Spec of C^0 is used, thereby typing a clause through C^0 by Spec-head agreement."
[12] Ginsburg (2009:38) also argues that it is Int^0 (Typ^0 in his terminology) instead of $Force^0$ that is a clause-typing head.

was drawn that the fronted wh-phrase cannot be located in Spec-CP (see Lubańska 2005, among others).

The argument holds if one assumes a single layer approach to the left periphery. However, adopting the split-CP hypothesis (see (21)), the contrast in (22) follows straightforwardly. Assuming that the complementizer *że* (that) in Polish spells out Force^0 (on a par with Italian, the language in which the complementizer *che* (that) spells out the head of ForceP (Rizzi 1997:288)), and the wh-phrase in Polish occupies Spec-IntP, it follows that the constituent order in (22a) is the only legitimate word order.[13]

Furthermore, the split-CP approach to the left periphery given in (21) can also account for the fact that a relative operator must precede a fronted wh-phrase. Consider the examples from Polish in (23a) and (23b).

(23) a. Spotkałeś mężczyznę, **który kogo** zabił?
          met$_{2,Sg,M}$ the man$_{ACC}$ who who$_{ACC}$ killed
          'Who did the man that you met killed?'
       b. *Spotkałeś mężczyznę, **kogo który** zabił?

According to Rudin (1988:471), the possibility of the relative pronoun and the wh-phrase occupying the same syntactic position (specifiers of CP) must be excluded since

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[13] One could hypothesize that *że* (that) in Polish is not a complementizer but a direct discourse marker which reports direct speech (in the sense of Lahiri 1991), resulting in the constituent order as in (22a). This assumption is, however, untenable. Willim (1989) observes independently that the wh-phrase in the sentences like (22a) takes matrix scope, which indicates that the question introduced by the wh-phrase is an embedded clause, and not a reported direct discourse. Furthermore, as the example in (i) below illustrates, it is possible for the subject DP to bind the pronoun *his* embedded in the clause introduced by the wh-phrase:

(i) Janek$_i$ powiedział, że co kupił swojej$_i$ dziewczynie?
     John said that what bought his girlfriend
     'What did John$_i$ say that he$_i$ bought for his$_i$ girlfriend?'

The fact that the subject of the matrix clause binds a possessive pronoun embedded in the object DP situated in the lower clause indicates that the question introduced by the wh-phrase cannot function as an independent quote/ reported direct question, but rather it is a subordinate clause introduced by a complementizer *że*.

a sentence cannot be both interrogative and non-interrogative (relative). Consequently, Rudin concludes that the wh-phrase, which obligatorily follows the relative pronoun, must be located in a projection below CP.

Rizzi (1997:298) assumes that in Italian, the relative pronoun resides in Spec-ForceP. Extending the proposal to Polish, I assume that the relative pronoun and the wh-phrase occupy two distinct projections, Spec-ForceP and Spec-IntP, respectively, and since the former precedes the latter in the syntactic hierarchy (cf. (21)), we correctly rule out (23b), leaving (23a) as the only grammatical structure.

To summarize, the interaction between wh-fronting and topicalization (the fact that a fronted topic can precede a wh-word), like also between wh-fronting and a complementizer (the fact that a wh-phrase obligatorily follows the complementizer), have been taken as decisive arguments that the clause-initial wh-phrase in Polish does not move to Spec-CP (Przepiórkowski 1994; Lubańska 2005; Cegłowski & Tajsner 2006). As the discussion attempted to illustrate, aspects of topic-, focus- and wh-fronting to the left periphery, as well as the syntactic behaviour of a wh-phrase with regard to the complementizer *that* and relative pronouns can be well explained if the split-CP approach is adopted. The split-CP adopted in this work (see (21)) is in line with Rizzi (2001). Given the split-CP structure, I argued that a fronted wh-phrase in Polish moves to Spec-IntP.

3.2   Split-CP in English

It has been a standard assumption in the generative literature that the fronted wh-phrase in English moves to Spec-CP (Chomsky 1995 *et seq.*). In this section, I will explore the left periphery of English wh-questions in line with Rizzi (1997; 2001). Based on the

interaction of wh-fronting with topicalisation, I will argue that the fronted wh-phrase in English root wh-questions moves to Spec-IntP, on a par with Polish. However, the landing site of the fronted wh-phrase in embedded wh-questions in English is different from the one in root contexts, and corresponds to Spec-ForceP.

3.2.1   Root Wh-questions

English does not seem to allow a topic phrase and a wh-phrase to co-occur in root clauses. Consider the examples in (24) a-b (quoted from Chomsky 1977:94) and (25) a-b (cited from Emonds 1976:40):

(24) a. *This book, to whom should we give?

    b. *To whom, this book, should we give?

(25) a. *These steps, what did you use to sweep with?

    b. *What these steps did (/did these steps) you use to sweep with?

    A different judgment on the (a)-examples in (24)-(25), however, can be found in Culicover (1996:461) and Haegeman & Guéron (1999:336), among others. Consider (26)-(27).

(26) To Terry, what did you give?

(27) During the holidays, what will you do?

The acceptability of the sentences in (26)-(27), i.e., the fact that a topicalized constituent and a wh-phrase can co-occur, suggests that they occupy two different projections. Given the structure of the split-CP in (21), as adopted for Polish, I propose that the fronted wh-phrase in English matrix wh-questions moves to Spec-IntP (on a par with

Polish, as discussed in §3.1.2 above),[14] and the topic constituent occupies the specifier of the highest TopP.[15] The fact that TopP does not iterate in English is illustrated by the unacceptability of (28) (Mimura 2009:277).

(28) *This book, to Robin, I gave.

Consider again the wh-question in (26) and its derivation depicted in (29) (irrelevant details omitted), given the structure of the left periphery in (21).

(29) [$_{ForceP}$ [$_{TopP}$ {To Terry}$_j$ [$_{IntP}$ what$_i$ [$_{FocP}$ [$_{FinP}$ [$_{TP}$ you give t$_i$ t$_j$]]]]]]?

The fact that the reverse order in which the wh-phrase precedes the topic element is ungrammatical in English (see (30); (cf. (26)), indicates that there is no movement of the wh-phrase to Spec-ForceP, i.e., the wh-phrase cannot move higher than Spec-IntP in English matrix wh-questions.

(30) *What to Terry did you give?

The latter conclusion will be of particular importance to the discussion of Superiority effects in English vs. Polish in chapter 5.

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[14] See also Ginsberg (2009:43) who assumes that wh-movement in English proceeds to Spec-TypP (Type Phrase), which is the equivalent of Spec-IntP in Rizzi's (2001) split-CP structure.
[15] With respect to a fronted focused element and a wh-phrase, the data in (i) (Kuno & Takami 1993:91; cf. also Kobayashi 2001, ch.5) illustrate that they cannot co-occur.

  (i)   *Who *in Harvard Square* did you see?

The fact that the fronted wh-phrase and the focalised constituent cannot co-occur may indicate that they compete for the same position, Spec-FocP (cf. also Italian, §3.1.2). However, it appears that a wh-phrase and a focused element cannot occur in the same sentence even if they occupy two distinct positions, as evidenced by the degraded status of (ii) (the example is attributed to Simpson 2000:113):

  (ii)   ??Who saw JURASSIC PARK?

Given the degraded status of (ii) (unless it was a rhetorical question, Simpson 2000:113), it implies that the unacceptability of (i) may follow from something other than the movement of the wh-phrase and a focused phrase to a single projection, Spec-FocP (and their complementary distribution). In light of these facts, I will continue to assume that the wh-phrase in English matrix wh-questions moves to Spec-IntP.

3.2.2   Embedded Wh-questions

Unlike in root wh-questions (cf. (26)-(27)), in embedded contexts topic cannot precede the fronted wh-word. For example, the equivalent of (26) is ungrammatical in an embedded context (see (31), cited from Culicover 1996:462).

(31)   *I was wondering to Terry what you gave.

Compare the example in (31) with (32), the latter adopted from Den Dikken (2003:83).[16]

(32) $^?$I don't know what to Mary, we should give.

The relative acceptability of (32) in which the wh-phrase precedes the topic phrase (cf. (30)) suggests that the wh-phrase moves to Spec-ForceP in embedded wh-questions in English. More specifically, given the structure of the left periphery in (21) above (based on Rizzi (2001), cf. (16)), I propose that the wh-phrase *what* in (32) is attracted to Spec-ForceP, whereas the topicalized constituent *to Mary* occupies Spec-TopP, as illustrated in (33), resulting in the constituent order in (32).[17]

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[16] As den Dikken acknowledges (2003:96, note 5), the judgement regarding (32) is controversial. The sentence is rejected by many native speakers. However, as den Dikken reports, for speakers who accept the combination of topicalization and wh-fronting, (32) is superior to its equivalent with the reverse order (see (i) here).

    (i)   *I don't know to Mary what we should give.

[17] Another possibility that can be pursued to explain the acceptability of (32) is in terms of multiple Topic projections as possible landing sites for the fronted topics (see (16)). Consider the construction in (i) here (Culicover 1996:453), which illustrates that multiple embedded topicalization is possible (albeit marginal) in English.

    (i)   I suggest that on your vacation, the beers that you drink you should keep a record of.

Given that topic can iterate in embedded questions in English (as illustrated by (i)), one could assume, given the structure of the left periphery in (16), that the Topic projections below IntP are available landing sites; hence the topicalized phrase *to Mary* in (32) moves to Spec-TopP below IntP, while the wh-phrase *what* occupies Spec-IntP (on a par with root wh-questions in English). However, the questions would be why the TopP above IntP cannot be projected in embedded wh-questions in English and why Topic projections below IntP are possible landing sites for topics in embedded but not in root wh-questions in English.

(33) I don't know [$_{ForceP}$ what$_i$ [$_{TopP}$ {to Mary}$_j$ [$_{IntP}$ [$_{FocP}$ [$_{FinP}$ [$_{TP}$ we should give t$_i$ t$_j$

]]]]]]?

Consequently, in embedded wh-questions in English, the feature responsible for attraction of the wh-phrase to the left periphery is located on Force^0 instead of Int^0 (see also den Dikken (2003) and Haegeman & Guéron (1999:345) who argue for a different landing site of the fronted wh-phrase in English, depending on the type of the wh-question: root vs. embedded).

3.3 Landing Site of the Non-initial Wh-phrase in Polish

Recall that there are two patterns of forming multiple wh-questions in Polish. Consider (34) (cf. (74) §1.2):

(34) a. **Co**   Ewa   **komu**   obiecała?
        what$_{ACC}$ Eva$_{NOM}$ whom$_{DAT}$ promised

   b. **Co**   **komu**   Ewa   obiecała?
        what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised

   c. ***Co**   Ewa   obiecała **komu**?
        what$_{ACC}$ Eva$_{NOM}$ promised whom$_{DAT}$

   'What did Eva promise to whom?'

The WH$_2$ *komu* can either appear in the pre-verbal position (cf. (34a)) or the pre-subject position (cf. (34b)). It could be assumed that both in (34a) and (34b) the wh-phrase *komu* occupies the same (clause-internal) position, and it is the subject DP that fails to raise to Spec-TP in (34b), which results in different constituent orders: (34a) vs. (34b). However, in §1.1.3, it was established that the subject DP in Polish raises obligatorily to

Spec-TP. Consequently, the landing site of the WH$_2$ in (34a) and (34b) must be different.

3.3.1   The Wh-phrase in the Pre-Verbal Position

Consider the example in (34a), with the WH$_2$ (*komu*) located in the pre-verbal position. As the sentence in (35) demonstrates (Dornisch 1998:132), the wh-phrase *komu* does not need to be adjacent to the verb. The example shows that an adverb can intervene between the verb and the clause-internal wh-word.

(35) Co   by   Piotr   **komu**   *wtedy* polecił?
      what$_{ACC}$ Cond.Aux Peter$_{NOM}$ whom$_{DAT}$ then   recommended
      'What would Peter then recommend to whom?'

This may imply that the clause-internal wh-phrase in (35), and consequently (34a), is not located in the vP-edge position (where *edge* subsumes both specifiers and adjuncts). On the other hand, it is possible to assume that the adverb in (35) is either adjoined to an intermediate category v' (see (36a)), or to a maximal category vP (see (36b)), in both cases the wh-phrase *komu* would occupy a vP-edge position.

(36) a.

126

b.

```
                    vP
                  /    \
             komu_i    vP
                      /    \
                 wtedy     vP
                          /    \
                     t_sub     v'
                              /    \
                             v      VP
                             |       |
                                    V'
                                   /    \
                                  V      t_i
```
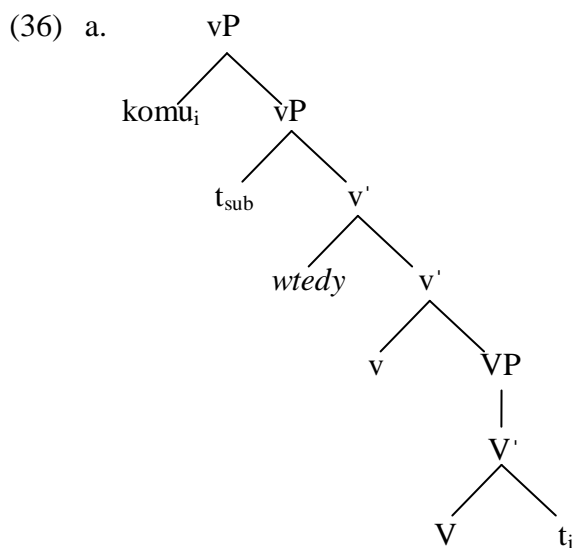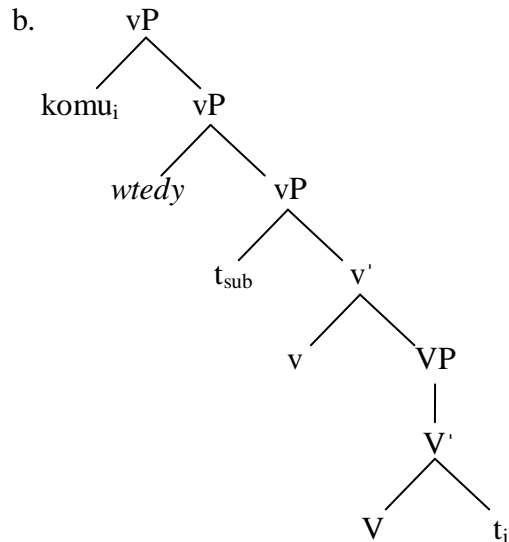
Dornisch (1998) uses clitics to establish the landing sites of fronted wh-words in Polish. Dornisch (1998:144) makes an interesting observation with respect to the position of a clause-internal wh-phrase. Compare (37) with (38):

(37) Kiedy Piotr   KOMU   go   przedstawił?
     when Peter$_{NOM}$ whom$_{DAT}$ him$_{Cl}$ introduced
     'When did Peter introduce him to whom?'

(38) Kiedy Piotr   go   komu   przedstawił?
     when Peter$_{NOM}$ him$_{Cl}$ whom$_{DAT}$ introduced
     'When did Peter introduce him to whom?'

Recall from chapter 2 (§2.2.2) that it is possible in Polish to either leave a focused element (whether a wh-pronoun or a non-wh-constituent) in situ, as illustrated in (39) for a wh-phrase, or optionally front it, as shown in (37).

(39) Co   by   Anna   poleciła   KOMU?
     what$_{ACC}$ Cond.Aux Anna$_{NOM}$ recommended whom$_{DAT}$
     'What would Anna recommend to whom?'

The pronominal clitic *go* follows the focalised wh-phrase in (37) but precedes the clause-internal wh-phrase in (38). Considering that the pronominal clitic *go* that occupies a head position separate from the verb, as argued by Dornisch (1998), follows the focused wh-phrase in (37), but obligatorily precedes the wh-phrase in (38) (the required order in (38) is: clitic-wh-pronoun, Dornisch 1998:141) implies that the position of the clause-internal wh-phrases in (37) and (38) is different. The fact that the clitic cannot intervene between the pre-verbal wh-word and the verb in (38), suggests that the clause-internal wh-phrase in (38) is located within the Verb Phrase and occupies an outer Spec-vP.

In §1.1.4.3 it was illustrated that the main verb in Polish raises to Asp^0 and Neg^0, when AspP and NegP are present in the syntactic structure (i.e., in constructions which contain aspectual affixes and negation). Since the clause-internal wh-phrase cannot intervene between the aspectual prefix and the verb (see (40b)) or the sentential negation and the verb (41b), I assume that when v^0-to-Asp^0 raising takes place, the clause-internal wh-phrase raises to the edge of AspP (outer Spec-AspP). Consequently, when v^0-to-Neg^0 raising occurs, the clause-internal wh-phrase moves to the edge of NegP.

(40) a. Co   Ania   **komu**   *po*kupowała?
        what$_{ACC}$ Anna$_{NOM}$ whom$_{DAT}$ after-bought

      b.*Co   Ania   *po***komu**kupowała?
        what$_{ACC}$ Anna$_{NOM}$ after-whom$_{DAT}$-bought

      'What did Anna buy for whom?'

(41) a. Komu   Ewa   **czego** *nie* kupiła?

     whom$_{DAT}$ Eva$_{NOM}$ what$_{GEN}$ Neg bought

  b.*Komu   Ewa   *nie* **czego** kupiła?

     whom$_{DAT}$ Eva$_{NOM}$ Neg what$_{GEN}$ bought

     'What didn't Eva buy for whom?'

The next section will discuss movement of the WH$_2$ to the 'pre- subject' position in Polish.

3.3.2   The Wh-phrase in the Pre-Subject Position

The focus of this section is on the landing site of a WH$_2$, located in the pre-subject position, as illustrated in (34b), repeated here as (42).

(42) **Co**   **komu**   Ewa   obiecała?
     what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised
     'What did Eva promise to whom?'

In examples like (42), it has been argued that the post-initial wh-phrase (WH$_2$) *komu* adjoins to TP (Rudin 1988; Dornisch 1998:205); alternatively, on the assumption that there exists a projection between CP and TP such as OpP (Citko 1997), claims have been made that these projections host the fronted WH$_2$ in Polish.

    Given the split-CP structure in (21) adopted for Polish, I will argue that the two wh-phrases in examples like (42) are located within the C system. The detailed discussion, however, will be postponed till chapter 5, where the order of movement of the wh-phrases as well as the positions the fronted wh-phrases occupy with respect to each other (so called Superiority effects) in multiple wh-questions will be addressed.

An assumption that should be rejected straightaway, since it is not corroborated empirically, is that both of the fronted wh-phrases in (42) move to a single maximal projection in the left periphery. As the following examples from Polish illustrate, the sequence of fronted wh-phrases can be interrupted by the conditional auxiliary *by* (43) or an adverb (44).

(43) Kogo   *by*   czego   Ewa   nauczyła?
who$_{ACC}$ Cond.Aux. what$_{GEN}$ Eva$_{NOM}$ taught
'Who could Eva teach what?'

(44) O   co   *wczoraj* kogo   policja   aresztowała?
about what yesterday who$_{ACC}$ police$_{NOM}$ arrested
'Who was arrested yesterday by the police for what reason?'

The data in (43)-(44) imply that WH$_1$ and WH$_2$ occupy different syntactic positions in the left periphery. Given that Spec-IntP hosts a WH$_1$ in Polish, the optional movement of the WH$_2$ from the vP-edge to the left periphery of the clause (cf. (34a) vs. (34b)) must involve movement to the specifier of a projection other than IntP.

3.4   Conclusions

The present work adopts the split-CP structure for Polish and English, as proposed by Rizzi (1997), and further modified in Rizzi (2001).

The position of fronted wh-phrases in Polish has been a matter of great dispute in the generative literature. This chapter has shown that the fronted wh-phrase in Polish is located in the C system, and given the split-CP structure, I have argued that the clause-initial wh-phrase in Polish moves to Spec-IntP. English root wh-questions pattern with Polish, i.e., the fronted wh-phrase in English matrix wh-questions occupies Spec-IntP.

However, the landing site of the fronted wh-phrase in embedded contexts in English is different and corresponds to Spec-ForceP.

Lastly, the landing site of the non-initial wh-phrase (WH_2) in Polish was investigated. The non-initial wh-phrase in Polish occupies the vP-edge (outer Spec-vP), and subsequent (optional) movement brings this wh-phrase to the left periphery, to the projection other than Spec-IntP.

CHAPTER 4

Phase-based Approach to Wh-fronting - The Proposal

Set within the framework of Phase Theory (Chomsky 2000 *et seq*.), this chapter compares a single wh-fronting language (English) with a multiple wh-fronting language (Polish) and puts forward a proposal of wh-question formation in the languages under consideration, with non-trivial consequences for the syntactic theory of natural languages. First, the discussion concentrates on a critical examination of Chomsky's (2000) and Bošković's (2007) accounts of wh-question formation. Subsequently, a proposal is put forward which explains the differences in surface representations of multiple wh-questions between Polish and English. The proposal is based on the assumption that multiple Spell-Out is subject to cross-linguistic variation. More specifically, languages differ as to whether they are subject to multiple Spell-Out (Polish) or single Spell-Out (English). Furthermore, it is argued that in the multiple wh-questions in Polish of the type: *Kto co powiedział?* (lit. Who what said) (Who said what?), the non-initial wh-phrase *co* occupies Spec-vP, which contrasts with a standard assumption that *co* is located as high as TP (Rudin 1988; cf. also Citko 1997). Finally, it is illustrated how the proposal extends to long-distance wh-questions both in English and Polish.

4.1 Wh-movement in Phase Theory

According to Phase Theory (Chomsky 2000 *et seq.*), wh-movement proceeds cyclically, targeting the edge of each phase, as illustrated in (2) for the wh-question in (1), (cf. (81), §1.3.2.2), with irrelevant details omitted.[1]

(1)   Who did John meet?

(2)

```
                        CP
                   ╱         ╲
               who            C'
                ▲         ╱       ╲
                │    C[EPP;uQ]      TP
                │      did       ╱     ╲
                │            John       T'
                │                    ╱      ╲
                │                  T          vP
                │                          ╱     ╲
                └──────────<who[iQ;uWh]>     vP
                                   ▲      ╱     ╲
                                   │  <John>      v'
                                   │          ╱       ╲
                                   │      v[EPP]        VP
                                   │              ╱        ╲
                                   │            V         <who[iQ; uWh]>
                                   │           meet              │
                                   └──────────────────────────────┘
```
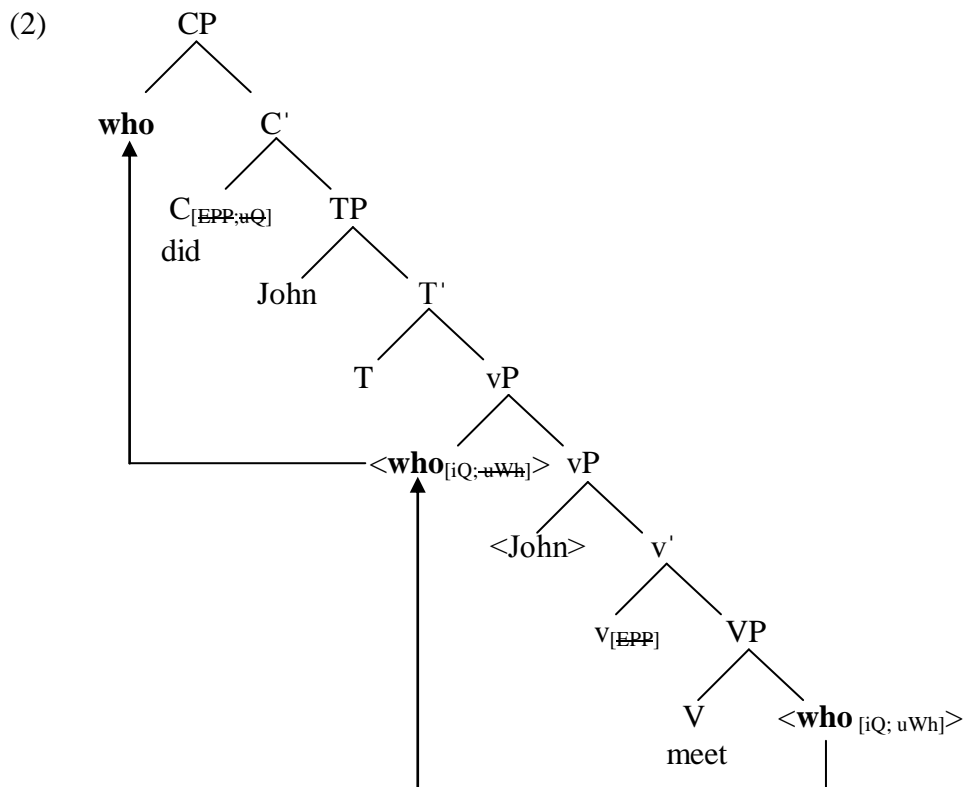
Chomsky (2000) proposes that wh-phrases carry an uninterpretable [Wh] feature (marked as [uWh]) (analogous to structural Case for nouns), which renders them *active* (i.e., eligible for Agree and Move) and an interpretable [Q] feature ([iQ]). The interrogative C^0 possesses an uninterpretable [Q] feature ([uQ]), which gets checked (valued) via Agree with the corresponding [iQ] feature on the wh-phrase. As a reflex of the [Q] agreement with C^0, the [uWh] feature on the wh-phrase gets valued and then

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[1] Recall from chapter 1, §1.3.2.1, fn. 24, that the term *phase* is used throughout this work in the sense of Chomsky's (2001 *et seq.*) *strong phase*.

removed from narrow syntax by the Spell-Out operation. The wh-phrase is active until its [uWh] is valued and deleted. In wh-fronting languages (like English), C^0 also has an EPP-feature, which attracts the wh-expression to Spec-CP.

This mechanism raises a number of questions, which will be discussed in the next section.

4.1.1 Successive-Cyclic Wh-Movement (Chomsky 2000; 2001)

The question that arises in the derivation of the sentence in (1) (depicted in (2)) is how the non-final stage of successive-cyclic movement, i.e., movement to the vP-edge (also referred to as indirect feature-driven movement, Chomsky 2000) is motivated.

According to Chomsky (2000; 2001), successive-cyclic movement is conditioned by the PIC (cf. (77), (79) §1.3.2.1), repeated here as (3)-(4) for ease of reference.

(3)   In phase α with head H ([α [H β]]), the domain of H is not accessible to operations

outside α, only H and its edge are accessible to such operations [the edge refers to

either specifiers or elements adjoined to αP]

(4)   a. [$_{ZP}$ Z...TP.. [$_{HP}$ α [H YP]]]

b. The domain of H is not accessible to operations at ZP; only H and its edge are

accessible to such operations (where HP corresponds to vP and ZP to CP).

Both the original (cf. (3)) (Chomsky 2000:108) and the revised version of the PIC (cf. (4)) (Chomsky 2001:13) requires that movement be cyclic and proceed through the edge of each phase before the XP reaches the final landing site. Put differently, an XP can move out of a phase provided it first moves to the edge of that phase, the position which is eligible for extraction by the higher phase. The movement of the phrasal category to

the edge of a phase is implemented by a "(generalized) EPP-feature" (Chomsky 2001; also referred to as a "P(eripheral)-feature" (Chomsky 2000), "OCC" (Chomsky 2004) or an "edge-feature" (Chomsky 2005)),[2] which can be optionally assigned to a phase head in accordance with (5) (Chomsky 2000:109).

(5)   The head H of phase Ph may be assigned an EPP-feature.

In (2), the (generalized) EPP-feature on v^0 creates an additional specifier and is satisfied by movement of an XP to Spec-vP, thus the EPP drives the movement of the wh-phrase to the outer Spec-vP. The movement of the wh-phrase to the vP-edge is subsequently licensed by the substitution of the wh-phrase to Spec-CP.

The suggestion that successive-cyclic movement is dependent on the property of intermediate heads (i.e., an EPP-feature optionally assigned to phase heads) faces a number of problems. Consider first the two long-distance wh-questions in (6) and (7), cited from Bošković (2007:592):

(6)   [$_{CP}$ What$_i$ do you [$_{vP}$ t$_i'''$ think [$_{CP}$ t$_i''$ [$_{C'}$ that Mary [$_{vP}$ t$_i'$ bought t$_i$]]]]]?

(7)   *Who thinks [$_{CP}$ what$_i$ [$_{C'}$ that Mary [$_{vP}$ t$_i'$ bought t$_i$]]]?

In Chomsky's account (2000), v^0 and the complementizer *that* (by virtue of being phase heads) may be endowed with an EPP-feature in accordance with (5). In order to derive (6), v^0 and *that* must be assigned an EPP-feature to allow the wh-phrase *what* to move through the embedded Spec-vP, Spec-CP, and matrix Spec-vP, so that it can finally move to the matrix Spec-CP. If v^0 and *that* were not assigned an EPP-feature, the wh-phrase could not be attracted by the matrix C^0 due to the PIC. The wh-phrase would stay in-situ, which would produce an ungrammatical wh-question in English (ignoring echo-

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[2] The traditional EPP-feature was formulated as a property of the head T, which requires that a clause have a subject.

questions). In (7), the wh-phrase *what* cannot undergo movement to the matrix Spec-CP (due to the presence of another wh-phrase in the matrix clause, which checks the uninterpretable feature on the matrix C^0). Consequently, v^0 and the complementizer *that* cannot be assigned an EPP-feature. However, given (5), the possibility of having an EPP-feature on intermediate phase heads in (7) cannot be ruled out.[3]

Bošković (2007) draws attention to the fact that in Chomsky's (2000; 2001) system, Move instantiated by an EPP-feature is contingent on Agree. More specifically, movement of an XP to Spec-YP is preceded by a feature-checking relation between XP and Y. This automatically entails that every step of movement, including successive-cyclic movement, must involve feature checking (Bošković 2007:593). If, however, we posit that there is a feature-checking Agree between an intermediate head, for example v^0 and the wh-phrase in (2), this would suffice to check the [uWh] feature on the wh-phrase. The wh-phrase would no longer be active, and hence it would be unavailable for agreement with C^0 (inactive elements are invisible to Agree, Chomsky 2001:24), and the [uQ] feature on C^0 would remain unchecked. Since a single uninterpretable feature cannot be checked (valued) more than once, a vast number of features would have to take part in the derivation.

Chomsky (2001:34-35) assumes that (5) holds, i.e., intermediate phase heads (v^0, embedded C^0) can be assigned an EPP-feature provided that the assignment has an effect on the outcome (see also Chomsky 2000:109), for example to allow successive-cyclic A-bar movement. As pointed out by Felser (2004:569), the idea that EPP-features are present only to trigger successive cyclicity "appears to describe, rather than derive, successive-cyclic movement."

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[3] Bošković (2007) does not discuss movement through the vP phase for simplicity reasons.

Bošković (2007) points out that assigning an EPP-feature to intermediate phase heads to allow successive-cyclic A-bar movement faces a look-ahead problem. For example, in short-distance wh-question like (2) above, the phase head v^0 possesses an EPP-feature, which drives successive-cyclic movement of the wh-phrase to Spec-vP. This intermediate movement is subsequently licensed by wh-movement to Spec-CP. The problem here is that the wh-phrase must move in order to satisfy the requirement of the target C^0 before the latter enters the structure, which consequently results in a look-ahead problem.[4]

One more point deserves attention here. Chomsky (2000:108) himself acknowledges and refers to the potential problem of look-ahead in indirect feature-driven movement and notes that look-ahead is avoided if the PIC holds. The PIC, as formulated in (3) and (4), requires that an XP with an uninterpretable feature ([uF]) move out of the complement domain of a phase head, otherwise the derivation crashes at the phase level. Put differently, movement of an XP to the phase edge is triggered to avoid crash at the phase level, due to the [uF] on the XP. Extending this approach to wh-question formation, we would expect the wh-phrase to vacate its in-situ position to avoid crash at the phase level, due to the [uWh] feature that it has. This type of approach to successive cyclicity would raise, however, further questions with respect to

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[4] Bošković (2007:592; 594) points out that examples like (6) and (7) above have the same structure at the point of the derivation when the embedded C^0 is merged (see (i) here):

(i) [$_{CP}$ what$_i$ [$_{C'}$ that Mary bought t$_i$]]?

In order to derive (6), the complementizer *that* must be assigned an EPP-feature to allow successive-cyclic wh-movement (ignoring vP phase for simplicity). However, the fact whether successive-cyclic movement is needed or not will only be known when the structure is expanded further. If the structure in (i) is expanded as in (6), movement of the wh-phrase *what* through the embedded Spec-CP is necessary. However, if the structure in (i) is expanded as in (7), successive-cyclic movement will be disallowed, since the wh-phrase *what* will not undergo substitution to the matrix Spec-CP. Therefore, at the point when the embedded CP is built, the computational system must 'predict' whether successive-cyclic movement is needed (i.e., whether the wh-phrase will undergo further movement), and consequently, whether to assign an EPP-feature to the intermediate head or not. This, however, is not predictable until the structure is expanded further and the matrix clause is built. The look-ahead problem arises.

multiple wh-constructions in languages like English, which move one wh-phrase to the clause-initial position and leave the other wh-phrase(s) in situ. According to Chomsky (2000), wh-phrases carry a [uWh] feature. He does not address the nature of wh-phrases in more details. Hence, it follows that wh-elements should be the same cross-linguistically (cf. also Zavitnevich 2005:77). Assuming that both wh-phrases in (8) carry a [uWh] feature, the wh-phrase *what* would have to vacate its in-situ position in order to prevent the derivation from crashing at the vP level, owing to the fact that the domain of the phase head v^0 (VP) sent to Spell-Out would contain an element with an uninterpretable feature.[5] That would result in obligatory overt multiple wh-fronting in English and the sentence in (8) should be excluded, contrary to fact.

(8)   Who brought what?

Multiple wh-questions raise problems for Chomsky's (2000) theory of phases, but these constructions and their derivations are not addressed by Chomsky (2000; 2001). An alternative to Chomsky's (2000) approach is to assume that wh-phrases in English carry an uninterpretable feature optionally, as suggested by Bošković (2007). The problems, however, that arise from allowing the optionality of [uF] on wh-phrases in a single language will be discussed in the next section.

4.1.2   Goal-driven Wh-Movement (Bošković 2007)

Bošković (2007) develops an approach to successive-cyclic movement within the Phase Theory of Chomsky (2000; 2001). Unlike Chomsky (2000; 2001), for whom successive-cyclic movement is driven by an inadequacy of the intermediate head (see

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[5] Given the evaluation principle in (78) §1.3.2.1, the derivation may not crash at the vP level, but will crash eventually at the level of the higher phase, CP, since C would be unable to check the [uWh] feature if the wh-phrase *what* stayed in situ due to the PIC (cf. (3)-(4)).

Bošković 2007:610), Bošković (2007) puts forward a proposal according to which there is no feature checking in intermediate positions, and hence no need to postulate an EPP-feature on intermediate heads. Bošković (2007) proposes that it is always the requirement of the moving element (the goal) which has an uninterpretable feature ([uF]) that forces it to raise to the edge of the phase.[6] If the XP with an [uF] fails to raise from its base position, its [uF] remains unvalued, causing the derivation to crash at the phase level (crash being evaluated locally, Bošković 2007:618). Consider the abstract representations in (9), where YP and XP are phases:

(9)   a.   [$_{YP}$ Y...[... Z]]]
                          iK
                          uF

b.   [$_{YP}$ Z$_i$ [$_{YP}$ Y...[... t$_i$]]]]
                          iK
                          uF

c.   [$_{XP}$ X...[... [$_{YP}$ Z$_i$ [$_{YP}$ Y...[... t$_i$]]]]
                    ~~uK~~   iK
                    iF   uF

d.   [$_{XP}$ Z$_i$ X...[... [$_{YP}$ t$_i$′ [$_{YP}$ Y...[... t$_i$]]]]
                    iK
                    ~~uF~~ iF

As illustrated in (9a), the phrasal category Z possesses an uninterpretable feature ([uF]). Due to the presence of [uF] on Z and the fact that the [uF] checker is not present within YP, Z must raise from its base position to the edge of YP (see (9b)). If Z did not raise to Spec-YP, the derivation would crash at the phase level (when the complement of Y is

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[6] [uF], [iK] is the terminology used by Bošković (2007) for ease of reference and this terminology will be employed in the discussion to follow.

sent to Spell-Out). As Bošković (2007:610) points out, there is no feature checking between Z and Y^0 and movement of Z to Spec-YP is motivated independently of the EPP-feature on the intermediate head.[7] Subsequently, when the higher phase head X^0 (the licenser of [uF]) is merged into the structure (cf. (9c)), the features on Z and X^0 Agree. However, Z is not forced to raise to Spec-XP, since the matrix head X^0, as argued by Bošković (2007), also lacks the EPP property (more specifically, there is no EPP-feature either on intermediate or matrix phase heads in Bošković's proposal).

In order to ensure that Z bearing [uF] moves to Spec-XP, Bošković (2007:619) postulates the following dependency: an element that functions as a probe must possess an [uF], so conversely an element that has an [uF] automatically functions as a probe. This two-way correlation proposed by Bošković entails that Z in (9) functions as a probe by virtue of possessing an [uF]. Since a probe must c-command its goal (the element with a valued matching feature [iF]) (cf. Chomsky 2000; 2001), Z must raise to Spec-XP, the position from which it c-commands X^0 (the licenser of [uF]). Put differently, Agree requires the following configuration (10):

(10) Agree: α [uF]   β [iF]

Agree before movement values the [uK] on X^0 (cf. (9c)). Agree after movement (i.e., when Z moves to Spec-XP) values the [uF] on Z (cf. (9d)). Z cannot stay in the intermediate position, Spec-YP, since the [uF] checker is not present within YP. The [uF] on Z forces Z to raise to Spec-XP. According to Bošković's proposal, X^0 does not

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[7] Bošković (2007:617/8) also argues that Agree is not subject to the PIC (only Move is). Consequently, the [uF] on Z in the representation in (9) could be checked via a long-distance agreement (i.e., across the phase boundary), with Z remaining in situ. Only when X^0 is merged will the EPP-feature on X^0 require Z to move to Spec-XP. However, movement of Z from its in-situ position would be barred by the PIC (Move being subject to the PIC). In order to avoid the look-ahead problem (i.e., the fact that Z must raise before X^0 enters the structure in order to be accessible for movement to Spec-XP), Bošković proposes a correlation by which an element with an [uF] also functions as a probe. See the discussion in the text in the next paragraph for details of this correlation.

need to possess an EPP-feature to attract Z to Spec-XP. Thereby, the EPP on the matrix head is dispensed with.

With respect to the wh-questions cross-linguistically, Bošković (2007:631) proposes that in wh-in-situ languages (e.g. Chinese, Japanese), the [F] feature on the wh-phrases is interpretable ([iF]), hence wh-elements always remain in their base positions. The target (C^0) carries a corresponding feature F which is uninterpretable (uniformly in all languages, by assumption), and is valued via long-distance Agree with the in-situ wh-phrase (cf. (11)). Assuming, as Bošković (2007) does i) that Agree is not subject to the PIC (i.e., Agree can occur across a phase boundary),[8] and ii) that the Activation Condition (which as formulated in Chomsky (2000) requires that an element have an [uF] to be able to undergo Move and Agree) holds only for Move but not for Agree, the Agree relation between [uF] bearing C^0 and the in-situ wh-phrase carrying [iF] is established. Put differently, the in-situ wh-phrase does not need to possess an uninterpretable feature to come into Agree with C^0. Under these assumptions Move is driven by the moving-element, whereas Agree is target-driven (Bošković 2007).

(11) $[_{CP}$ $C_{[uF]}$ $[_{TP}$ …$Wh_{[iF]}$ $]]$
             $\llcorner$___ Agree ___$\uparrow$
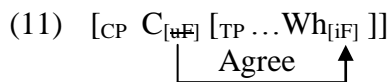
In multiple wh-fronting languages like Bulgarian, which obligatorily front all wh-phrases to the clause-initial position, Bošković (2007) assumes that every wh-phrase possesses an [uF] (specified as [uK] in (12)), which force them to raise to the position c-commanding the checker, i.e., to (multiple) Spec-CP. Agree before movement checks

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[8] See Bošković (2007) for extensive arguments as to why Agree is not subject to the PIC (contra Chomsky 2000; 2001) (only Move is constrained by the PIC).

the uninterpretable feature ([uF]) on C^0 (cf. (12a)). Agree after movement checks the uninterpretable feature ([uK]) on the wh-phrases (cf. (12b)).[9]

(12) a. [$_{CP}$ C$_{[uF]}$ [$_{TP}$ [$_{vP}$ ... Wh$_{i[iF; uK]}$ Wh$_{j[iF; uK]}$]]

   b. [$_{CP}$ Wh$_{i[uK]}$ Wh$_{j[uK]}$ C$_{[iK]}$ [$_{TP}$ [$_{vP}$ ... t$_i$ t$_j$]]]

In languages like English, which front one wh-phrase in a multiple wh-question, and leave the second wh-phrase in situ, Bošković (2007) assumes that wh-phrases carry an [uF] optionally (and C^0 does not allow multiple specifiers, unlike in multiple wh-fronting languages).

The optionality of [uF] on wh-phrases, as proposed by Bošković (2007), is problematic for empirical and theoretical reasons. First, as independently observed by Simpson (2000:99), it appears theoretically implausible that "a morphological property which characterises and identifies a particular class of elements (notably wh-phrases here) is only present on a single member of that group when more than one of these is present in a single sentence."

Consider the examples of multiple wh-questions in English in (13) a-b:

(13) a. Who brought what?

   b. *What did who bring?

In accordance with Bošković's (2007) proposal, in order to derive (13a), we need to assume that the wh-phrase *who* carries an [uF], whereas the wh-phrase *what* lacks an [uF] (if *what* had an [uF], this wh-phrase would function as a probe and it would have to

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[9] The skeletal structure in (12) is based on the discussion in Bošković (2007:630-631). The author assumes that wh-phrases in Bulgarian carry an [uK]/[uF] and C^0 has a corresponding uninterpretable [F] feature. The question of how two corresponding uninterpretable features may come into Agree is not explicitly addressed by Bošković (see Pesetsky & Torrego (2007) who discuss such a possibility). For ease of exposition, I use two different notations in (12), [uK] and [uF], instead of just one, [uF].

raise to Spec-CP to c-command the licenser of [uF] (C^0), under the Agree mechanism in (10)). However, given the optionality of [uF] on wh-phrases, as proposed by Bošković (2007), we cannot exclude the possibility that the [uF] is present on *what* instead of *who*, which then generates an ungrammatical sentence, as in (13b). Adopting Bošković's (2007) proposal of feature optionality, we face a problem of 'over-generation' of ungrammatical structures, i.e., there is no mechanism to exclude illicit derivations like (13b) by the computational system.

Furthermore, the optionality of [uF] on wh-phrases also faces a look-ahead problem. Consider the two following wh-questions in (14a) and (14b).

(14) a. What did you bring?

 b. Who brought what?

The wh-phrase *what* undergoes movement in (14a), whereas it remains in the base position in (14b). Accordingly, in the derivation of (14a), *what* must possess an [uF], while in the derivation of (14b), *what* must lack an [uF]. As pointed out by Grebenyova (2006:47), "[t]he distribution of two different lexical items for *what* depends on the presence of another wh-phrase in the structure, which can be introduced at a much later point in the derivation. [...] this creates a look-ahead problem."

Furthermore, Polish multiple wh-questions constitute counterexamples for the proposal advocated in Bošković (2007). Consider the multiple wh-questions from Polish in (15) a-c (cf. (74) a-c §1.2):

(15) a. **Co** Ewa$_{NOM}$ **komu** obiecała?

     what$_{ACC}$ Eva   whom$_{DAT}$ promised

  b. **Co**   **komu**   Ewa   obiecała?

     what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised

  c. ****Co**   Ewa   obiecała **komu**?

     what$_{ACC}$ Eva$_{NOM}$ promised whom$_{DAT}$

   'What did Eva promise to whom?'

The contrast between (15) a-b, on the one hand, and (15c), on the other, illustrates that both wh-phrases raise obligatorily from their base positions, which, under Bošković's (2007) proposal, indicates that the wh-phrases must possess an [uF]. The second wh-phrase, *komu*, does not need to raise to the CP-area, but instead it can be stranded in the pre-verbal position (the vP-edge), as in (15a). If v^0, instead of Int^0 (recall from chapter 3 that the Agree relation holds between the wh-phrase and Int^0 in Polish) was the licenser of [uF] on wh-phrases in Polish, none of the wh-phrases would raise to the clause-initial position (the CP-area), but instead they would all stay in the pre-verbal position (such a sentence would be ungrammatical in Polish). In line with Bošković's (2007) proposal, we need to postulate that the wh-phrase *co* in (15) a-b raises to Spec-IntP (clause-initial position) to c-command the checker (Int^0) and to have its [uF] checked against the corresponding feature on Int^0. The same movement is expected for the second wh-phrase *komu*, i.e., the wh-phrase *komu* bearing an [uF] should raise to the CP-area, the position from which it would c-command the licenser of [uF]. This does not happen obligatorily, as the grammaticality of (15a) implies. The theory proposed by Bošković (2007) does not allow a wh-phrase to be stranded in the pre-verbal (intermediate) position in any language, in which the licenser of wh-fronting is located in the CP-area.

Consequently, examples like (15a) should be excluded (ungrammatical) under Bošković's (2007) account, contrary to fact.

To summarize, Bošković's (2007) proposal cannot account for the grammaticality of the wh-question in (15a) in a language like Polish. Similarly, Chomsky's (2000; 2001) approach to wh-question formation faces a number of problems, as discussed in §4.1.1 (see also §1.3.2.2 which addresses the problems of Chomsky's (2005; 2006) approach to wh-movement in terms of the Edge-feature). The following questions remain: i) how are wh-questions derived in languages like Polish and English; ii) what accounts for the contrast in surface structure representations between Polish and English (cf. (74) vs. (73) in §1.2, repeated above as (15) and below as (16), respectively); more specifically, what drives the movement of the WH_2 to the pre-verbal position in Polish (cf. (15a)), unlike in English (cf. (16)), and allows the wh-phrase to stay in the pre-verbal position in Polish.

(16)   Who bought what?

The last question is of special importance. Chomsky (2004:123) notes that the XP raised to the outer Spec-vP cannot be stranded in that position, otherwise Agree between the external argument (the subject) located in the inner Spec-vP and T^0 would not be possible (the XP would be an intervener).[10] As illustrated in (15a), Polish allows a wh-phrase to be pronounced in the pre-verbal position (outer Spec-vP), contra Chomsky's (2004) predictions. In what follows, the aforementioned questions will be addressed. The next section will offer an alternative account of wh-question formation within the Phase Theory of Chomsky (2000; 2001), comparing English (a single wh-

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[10] One could claim that the XP does not intervene between T^0 and the external argument given the notion of *equidistance* as proposed by Chomsky (1995:356). It should be highlighted however that, in more recent works, Chomsky (2001) dispenses with the concept of *equidistance*. A detailed discussion on intervention effects and equidistance will be presented in chapter 5.

fronting language) with Polish (a multiple wh-fronting language). The proposal developed here will neither adopt an EPP-feature as a trigger for movement, nor allow for optionality of uninterpretable features on wh-phrases in a single language. The question about the lack of wh-intervention effects, as raised with respect to (15a), as well as the position the wh-phrases can occupy with respect to each other in multiple wh-questions (Superiority effects) both in Polish and English will be postponed till the next chapter.

4.2   Wh-question Formation: The Proposal

4.2.1   The Y-Model

According to the minimalist T/Y-Model of the grammar (Chomsky 1995),[11] Spell-Out occurs once during the syntactic computation. At the point of Spell-Out, the derivation branches into two separate derivational parts: PF and LF, as illustrated in (17). The branch proceeding to PF contains elements which are relevant to the interpretation only at PF, whereas the branch proceeding to LF contains elements relevant only to the interpretation at LF.

(17) The Minimalist T/Y-Model (Chomsky 1995)

Lexicon

Spell-Out

PF   LF

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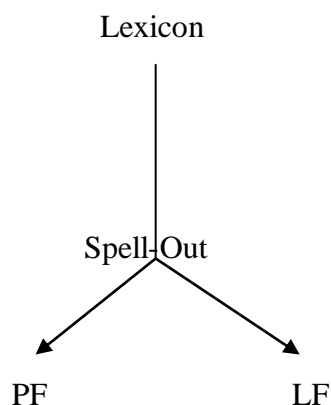
[11] The standard inverted Y model of the grammar was put forward by Chomsky & Lasnik (1977).

In the Y-Model of the grammar, the distinction between overt and covert operations is based on the timing of Spell-Out: overt syntactic operations precede, while covert ones occur after Spell-Out (covert movement takes place on the branch proceeding to LF). Hence, under the Y-model, covert movement obligatorily follows overt movement. Operations taking place in the covert component have semantic and syntactic consequences, however no phonological reflex.

4.2.2   The Multiple Spell-Out Model

According to Chomsky's (2000 *et seq.*) theory of phases, Spell-Out occurs more than once in the derivation (see also Uriagereka 1999 and Nissenbaum 2000). According to Phase Theory, Spell-Out is cyclic and occurs upon the completion of every phase: (transitive) vP and CP (Chomsky 2000 *et seq.*). Put differently, vP and CP are points at which a syntactic structure is transferred to PF (receiving a phonetic interpretation) and LF (receiving a semantic interpretation). Once a phase is completed, the complement of the phase head becomes opaque to further syntactic computation as it is transferred to the interfaces. The multiple Spell-Out model is illustrated in (18).

(18) Multiple Spell-Out model according to Chomsky (2000 *et seq.*)

CP   **PF Spell-Out**; **LF Transfer**

C'

C   TP ⟶ spelled-out domain

T'

T   vP   **PF Spell-Out**; **LF Transfer**

v'

v   VP ⟶ spelled-out domain

V'

V   …
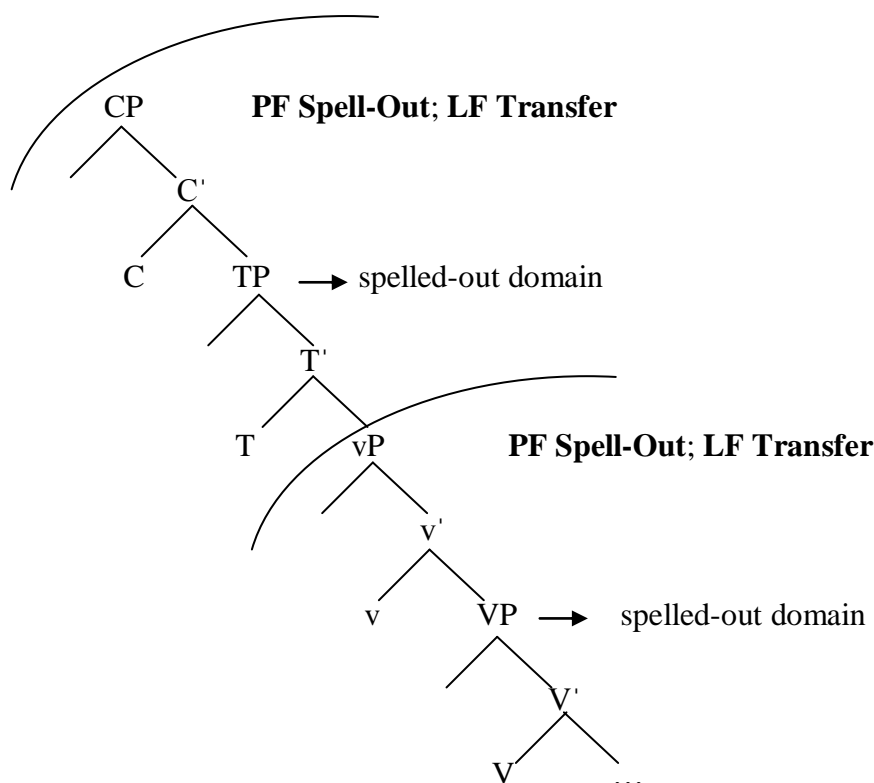
The introduction of multiple/cyclic Spell-Out eliminates the distinction between overt and covert cycles (i.e., pre-Spell-Out vs. post-Spell-Out cycle, cf. Chomsky 1995) and results in a single syntactic cycle. An important consequence of the multiple Spell-Out model, as pointed out by Yoon (2001:189), is that overt and covert movements can intersperse, and so a covert movement can precede an overt movement (this state of affairs was not possible under the Y-model).

4.2.3 (Non)-Cyclic PF Spell-Out

I adopt the multiple Spell-Out model and follow the standard assumption (Chomsky 2000 *et seq.*) that transitive vP and CP are phases,[12] i.e., points at which a syntactic structure is sent to the interfaces. Once a phase is completed, the complement of the

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[12] There is a suggestion in Chomsky (2005:10) that DP may also be a phase.

phase head becomes opaque to further syntactic operations, while the edge of a phase (which includes the head with all specifiers and adjuncts) remains accessible to the syntactic computation in the next phase.

Whereas for Chomsky (as illustrated in (18)), a completed syntactic object is sent both to PF and LF,[13] I adopt a modified version of Phase Theory in which only PF is accessed cyclically, whereas transfer to LF occurs once the derivation is completed and reaches the root of the structure, as in Cecchetto (2003; 2004), who follows Nissenbaum (2000). This particular version of Phase Theory entails that in the process of constructing/deriving a sentence, a completed syntactic object is spelled out to one interface (PF) only.[14]

I assume that transfer to LF takes place upon convergence (i.e., once the derivation is completed) cross-linguistically. However, I propose that languages differ as to whether Spell-Out applies multiple times or only once during the derivation. The assumption that Transfer to LF is uniform across languages, while PF Spell-Out may vary across languages, is in accordance with Chomsky's (2006:13) speculations about the 'primacy' of the semantic interface (LF) over PF in language design. It should also be noted that the parameterization of PF Spell-Out in natural languages is not an innovative claim. In early Minimalism (Chomsky 1993; 1995) the rule Spell-Out could apply at any point in the derivation to LF subject to satisfying the conditions indirectly imposed by the PF interface. It was assumed then that "[l]angauges differ with resepct

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[13] Cf. the discussion in chapter 1, §1.3.2.1, fn. 25.

[14] It should be noted that since the advent of Phase Theory (Chomsky 2000 *et seq*.), various modifications have been postulated. For example, the claim that transfers to PF and LF may not happen at the same point during the derivation has been put forward by Marušič (2005). Marušič (2005) argues for a model of non-simultaneous phases, according to which a completed syntactic object may be transferred to a single interface, either to PF or to LF. Marušič (2005:10) points out that phases remain parallel, "it's just that in some cases they don't Spell-Out to both interfaces simultaneously."

to where Spell-Out applies in the course of the derivation to LF" (Chomsky 1995:191) (where Spell-Out referred to the point of sending a syntactic structure to PF).

I follow Megerdoomian (2003) in assuming that nodes spelled-out to PF can be the language parameter causing mismatches in surface structure representations.[15] More specifically, I argue that what differentiates surface patterns of Polish and English multiple wh-questions is the fact that Spell-Out to PF is postponed in English. The proposal is that in Polish, Spell-Out to PF is cyclic and occurs upon the completion of every phase, vP and CP, whereas in English, Spell-Out to PF is postponed till the derivation is completed, i.e., it takes place at the (matrix) CP level. Since in this thesis the split-CP is adopted (see chapter 3), the completed structure will undergo Spell-Out at ForceP.

The question that arises is why Polish and English should differ in terms of Spell-Out to PF. I assume that parameters, apart from being assigned to the properties of lexical items, can also follow from system settings, i.e., it is the settings of Universal Grammar that provide the option of either having multiple Spell-Out (as in Polish) or single Spell-Out (as in English). It should be highlighted that the idea that the size of the wh-checking domain is subject to a parametric variation to which the cross-linguistic differences in the distribution of wh-elements are attributed has been put forward independently in Simpson (2003). Furthermore, Simpson argues that the domain in which [Wh] features are checked in English is an entire sentence (2003:103). In a similar vein, the proposal here postulates that the cross-linguistic differences in surface structure representations of multiple wh-questions between Polish and English result

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[15] Megerdoomian (2003) argues for a parameterization of PF Spell-Out across languages (Transfer to LF being universal but applying cyclically), based on causative constructions in Eastern Armenian and Japanese.

from different sizes of the wh-checking domain, the latter determined by the application of Spell-Out.

The proposal put forward here relies on a feature-checking mechanism, as formulated by Chomsky (2000; 2001), with some modifications, as discussed in the next section.

4.2.4 Features

Chomsky (2001) assumes that there is a link between feature-interpretability and feature-valuation. According to Chomsky, interpretable features (e.g. φ-features on a nominal) enter the derivation valued, whereas uninterpretable features (e.g. φ-features on T^0, the Case feature on nouns) enter the derivation without values. Unvalued features trigger Agree, the syntactic operation which serves to assign values.[16] Agree holds between α (probe) and β (goal), where α has an uninterpretable (hence unvalued) feature and β has a corresponding interpretable (valued) feature. Features valued in the course of the derivation remain uninterpretable at LF (see Chomsky 2001:5). They must be removed from narrow syntax to allow LF-convergence. However, they must remain in the derivation until the phase level, since they may have a phonetic reflex (all features remain accessible to PF). The Spell-Out operation, which applies at the phase level, removes LF-uninterpretable features from narrow syntax. Since Spell-Out must remove only the syntactically valued features (i.e., LF-uninterpretable), and leave the features that entered the derivation valued (i.e., LF-interpretable), Spell-Out must be strictly cyclic.

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[16] The unvalued Case feature on a nominal does not induce Agree (Chomsky 2000:127). Case is checked (valued) as a reflex of φ-feature agreement.

Some problems have been identified with respect to Chomsky's (2000; 2001) mechanism of Spell-Out. Spell-Out can detect a valued/unvalued distinction, however after the application of Agree (the operation of assigning values/checking), this distinction disappears. As pointed out by Boeckx & Grohmann (2007:208), once a feature has been valued, Spell-Out cannot distinguish between a valued and an unvalued instance of the feature. For example, the φ-features of T^0 and the φ-features of a nominal have the same status after valuation (Epstein & Seely 2002:72). The crucial difference is that the former features remain semantically uninterpretable, while the latter are interpretable at LF. Spell-Out, however, cannot detect which feature is LF-interpretable and which one is not. Although Spell-Out is cyclic and may apply immediately after valuation, the fact is that at Spell-Out all features are valued, and hence it cannot be determined which features are uninterpretable (and so should be eliminated) and which are interpretable (and hence should remain in the derivation) (Legate 2002). Consequently, it follows that Spell-Out, which has no access to the interfaces, applies 'blindly' in transferring the relevant types of features to the interfaces, or alternatively it will have to reconstruct the derivation (the latter assumed by Chomsky 2001:12).

One way to avoid the problems that the uninterpretable feature deletion creates for Spell-Out in Chomsky's (2000; 2001) framework is to assume, along with Adger & Ramchand (2005), that there are no inherently uninterpretable features (cf. also Svenonius (2002) and Pesetsky & Torrego (2001; 2007)). Adger & Ramchand (2005:171) assume that features are either interpretable at the interface or they enter the derivation as uninterpretable (unvalued) and by being assigned a value in the course of the derivation they become interpretable. As pointed out by Hicks (2006:62), in such a system the role of the unvalued feature is to become a legitimate interface object,

instead of simply get eliminated. Whereas for Adger & Ramchand (2005), all features must be semantically motivated (they must be LF-interpretable), Hicks (2006) proposes that feature-interpretability should be relativised to the particular interface under consideration. More specifically, Hicks proposes that features should be classified as either morphosyntactic or semanticosyntactic, the former being relevant/interpretable only to PF, while the latter only to LF, both being able to trigger syntactic operations.

Following Adger & Ramchand (2005) and Hicks (2006), I assume that once valued (checked), a feature becomes interpretable, contra Chomsky (2000; 2001). As proposed by Hicks (2006), I assume that feature-interpretability subsumes both semantic and phonological interpretation. However, I diverge from Hicks's (2006) proposal in that I do not adopt the feature relativisation to the particular interface;[17] instead, I assume that once valued, the feature becomes interpretable both to PF and LF, while the presence of an uninterpretable feature at the interfaces (PF and/or LF) will immediately cause the derivation to crash. Features without values cannot be interpreted. I assume that features are assigned values (checked) under the syntactic operation Agree (Chomsky 2000; 2001).[18]

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[17] The classification of features as morphosyntactic or semanticosyntactic raises further questions about what the criteria for feature classification should be. It seems reasonable to assume that if a feature has a morphological reflex, it should be categorized as morphosyntactic. For example, the [Q] feature would fall under the morphosyntactic category given that in languages which possess Q-particles (for example Japanese -ka) it is morphologically realized (one could claim that [Q] is not morphologically realized in Japanese as the particle –ka does not possess a [Q] element in its morphological form; however, the same should then apply to the [Wh] feature on wh-phrases in languages other than English (e.g Slavic languages), which do not have [Wh] in their morphological properties, i.e., either we should give a different name to the [Wh] feature depending on the morphological shape of the wh-phrase in a given language, or we should not classify the [Wh] feature as a morphosyntactic feature (contra Chomsky 1995) in languages other than English). On the other hand, the [Q] feature carried by a wh-phrase, which for Chomsky (2000) is interpretable, determines its semantics by marking it as interrogative (Zavitnevich 2005:77), and on that basis the [Q] feature could be classified as semanticosyntactic. Due to the lack of clarity regarding the criteria of feature division into morphosyntactic and semanticosyntactic, the feature-split proposed by Hicks (2006) will not be adopted in this work.
[18] In what follows, the following notation will be used: [uF] to refer to an unvalued (i.e., uninterpretable) feature; once an unvalued feature is assigned value (checked), illustrated by [uF:val], it becomes interpretable, and will be subsequently marked as [iF].

The approach to features taken in this work raises certain questions. Assuming that once valued, a feature becomes interpretable to the interfaces appears to be in opposition to the minimalist assumption (Chomsky 1995 *et seq.*) that there exist LF-uninterpretable features (features that do not contribute to semantic interpretation) like Case features on nouns/DPs or φ-features on verbs. However, it has been argued that Case markers can bear a semantic interpretation such as for example specificity (de Swart (2007) and references therein; see also Adger 1994), and verbal agreement features can also receive/contribute to semantic interpretation (Dowty & Jacobson 1988; see also Wechsler & Hahm (2011) with respect to a number feature on verbs). Drawing on the aforementioned works, I support the idea that Case features on a DP and φ-features on verbs can contribute to semantic interpretation, hence they can access the LF interface.[19]

On the approach to features adopted in this work (similarly to the relativisation of features proposed by Hicks 2006), according to which a feature becomes interpretable once valued/checked, we eliminate the mechanism of feature deletion upon Spell-Out. Furthermore, Hicks (2006:62) argues that Spell-Out as an operation of feature deletion and transfer of a syntactic object to the interfaces can be dispensed with, and he proposes that, once a phase is completed, the interfaces (PF and LF) inspect the derivation and read off the features (information) which are interpretable to them. I will follow Hicks (2006) in assuming that once a phase is completed, the interfaces inspect

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[19] Alternatively, one can argue, following Svenonius (2002) and Pesetsky & Torrego (2007) that an uninterpretable feature like Case is only an uninterpretable counterpart of an otherwise interpretable feature. For example, accusative case on a nominal is an uninterpretable manifestation of interpretable properties of the verb (Svenonius 2002). Put differently, there are no entirely uninterpretable features. Pesetsky & Torrego (2007), drawing on Brody's (1997) Radical Interpretability, propose that every uninterpretable feature must have an interpretable counterpart, and the two come into Agree. After the application of Agree, the interpretable and uninterpretable counterparts are two instances of a single feature, in two syntactic locations. What is valued and deleted under Agree is only an uninterpretable instance of the feature, which has a corresponding interpretable instance in another syntactic location. Again, there are no purely uninterpretable features, only uninterpretable instances of features, which receive a semantic interpretation in another syntactic location.

the derivation.[20] In what follows, the term *Spell-Out* will be used to refer to the point of the derivation when the PF interface inspects the derivation, whereas the term *Transfer* will be utilized to refer to the direct inspection of the derivation by LF (cf. also chapter 1, §1.3.2.1, fn. 26).

With respect to the features involved in wh-question formation, I assume that wh-phrases carry two sets of features (see Zeijlstra 2010): an interpretable instance of [Wh] (henceforth [iWh]) and an uninterpretable instance of [Q] ([uQ]), while the interrogative C^0 carries an uninterpretable [Wh] feature ([uWh]) and an interpretbale [Q] feature ([iQ]). Since in this work the Split-CP is adopted both for Polish and English (see chapter 3), and wh-phrases move to Spec-IntP (apart from embedded clauses in English, see §3.2.2), Int^0 is the locus of the [uWh; iQ] features. The feature specifications for Int^0 and wh-phrases are given in (19).

(19) Int^0:   [uWh; iQ]
       wh-phrase: [iWh; uQ]

I propose that in wh-fronting languages, both in a single wh-fronting language like English and a multiple wh-fronting language like Polish, wh-phrases carry the [uQ] feature uniformly, hence all wh-phrases in English and Polish require feature checking.

4.2.5   The Mechanism of Agreement and Dislocation

Chomsky (2000; 2001) postulates that the displacement property in natural languages is motivated by an EPP-feature, optionally assigned to phase heads. However, given the

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[20] Assuming that PF and LF inspect the derivation and read off the relevant features also allows us to overcome the potential problems addressed earlier in this section, which have been identified with respect to the proposed approach to features. For example, when LF inspects the derivation, it will not read off the features which are semantically inert (like Case on a DP, as argued by Chomsky 1995 *et seq.*), only the features that it can interpret.

problems that the assignment of an EPP-feature creates (as discussed in §4.1.1), and since the existence of EPP-features on phase heads is merely a stipulation, which should be avoided assuming that the Strong Minimalist Thesis (20) holds, I will explore a different mechanism as a trigger for movement.

(20) *Strong Minimalist Thesis* (Chomsky 2000:96)

   Language is an optimal solution to legibility conditions.

Let us first recall from §4.1.2 the mechanism of Agree and Move as assumed in Bošković (2007). For Bošković, Agree is established once the probe (Int^0) with a [uF] feature c-commands the goal (a wh-phrase) with a matching [iF]. According to Bošković (2007), Agree requires the configuration in (21), where the " > " symbol stands for c-command:

(21) Agree: [uF] > [iF]

Consider the feature specification in (22):

(22) Int^0 wh-phrase
      [uF]   [iF]
      [iK]   [uK]

Valuation of [uF] on Int^0 takes place under Agree when Int^0 c-commands the wh-phrase (in accordance with (21)). However, the wh-phrase by virtue of possessing the [uK] feature also acts as a probe, and in order to have its [uK] feature checked, the wh-phrase must raise to a position where it c-commands Int^0. Agree established before the wh-phrase moves values the [uF] feature on Int^0, whereas Agree after the movement of the wh-phrase to Spec-IntP values the [uK] feature on the wh-phrase.

As argued by Zeijlstra (2010), the version of Agree in (21) is empirically problematic. Zeijlstra (2010) cites data from languages which exhibit Multiple Agree and Concord phenomena, and illustrates that both of these phenomena require a strict [iF] > [uF] version of Agree. In order to account for Concord and Multiple Agree facts, Zeijlstra (2010:14) modifies Bošković's (2007) proposal and argues that for Agree and Move, the correlation in (23) is valid.

(23) Agree: α [iF] > β [uF]

   Move: α [uF] > β [iF]

Translating α and β into Int^0 and a wh-phrase with relevant features (see (19)), we obtain (24):

(24) Agree: Int^0 [iQ] > wh-phrase [uQ]

   Move: Int^0 [uWh] > wh-phrase [iWh]

According to (24), in order to establish Agree, a wh-phrase carrying the [uQ] feature must be c-commanded by Int^0, which bears [iQ]; Move, on the other hand, takes place when Int^0 equipped with the [uWh] feature finds a wh-phrase carrying [iWh] in its c-command domain and attracts the latter to Spec-IntP to have the [uWh] feature checked under Agree. In this system (as in Bošković 2007), Agree and Move are sister functions (i.e., Move is no longer contingent on Agree), contra Chomsky (2000; 2001).

   In this work, I adopt the mechanism of Agree and Move, as specified in (23)-(24). Furthermore, *multiple Agree* will be assumed (Hiraiwa 2001), according to which a syntactic head can establish Agree relations with more than one XP simultaneously.[21]

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[21] According to Ura (2000), features can bear [+multiple] or [-multiple] specification and either probe or goal can be specified as [+multiple].

4.2.6   Derivation of Matrix Wh-questions

4.2.6.1 Single Wh-questions in Polish

The derivation of the wh-question in (25) is illustrated in (26). For ease of exposition, only ForceP and IntP from the split-CP (cf. (21) §3.1.2) are included.[22]

(25) Co   ona   kupiła?

   what$_{ACC}$ she$_{NOM}$ bought

   'What did she buy?'

(26) ForceP   → PF Spell-Out; LF-Transfer

```
            ForceP
           /      \
                  IntP
                 /    \
        co[iWh; iQ]    Int'
                      /    \
          Int[uWh:val; iQ]  TP
          Step4-Agree      /   \
                         Sub    T'
                               /  \
                              T    vP      → PF Spell-Out
                                  /   \
                   <co[iWh; uQ:val]>   vP
                   Step2-Agree        /   \
                                  <Sub>    v'
                                          /  \
                                       v+V    VP
                                             /   \
                                            V    <co[iWh; uQ]>
                                              Step1-Move
```

Step3-Move

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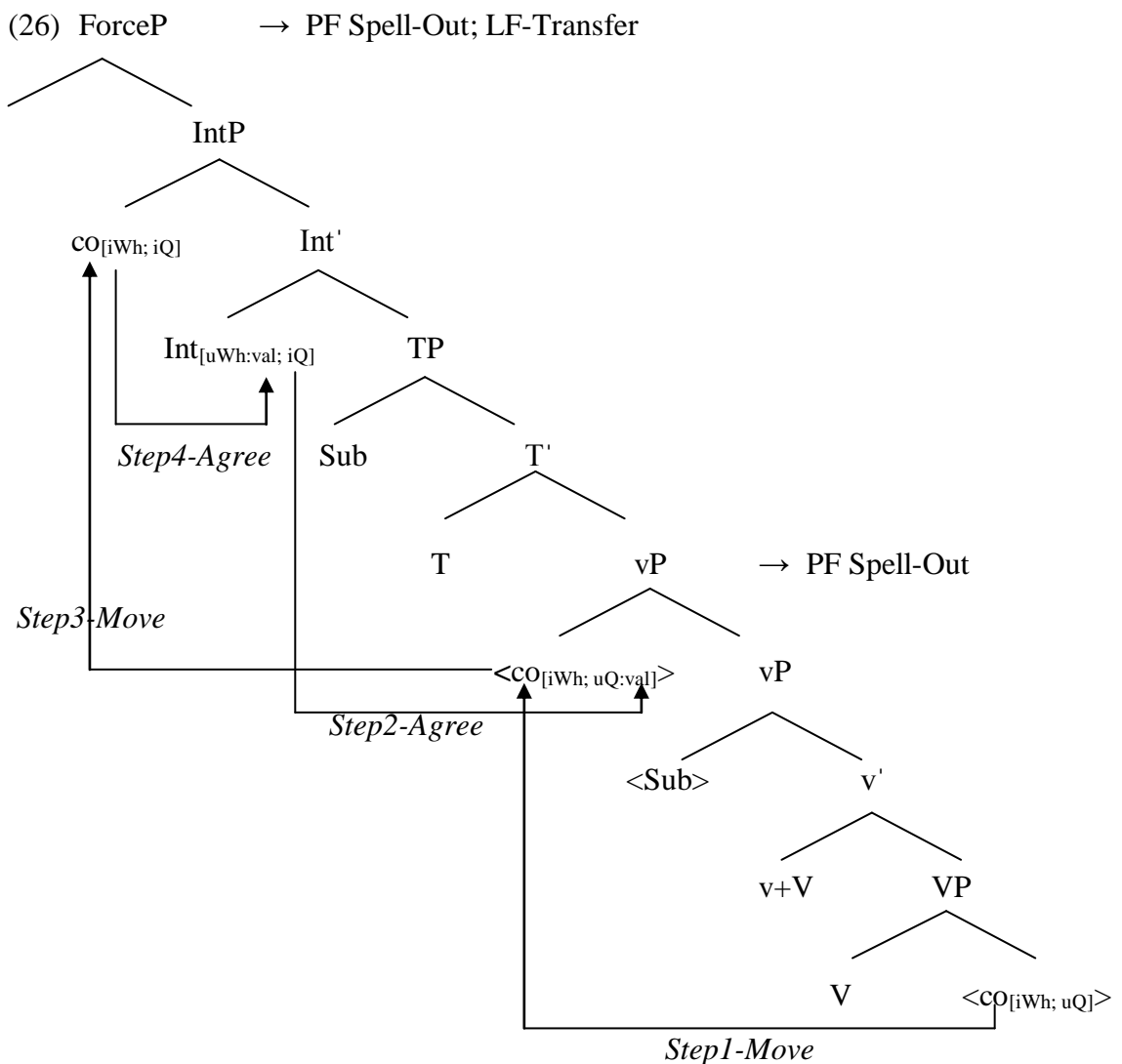
[22] Adopting Rizzi's (2001) split-CP, I assume that once the whole set of projections within the C system (the highest being ForceP) is introduced, the structure is sent to the interface(s). I.e., in the derivation of (25), depicted in (26), as well as the examples to follow, the assumption is that the structure is sent to PF and LF upon completion of the highest projection in the left periphery, i.e., ForceP. It is due to space limits and for ease of exposition that the whole array of projections from the C system is not included.

The derivation proceeds as follows: the wh-phrase *co* originates as a complement of the verb and the subject DP is merged in Spec-vP. The wh-phrase *co* raises from its base position to the vP-edge (Step 1). Upon completion of vP, Spell-Out takes place, i.e., the complement of v^0, VP, is sent to PF. Since the wh-phrase embedded in the VP contains an uninterpretable feature ([uQ]), which v^0 cannot check due to the lack of a relevant matching feature, the wh-phrase is forced to raise out of VP to the vP-edge (the position where it is available for further computation) in order to prevent the derivation from crashing at the vP level. It is both the application of Spell-Out at the vP level and the [uQ] feature of the wh-phrase that force the movement of the wh-phrase to the vP-edge (cf. Bošković 2007). The wh-phrase leaves a copy in its original position, as indicated by the " $<>$ " symbol.[23]

In the next higher phase, when Int^0 is merged, it possesses a valued (interpretable) instance of a [Q] feature. Agree is established between Int^0 bearing [iQ] and the [uQ] on the wh-phrase located in the (outer) Spec-vP (Step 2), as a result of which the [uQ] feature on the wh-phrase is checked.[24] Agree obtains since the [iQ]-bearing Int^0 c-commands the [uQ]-bearing wh-phrase, in accordance with (24).

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[23] Assuming that copies are identical elements and include the same set of features (cf. Chomsky 2004:111), VP sent to Spell-Out will contain a copy of a wh-phrase with a [uWh] feature, an issue pointed out to me. This is actually a problem for Phase Theory in general (as noted in Atkinson (2000) and Felser (2004), among others). For example, in a long-distance wh-raising construction, the wh-phrase moves through the edge of each intervening phase (vP and CP), according to Chomsky (2000), leaving a copy in each of these positions, before it reaches the final landing site, matrix Spec-CP. However, upon completion of each phase (alternatively upon completion of the next higher phase, Chomsky 2001), the complement of the phase head, which is sent to the interfaces, contains a copy of the wh-element, which bears the [uWh] feature. The derivation is predicted to crash. To overcome this problem, one can assume that copies sent to PF will not cause the derivation to crash when they are not phonetically realised (see Felser 2004:570). In line with the assumption that pronunciation is established only for heads of trivial chains but not for lower elements in non-trivial chains (Bošković 2003:21), we can postulate that only the former but not the latter would cause the derivation to crash when they are sent to PF. Furthermore, as observed by Chomsky (2004:119), Spell-Out does not apply to a trace (copy).

[24] The Subject DP raises from Spec-vP to Spec-TP. The question as to why the wh-phrase in the outer Spec-vP does not block Agree between T^0 and the subject DP located in the inner Spec-vP will be argued to follow from Chomsky's (1995) MLC and a definition of Closeness defined both structurally and in terms of the Activation Condition. For details of the discussion see chapter 5, §5.3)

The [uWh] feature of Int^0 also requires checking. This feature cannot be checked along with the [uQ] feature, since the element with the matching [iWh] (i.e., the wh-phrase) does not c-command Int^0. In order to check the [uWh] feature on Int^0, the [iWh]-bearing wh-phrase must raise to Spec-IntP, the position from which it c-commands Int^0. Put differently, the [uWh] feature on Int^0 forces the wh-phrase to raise to Spec-IntP (Step 3). Once in Spec-IntP, the wh-phrase c-commands Int^0; Agree can be established and the [uWh] feature on the latter is checked under Agree (Step 4). With all uninterpretable features having been rendered interpretable, the whole structure undergoes (PF) Spell-Out and (LF) Transfer. The head of the chain (i.e., the highest copy of the wh-phrase which is located in Spec-IntP) is pronounced, giving (25).

Notice that the Agree relation established after movement of the wh-phrase to Spec-IntP appears to violate Chomsky's (2000) Activation Condition, since the [uQ] feature of the wh-phrase has already been valued (and rendered interpretable);[25] hence, the wh-phrase does not possess any uninterpretable feature when it agrees and checks the [uWh] on Int^0 (Step 4, (26)). Following Bošković (2007) and Bhatt (2005:803), among others, I assume that Agree, unlike Move, does not require the Activation Condition.[26]

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[25] For Chomsky (2000 *et seq.*), an element is inactive once all of its uninterpretable features are checked. Then the element is *frozen* in place.

[26] In fact a wh-phrase becomes inactive once its [uQ] feature is checked. In order to be available for attraction by [uWh], I assume that checking of the [uQ] feature(s) and attraction by [uWh] on Int^0 happen simultaneously.

Another way of maintaining that a wh-element remains active when it moves to check the [uWh] feature on Int^0 is to assume that goal β becomes inactive only after Agree established between probe α and goal β has checked all uninterpretable features both on α and β which directly participated in Agree. We can subsume the above generalization under the Inactivation Principle, which we formulate in (i).

(i) *The Inactivation Principle*
   A) β is inactive iff all uninterpretable features ([uFs]) directly participating in Agree between probe α and goal β are checked both for α and β; and
   B) An [uF] on α directly participates in Agree with β if β has a matching [iF].

In the wh-question in (26), both [uQ] and [uWh] directly participate in Agree (since they have corresponding [iQ] and [iWh] features), which holds between Int^0 and the wh-phrase *co*. In line with (i),

4.2.6.2 Single Wh-questions in English

Consider now the example (27) from English, and its derivation illustrated in (28). As in the Polish example above, only ForceP and IntP are present from the C system (see chapter 3, §3.2.1). On a par with Polish, the fronted wh-phrase in root wh-questions in English moves to Spec-IntP.

(27) What did you buy?

(28) ForceP → PF Spell-Out; LF-Transfer

IntP

what$_{[iWh; iQ]}$ Int'

Int$_{[uWh:val; iQ]}$ TP

Step3-Agree Sub T'

T vP → *PF Spell-Out

<Sub> v'

v+V VP

V <what$_{[iWh; uQ:val]}$>

Step1-Agree

Step2-Move
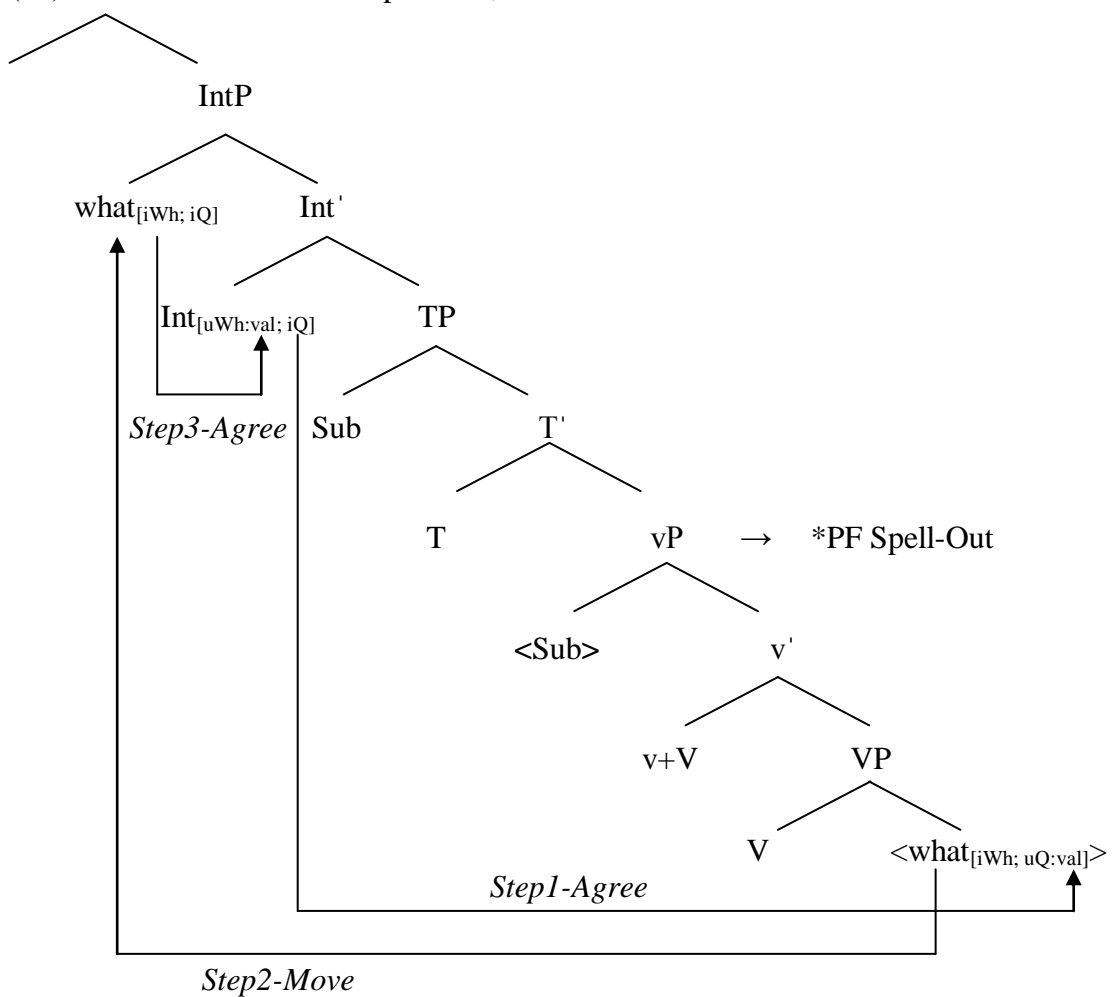
As illustrated in (28), the lexical verb takes the wh-phrase *what* as a complement. The wh-phrase bears two sets of features: [iWh] and [uQ]. The difference between English

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the wh-phrase *co* in (26) remains active until the [uWh] feature on Int^0 is checked, which happens after the wh-phrase *co* had moved to Spec-IntP and agreed with Int^0.

(cf. (28)) and Polish (cf. (26)) is that upon completion of vP, the complement of v^0 does not undergo Spell-Out in the former language (as indicated by the star symbol in (28)). Even though the wh-phrase *what* contains an uninterpretable feature, the wh-word is not forced to vacate its in-situ position (unlike in Polish) since the derivation is not predicted to crash at the vP level due to the lack of the application of Spell-Out at vP.

When Int^0 enters the structure in (28) equipped with [uWh] and [iQ] features, Agree is established between Int^0 and the in-situ wh-phrase *what* (Step 1) (recall the mechanism of Agree and Move in (24)), as a result of which the [uQ] feature on the wh-phrase is checked. Simultaneously, the [uWh] on Int^0 attracts the wh-phrase to Spec-IntP (Step 2). This movement is possible since there is no phase boundary between Int^0 and the in-situ wh-phrase. Once the [iWh]-bearing wh-phrase is in Spec-IntP, the [uWh] feature on Int^0 is checked under Agree (Step 3). The derivation converges, with all uninterpretable features having been checked, and the whole structure is sent to the interfaces (PF and LF). The head of the chain (i.e., the occurrence of the wh-phrase located in Spec-IntP) is pronounced.

As the following sections will illustrate, the proposed parameterization of PF Spell-Out is what accounts for different structural representations of multiple wh-questions between Polish and English.

4.2.6.3 Multiple Wh-questions in Polish

Consider the multiple wh-question in (29) from Polish and its derivation depicted in (30).

(29) Kto   co   przyniósł?
     who$_{NOM}$ what$_{ACC}$ brought
     'Who brought what?

(30) ForceP   →   PF Spell-Out; LF-Transfer

IntP

kto$_{[iWh; iQ]}$ Int'

Int$_{[uWh:val; iQ]}$ TP

Step5-Agree   <kto$_{[iWh; uQ:val]}$> T'

Step4-Move

T   vP   →   PF Spell-Out

Step3-Multiple Agree

<co$_{[iWh; uQ:val]}$> vP

<kto$_{[iWh; uQ]}$> v'

Step2-Move

v+V   VP

V   <co$_{[iWh; uQ]}$>

Step1-Move
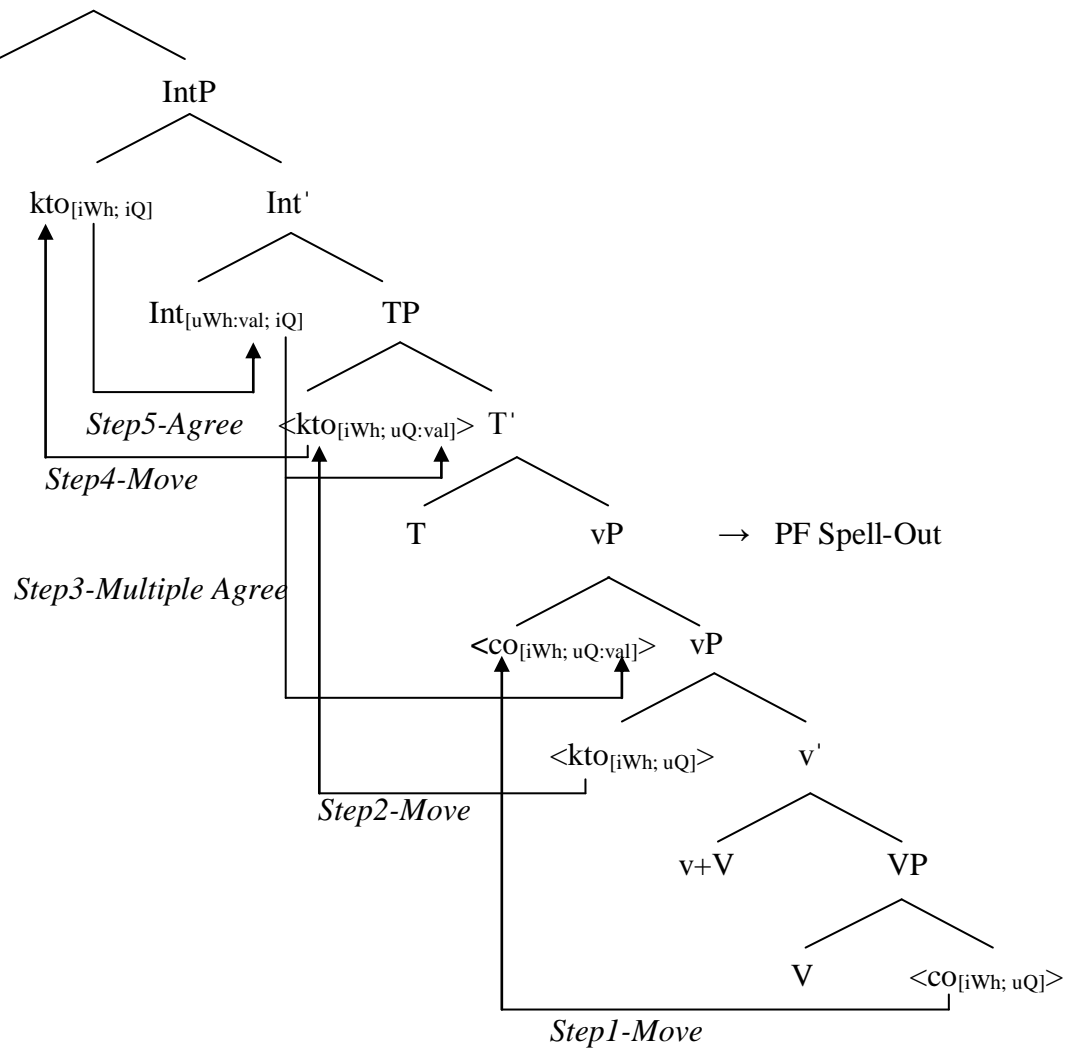
The derivation illustrated in (30) proceeds as follows. Both the subject wh-phrase *kto* and the object wh-phrase *co* carry an uninterpretable feature ([uQ]). Due to the application of Spell-Out at the vP level and the presence of the [uQ] feature, the wh-

phrase *co* must move out of VP (Step 1) before the VP is mapped to PF. The movement of the wh-phrase to the vP-edge is indirectly driven by PF requirements: if *co* does not raise, VP will contain a [uQ]-equipped wh-element. This feature cannot be interpreted by PF and the derivation will crash. Hence, the wh-phrase *co* raises to Spec-vP (an escape hatch) to prevent a PF crash at the vP level.

The derivation then proceeds with the wh-phrase *co* located in the vP-edge. The subject wh-phrase *kto* raises from Spec-vP to a canonical subject position, Spec-TP (Step 2), (Chomsky 2000).[27, 28] In the next phase, the head Int^0 enters the structure with the following set of features: [uWh] and [iQ]. Int^0 comes into multiple Agree (cf. Hiraiwa 2001) (Step 3), and checks the [uQ] features on both wh-phrases: *kto* and *co*. The [uWh] feature on Int^0 attracts one of the wh-phrases to Spec-IntP. Since the subject wh-phrase *kto* (located in Spec-TP) is closer to Int^0 than the wh-object *co*, the latter situated in the vP-edge (see §5.1.2, (10) & (12)), Int^0 attracts the wh-phrase *kto* to Spec-IntP (Step 4). The [uWh] feature carried by Int^0 is checked under Agree with the matching interpretable [Wh] feature carried by the wh-phrase (Step 5).

Since the [uWh] feature on Int^0 is satisfied via movement of one wh-phrase to Spec-IntP, the second wh-phrase (the object wh-phrase *co*) remains in the vP-edge, a pre-verbal position, where it is pronounced. The copy of the wh-phrase *co* located in the V-complement position is inaccessible to PF since VP has already been sent to Spell-Out upon completion of vP. Consequently, the copy of the wh-phrase *co* inside VP

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[27] The absence of intervention effects, i.e., the fact that the object wh-phrase *co* located in the outer Spec-vP does not block movement of the subject *kto* from the inner Spec-vP to Spec-TP will be addressed in chapter 5, see §5.3.

[28] In Chomsky's (2005) model of Phase Theory, T^0 inherits its $u\varphi$-features from C^0; hence the subject DP is attracted to Spec-TP only after C^0 enters the structure. Chomsky's (2005) proposal entails that when the subject DP is a wh-phrase, both T^0 and C^0 attract the wh-subject from the in-situ (vP-edge) position and the two operations proceed in parallel (see also fn. 5, §5.1.2). According to the diagram in (30), the subject wh-phrase *kto* raises from Spec-vP to Spec-TP, followed by subsequent wh-movement to Spec-IntP. This two-step derivation is in accordance with Chomsky's (2000) model of phases, as adopted in this work.

cannot be pronounced. With all uninterpretable features having been checked, the final application of Spell-Out can occur, and the derivation converges, resulting in the constituent order in (29).

4.2.6.4 Multiple Wh-questions in English

Unlike in Polish (cf. (30)), the second wh-phrase in a multiple wh-question in English stays in situ. Consider the example in (31).

(31)   Who saw what?

I argue that the difference in surface structure representations between Polish (cf. (29)), on the one hand, and English (cf. (31)), on the other, is the direct result of the lack of the application of multiple Spell-Out in the latter language. While in Polish, the domain of v^0 is sent to PF upon completion of vP, in English, Spell-Out is postponed until the derivation is fully completed.

Consider the derivation of the English sentence in (31), as illustrated in (32).

(32) ForceP   →   PF Spell-Out; LF-Transfer

IntP

$who_{[iWh; iQ]}$ Int'

Int$_{[uWh:val; iQ]}$ TP

Step4-Agree $<who_{[iWh; uQ:val]}>$ T'

Step3-Move

T   vP   →   *PF Spell-Out

Step1-Move

$<who>_{[iWh; uQ]}$ v'

Step2-Multiple Agree

v+V   VP

V $<what_{[iWh; uQ:val]}>$

As illustrated in (32), both wh-phrases *who* and *what* carry a [uQ] feature. The wh-phrase *what* is not forced to vacate its in-situ position since Spell-Out does not apply upon completion of vP (as indicated by the star symbol). When Int[0] enters the structure, it comes into multiple Agree with the wh-phrases (Step 2): *what* situated in the V-complement position, and *who* located in Spec-TP (the wh-phrase *who* had raised from Spec-vP to Spec-TP (Step 1)). The [uQ] feature on the wh-phrases is checked under (multiple) Agree with the [iQ]-bearing Int[0].

In order for the [uWh] feature on Int[0] to be checked, the wh-phrase *who* (the closest wh-phrase) moves to Spec-IntP (Step 3). The [uWh] on Int[0] is checked via Agree by the c-commanding wh-phrase, which bears [iWh] (Step 4). With all uninterpretable features having been checked, the structure is sent both to PF and LF. The wh-phrase *who* is

pronounced in Spec-IntP, while the second wh-phrase *what* is pronounced in-situ (the in-situ wh-phrase *what* is visible to PF since VP has not been sent to Spell-Out upon completion of vP), thus resulting in the surface representation in (31).

4.2.7 Successive-Cyclic A-bar Movement

Since Chomsky (1973), it has been widely assumed that wh-movement proceeds via intermediate positions, i.e., wh-movement is successive-cyclic. The trigger for intermediate movement steps has been a problematic matter for minimalist theory, which postulates that movement must result in feature checking (the *Last Resort* condition, Chomsky 1995:280). In Chomsky (2000 *et seq.*), successive-cyclic movement through the phase edge is driven by the PIC and a (generalized) EPP-feature, the latter optionally assigned to phase heads. However, in §4.1.1 it was shown that attributing intermediate steps of movement to the optional EPP-feature faces a look-ahead problem.

In the proposal put forward here the EPP-feature and the PIC are dispensed with as triggers for movement. In line with Zeijlstra (2010), I argued that the final step of wh-movement is induced by an uninterpretable feature ([uWh]) on the target. In the proposal advocated here, movement out of the internal domain of the intermediate phase head, v^0, is derived independently of the PIC and the EPP (cf. Chomsky 2000 *et seq.*). Movement to the vP-edge is triggered by an inadequacy, i.e., an uninterpretable feature, on the moving element and the application of Spell-Out at vP. Given the fact that an element equipped with an uninterpretable feature is an illegitimate interface object, the derivation is predicted to crash at PF if the structure sent to PF contains an item equipped with an uninterpretable feature. Thus, movement of a [uQ]-bearing wh-phrase

to the vP-edge (an intermediate landing site) is indirectly driven by PF requirements (the presence of a wh-phrase bearing the [uQ] feature contained in the spelled-out unit would lead to a PF crash).

The idea that the PIC effects for intermediate movement steps follow from PF considerations (yet in a different form than proposed here) has been expressed in various works, e.g. in Fox and Pesetsky (2005) (see also Bošković 2003; 2007). Fox and Pesetsky (2005) argue that intermediate movement to a phase edge is required for a structure to be properly linearized at PF, hence movement is due to PF requirements.

Eliminating the PIC as a condition on Move and Agree, as we do in this work (see also Bošković 2007, among others), leaves a question open of what determines the size of the spelled-out domain. For Chomsky (2000 *et seq.*), the size of the spelled-out unit (which corresponds to the complement of a phase head) is determined by phases/ the PIC. I propose that the portion of a structure sent to Spell-Out (i.e., the internal domain of a phase head which does not include the phase head and its edge) is not determined by the PIC/phases but by the PF interface conditions. Put differently, the locality of syntax is not conditioned by the PIC, which allows us to eliminate the PIC from the grammar completely (cf. also Stjepanović & Takahashi 2001). The assumption that the size of the spelled-out domain is determined independently of the PIC appears necessary (to an extent) also for Chomsky (2000 *et seq.*). Chomsky (2004) (also reported in Gallego 2007:58), notes that whereas in non-root contexts, only the sister of a phase head is spelled out (in accordance with the PIC), in root clauses, the phase is spelled out in full. Otherwise, the edge of the matrix CP would never be sent to the interfaces. The fact that an entire phase is sent to the interfaces in root contexts does not,

however, follow from the PIC (given in (3) and (4), §4.1.1). Instead, it seems to be determined by such external factors as the interfaces, as assumed here.[29]

The question of which portion of a structure is spelled out (whether it is only the complement of a phase head or the edge as well) appears to be even wider, i.e., why are only (transitive) vP and CP regarded as phases (the points of sending a syntactic structure to the interface(s))? The question of what syntactic objects are phases on the PF and/or LF side has been a controversial matter since the advent of Phase Theory. Contra Chomsky (2000 *et seq*.), there have been proposals that not only transitive vP but also passive and unaccusative Verb Phrases are phases (Legate 1998; 2003; cf. also Ko (2008)). TP has also been considered to be a phase (Grohmann 2000; Marušič 2005).[30] Furthermore, it has been argued that VP rather than vP is the point of Spell-Out (Fox & Pesetsky 2005). The evaluation of different proposals in order to establish which nodes should/can be phases, however, is far beyond the scope and aims of the present work.

The account put forward in this chapter assumes that movement out of the lower phase, vP, is driven by PF requirements, which follow from the application of multiple Spell-Out. Multiple (PF) Spell-Out, as argued here, is subject to cross-linguistic variation. In a language like English, I argued that Spell-Out is based on convergence, and takes place at the end of the syntactic derivation, at the CP (here ForceP) level. Consequently, wh-movement in English (matrix wh-questions) is assumed to proceed in a single step. However, there is evidence from reconstruction (Fox 1999; Winkler 2005,

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[29] Cf. also Nissenbaum (2000:163-164) who postulates a principle in (i), which determines the relevant part of the structure sent to PF on each cycle.

    (i)   *Spellout* applies to the internal domain on each cycle
          The *spellout* property of a head H is satisfied by applying rules of phonology to the sister of H.

[30] Marušič (2005) considers a non-finite TP and argues that it is a non-simultaneous phase i.e., it is an LF phase, but not a PF phase.

among others) and parasitic gaps (Nissenbaum 2000) that A-bar movement in English is successive-cyclic and proceeds through a vP-edge.

Consider the example in (33) (Winkler 2005:208, who attributes it to Fox 2000), which shows that wh-movement in English must proceed through the vP-edge.

(33) [Which of the papers that he$_i$ wrote for Mrs. Brown$_j$]$_k$ did every student$_i$ __ get her$_j$ to grade t$_k$?

As reported in Winkler (2005), the wh-phrase in (33) must reconstruct so that the variable *he* is c-commanded by its binder, the quantifier *every student*. Reconstruction to the base position (marked by t$_k$) is prohibited since that would result in a Condition C violation (the pronoun *her* would c-command the R-expression *Mrs. Brown*). The wh-phrase must reconstruct to a position which is above the object *her* but lower than the subject *every student*. Consequently, it reconstructs to Spec-vP (marked by "__").

In order to account for the fact that wh-movement in English must stop at the vP-edge, I revive an approach from early Minimalism. In the spirit of Takahashi's (1994b) *Form Chain* (cf. also Chomsky & Lasnik's (1993) *Minimize Chain Links* Condition), I assume that movement of an XP from its base position to the final landing site (triggered by an inadequacy of the target) takes place in local steps (which do not involve feature checking). The question that clearly arises is how local the steps should be, i.e., what the landing sites of successive-cyclic movement are. The answer is not straightforward. For example, Boeckx (2003:8) assumes that a moving element adjoins to a maximal projection of each head on its way to the final landing site. Within the framework of Phase Theory (Chomsky 2000 *et seq.*), I assume that movement to the target position in the left periphery proceeds via the edge of vP.

The assumption that movement in English proceeds in local steps does not entail that English and Polish differ in how successive-cyclic A-bar movement takes place in the two languages. In Polish, as in English, A-bar movement is required to proceed in local steps (by assumption, via a vP-edge); however the effects of this movement in Polish are diminished by the application of multiple Spell-Out. Put differently, both in English and Polish A-bar movement is required to proceed in a successive-cyclic fashion. If a language is subject to multiple Spell-Out (like Polish), an XP can be stranded and pronounced in a position, which in a language with single Spell-Out (like English), can serve only as a stopover site of successive-cyclic movement. More specifically, the application of multiple Spell-Out in Polish is what triggers the movement of the wh-phrase(s) to the vP-edge, the movement which has previously been argued to result either from focusing (Lubańska 2005), quantifier raising (Dornisch 2000; 2001) or [Wh] feature-checking requirements on the wh-phrase and a verbal head (Dornisch 1998), none of which turned out to be a tenable account, as I argued in chapter 2. The fact that Polish allows, while English disallows, multiple Spell-Out is the reason for cross-linguistic differences in surface representations of multiple wh-questions between the two languages, as presented in §4.2.6.

The next section will illustrate how the proposed cross-linguistic variation in the mapping to PF extends to and accounts for long-distance wh-extraction facts both in Polish and English.

4.2.8 Long-distance Wh-extraction in Polish

4.2.8.1 Basic Facts

Polish does not allow wh-extraction out of a finite indicative clause, as demonstrated by the ungrammaticality of (34) (Lubańska 2005:110; see also Witkoś 1995:229).[31]

(34) *Co_i myślisz, że ona   kupiła t_i?
     what$_{ACC}$ think$_{2,Sg}$ that she$_{NOM}$ bought$_{3,Sg,Fm}$
     'What do you think that she bought?'

Alternatives to long-distance wh-extraction across a finite clause boundary are partial wh-movement constructions. To express the meaning of the sentence in (34), we can either ask (35) or (36), in both instances the wh-phrase undergoes movement to a clause-internal position.

(35) Myślisz, że co_i ona   kupiła t_i?
     think$_{2,Sg}$ that what$_{ACC}$ she$_{NOM}$ bought$_{3,Sg,Fm}$
     'What do you think that she bought?'

(36) Jak myślisz, co_i ona   kupiła t_i?
     how think$_{2,Sg}$ what$_{ACC}$ she$_{NOM}$ bought$_{3,Sg,Fm}$
     'What do you think that she bought?'

Both (35) and (36) elicit an answer which supplies the value only for the wh-phrase *co* (Lubańska 2005:103/111). The wh-phrase *co* takes scope outside the embedded clause. The construction in (35) has been termed *long wh-scoping* (Meyer 2001), and it can be used as a genuine request for information, an echo-question or a rhetorical question

---

[31] There appear to be conflicting judgments about the possibility of wh-extraction out of tensed indicative complements in Polish. Some authors argue that certain bridge verbs like *mówić* (say) and *powiedzieć* (tell), unlike for example *myśleć* (think), allow for long-distance wh-extraction in Polish (Cichocki 1983; Zabrocki 1989); others, however, do not assume the existence of any bridge verbs in Polish allowing for long-distance wh-extraction (Giejgo 1981; Willim 1986; Witkoś 1995).

(Willim 1989). In the *jak…wh-construction* in (36), the wh-phrase *jak* in (36) is semantically inert. It only marks the scope of the wh-phrase *co* (Lubańska 2005:103).

The type of constructions that allow long-distance wh-extraction in Polish are those introduced by a subjunctive complementizer *żeby* (consisting of an indicative complementizer *że* (that) and the element *by* (would)), which can either occur with a bare infinitival (37) or a tensed clause complement (38) (Lubańska 2005:124; Willim 1989:112).[32] It is also possible to extract a wh-phrase out of a bare infinitival complement (39) (Willim 1989:112).

(37) Kogo$_i$ Jan   chciał,   żeby   odwiedzić t$_i$?
who$_{ACC}$ John$_{NOM}$ wanted$_{3,Sg,M}$ that-subj visit$_{INF}$
'Who did John want to visit?'

(38) Co$_i$ chcesz, żeby   Jan   przeczytał t$_i$?
what$_{ACC}$ want$_{2,Sg}$ that-subj John$_{NOM}$ read$_{Perf,Past-Part,Sg,M}$
'What do you want John to read?'

(39) Co$_i$ Jan   chciał   kupić t$_i$?
what$_{ACC}$ John$_{NOM}$ wanted$_{3,Sg,M}$ buy$_{INF}$
'What did John want to buy?'

It should be noted that unlike object extraction (cf. (37)), extraction of a wh-subject from a complement clause introduced by a subjunctive complementizer is impossible in Polish (see (40)).

---

[32] Certain verbs introduced by the subjunctive complementizer *żeby*, for example *przekonywać* (to convince), which unlike the verb *chcieć* (want) (ex. (37)), do not take a bare infinitival complement, do not allow wh-extraction, see (i), (cf. (38)), (Willim 1989:112).

(i) *?Co$_i$ przekonałeś Jana,   żeby   przeczytał t$_i$?
what persuaded$_{2,Sg,M}$ John$_{ACC}$ that-subj read$_{Perf,Past-Part,Sg,M}$
'What did you persuade John to read?'

(40) *Kto$_i$ Maria   chce,   t$_i$′ żeby   t$_i$ wygłosił przemowę?
      who$_{NOM}$ Mary$_{NOM}$ wants$_{3,Sg}$ that-subj   gave   speech$_{ACC}$
      (lit.) 'Who does Mary want that deliver the speech?'
      'Who does Mary want to deliver the speech?'

The existence of the *that*-trace effect (ex. (40)) indicates that the subject position is not lexically governed in Polish (Lasnik & Saito 1984:279).

Judgments regarding multiple wh-extraction in Polish seem to differ among native speakers, which is reflected in the literature. As reported in Cichocki (1983) and Rudin (1988), multiple wh-extraction is ungrammatical in Polish (see (41)) (see also Rudin 1988:454), whereas according to Dornisch (1998:177), multiple wh-extraction out of a subjunctive complement is allowed, as shown in (42) (see also Citko & Grohmann 2001).

(41) *Co komu* Maria   chce,   żeby   Janek   kupił _ _ ?
      what to whom Maria$_{NOM}$ wants$_{3,Sg}$ that-subj John$_{NOM}$ bought
      'What does Maria want John to buy for whom?'

(42) *Co kiedy* chcesz, żebym   ci ugotowała _ _?
      what when want$_{2,Sg}$ that-subj you cooked
      'What do you want me to cook for you when?'

Given the basic facts about long-distance wh-movement in Polish, let us now explain the difference in wh-extraction between indicative and subjunctive complements and illustrate how long-distance wh-questions are derived in Polish.

4.2.8.2 Subjunctive vs. Indicative Complements: Explaining the Differences in Wh-Extraction

As discussed in the previous section, wh-extraction out of a finite indicative clause is ungrammatical in Polish. Consider again the wh-question in (34), repeated here as (43), and its derivation illustrated in (44). Due to space limits, only ForceP and IntP out of the array of projections in the C system are included (see (21), chapter 3, §3.1.2).

(43) *$\textbf{Co}_i$ myślisz, że   ona   kupiła t_i?
  what think$_{2,Sg}$ that she$_{NOM}$ bought$_{3,Sg,Fm}$
  'What do you think that she bought?'

(44) ForceP   → PF Spell-Out; LF-Transfer

```
(44) ForceP        → PF Spell-Out; LF-Transfer
         Force'
      Force   IntP
                Int'
          Int[iWh;uQ]  TP
                  Sub    T'
                      T      vP      → PF Spell-Out
                               vP
                         <Sub>    v'
                              v+V      VP
                             myślisz
                                   V   ForceP    → PF Spell-Out
                                          Force'
                                     Force   IntP
                                      że
                                   co[iQ; iWh]    Int'
                                               Int[iQ;uWh:val]  TP
                                       Step4              ona    T'
                                                             T      vP   → PF Spell-Out
                                       Step3        <co[uQ:val;iWh]>  vP
                                             Step2                <ona>   v'
                                                                      v+V     VP
                                                                        V   <co[uQ;iWh]>
                                       Step1
```
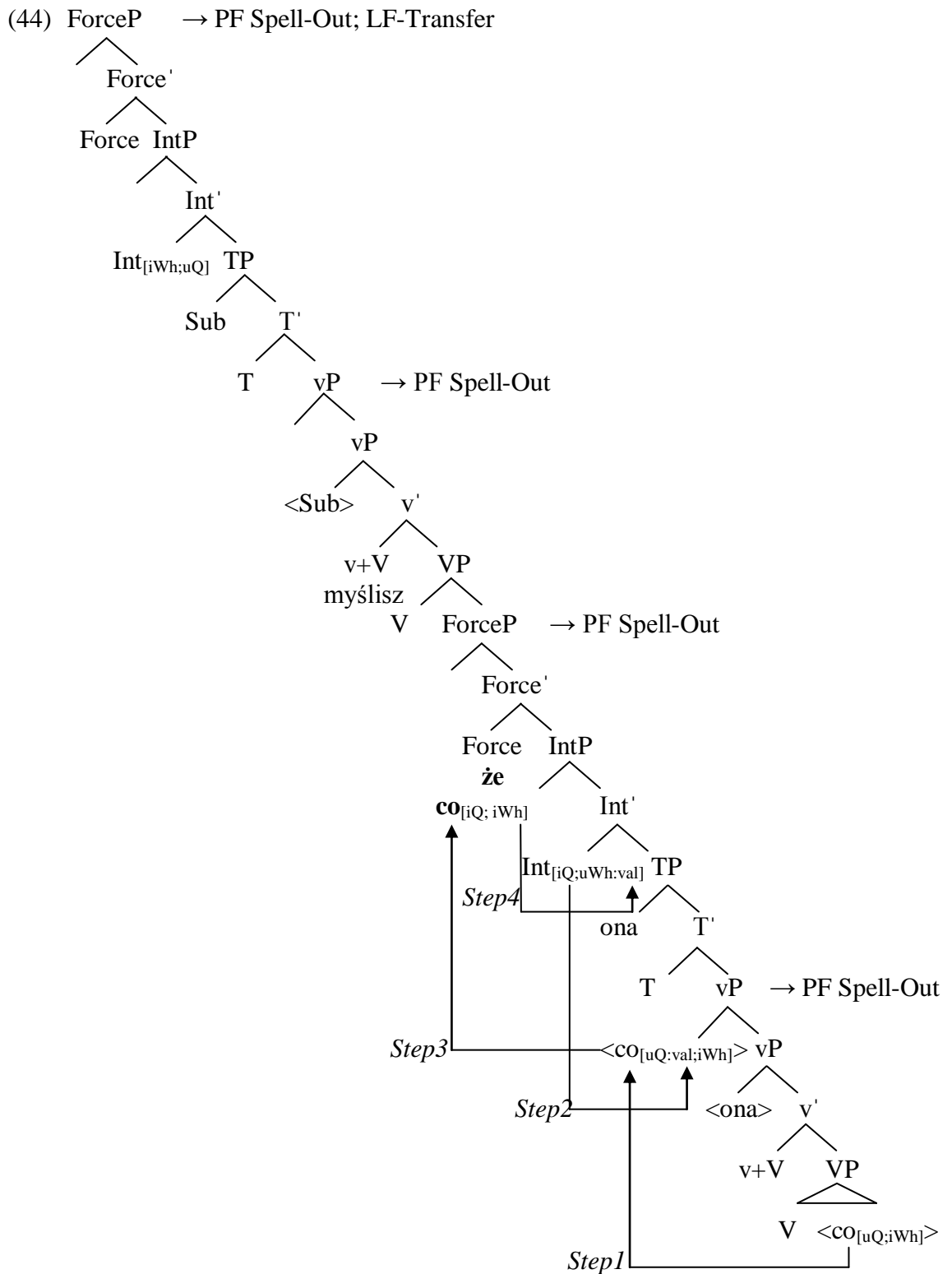
Recall from chapter 3, §3.1.3, that in embedded clauses (similarly to matrix wh-questions), a wh-phrase is attracted to Spec-IntP in Polish and the indicative complementizer *że* (that) occupies Force[0] (cf. also Italian, Rizzi 1997).

The derivation in (44) proceeds as follows. The wh-phrase is equipped with [iWh] and [uQ] features. Due to the [uQ] feature, the wh-phrase must vacate its base position prior to Spell-Out, which applies at the vP level and sends the syntactic object (VP) to PF. The wh-phrase moves to the outer Spec-vP (Step 1). Subsequently, when Int^0 is merged, it agrees with the wh-phrase *co* located in the vP-edge, and values the [uQ] feature on the wh-phrase (Step 2). The [uWh] feature on Int^0 forces movement of the wh-phrase *co* to Spec-IntP (Step 3), and Agree is established between the wh-phrase and Int^0, the result of which the [uWh] feature on Int^0 is checked (Step 4). Upon completion of the embedded ForceP, the internal domain of $Force^0$ (IntP) is sent to Spell-Out, along with the wh-phrase located in Spec-IntP. Since the [uQ] feature on the wh-phrase is checked within the embedded clause, and the wh-phrase is sent to Spell-Out while located in the embedded Spec-IntP, it does not participate in further syntactic operations, and hence it is unavailable for wh-extraction in the matrix clause. The wh-phrase cannot raise from the embedded to the matrix clause to check the [uWh] on the matrix Int^0. We correctly rule out (43).[33]

In contrast to (43), wh-extraction is possible from a clause introduced by the subjunctive complementizer *żeby* (see (45)).

(45) **Co**$_i$ chcesz, żeby   ona   kupiła t$_i$?
    what want$_{2,Sg}$ that-subj she$_{NOM}$ bought$_{Sg,Fm}$
    'What do you want her to buy?'

---

[33] Considering that the [uWh] feature on the matrix Int^0 in (44) remains unchecked due to the impossibility of raising the wh-phrase to the matrix Spec-IntP, the derivation crashes. This should also exclude examples like (35) above, in which the wh-phrase is raised only to the embedded Spec-IntP. However, it has not been uncontroversial as to how partial wh-movement constructions (which are also present in other languages, for example, German) are derived. The question would not arise if, for example, we follow Dayal (1994), who argues that long and partial wh-movement constructions are not structural variants, hence they differ in how they are derived.

I propose that in the derivation of (45), the conditional auxiliary *by* (would) situated in T^0 raises to Force^0. This, I will argue, is what derives the contrast between (43) and (45).

The tree structure in (46a) shows how the derivation of the sentence in (45) proceeds in the embedded clause.

(46) a. ....
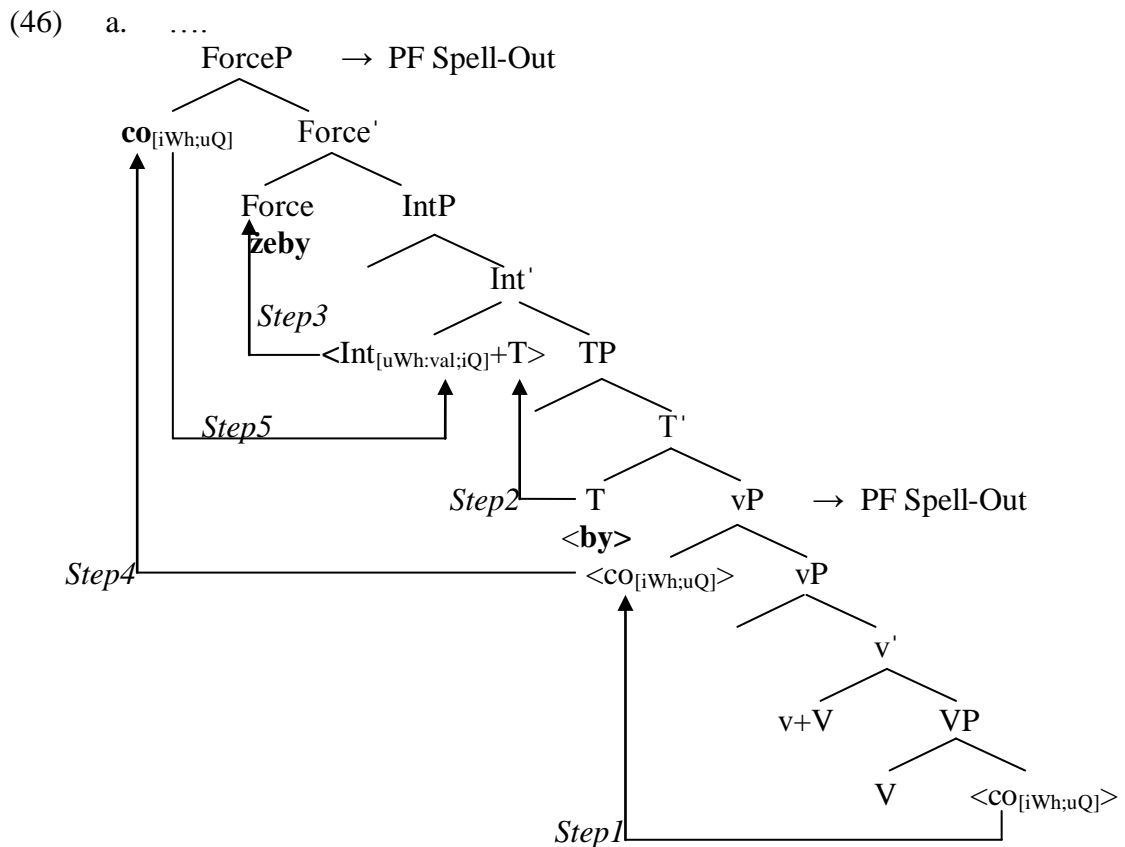
According to the diagram in (46a), the wh-phrase *co* raises from its base position to prevent the derivation from crashing at the vP level due to the application of Spell-Out at vP and the [uQ] feature on the wh-phrase (Step 1). In chapter 1, §1.1.4.1, it was established that the conditional auxiliary *by* (would) in Polish occupies T^0 (see also Dornisch 1998:89/90). Since the subjunctive complementizer *żeby* ('that would') consists of the indicative complementizer *że* and the auxiliary *by*, I assume that the subjunctive complementizer *żeby* is formed by T^0-to-Force^0 raising (*że* occupies Force^0

in Polish, see chapter 3, §3.1.3). In accordance with the head movement constraint, T^0 must first move to Int^0 (Step 2) (before the complex $Int^0 + T^0$ moves and adjoins to $Force^0$). The movement of T^0 to Int^0 has the following consequence: Agree between Int^0 and the wh-phrase required to check the [uQ] feature on the wh-phrase cannot be established. The reason being that Agree (as standardly assumed) requires c-command, however after movement of T^0 to Int^0 (Step 2), T^0 and Int^0 are sisters and neither can c-command outside (Chomsky 2000:117). T^0 does not c-command its trace/copy and Int^0 no longer c-commands into its former c-command domain.[34] Since Int^0 does not c-command the wh-phrase located in the outer Spec-vP, the [uQ] feature on the wh-phrase *co* remains unchecked, leaving the latter syntactically active. When $Force^0$ enters the derivation, the Int^0-T^0 complex raises to $Force^0$ (Step 3). The wh-phrase moves to Spec-ForceP (Step 4) to prevent the derivation from crashing at the ForceP level (where Spell-Out applies) due to the presence of the [uQ] feature on the wh-phrase. Once in Spec-ForceP, the wh-phrase c-commands Int^0 and values the [uWh] feature on the latter (Step 5) under Agree. Subsequently, the derivation proceeds as illustrated in (46b).

---

[34] Assuming that when a head gets moved, it projects, i.e., it gives the label to the new category created by movement (see Donati 2006; Koeneman 2000, among others), after T^0-to-Int^0 raising, the head T projects the label and consequently Int^0 does not c-command the wh-phrase.
Cf. also Chomsky (2001) who excludes head movement as an operation of narrow syntax and instead assumes that it takes place in the phonological component.

b.　ForceP　　→ PF Spell-Out; LF-Transfer

[Syntactic tree diagram:]

ForceP
 Force'
  Force IntP
   co[iWh;iQ]   Int'
    Int[iQ;uWh:val]   TP
     Step9
    Step8   Sub   T'
     Step7   T   vP   → PF Spell-Out
       <co[iWh;uQ:val]>   vP
         <Sub>   v'
      Step6   v+V   VP
            V   ForceP   → PF Spell-Out
         <co[iWh;uQ]>   Force'
              Force   IntP
              żeby   △
                   …

Step 6 is motivated by PF considerations. The structure which is to be sent to PF at the matrix vP level contains the wh-phrase *co* equipped with an uninterpretable feature. To avoid being spelled-out (and consequent PF crash), the wh-phrase raises to the vP-edge in the matrix clause. When matrix Int^0 enters the structure, its [iQ] feature comes into Agree (established under c-command) with the [uQ] feature on the wh-phrase (Step 7). The [uWh] on Int^0 forces the wh-phrase to move to Spec-IntP (Step 8) so that the [uWh] feature can be checked under Agree (Step 9). With all uninterpretable features having been checked, the structure undergoes Spell-Out and Transfer at the matrix ForceP level. We successfully derive the long-distance wh-question in (45).

The account in this section, which rests on the assumption that *by*, which spells out

T^0, raises and adjoins to the indicative complementizer *że*, is reminiscent of the proposal

of long-distance wh-extraction in Russian and English, as put forward in Khomitsevich

(2007, chapter 5).

4.2.9   Long-distance Wh-extraction in English

This section addresses the derivation of long-distance wh-questions in English. Unlike

Polish, English allows wh-extraction out of a tensed indicative clause. Consider (47)

and its derivational structure in (48). Recall from chapter 3, §3.2.2, that in embedded

wh-questions in English, it is $Force^0$ that is equipped with [uWh; iQ] features.

(47) $What_i$ did John say (that) Paul bought t_i?

(48) ForceP   → PF Spell-Out; LF-Transfer

```
ForceP
  Force'
    Force   IntP
    what[iWh;iQ]   Int'
              Int[uWh:val;iQ]   TP
              Step5         you   T'
                                T    vP        → *PF Spell-Out
                                did
                                    <you>   v'
                                          v+V    VP
                                          say
                                              V    ForceP      → *PF Spell-Out
                                                   <what[iWh;uQ:val]>  Force'
                                                                  Force[uWh:val]   TP
                                                                  that
                                                                       Paul   T'
                                                                            T    vP   → *PF Spell-Out
                                                                                <Paul>   v'
                                                                                      v+V    VP
                                                                                      bought
                                                                                          V   <what[iWh;uQ]>
```

Step4

Step3

Step2

Step1
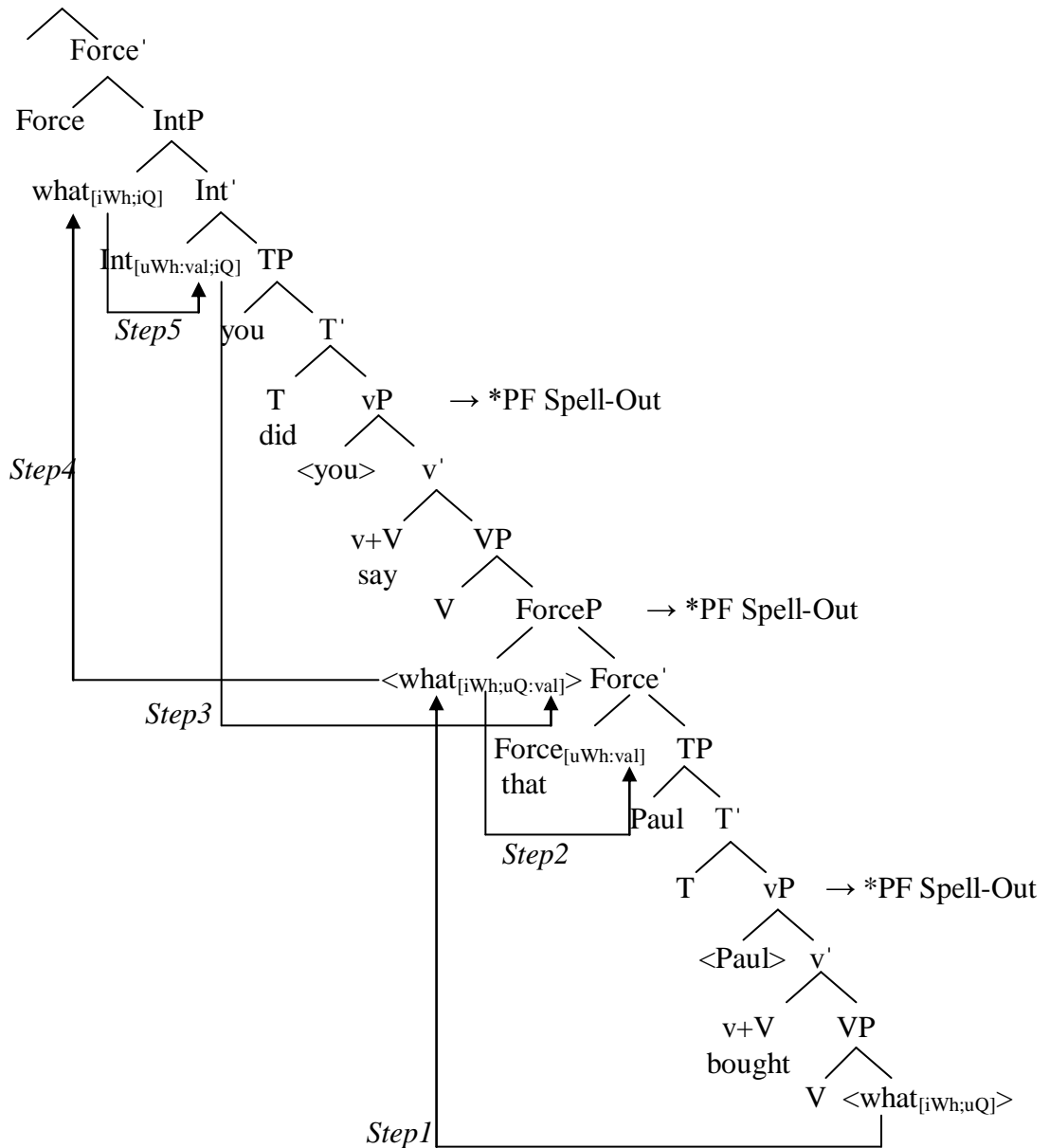
In order to derive a wh-question such as (47), represented in (48), in which the wh-phrase *what* is extracted from an embedded clause to the clause-initial position in the matrix sentence, we need to assume that the head Force is not able to check the [uQ] feature on the wh-phrase. Put differently, Force[0] does not bear the [iQ] feature (hence the absence of [iQ] on the head Force in the diagram). Otherwise, if *what* in (48) had its [uQ] feature checked by [iQ] on Force[0] within the embedded clause, the wh-phrase would become inactive and hence unavailable for movement to the clause initial-

position, the matrix Spec-IntP. Since Move requires the Activation Condition, i.e., in order to undergo movement an element must possess an uninterpretable feature, I propose that Force^0 in (48) is a *defective* head in the sense that it cannot check the [uQ] feature on the wh-phrase due to the fact that it lacks the corresponding [iQ] feature.

Furthermore, the question is whether Force^0 in the embedded clause possesses the [uWh] feature. As illustrated in (48), I assume that it does. There is empirical evidence that a wh-phrase moves to a clause-internal position in English, as shown for example in (49) (the example cited from Pesetsky 1987:99).

(49) *Who* knows *where$_i$* we bought *what t$_i$*?

The wh-phrase *where* originates as an adjunct to the Verb Phrase and undergoes movement to the clause-internal position attracted by the [uWh] feature on Force^0 (cf. (48)). Considering that the [uWh] feature in the matrix clause in (49) is checked by the wh-phrase *who*, the wh-phrase *where* is stranded in the clause-internal position, the embedded Spec-ForceP, and the [uQ] features on *where* and *what* are checked under Agree with the matrix head Int^0, which bears [iQ] (cf. (48)).[35]

---

[35] Given the claim that Force^0 in an embedded clause carries the [uWh] feature, it would require the wh-phrase *what* in (i) to move to the clause-internal position to satisfy this feature of Force^0 (the [uWh] feature on Int^0 in the matrix clause is checked by the wh-phrase *who*). The sentence in (i), however, is ungrammatical (cf. the discussion on similar examples by Bošković (2007) in §4.1.1).

(i) *Who thinks what$_i$ (that) John bought t$_i$?

It should be noted that the ungrammaticality of the example in (i) is independent of the requirement to check the [uWh] feature in the embedded clause. It is due to the verb sub-categorizational properties. The verb *think* can only take a declarative complement clause, as opposed to verb like *wonder*, which takes an interrogative complement clause (see (ii)).

(ii) I wonder what John bought.

Furthermore, leaving a wh-phrase in situ in (i) does not make the sentence grammatical either (see (iii)):

(iii) ??Who thinks (that) John bought what?

According to the native speakers I consulted, the sentence in (iii) is not a well-formed English wh-question. It lacks a Pair-List reading and is only acceptable (by some speakers) on an echo reading. Echo wh-questions as opposed to true wh-interrogatives leave a wh-phrase in situ, hence the factors governing their derivation must be different from those involved in the formation of regular wh-questions.

After establishing the feature specification of Force^0 in English, let us now describe the derivation of (47), as illustrated in (48). The wh-phrase *what* possesses the [iWh] and [uQ] features. The [uWh] feature on the embedded Force^0 attracts the wh-phrase *what* to Spec-ForceP (Step 1) so that the [uWh] feature can be checked/valued under Agree (Step 2). Since Force^0 lacks the [iQ] feature, the [uQ] feature on the wh-phrase remains unchecked. The derivation proceeds to the matrix clause. When Int^0 enters the derivation, equipped with [uWh; iQ] features, it checks the [uQ] feature on the wh-phrase located in Spec-ForceP under Agree (Step 3), and the wh-phrase is attracted by the [uWh] feature on Int^0 to Spec-IntP (Step 4). Agree is established between the [iWh]-bearing wh-phrase and Int^0 (Step 5), and as a result the [uWh] feature on the latter is checked. The derivation converges with the wh-phrase *what* located in the clause-initial position, matrix Spec-IntP. Upon completion of the matrix ForceP, the whole structure is sent to PF (and LF), on a par with matrix wh-questions in English. Given the discussion in §4.2.7 and the assumption that A-bar movement in English proceeds via a vP-edge (due to the requirement that movement occurs in small steps), the wh-phrase *what* in (48) stops and adjoins to the embedded and matrix vPs on the way to its landing sites (Spec-ForceP and finally Spec-IntP).

Consider now the derivation of a long-distance wh-question with two wh-phrases, given in (50), and its tree structure in (51).

(50) *Who*$_i$ did John say t$_i$ bought *what*?

(51) ForceP   → PF Spell-Out; LF-Transfer

Force'

Force   IntP

who$_{[iWh;iQ]}$ Int'

Step4

Int$_{[uWh:val;iQ]}$ TP

Step 5   John   T'

T   vP   → *PF Spell-Out
did

<John>   v'

v+V   VP
say

V   ForceP   → *PF Spell-Out

<who$_{[iWh;uQ:val]}$>   Force'

Step1   Force$_{[uWh:val]}$ TP
that

Step3   *Step2*

<who$_{[iWh;uQ]}$>   T'

T   vP   → *PF Spell-Out

<who$_{[iWh;uQ]}$>   v'

v+V   VP
bought

V   what$_{[iWh;uQ:val]}$

As illustrated in (51), the wh-phrases *who* and *what* carry an uninterpretable ([uQ]) feature. The head Force possesses the [uWh] feature, which forces the wh-phrase *who* (the closest wh-phrase) to move to Spec-ForceP (Step 1). The [uWh] feature on Force[0] attracts the wh-subject *who* (which had previously raised to Spec-TP, the canonical subject position) and Agree takes place upon which the [uWh] feature on Force[0] is checked (Step 2). In the derivation of the matrix clause, when Int[0] is merged equipped

with the [iQ] feature, it checks the [uQ] feature on the wh-phrases: *who*, located in Spec-ForceP, and *what*, situated in its base position, via multiple Agree (Step 3). The [uWh] feature on Int^0 attracts the wh-phrase *who* from Spec-ForceP to Spec-IntP (Step 4). Subsequently, the [uWh] feature on Int^0 is valued under Agree with the [iWh]-bearing *who* (Step 5). On its way to the landing sites (Spec-ForceP and Spec-IntP, respectively), the wh-phrase *who* stops at the vP-edge (in accordance with the requirement that movement proceed in local steps). With all uninterpretable features having been rendered interpretable, the whole structure undergoes Spell-Out and Transfer.

If Spell-Out (to PF) was to take place upon completion of the embedded ForceP in (51), the wh-phrase *what* would be forced to vacate its in-situ position due to its [uQ] feature and move to the embedded Spec-ForceP, to prevent the derivation from crashing at PF. That would result in the wh-phrase *what* occupying embedded Spec-ForceP, which would produce an ungrammatical sentence (see (52)).

(52) *Who did John say *what* bought?

We successfully derive (50) and exclude (52) on the assumption that Spell-Out in English is postponed until the derivation is completed, as put forward in this thesis.

4.3   Summary and Conclusions

This chapter was devoted to a comparative study of Polish and English wh-constructions, and proposed a novel approach to wh-question formation in the languages under consideration. The assumption adopted was that Transfer to LF is based on convergence across languages; however Spell-Out to PF may vary cross-

linguistically, which causes the mismatches in surface structure representations among languages. Move is independent of Agree and these two syntactic operations can alternate. Furthermore, the locality of Move and Agree is not conditioned by the PIC (contra Chomsky 2000; 2001).

The primary aim of this chapter was to examine how effectively Phase Theory in the form proposed by Chomsky (2000; 2001) can explain facts about wh-movement cross-linguistically, based on two quite distant languages like Polish and English. It was demonstrated that attributing movement to the PIC and an EPP-feature is problematic both for theoretical reasons (look-ahead) and empirical ones. It suggested a modification with respect to how successive-cyclic movement proceeds. More specifically, successive-cyclicity derives from a requirement that movement proceed in local steps and from the application of multiple Spell-Out, the latter was argued to be subject to cross-linguistic variation.

The proposal advocated here avoids the problems of i) look-ahead in the syntactic derivation, as it does not assume the (generalized) EPP-feature in intermediate positions (cf. Chomsky 2000; 2001), and ii) the proliferation of ungrammatical structures, which arise from the optionality of an uninterpretable feature assigned to lexical items (cf. Bošković 2007).

The next chapter will be devoted to the phenomenon of Superiority effects and the absence of intervention effects in wh-questions, which thus far have remained unaddressed.

CHAPTER 5

Superiority and Wh-Intervention Effects

This chapter concentrates on explaining differences in Superiority effects between Polish and English and the absence of intervention effects in wh-questions. I will show that both English and Polish are subject to the same locality constraints on movement. Two independently existing properties of Polish syntax (TopP which can host a wh-phrase, as established in chapter 3, and VP-internal scrambling, as will be discussed here), not found in English, derive the syntactic differences in Superiority effects between the two languages. I will argue that the absence of wh-intervention effects follows from the definition of Closeness, which, apart from applying in structural terms, relies on the concept of the Activation Condition, the latter understood as in Chomsky (2000; 2001).

5.1   Superiority Effects in Polish and English Wh-Questions

Wh-phrases in multiple wh-questions in English are subject to strict ordering constraints, as illustrated in (1)-(2) (cf. Müller 2004:300; Simpson 2000:97):

(1)   a. *Who* brought *what*?

     b. *What did *who* bring _?

(2)   a.   *Who* did you give _ *what*?

     b.   *What did you give *who* _?

The contrast in grammaticality between the (a)-(b)-examples in (1) and (2) indicates that English matrix wh-questions exhibit Superiority effects (i.e., it is the structurally higher wh-phrase that must appear in the clause-initial position). Embedded wh-questions in English are subject to the same restrictions as are matrix wh-questions. Consider (3) as an example.

(3)   a. I don't remember *who* brought *what*.

   b. *I don't remember *what who* brought _.

Unlike English, Polish allows violations of Superiority in wh-questions, both in matrix and embedded contexts. Wh-phrases in Polish can switch orders, and the sentences are all grammatical, as illustrated in (4)-(6) for matrix and embedded wh-questions (see Rudin 1988; Lubańska 2005; Citko 1997; 2011).

(4)   a. *Kto   co   przyniósł?*
      who$_{NOM}$ what$_{ACC}$ brought
      'Who brought what?'

   b. *Co   kto   przyniósł?*
      what$_{ACC}$ who$_{NOM}$ brought
      'Who brought what?'

(5)   a. *Komu   co   Ewa   obiecała?*
       whom$_{DAT}$ what$_{ACC}$ Eva$_{NOM}$ promised
       'To whom did Eva promise what?'

   b. *Co   komu   Ewa   obiecała?*
       what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised
       'What did Eva promise to whom?'

(6)   a. Nie pamiętam *kto*   *co*   przyniósł.

         not   remember who$_{NOM}$ what$_{ACC}$ brought

         'I don't remember who brought what.'

      b. Nie pamiętam *co*   *kto*   przyniósł.

         not remember what$_{ACC}$ who$_{NOM}$ brought

         'I don't remember who brought what.'

The absence of Superiority effects is also observed in double object constructions in (7), in which the second wh-phrase is situated in the pre-verbal position (cf. (5)).

(7)   a. *Komu*   Ewa   *co*   obiecała?

         whom$_{DAT}$ Eva$_{NOM}$ what$_{ACC}$ promised

         'To whom did Eva promise what?

      b. *Co*   Ewa   *komu*   obiecała?

         what$_{ACC}$ Eva$_{NOM}$ whom$_{DAT}$ promised

         'What did Eva promise to whom?'

The aim of the following sections will be to explain the contrast in Superiority effects between English (cf. (1)-(3)) and Polish (cf. (4)-(7)), within the minimalist assumptions (see §1.3.2 and chapter 4) and split-CP (see chapter 3) adopted in this thesis. I will illustrate that both Polish and English are subject to the same locality constraint, the Minimal Link Condition (Chomsky 1995:311). However, I will argue that the notion of *Closeness*, which is a central component of the Minimal Link Condition, should be re-defined. In the next section, I will show that Closeness relativised to minimal domains (as in Chomsky 1995), along with the concept of *equidistance* (Chomsky 1995), make incorrect predictions with respect to Superiority effects in ditransitive constructions in English.

5.1.1   Equidistance

Chomsky (1993:17-18; 1995:184) posits the notion of *equidistance*, as defined in (8): [1]
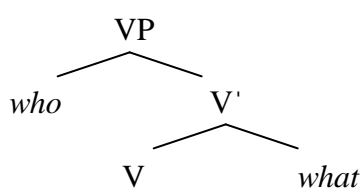
(8)   If α, β are in the same minimal domain, they are equidistant from ɣ

The minimal domain of a head H (Chomsky 1993:17-18; 1995:299) includes the specifier and complement of H^0, the constituents which are adjoined to H^0, to its specifier, or to its maximal projection.

The notion of equidistance and the minimal domain, as proposed by Chomsky (1993; 1995), have been argued to account for such empirical data as Object Shift in Icelandic (Chomsky 1995) and the absence of Superiority effects in multiple wh-questions in Polish (Citko 1997; Dornisch 1998).

Consider again the wh-questions in (2) from English and the contrast in acceptability between (2a) and (2b). In the wh-questions in (2), the object wh-phrases *who* and *what* originate in the specifier and the complement of the V head, respectively (see (9)).

(9)   …

```
              VP
           /      \
        who        V'
                 /    \
               V       what
```

Given the definition of equidistance in (8) and the fact that both *who* and *what* in (9) are located in the (same) minimal domain of V^0, the object wh-phrases in (9) are both equidistant (i.e., they are equally close to C^0). Consequently, C^0 could attract either wh-phrase to Spec-CP (clause-initial position), without violating locality and resulting in

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[1] Cf. Chomsky (2000:122/3): "terms of the same minimal domain are equidistant to probes', and 'the minimal domain of a head H is a set of terms immediately contained in projections of H.'

ungrammaticality. As the star symbol indicates, however, the wh-question in (2b) is unacceptable in English.[2]

Since the notion of equidistance cannot account for the contrast in grammaticality in ditransitive constructions in (2) from English, the concepts of equidistance and the minimal domain will not be adopted in the thesis.[3] The aim of the next section will be to account for the existence of Superiority effects in English (cf. (1)-(3)) and the lack thereof in Polish (cf. (4)-(7)). As the discussion to follow will demonstrate, both Polish and English are subject to the same locality constraint, which we define not only in structural terms (c-command), but also in terms of the Activation Condition.

5.1.2 Explaining the Patterns of Superiority Effects

In order to address the patterns of Superiority effects in English (cf. (1)-(3)) and Polish (cf. (4)-(7)), I adopt the Minimal Link Condition (Chomsky 1995:311), also assumed in Chomsky 2001; 2004), given in (10):

(10) *Minimal Link Condition (MLC)*

K attracts α only if there is no β, β closer to K than α, such that K attracts β.

---

[2] It should be noted that Superiority effects do not arise in prepositional dative constructions in English. Consider the examples in (i) a-b (Müller 2004:300):

(i) a. What$_i$ did you give t$_i$ to whom?
   b. To whom$_j$ did you give what t$_j$?

The discrepancies in Superiority effects between dative constructions (cf. (i) a-b), on the one hand, and the double object constructions (cf. (2) a-b), on the other hand, follow from different syntactic relations that the wh-phrases occupy with respect to each other in these types of constructions. While in the double object dative (cf. (2)), the indirect object *who* c-commands the direct object *what*, and hence the former is closer to C^0 than the latter, in prepositional dative constructions, on the other hand, both objects are in a mutual c-command relation (cf. Bruening 2001, among others), hence they are equally close to the target, C^0. Either wh-object in the prepositional dative can be attracted by C^0, and consequently Superiority effects do not arise.

[3] See also Doggett (2004) who provides arguments for the lack of equidistance among multiple specifiers and between the specifier and the complement of the same head.

Chomsky (1995:356) postulates that *Closeness* for Attract/Move should be relativised to minimal domains, in accordance with (11):

(11) If β c-commands α and τ is the target of raising, then
β is closer to K than α unless β is in the same minimal domain as (a) τ or (b) α.

Since the concept of the minimal domain is not adopted in this work (for reasons discussed in the previous section), following Wiland (2009:15), I adapt the definition of *Closeness*, as defined in (12).[4]

(12) α is *closer* to γ than β iff:
    a. γ c-commands an occurrence of α and β
    b. α asymmetrically c-commands an occurrence of β
    c. α and β are active with respect to γ

    where "occurrence of α" is a member of the chain $C=(\alpha_1,\ldots \alpha_{1+n})$

I follow Wiland (2009) who argues that the definition of *Closeness* subsume both a structural relation between two potential attractees as well as a condition that they must be active ('*active* with respect to γ' is understood as having an uninterpretable feature relevant to γ, and *inactive* means 'checked/valued'). I will demonstrate that the MLC given in (10) along with the definition of Closeness in (12) accounts for the absence of wh-intervention effects both in English and Polish and derives the Superiority effects in English both in the context of subject/object and object/object wh-phrases (cf. (1)-(3)). The absence of Superiority effects in Polish (cf. (4)-(7)), on the other hand, follows from independent properties of Polish syntax, i.e., the possibility of scrambling in Polish (unlike in English, Müller 2004:299) and the fact that in Polish TopP can host a fronted wh-phrase (see §3.1.1; cf. §3.2 regarding TopP in English).

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[4] The definition of *Closeness* in (12) taken from Wiland (2009:15) introduces a slight modification with respect to the point (c) by adding 'with respect to γ'.

Recall from chapter 1 that this thesis adopts the theory of phases as outlined in Chomsky (2000; 2001) (see §1.3.2.2), which relies on feature matching (i.e., Agree) and according to which the subject wh-phrase *who* is attracted to Spec-CP from a Spec-TP position (instead of the first-merge position, Spec-vP, as proposed in Chomsky 2005).[5]

5.1.2.1 Subject-Object Wh-phrases

Consider first the wh-question in (1a) from English and its derivation depicted in (13) (cf. (32), § 4.2.6.4).

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[5] Chomsky (2005) argues that the head T is not an independent probe. According to Chomsky (2005), T^0 inherits Agree-features (φ-features) from C^0, once C^0 enters the structure. Consequently, the Agree-features on T^0 and the Edge Feature on C^0 (the EPP-feature in Chomsky 2001) apply in parallel and attract the wh-subject *who* from its base position (Spec-vP); as a result, an A-chain and an A-bar chain are formed, respectively. Consider (i):

    (i) $[_{CP}$ who$_k$ $[_C$ $[_{TP}$ who$_j$ $[_T$ $[_{vP}$ who$_i$ called you]]]]]?

According to (i), there is no derivational step from Spec-TP to Spec-CP. The two A-chains in (i): who$_i$ and who$_i$-who$_j$ are invisible (not pronounced). The wh-phrase is pronounced in the Spec-CP position.

(13) ForceP   → PF Spell-Out; LF-Transfer

         IntP

who[iWh;iQ]   Int'

     Int[uWh:val;iQ]   TP

     <who[iφ;Case:Nom;iWh;uQ:val]>   T'

       T [uφ:val]   vP   → *PF Spell-Out

     <who[iφ;uCase;iWh;uQ]>   v'

       v+V   VP

       V   **what**[iφ;Case:Acc;iWh;uQ:val]

Recall from §4.2.6.4 that wh-phrases in English carry the [iWh] and [uQ] features, which participate in wh-movement. As DPs, wh-phrases *what* and *who* also possess an interpretable set of φ-features ([iφ]), as shown in the diagram in (13). When T^0 is merged into the structure with an unvalued set of φ-features, it searches its c-command domain and attracts the wh-phrase *who* (with a matching set of interpretable φ-features and an unvalued Case feature) to Spec-TP, in accordance with the MLC (10) and Closeness (12).[6] The [uφ] features on T^0 are checked and the Case feature on the wh-phrase is valued as Nominative as a reflex of the [φ]-feature agreement.

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[6] The assumption that [uφ] features on T^0 require movement of a nominal to Spec-TP raises a question as to how [uφ] features on v^0 are satisfied. If we assume that [uφ] features are located on the lexical verb V instead of v^0 (see Zeijlstra 2010:19; Chomsky 2001:9), then [uφ] would be c-commanded by a direct object carrying [iφ] at some point in the derivation (i.e., prior to V^0-to-v^0 raising), satisfying the requirement on Agree as adopted in this thesis (see chapter 4, §4.2.5, (23)).
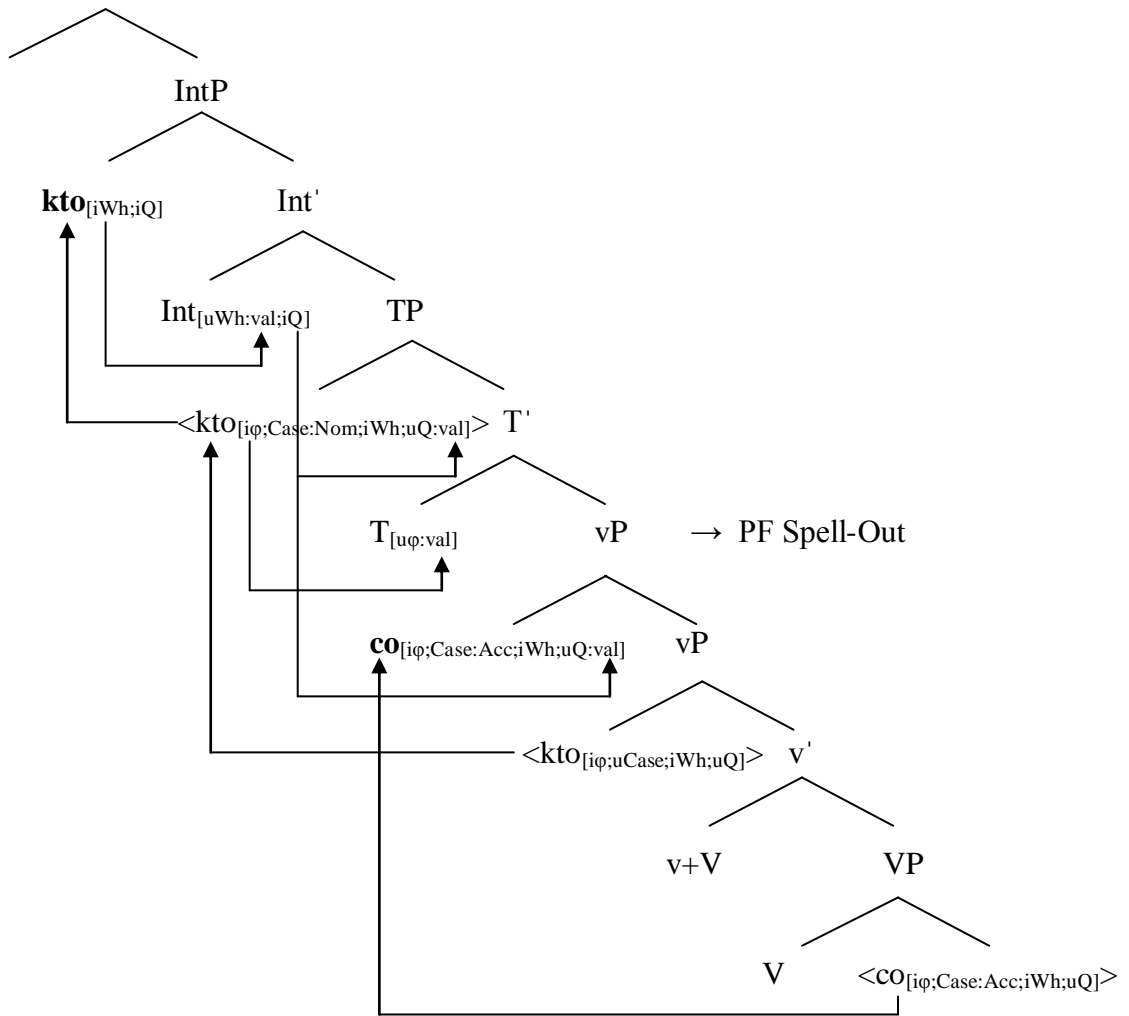
When Int^0 enters the structure, it searches its c-command domain for an active element with a matching [iWh] feature. Both *who* and *what* are potential goals able to check the [uWh] feature on Int^0 by virtue of possessing the [iWh] and [uQ] features, the latter making them syntactically active. Int^0 values the [uQ] feature on the wh-phrases via multiple Agree (recall the mechanism of Agree, §4.2.5, (23)) and raises the wh-phrase *who* (located in Spec-TP) to Spec-IntP, in accord with the MLC (10) and Closeness (12). The [uWh] feature of Int^0 is valued under Agree by the [iWh]-equipped wh-phrase *who*. We derive the surface word order in (1a). The wh-question in (1b) is excluded since movement of the wh-phrase *what* across *who* in (13) would violate the MLC. Therefore, this derivation is prohibited, and the contrast in grammaticality between (1a) and (1b) is accounted for.[7]

On a par with matrix wh-questions, in embedded contexts in English, it is the wh-phrase *who* that must be raised to Spec-IntP instead of *what* (in accordance with the MLC (10) and Closeness (12)), which accounts for the contrast in grammaticality between (3a) and (3b).

Consider now the wh-question in Polish in (4a) and its derivation illustrated in (14) (cf. (30), §4.2.6.3).

---

[7] It should be noted that the movement of *who* from Spec-TP (an A-position) to Spec-CP (an A-bar position) is permissible, since the head of an A-chain can undergo A-bar movement, with different features involved (Chomsky 2000:128).

(14) ForceP   → PF Spell-Out; LF-Transfer

IntP

kto$_{[iWh;iQ]}$ Int'

Int$_{[uWh:val;iQ]}$ TP

<kto$_{[i\varphi;Case:Nom;iWh;uQ:val]}$> T'

T$_{[u\varphi:val]}$ vP   → PF Spell-Out

co$_{[i\varphi;Case:Acc;iWh;uQ:val]}$ vP

<kto$_{[i\varphi;uCase;iWh;uQ]}$> v'

v+V   VP

V   <co$_{[i\varphi;Case:Acc;iWh;uQ]}$>

First, the object wh-phrase *co* containing an uninterpretable feature ([uQ]) raises from the verb complement position to the outer Spec-vP to prevent the derivation from crashing at PF due to the application of Spell-Out at vP. When T^0 is merged, it attracts the wh-phrase *kto* to Spec-TP, since it is the only available goal that can check the [uφ] features on T^0 (the wh-phrase *co* is an inactive goal with respect to T^0, since the wh-phrase *co*, having its Case feature already valued, does not possess any uninterpretable features relevant to T^0 (cf. (12c)) (see also §5.3 below for a detailed discussion on the absence of wh-intervention effects). Situated in the Spec-TP position, the wh-phrase *kto* is a closer active goal for Int^0 than the wh-phrase *co*, hence the former raises to Spec-IntP, producing the surface representation as in (4a). Both the [uQ] feature on the wh-

phrases and the [uWh] feature on Int^0 are checked/valued via Agree by a c-commanding element with a corresponding interpretable feature.

Since it is the wh-subject *kto* that must raise to Spec-IntP by virtue of being the closest goal for Int^0, the question arises as to how sentences like (4b), repeated here as (15), in which the wh-phrase *co* precedes *kto* are possible and well-formed in Polish.

(15) *Co   kto*   przyniósł?
     $what_{ACC}$ who_{NOM} brought
     'Who brought what?'

As we will see, the possibility of obviating Superiority effects in Polish wh-questions follows from the properties of the split-CP (Rizzi 1997; 2001) as adopted for Polish (see chapter 3) and the possibility of moving a wh-phrase to Spec-TopP in Polish.

Recall from §3.1.1 that there is a projection above IntP, TopP, in Polish which hosts a contrastively topicalized XP, the latter can be a wh-phrase. Consider again the structure of the left periphery proposed for Polish (cf. (21), §3.1.2), repeated here in (16), and the examples in (17a) and (17b), which illustrate movement of the wh-phrase from Spec-IntP to Spec-TopP, the head of the latter category being overtly realised by the lexical marker *to* (it).
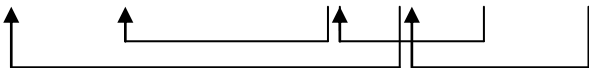
(16)   ForceP > TopP > IntP > FocP > FinP

(17) a. [$_{TopP}$ Ewa$_i$ [$_{Top}$ to [$_{IntP}$ **kogo** [$_{TP}$ t$_i$ [$_{vP}$ zaprosiła   na urodziny]]]]]?
          Eva_{NOM} it_{PRT} who_{ACC} $invited_{3,Sg,Fm}$ on birthday
          'As for Eva, who did she invite to her birthday party?'

b. [TopP **Kogo$_i$** [Top to [IntP **t$_i$** [TP Ewa [vP zaprosiła na urodziny]]]]]?

who$_{ACC}$ it$_{PRT}$ Eva$_{NOM}$ invited$_{3,Sg,Fm}$ on birthday

'Who was it that Eva invited to her birthday party?'

According to Cegłowski & Tajsner (2006), the presence of the lexical marker *to* (it) in the lexical array triggers obligatory constituent displacement to Spec-TopP. The presence of the lexical marker *to* (which heads TopP) entails that the XP situated in Spec-TopP acts as a contrastive topic (see §3.1.1).

Assuming that the Spec-TopP position above IntP is an available landing site for a wh-phrase even if the lexical marker *to* is not part of the lexical array,[8] I propose that in the multiple wh-question in Polish in (15), the wh-phrase *co* has obviated the Superiority effect (cf. (4a)) by raising from the vP-edge position to Spec-TopP, as depicted in (18).

(18)   [ForceP [TopP **co$_j$** [IntP **kto$_i$** [FocP [FinP [TP **t$_i$′** [vP **t$_j$′** [vP **t$_i$** [vP V **t$_j$**]]]]]]]]]]?

I assume that the movement of the wh-phrase *co* from the vP-edge position to the left periphery (Spec-TopP) is induced by an uninterpretable [uTop] feature, optionally assigned to the wh-phrase *co*.[9]

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[8] The claim, as made here, that Top^0 may not be phonetically realized in Polish and yet attract an XP to Spec-TopP is empirically supported by the examples such as (i) from Polish (see also §3.1.2, fn. 6), in which the constituent fronted to the clause-initial position is understood as a contrastive topic, whether or not followed by the particle *to*.

(ii) A   Piotr (to) dokąd się wybiera?
      and Peter (it) where Refl goes
      'And as for Peter, where is he going?'

[9] Developing an exact mechanism of topicalization and focalisation to the left periphery in Polish is beyond the scope of this work. In order to make Agree and Move licit between the wh-phrase *co* and Top^0 in (18) (given the mechanism of Move and Agree in chapter 4, §4.2.5), I tentatively suggest that Top^0 carries an [iTop] feature, which checks the [uTop] feature on the wh-phrase *co*. However, in order to be active, Top^0 must also possess an [uF], which attracts the wh-phrase *co* to Spec-TopP, and this feature is valued against a matching interpretable feature [iF] carried by the wh-phrase *co*. We could specify the

In §3.2 it was established that the fronted wh-phrase in matrix wh-questions in English moves to Spec-IntP, and the latter is the highest projection that can host a wh-phrase in root wh-questions in English. Consider again the contrast in acceptability between (19a) and (19b) (see ex. (26) and (30), §3.2.1).

(19) a. To Terry, what did you give?

    b. *What to Terry did you give?

Adopting Rizzi's (2001) split-CP structure, in §3.2.1 I concluded that the fronted wh-phrase in English root questions moves to Spec-IntP, and the topicalized phrase *to Terry* in (19a) occupies Spec-TopP, as illustrated in (20) (see ex. (28), §3.2.1).

(20) [$_{ForceP}$ [$_{TopP}$ {To Terry}$_j$ [$_{IntP}$ what$_i$ [$_{FocP}$ [$_{FinP}$ [$_{TP}$ you give t$_i$ t$_j$]]]]]]?

The contrast in acceptability between (19a) and (19b) is captured if we assume that the wh-phrase *what* cannot move higher than IntP (i.e., to Spec-ForceP) in English root wh-questions. English contrasts with Polish, since the latter offers an additional (apart from Spec-IntP) landing site (Spec-TopP) for the fronted wh-phrase. I propose that this difference between Polish and English is what accounts for the variations in Superiority effects between the two languages (cf. (1) a-b vs. (4) a-b).

With respect to embedded wh-questions in Polish, recall from §3.1.1.2 (ex. (10)), that when the particle 'to' (it) is present, a fronted wh-phrase moves to the pre-*to* position, i.e., Spec-TopP, as shown in (21).

(21) Już   wiem   **kogo**   *to*   Ewa   zaprosiła   na bal maturalny.
already know$_{1,Sg}$ who$_{ACC}$ it$_{PRT}$ Eva$_{NOM}$ invited$_{3,Sg,Fm}$ for prom
'I already know who it is that Eva invited to the prom.'

[uF] on Top^0 as a [uScope] feature owing to the fact that topics are elements which take highest scope in a sentence (see van Craenbroeck & Lipták 2006).

Since Spec-TopP is an available landing site for the fronted wh-phrase in embedded clauses (in addition to Spec-IntP, see §3.1.1.2 and §3.1.2), similarly to root wh-questions, the lack of Superiority effects in embedded wh-questions in Polish (see (6a)-(6b)) is correctly predicted.

In embedded wh-questions in English, the landing site of the fronted wh-phrase is Spec-ForceP, as established in §3.2.2. Since ForceP is the highest projection in the left periphery (Rizzi 1997; 2001), see also (16) above, no wh-fronting to a position higher than ForceP can occur, thereby Superiority effects in embedded wh-questions in English (cf. (3) above) cannot be obviated.

This section illustrated that locality in movement both in English and Polish observes the MLC (cf. (10)), which relies on the concept of Closeness as defined in (12). The asymmetry in Superiority effects between English (cf. (1) & (3)) and Polish (cf. (4) & (6)) wh-questions (in the context of wh-subject/wh-object) was attributed to the absence of an additional landing site for a wh-phrase in English, and the presence thereof in Polish.

5.1.2.2 Object Wh-phrases

The differences in Superiority effects between English and Polish also emerge in double object constructions. Consider the contrast between English (cf. (2) a-b), reproduced here as (22) a-b and Polish (cf. (5) a-b and (7) a-b), repeated here for ease of reference in (23) a-b and (24) a-b.

(22) a. *Who* did you give *what*?

   b. **What* did you give *who*?

(23) a. *Komu*   Ewa   *co*   obiecała?

       whom$_{DAT}$ Eva$_{NOM}$ what$_{ACC}$ promised

       'To whom did Eva promise what?

    b. *Co*   Ewa   *komu*   obiecała?

       what$_{ACC}$ Eva$_{NOM}$ whom$_{DAT}$ promised

       'What did Eva promise to whom?'

(24) a. *Komu*   *co*   Ewa   obiecała?

       whom$_{DAT}$ what$_{ACC}$ Eva$_{NOM}$ promised
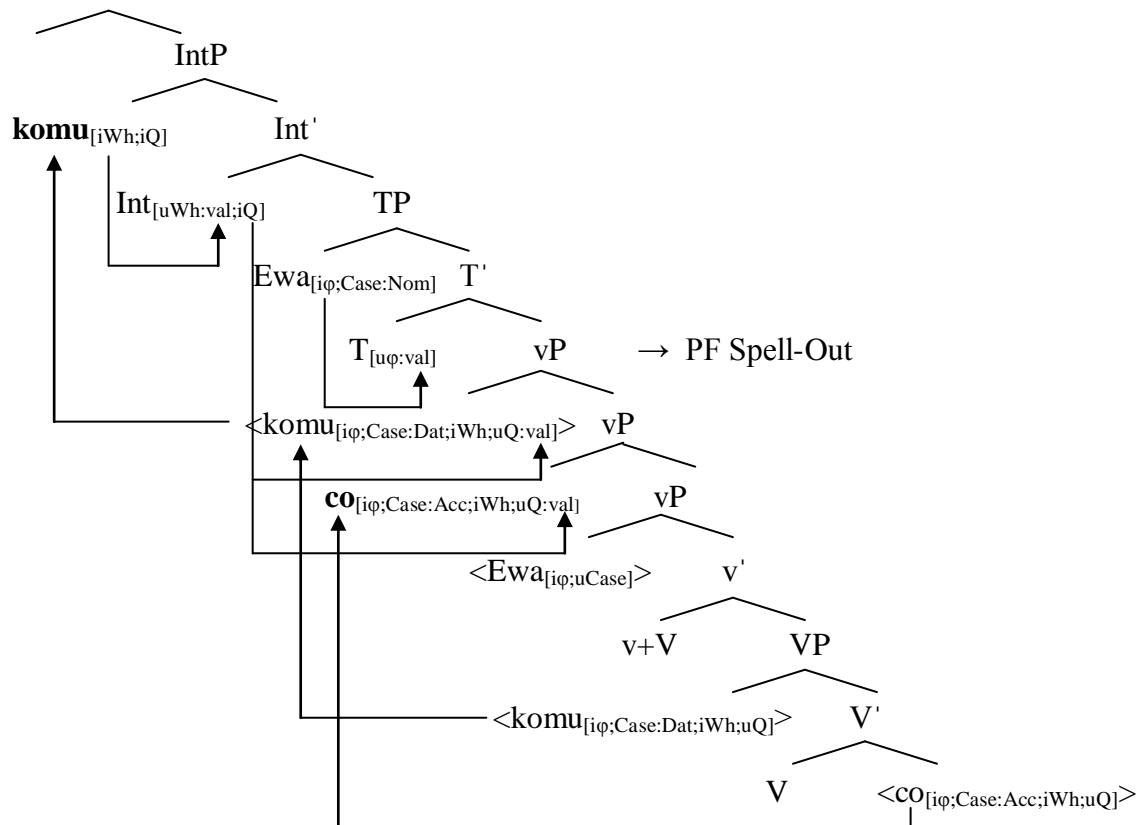
       'To whom did Eva promise what?

    b. *Co*   *komu*   Ewa   obiecała?

       what$_{ACC}$ whom$_{DAT}$ Eva$_{NOM}$ promised

       'What did Eva promise to whom?'

With respect to English, as illustrated in (22a) and (22b), Superiority effects exist in double object constructions between two object wh-phrases. In order to capture the contrast in grammaticality between (22a) and (22b), let us look at the derivation in (25) (irrelevant details omitted):

(25)   ForceP   → PF Spell-Out; LF-Transfer

$$\text{who}_{[iWh;iQ]}\quad \text{Int}'$$

Tree structure (25):

- ForceP → PF Spell-Out; LF-Transfer
  - IntP
    - **who**[iWh;iQ]
    - Int'
      - Int[iQ;uWh:val]
      - TP
        - you[iφ;Case:Nom]
        - T'
          - T[uφ:val]
          - vP → *PF Spell-Out
            - <you[iφ;uCase]>
            - v'
              - v+V
              - VP
                - <who[iφ;Case:Dat;iWh;uQ:val]>
                - V'
                  - V
                  - **what**[iφ;Case:Acc;iWh;uQ:val]

As illustrated in (25), both object wh-phrases carry the [iWh] and [uQ] features which participate in wh-movement. The wh-phrases do not raise from their base positions since the structure is not spelled out to PF upon completion of vP (which is indicated by the star symbol). When T^0 is merged, the subject DP *you* raises to Spec-TP to check the [uφ] features on T^0 and simultaneously the Case feature on the subject is valued as Nominative.

Subsequently, when Int^0 enters the structure equipped with the [iQ] and [uWh] features, it comes into (multiple) Agree with the wh-phrases which are located in situ, and the [uQ] feature on the wh-phrases is checked as a result of this agreement. The wh-phrase *who* is a closer active goal for Int^0 than the wh-phrase *what*, consequently the former is attracted to the clause-initial position, Spec-IntP, to value the [uWh] feature of Int^0 under Agree. Movement of the wh-phrase *what* across *who* to Spec-IntP is illicit, as it would violate the MLC (see (10)). Hence, we correctly rule out (22b) and account for

the Superiority effects (i.e., the grammaticality contrast between (22a) and (22b)) in double object constructions in English.

Polish double object constructions do not exhibit Superiority effects (compare (a)-(b) examples in (23) and (24)). Let us look at the derivation of the wh-question in (23a) first, which is illustrated in (26).

(26) ForceP   → PF Spell-Out; LF-Transfer

$$\text{komu}_{[\text{iWh;iQ}]} \quad \text{IntP} \quad \text{Int}'$$

$$\text{Int}_{[\text{uWh:val;iQ}]} \quad \text{TP}$$

$$\text{Ewa}_{[\text{i}\varphi;\text{Case:Nom}]} \quad \text{T}'$$

$$\text{T}_{[\text{u}\varphi:\text{val}]} \quad \text{vP} \quad \rightarrow \text{PF Spell-Out}$$

$$\langle\text{komu}_{[\text{i}\varphi;\text{Case:Dat;iWh;uQ:val}]}\rangle \quad \text{vP}$$

$$\text{co}_{[\text{i}\varphi;\text{Case:Acc;iWh;uQ:val}]} \quad \text{vP}$$

$$\langle\text{Ewa}_{[\text{i}\varphi;\text{uCase}]}\rangle \quad \text{v}'$$

$$\text{v+V} \quad \text{VP}$$

$$\langle\text{komu}_{[\text{i}\varphi;\text{Case:Dat;iWh;uQ}]}\rangle \quad \text{V}'$$

$$\text{V} \quad \langle\text{co}_{[\text{i}\varphi;\text{Case:Acc;iWh;uQ}]}\rangle$$

Recall from chapter 1 §1.1.2 that the basic word order in ditransitive constructions in Polish is: V-IO-DO. Hence, the indirect object *komu* is inserted structurally higher than the direct object *co*, as illustrated in (26). The wh-phrases in (26) raise to the vP-edge due to the [uQ] feature and Spell-Out which applies at the vP level and sends the complement of v^0 to PF. In line with Richards (1997; 2001), I assume that the movement of the wh-phrases to multiple specifiers of v^0 in (26) proceeds in 'a tuck-in

fashion', i.e., the structurally higher wh-phrase *komu* moves first, followed by movement of the wh-phrase *co* to the inner Spec-vP. When T^0 is merged, the subject DP *Ewa* raises to Spec-TP to check the [uφ] feature on T^0 under Agree, as it is the only active goal for T^0 by virtue of having an unvalued Case feature (see §5.3 below). When Int^0 enters the derivation, it checks the [uQ] feature on both wh-phrases located in the vP-edge. The wh-phrase *komu* is closer to Int^0 than the wh-phrase *co* (given the MLC in (10) and Closeness in (12)), hence it is the former that raises to Spec-IntP to check the [uWh] feature of Int^0 under Agree. The wh-phrase *co* remains in the vP-edge position, where it is pronounced. Thereby, we derive the wh-question in (23a).

Let us now consider the wh-question in (23b), in which the wh-phrase *co* occurs in the clause-initial position, whereas the wh-object *komu* is pronounced in the pre-verbal position.

I propose that the difference in surface structure representations between (23a) and (23b) in Polish double object constructions follows from the possibility of VP-internal scrambling in this language. In §5.2 I will illustrate that VP-internal scrambling accounts for a variety of syntactic phenomena in Polish, hence its existence in Polish syntax is acknowledged on independent grounds.

Consider now the derivation of the wh-question in (23b), depicted in (27):

(27) ForceP   → PF Spell-Out; LF-Transfer

$$\text{IntP}$$

co$_{[iWh;\ iQ]}$ Int′

Int$_{[uWh:val;iQ]}$ TP

Ewa$_{[i\varphi;Case:Nom]}$ T′

T$_{[u\varphi:val]}$ vP   → PF Spell-Out

vP

<co$_{[i\varphi;Case:Dat;iWh;uQ:val]}$>   vP

komu$_{[i\varphi;Case:Acc;iWh;uQ:val]}$ vP

<Ewa$_{[i\varphi;uCase]}$>   v′

v+V   VP

<co$_{[i\varphi;Case:Acc;iWh;uQ]}$>   VP

<komu$_{[i\varphi;Case:Dat;iWh;uQ]}$>   V′

V   <co$_{[i\varphi;Case:Acc;iWh;uQ]}$>

I assume that in the derivation of the wh-question in (23b), as shown in (27), the direct object *co* undergoes scrambling to Spec-VP.[10] Once in Spec-VP, the wh-phrase *co* is structurally higher and c-commands the wh-phrase *komu*. When both wh-phrases raise to the vP-edge (due to the application of Spell-Out at vP and their [uQ] feature), the movement proceeds in a tuck-in way and preserves the order DO-IO (*co* is located higher than *komu*). Subsequently, when Int^0 enters the derivation, the [uQ] feature on the wh-phrases is checked under multiple Agree by the [iQ]-bearing Int^0. The DO *co* situated in the most outer Spec-vP is closer to Int^0 than the IO *komu*, hence it is the former that raises to Spec-IntP (in accordance with the MLC (10) and Closeness (12)) to

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[10] The trigger for scrambling has been a controversial issue. Whereas some authors argue that scrambling is an optional movement operation (Saito 1989; Saito & Fukui 1998), others propose that only long-distance but not local scrambling is optional (Miyagawa 2006). I leave the question of what triggers local and long-distance scrambling in Polish and cross-linguistically as a topic for further research.

check the [uWh] feature on Int^0. The wh-phrase *komu* stays in the vP-edge, where it is pronounced, while the subject DP *Ewa* has undergone raising to Spec-TP. We obtain the constituent order in (23b).

It is also possible for both object wh-phrases to appear in the clause-initial position (see the examples in (24a) and (24b)). I propose that the optional movement of the wh-phrase from the pre-verbal position (cf. (23) a-b) to the left periphery of the clause ((24) a-b) in double object constructions in Polish involves movement of the wh-phrase from Spec-vP to Spec-TopP, on a par with the derivation of a wh-question in (18) in Polish, discussed in §5.1.2.1. The derivations of (24) a-b are given in (28) a-b, respectively.

(28) a. [$_{ForceP}$ [$_{TopP}$ **komu$_i$** [$_{IntP}$ **co$_j$** [$_{TP}$ Ewa [$_{vP}$ **t$_j''$** [$_{vP}$ **t$_i'$** [$_{VP}$ **t$_j'$** [$_{VP}$ V **t$_i$ t$_j$**]]]]]]]]?

   b. [$_{ForceP}$ [$_{TopP}$ **co$_j$** [$_{IntP}$ **komu$_i$** [$_{TP}$ Ewa [$_{vP}$ **t$_i'$** [$_{vP}$ **t$_j'$** [$_{VP}$ V **t$_i$ t$_j$**]]]]]]]?
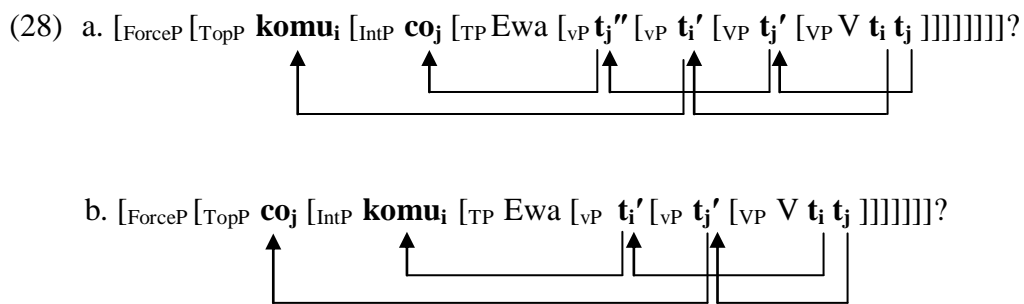
According to (28a), the wh-phrase *co* undergoes VP-internal scrambling to Spec-VP. This process reverses the base order of object wh-phrases (*co* (t$_j'$) precedes *komu* (t$_i$) within VP). When the wh-phrases undergo raising to the vP-edge, the wh-phrase *co* moves first, followed by movement of the wh-phrase *komu*, the latter lands in the inner Spec-vP (the movement proceeds in a tuck-in way). Since *co* is closer to Int^0 than *komu*, the former raises from Spec-vP to Spec-IntP. Subsequently, the wh-phrase *komu* moves from Spec-vP to Spec-TopP, deriving (24a).

In (28b), on the other hand, no VP-internal scrambling takes place and the wh-objects raise from their base positions to multiple specifiers of vP preserving their underlying order. The wh-phrase *komu* is attracted to Spec-IntP, since it is the closest

element that can check the [uWh] feature of Int^0. Subsequently, the wh-phrase *co* moves from Spec-vP to Spec-TopP, resulting in the representation in (24b).

The account of the lack of Superiority effects in double object constructions in Polish, as put forward here, relies on the existence of VP-internal scrambling in the language under consideration. The fact that VP-internal scrambling in Polish is not a stipulation, but instead its existence in Polish syntax finds an empirical support, will be discussed in the next section.

5.2   VP-Internal Scrambling

In the previous section I established that the absence of Superiority effects in double object constructions in Polish is attributed to the possibility of VP-internal scrambling. This section will illustrate that VP-internal scrambling in Polish is possible on independent grounds and subsumes a number of empirical facts including (apart from Superiority effects) quantifier scope and WCO effects.

Recall from chapter 1, §1.1.2, that in double object constructions in Polish containing two quantificational objects, only a surface scope interpretation is possible if the indirect object (marked for Dative) precedes the direct object (marked for Accusative) (see (29)). On the other hand, when the direct object precedes the indirect object (see (30)), both surface and inverse scope readings are available.[11]

(29)   Nauczyciel zadał   [$_{DAT}$ każdemu studentowi] [$_{ACC}$ jedno zadanie].
       teacher   assigned   every student   one problem
       'The teacher assigned every student one problem.' $\forall > \exists$; $*\exists > \forall$

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[11] The same scope interpretation would obtain if one or both quantificational objects occupied pre-verbal positions (see Wiland 2009:99).

(30) Piotr dał   [ACC każdą naszą monetę] [DAT jakiemuś chłopcu].

Peter gave   each coin of ours   some boy

'Peter gave each coin of ours to some boy.'   ∀ > ∃ ; ∃ > ∀

   According to Wiland (2009:99), the scope ambiguity observed in (30) is the result

of scrambling of the direct object across the indirect object (the IO c-commands the

trace of the DO). In order to illustrate how the scope facts in (29)-(30) follow from the

proposal of VP-internal scrambling and the adopted 'tuck-in' approach to movement, let

us look at the derivations of (29) and (30), illustrated in (31) and (32), respectively.

(31)   ….
                        TP
                   Sub   T'
                          T+v   vP
                          every student   vP
                                    one problem   vP
                                            <Sub>   v'
                                                  v+V   VP
                                                  <every student>   V'
                                                            V   <one problem>

(32)

....

```
                          TP
                    _____|_____
                  Sub            T'
                            _____|_____
                          T+v            vP
                                    _____|_____
                        each coin of ours       vP
                                            _____|_____
                                        some boy           vP
                                                      _____|_____
                                                  <Sub>            v'
                                                              _____|_____
                                                            v+V            VP
                                                                      _____|_____
                                                                  <each…>            VP
                                                                                _____|_____
                                                                            <some boy>           V'
                                                                                            _____|_____
                                                                                          V            <each…>
```
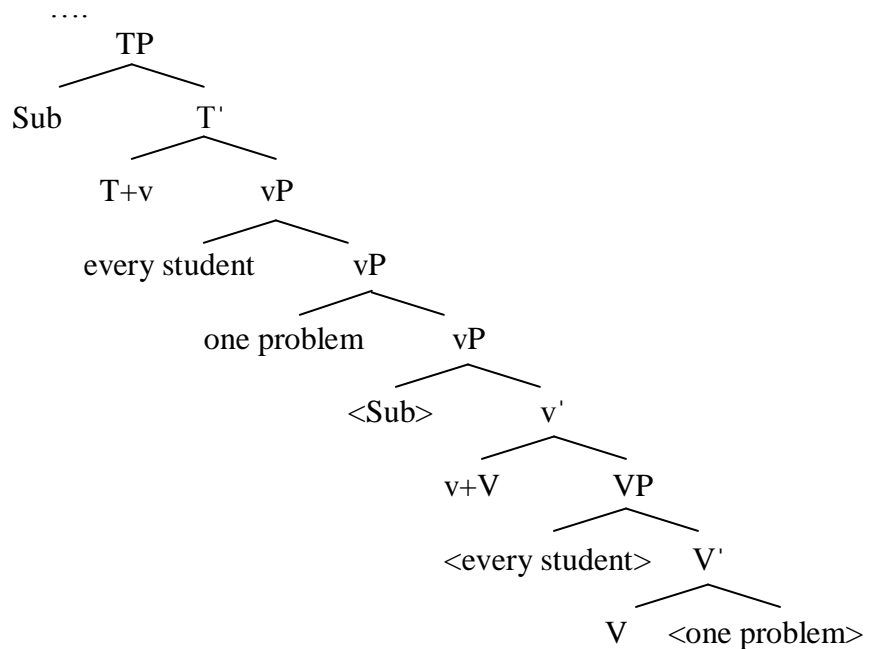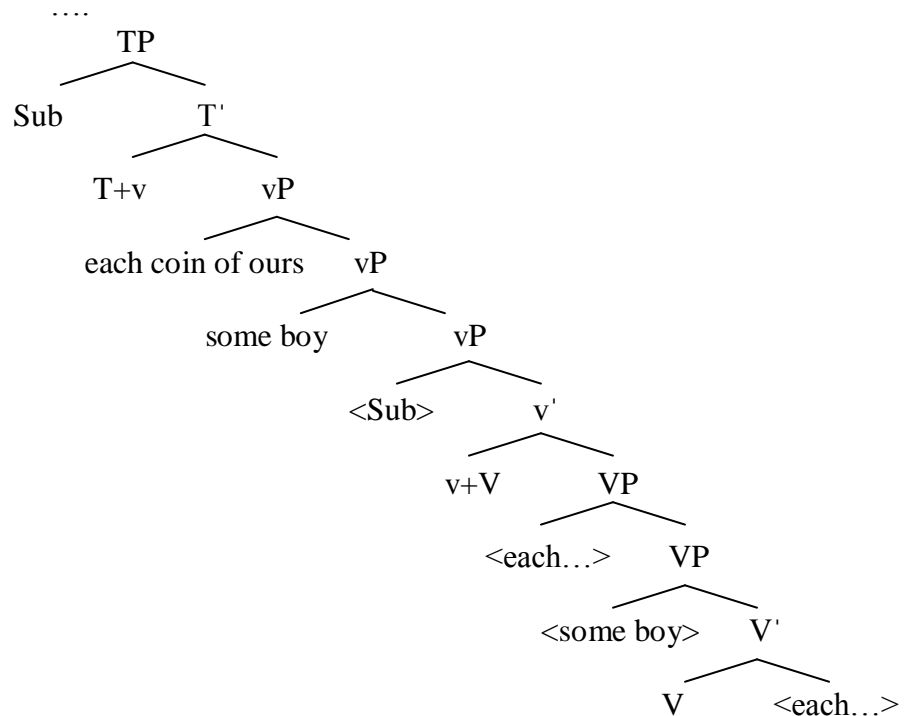
Both in (31) and (32), the subject DP has raised from Spec-vP to Spec-TP (see §1.1.3), and the lexical verb has moved to T^0 (the verb raising to T^0 is marked by T+v in the diagrams). The fact that a lexical verb in Polish can optionally raise to T^0 was established in §1.1.4.3. In (31), both quantificational objects raise from their base positions to multiple specifiers of vP, and the movement proceeds in a tuck-in way, similarly to the movement of object wh-phrases in multiple wh-questions (cf. §5.1.2.2). Since quantificational objects are uninterpretable in situ (Bruening 2001:251), they cannot reconstruct to their base positions (see also Johnson & Tomioka 1998), and consequently the only interpretation available for (31) (corresponding to (29)) is the one where the indirect object (represented by a universal quantifier *every*) takes scope over the direct object (represented by an existential quantifier *some*) since the former c-commands the latter.

In (32), on the other hand, the direct object *each coin of ours* undergoes scrambling to the outer Spec-VP prior to moving to Spec-vP. The VP-internal scrambling reverses

the base order of the quantificational objects. Movement of the quantifiers from Spec-VP to Spec-vP (to multiple specifiers of a single head) proceeds in a tuck-in fashion: the direct object *each coin of ours* raises first, followed by movement of the indirect object *some boy* to the inner Spec-vP. The quantificational direct object can reconstruct to a position through which it has passed, i.e., a VP-external position. Consequently, we obtain two interpretations in (30): a surface reading, in which the direct object (represented by a universal quantifier *each*) takes scope over the indirect object (represented by an existential quantifier *some*) and an inverse scope reading, where *some* takes scope over *each*, the latter interpretation resulting from a VP-internal scrambling.

Apart from quantificational objects, other XPs can also undergo VP-internal scrambling in Polish. Consider the example in (33). Given that the basic order in double object constructions in Polish is V-IO-DO and the lexical verb may stay in v^0 (v^0-to-T^0 raising in Polish is possible but not obligatory, cf. §1.1.4.3), the constituent order in (33) suggests that the DO (marked for Accusative) has undergone VP-internal scrambling.

(33) Kiedy przedstawiłeś   Ewę$_j$ Piotrowi t$_j$?
       when   introduced$_{2,Sg,M}$ Eva$_{ACC}$ Peter$_{DAT}$
       'When did you introduce Eva to Peter?'

Another piece of data that follows straightforwardly from the assumption that VP-internal scrambling exists in Polish comes from WCO. The proposal that wh-phrases can undergo VP-internal scrambling accounts for the lack of WCO effects in wh-questions in Polish, as illustrated in (34) (see §2.2.3.1 for a more detailed discussion on WCO effects in Polish).

(34) Kiedy Piotr kogo$_i$ przedstawił   jego$_i$ nowemu przełożonemu t$_i$?

when Peter who$_{ACC}$ introduced$_{3,Sg,M}$ [$_{DAT}$ his new   boss]

'When did Peter introduce who$_i$ to his$_i$ new boss?'

In chapter 2, §2.2.3.1, a suggestion was put forward that in examples like (34), the movement of the wh-phrase *kogo* to the vP-edge (an immediately pre-verbal position) is preceded by movement of *kogo* to Spec-VP (see (35)).

(35) [$_{IntP}$ kiedy [$_{TP}$ Piotr [$_{vP}$ kogo$_i$ [$_{vP}$ [$_{VP}$ t$_i$′ [$_{VP}$ V {jego$_i$…}t$_i$]]]]]]?

Movement of the wh-phrase *kogo* in (35) from its base position to the vP-edge proceeding via Spec-VP leaves a trace (copy) in the Spec-VP position (t$_i$′). The wh-phrase *kogo* locally A-bar binds only the trace of the wh-phrase (t$_i$′), whereas the pronoun *jego* is locally A-bound by the c-commanding intermediate trace of the wh-phrase in Spec-VP. If scrambling of the wh-phrase *kogo* to Spec-VP did not take place, and the wh-phrase moved directly from its base position (V-complement) to Spec-vP, the wh-phrase *kogo* would bind more than one variable, in violation of the Bijection Principle. We thus account for the lack of WCO effects in examples like (34) by postulating that VP-internal scrambling is an available movement operation in Polish syntax.

The last section will be devoted to the absence of intervention effects in wh-questions.

5.3 Wh-Intervention Effects

The aim of this section is to establish how Agree between T^0 and the external argument located in the inner Spec-vP is possible in the Polish examples in (14) & (26)-(27) above, given that there are wh-phrases in the outer Spec-vP, which should block Agree and subsequent movement of the subject DP to Spec-TP.

In Chomsky (2001), T^0 is regarded as an independent probe, i.e., it possesses Agree (φ)-features inherently (not derivationally from C^0, cf. Chomsky 2005). Hence, T^0 probes before C^0 enters the derivation. The presence of the wh-phrases in the outer Spec-vP, as illustrated in (14), (26) & (27) from Polish, should block Agree between T^0 and the subject, the latter located in the inner Spec-vP. The wh-phrases are potential matching goals for T^0, since they possess an interpretable set of φ–features. Although the wh-phrases in the outer Spec-vP are inactive with respect to T^0 (their Case feature already has a value), inactive nominals still induce intervention effects under DIC, see chapter 1, §1.3.2.1, (80), as argued by Chomsky (2000:123; 2001:27).[12]

Consider a single wh-question from English in (36).

(36) a. Who did John see?

   b. $[_{TP} [_T [_{vP} who_i [_{vP} John [_v see t_i]]]]]$

   c. $[_{CP} who_i [_C [_{TP} John_j [_{vP} t_i' [_{vP} t_j [_v see t_i]]]]]]$

In order to overcome the problem of the intervention effect illustrated in (36b) (the wh-phrase *who* intervenes between T^0 and the subject DP *John*), Chomsky (2001:27/28) postulates that the MLC should be evaluated only at the phase level, i.e., at CP (in line with the Evaluation principle (cf. (78), §1.3.2.1), according to which Spell-Out takes

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[12] The wh-phrases carry an[uWh] feature which makes them active for C^0, but this feature is irrelevant to T^0 (cf. Chomsky 2001:fn. 49).

place at the next higher phase). When T^0 probes and attracts the external argument *John* to Spec-TP, the MLC is violated since subject passes over the intervening wh-phrase. However, since the effects of the MLC are only determined at the phase level (CP), movement of the wh-phrase *who* to Spec-CP salvages the apparent violation of the MLC.[13] Wh-movement of *who* to Spec-CP leaves only a trace (copy of the moved element) in the vP-edge. Chomsky (2001:28) assumes that the trace of an XP in the vP-edge, lacking phonological content and being inactive with respect to T^0, is invisible to Match, and consequently to Agree and Move. Therefore, Agree between T^0 and the subject DP can take place and the subject moves to Spec-TP (Chomsky 2001).

As Chomsky (2001:28; 2004:123) points out, the evaluation of the MLC at the phase level has the following consequence: an XP raised to Spec-vP cannot be stranded there; otherwise, the presence of an XP in the outer Spec-vP will block Agree and hence movement of the external argument to Spec-TP. As we have already seen in (14), (26) and (27), Polish is one of a class of languages which allows a wh-phrase to be stranded in the pre-verbal position (contra Chomsky's predictions).

I propose that the absence of intervention effects in Polish wh-questions follows from the definition of *Closeness* adopted here, as defined in (12). It should be noted that in Chomsky's (2000; 2001) theory, inactive matching goals induce defective intervention effects under the DIC (see (80), §1.3.2.1). Given the definition of Closeness adopted here, I assume that elements which become inactive in the course of the derivation do not constitute interveners between the probe and a structurally lower goal (see Wiland (2009) for motivations and arguments for implementing the concept of *activity* into the definition of Closeness).

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[13] As pointed out in Müller (2004:293), the claim that the MLC is only evaluated at the phase level and not at each step of the derivation makes the MLC a representational constraint instead of a derivational one.

Consider again the wh-question in (37) from Polish (the equivalent of (23a)), and its derivational representation in (38):

(37) *Komu* Ewa *co* obiecała?
whom$_{DAT}$ Eva$_{NOM}$ what$_{ACC}$ promised
'To whom did Eva promise what?

(38) [$_{IntP}$ **Komu$_i$** [$_{TP}$ Ewa$_k$ [$_T$ [$_{vP}$ t$_i'$ [$_{vP}$ **co$_j$** [$_{vP}$ t$_k$ [$_v$ [$_{VP}$ obiecała t$_i$ t$_j$]]]]]]]]]?

In order for the wh-phrases *komu* and *co*, located in the vP-edge, to act as potential goals for T^0, both *komu* and *co* need to be active with respect to T^0 (in accordance with (12c)); however, in (38), the wh-phrases are inactive, hence invisible to T^0 since their Case features, which make a nominal active for T^0, have already been assigned value as Dative and Accusative on *komu* and *co*, respectively (the [uQ] feature on the wh-phrases is irrelevant to T^0, it makes the wh-phrases active only for Int^0). Since the wh-phrases are both inactive with respect to T^0, they are unable to move to Spec-TP and agree with T^0. The closest (and the only) active goal in the search domain of T^0 is the subject DP in the inner Spec-vP by virtue of possessing an unvalued Case feature, which needs to be assigned value as Nominative. Since only active elements are relevant for the evaluation of minimality (see (12)), the inactive (for T^0) wh-phrases *komu* and *co*, although structurally higher than the subject *Ewa*, do not intervene between T^0 and the subject. The intervention effects neither arise in (38), nor do they in other examples like (14) and (27). The subject DP *Ewa* is attracted to Spec-TP and agreement is established between the [iφ] features carried by the subject and the [uφ] features on T^0. The derivation converges.

5.4 Summary

This chapter concentrated on explaining the presence of Superiority effects in English and the absence thereof in Polish fully-fledged wh-questions. Both languages are subject to the same constraint on movement, the MLC, as proposed by Chomsky 1995. Unlike in Chomsky (1995; 2000; 2001), but following Wiland (2009), I argued that the requirement that elements be *active* should be included in the definition of Closeness, the latter constituting an integral part of the MLC.

The discrepancies in Superiority effects between English and Polish wh-questions in the context of subject/object wh-phrases follow from the fact that in Polish, unlike in English, TopP in the left periphery can serve as an additional landing site for the fronted wh-phrase, which accounts for Superiority violations in Polish.

The differences in Superiority effects between English and Polish wh-questions in double object constructions were attributed to the existence of VP-internal scrambling in the latter language. VP-internal scrambling is an optional movement process, whose existence in the syntax of Polish finds an independent confirmation from data involving WCO effects and quantifier scope.

Finally, the lack of intervention effects in Polish wh-questions was discussed. I argued that their absence follows from the definition of Closeness, whose domain of the application is defined both structurally and in terms of the Activation Condition.

The two final chapters will be devoted to the phenomenon of Superiority effects and sluicing in Polish, and the unexpected existence of Superiority effects under multiple sluicing in Polish.

CHAPTER 6

Superiority Effects in Polish: Part I - Wh-questions

Wh-constructions have been extensively discussed in the generative literature. In the formulation of syntactic accounts and for a number of innovative theoretical postulations, *Superiority* has served as a criterion. This chapter is devoted to the phenomenon of Superiority effects. It reports judgments on Superiority effects in Polish, as encountered in the literature. A comprehensive discussion on Superiority effects in Polish multiple wh-questions is crucial in order to establish how and why fully-fledged wh-questions differ from their sluiced counterparts in Polish. Multiple sluicing constructions will be the focus of the next chapter.

6.1   Superiority Variations

The distribution of Superiority effects is subject to cross-linguistic variation, not only in genetically distinct languages, but also within homogenous groups. For example, Slavic languages fall into different types with respect to how Superiority is manifested in multiple wh-questions. Whereas some Slavic languages, for example Bulgarian and Macedonian, are subject to strict ordering constraints, other languages, including Czech, Polish and Russian, allow arbitrary wh-order. In addition, the claim has been made that the distribution of Superiority effects can vary in a single language depending on the context, for example main clause short-distance questions vs. embedded wh-questions, as in Serbo-Croatian (Bošković 1998a; 1998b).

The aim of this chapter is to juxtapose judgments on Superiority effects in wh-questions in Polish, as found in the literature. This is a preludium to the discussion of Superiority effects under multiple sluicing in Polish, which will be addressed in the next chapter.

6.2 Superiority Violations in Multiple Wh-Questions in Polish

6.2.1 Judgments on Superiority Effects

There is a general consensus in the literature (Toman 1981; Lasnik & Saito 1984; Rudin 1988; Przepiórkowski 1994; Citko 1997; 2011; Lubańska 2005) that Polish multiple wh-questions do not display Superiority effects, neither in matrix nor in embedded contexts. The sentences in (1)-(3) are among a number of examples, which have been provided in the literature to confirm this claim.

(1)   a. **Kto   co**   kupił?
          who$_{NOM}$ what$_{ACC}$ bought$_{3,Sg,M}$
          'Who bought what?'
       b. **Co kto** kupił?

(2)   a. Nigdy się   nie dowiesz **co   komu**   powiedziałam.
          never Refl not know$_{2,Sg}$ what$_{ACC}$ who$_{DAT}$ told$_{1,Sg,Fm}$
          'You will never find out whom I have told what.'
       b. Nigdy się nie dowiesz **komu co** powiedziałam.

(3)   a. **Kogo   kiedy** chcesz żebym   zaprosiła?
          whom$_{ACC}$ when   want$_{2,Sg}$ that-subj invited$_{Sg,Fm}$
          'Who do you want me to invite when?'
       b. **Kiedy kogo** chcesz żebym zaprosiła?

A contradictory view, however, is presented by Cheng (1991) and Dornisch (1998). Dornisch highlights the fact that Superiority effects in Polish (and other Slavic languages) may include not only argument-argument or argument-adjunct asymmetries, but also asymmetries involving oblique Cases, such as DAT-ACC, ACC-GEN, etc. Dornisch (1998:170) provides the examples in (4) a-b and (5) a-b, which, according to the author's informants, are subject to ordering constraints.

(4) a. **Kogo** byś **czego** pozbawiła?
     who$_{ACC}$ Cond.Aux$_{2,Sg}$ what$_{GEN}$ deprived$_{Sg,Fm}$
     'Who would you deprive of what?'
   b. **Czego** byś **kogo** pozbawiła?

(5) a. **Co** byś **komu** kupiła?
     what$_{ACC}$ Cond.Aux$_{2,Sg}$ whom$_{DAT}$ bought$_{Sg,Fm}$
     'What would you buy for whom?'
   b. **Komu** byś **co** kupiła?

Dornisch (1998:169-170) reports that whereas the (a)-examples in (4)-(5) are judged as perfectly acceptable, the (b)-examples are "perceived as forced/odd". Although the (b)–examples are not considered ungrammatical (hence Dornisch does not mark the examples with a star symbol or question marks), Dornisch finds the decline in acceptability between (a)-(b) in (4) and (5) significant and argues that Superiority effects are operative in Polish. Furthermore, Cheng (1991) reports that contexts including subject-adjunct or subject-object distinction appear to be subject to Superiority in Polish.[1]

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[1] Cheng, however, emphasizes the fact that "[..] More data are needed to determine whether or not strict ordering is required among fronted wh-words in Polish-type languages." (1991:100).

6.2.2   An Experimental Study (Meyer 2004)

The most recent study on Superiority effects in Polish conducted by Meyer (2004a; b) has produced yet more contrastive results. Meyer (2004a; b) carried out a series of online sub-studies by means of a Magnitude Estimation technique and an additional judgment task using an in-class questionnaire. The contexts examined in the study included subject/object asymmetries and the argument/adjunct distinction. The wh-sequence between two objects was not investigated, nor were the contexts including an inanimate subject. Both matrix and embedded sentences were incorporated in order to test whether the type of sentence influences the wh-order. In addition, corpus data were examined and the findings juxtaposed with the results of the experiment.

6.2.2.1 Subject/Object Wh-sequence

With respect to the subject/object asymmetry, Meyer (2004a; b) reports that there is no significant preference for the wh-sequence, i.e., it is equally acceptable to place a wh-object in front of a wh-subject in Polish wh-questions. However, a separate statistical test ANOVA revealed that there is a definite preference for the wh-subject to precede the wh-object when both wh-phrases refer to animates: *kto* > *kogo* (who$_{NOM}$ > who$_{ACC}$). This effect is alleviated when the wh-object is inanimate. As the study demonstrated, both configurations *kto* > *co* (who$_{NOM}$ > what$_{ACC}$) and *co* > *kto* (what$_{ACC}$ > who$_{NOM}$) are equally well-formed. Hence, the examples in (7) below bear the same grammatical status, whereas the wh-question in (6b) is degraded in comparison to (6a) (and also in comparison with (7b)). The examples in (6)-(7) are cited from Meyer (2004b:248).

(6) a. **Kto   kogo**   uważał   za wroga?

   who_{NOM} who_{ACC}   considered as enemy

   'Who thought who was the enemy?'

   b. **Kogo kto** uważał za wroga?

(7) a. **Kto   co**   uważał   za błąd

   who_{NOM} what_{ACC} considered as mistake

   'Who considered what to be the mistake?'

   b. **Co kto** uważał za błąd?

Meyer (2004a; b) differentiates between two types of Superiority: *grammatical* and *interpretational*. Polish multiple wh-questions are characterised by nested paths (cf. Pesetsky 1987), i.e., the object can move across (hence precede) the subject. There is, however, an animacy/inanimacy factor which influences the acceptability of the wh-sequence between subject and object wh-phrases. This has been referred to as interpretational Superiority (Meyer 2004a:62) and formulated under the generalization in (8).[2]

(8)   Wh-phrases ranging over identical sets of referents do not surface in reverse order in a multiple wh-question.

As reported by Meyer (2004a; b), the type of context (matrix or subordinate) has no impact on the reported judgments.

6.2.2.2 Argument/Adjunct Wh-sequence

The wh manner adverb *jak* (how) has been used to form sequences with wh-subject and wh-object, respectively, as exemplified in (9)-(10) (Meyer 2004b:249):

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[2] The same effect in animacy/inanimacy distinction between wh-subject and wh-object has been observed for another Slavic language, Czech (Meyer 2004a; b).

(9) a. **Kto   jak** myśli,   dlaczego Piotrowski nam nie powiedział prawdy?

who$_{\text{NOM}}$ how thinks$_{3,\text{Sg}}$ why   Piotrowski us   not said$_{2,\text{Sg,M}}$ truth

'How does who think, why didn't Piotrowski tell us the truth?'

b. **Jak kto** myśli, dlaczego Piotrowski nam nie powiedział prawdy?

(10) a. **Kogo   jak** nauczyli   języka polskiego?

who$_{\text{ACC}}$ how taught$_{1,\text{Pl}}$ Polish language

'How did they teach Polish to whom?'

b. **Jak kogo** nauczyli języka polskiego?

The study revealed that there is no significant preference for any particular wh-sequence in this context. This corresponds with the general assumption about the lack of Superiority effects between arguments and adjuncts in Polish wh-questions. With respect to the matrix/embedded distinction, there was no effect on the judgments.

6.2.2.3 Corpus Data

The results of the experimental study reported in previous sections have been evaluated against the evidence from text corpora (Meyer 2004b:238). With respect to the wh-subject/wh-object sequence, there was no instance of an object preceding the subject unless the object referred to inanimates. The sequence of *co > kto* (what$_{\text{ACC}}$ > who$_{\text{NOM}}$) has been well-established, whereas no example was found for the sequence of *kogo > kto* (who$_{\text{ACC}}$ > who$_{\text{NOM}}$) or *komu > kto* (whom$_{\text{DAT}}$ > who$_{\text{NOM}}$) (Meyer 2004a:58-9; 2004b:238). This corroborates the experimental findings according to which Superiority effects exist with wh-subject/wh-object only when both wh-phrases agree with respect to animacy (interpretational Superiority).

Regarding the wh-subject/wh-adjunct distinction, wh-questions with animate or inanimate wh-subject preceding wh-adjunct and the reverse order were encountered in

the corpora, which supports the general assumption about the absence of a preferred wh-order between arguments and adjuncts, and simultaneously contradicts Cheng's (1991) claim that Superiority effects exist between subject > adjunct and adjunct > subject wh-phrases in Polish.

In addition, the corpus data included examples of wh-questions containing two object wh-phrases (DAT animate *komu* (to whom) and ACC inanimate *co* (what)). Both variations in the wh-sequence were attested, i.e., the sequence *komu > co* (to whom > what) as well as *co > komu* (what > to whom), albeit the former was less frequently encountered in the text corpora than the latter.

6.2.2.4 Case

A point that should be raised is that no study thus far has considered Case variation as a potential factor influencing acceptability judgments. As discussed by Dornisch (1998), Case may have an effect on native speakers' judgments, as pointed out with respect to examples in (4)-(5), reproduced here as (11)-(12):

(11) a. **Kogo** byś **czego** pozbawiła?

who$_{ACC}$ Cond.Aux$_{2,Sg}$ what$_{GEN}$ deprived$_{Sg,Fm}$

'Who would you deprive of what?'

  b. **Czego** byś **kogo** pozbawiła?

(12) a. **Co** byś **komu** kupiła?

what$_{ACC}$ Cond.Aux$_{2,Sg}$ who$_{DAT}$ bought$_{Sg,Fm}$

'What would you buy for whom?'

  b. **Komu** byś **co** kupiła?

As reported by Dornisch (1998), the fact that (11a) and (12a), in which the wh-phrase marked for ACC comes first, were judged by her informants as more acceptable

than (11b) and (12b) may imply that ACC Case should precede other oblique cases (GEN in (11) and DAT in (12)) (the conclusion drawn by Dornisch 1998:170). However, if Case was the factor influencing the wh-order in Polish multiple wh-questions, we should not find the aforementioned asymmetry between the acceptability of $co > kto$ (what$_{ACC}$ > who$_{NOM}$) vs. $kogo > kto$ (who$_{ACC}$ > who$_{NOM}$) (in both instances the wh-phrase marked for ACC comes first), and also the relative acceptability of the order $komu > co$ (whom$_{DAT}$ > what$_{ACC}$), as found in the text corpora by Meyer (2004a; b). Therefore, I refrain from considering Case variations as a potential factor influencing judgments.

6.2.3   Discussion

The data discussed above demonstrate that nested paths in Polish multiple wh-questions are well-established with the exception when both wh-phrases are animate (then crossing paths are required, i.e., movement of the wh-object $kogo$ must proceed to the position below the wh-subject kto, giving the sequence kto $kogo$ (who$_{NOM}$ who$_{ACC}$)). The conclusion is that Polish wh-questions do not exhibit Superiority effects, as has been widely assumed in the literature; however a pragmatic factor (animacy/inanimacy) plays a part in speakers' judgments on acceptability.

The question arises as to why the effect of animacy/inanimacy has not been noticed or discussed before in the literature on Polish wh-constructions.[3] The answer may be attributed to the fact that the accounts illustrating the absence of Superiority effects in Polish have usually been based on a limited number of examples and furthermore, the contexts including animate and inanimate object crossing over an animate subject have

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[3] Cheng's (1991) informants differ in judgments with respect to subject/object wh-order, however the author does not provide any further details on the contrast between animate/inanimate object.

not been juxtaposed by the authors. What appears to be important, however had not been investigated until Meyer (2004a; b), is the comparison of sentences such as (6)-(7), repeated here as (13)-(14), and the significant decline in acceptability for (13b) as opposed to (14b).

(13) a. **Kto   kogo**   uważał   za wroga?
        who$_{NOM}$ who$_{ACC}$ considered as enemy
        'Who thought who was the enemy?'
   b. ??**Kogo kto** uważał za wroga?

(14) a. **Kto   co**   uważał   za błąd?
        who$_{NOM}$ what$_{ACC}$ considered as mistake
        'Who considered what to be the mistake?'
   b. **Co kto** uważał za błąd?

The next section will conclude the discussion in this chapter.

6.3   Conclusions

This chapter has concentrated on establishing whether Superiority effects exist in fully-fledged wh-questions in Polish, based on the judgments provided in the literature. The conclusion is drawn that wh-phrases in Polish fully-fledged wh-questions are not subject to syntactic ordering constraints.

The next chapter will be devoted to the phenomenon of multiple sluicing. Its aim will be to address the question of why wh-phrases in sluicing, unlike their counterparts in non-elided wh-questions, are subject to strict ordering constraints.[4]

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[4] To my knowledge, the existence of Superiority effects under multiple sluicing in Polish has not been addressed in the generative literature. Grebenyova (2007) examines the existence of Superiority effects in Russian multiple sluicing and makes a reference to Polish, however neither a detailed discussion nor any examples with respect to Superiority effects in Polish are provided.

CHAPTER 7

Superiority Effects in Polish: Part II - Multiple Sluicing

This chapter introduces the phenomenon of *Multiple Sluicing*. In contrast to fully-fledged wh-questions, wh-phrases in multiple sluicing constructions in Polish are subject to strict ordering constraints. The existence of Superiority effects under multiple sluicing in Polish is established based on the results of a controlled experimental study, which are presented here. I argue that the differences in Superiority effects between fully-fledged wh-questions and multiple sluicing constructions in Polish follow from variations in the left periphery. More specifically, as opposed to fully-fledged wh-questions, TopP is not projected in sluicing contexts in Polish.

7.1   Multiple Sluicing

The term *Sluicing* was introduced by Ross (1969) to refer to an interrogative clause in which the only pronounced material is a wh-word (referred to as *wh-remnant*), the rest of the sentence (i.e., TP) being elided. The following examples illustrate sluicing in English in an embedded clause (1) and a matrix clause (2). The TP ellipsis is indicated by the strikethrough.

(1)   John loves somebody. I wonder [$_{CP}$ who [$_{TP}$ ~~John loves *t*~~]

(2)   A: Someone has just called.

   B: Who [$_{TP}$ ~~*t* has just called~~]?

The wh-remnants in examples (1) and (2) have an overt correlate in the antecedent clause, *somebody* and *someone*, respectively. The correlate must be indefinite, as the contrast in (3) indicates.

(3) a. He saw *someone*, but I don't know who.

   b. *He saw *everyone*, but I don't know who.

A wh-phrase in the sluice (where the *sluice* refers to the deleted structure) does not, however, require any overt correlate in the antecedent clause. Consider (4) (Ross 1969:252).

(4) He is writing (something), but you cannot imagine what/where/why/to whom/etc.

Although the correlates in the antecedent clauses are restricted to indefinite DPs, as indicated by the contrast in (3), *multiple sluicing* (Takahashi 1994a), i.e., sluicing with more than one wh-remnant, allows a strong quantifier *every* as a correlate. Multiple sluicing constructions are marginal in English, but they are common in many other languages, including Serbo-Croatian, Polish and Russian (multiple wh-fronting languages), as well as German, Greek, Japanese (non-(multiple) wh-fronting languages).

The PF-deletion of TP (Ross 1969; Merchant 2001; Lasnik 2001b; 2007) is one of the two approaches to sluicing, the other being LF copying (Chung *et al*. 1995). Sluicing analysed as an LF-copying phenomenon requires that a *wh*-phrase be base-generated in Spec-CP. The *wh*-phrase is followed by an empty TP which gets interpreted by having the antecedent clause copied at LF. The identity is established between the displaced wh-phrase and the indefinite in the copied TP by means of coindexing, and the displaced wh-phrase binds the indefinite in the copied TP. This

thesis adopts the PF-deletion approach to sluicing, according to which a wh-remnant undergoes fronting to Spec-CP, followed by clausal ellipsis (TP-deletion) at PF.

7.2   The Interpretation of Multiple Wh-remnants

Multiple wh-questions in natural languages can have pair-list (PL) and single-pair (SP) readings, however the distribution of the latter is subject to cross-linguistic variation. Examples of a single-pair answer and a pair-list answer to the multiple wh-question in (5) are given in (A) and (B) respectively:

(5)   Who bought what?

    A: John bought a CD.

    B: John bought a CD, Tom (bought) jeans, Jenny (bought) a dress…

The SP answer contains just a single proposition, whereas the PL answer comprises a set of propositions. While some languages, for example Serbo-Croatian and Japanese, allow for both readings (Citko & Grohmann 2001), other languages like English, Bulgarian and Russian allow only a PL reading (Grebenyova 2004; 2006; 2007). Since in English multiple wh-questions with non-d-linked wh-phrases the interpretation is restricted to the PL reading, the answer to (5) given in (A) is infelicitous in English.

The presence of quantifiers *every* and *some* in the antecedent clause reguires a pair-list interpretation in the sluice, whereas an antecedent clause with two indefinite phrases results in a single-pair reading in the sluice.

According to Grebenyova (2007:69), the interpretation available for multiple wh-remnants in language L corresponds to the interpretation available to wh-questions in language L. For example, the following sentence in (6) from Russian is unacceptable, since the two indefinite DPs in (6) impose a single-pair reading on the wh-remnants in

the sluice, however multiple wh-questions in Russian allow only a PL reading (Grebenyova 2007:67; but see Stepanov 1998:461). Conversely, the sentence in (7) is acceptable in Russian since the presence of the strong quantifier *every* in the antecedent clause results in a PL reading in the sluice, which corresponds to the interpretation allowed in non-elided wh-questions in Russian (the examples in (6) and (7) are quoted from Grebenyova 2007:66/67).

(6) ??*Kto-to* priglasil *kogo-to* na tanec, no ja ne pomnju kto kogo.
      someone invited someone to dance but I not remember who whom
 (lit.) 'Someone invited someone to a dance but I don't remember who whom.'

(7) *Každyj* priglasil *kogo-to* na tanec, no ja ne pomnju kto kogo.
      everyone invited someone to dance but I not remember who whom
 (lit.) 'Everyone invited someone to a dance but I don't remember who whom.'

As opposed to Russian, Japanese, for example, allows a SP reading in multiple wh-constructions. Consequently, the language permits the SP interpretation in multiple sluicing, as demonstrated by the grammaticality of (8), cited from Merchant (2001:112):

(8) Sono toki, dareka-ga nanika-o mise-ta. Sikasi, dare-ga nani-o ka
      that time someone$_{NOM}$ something$_{ACC}$ showed but who$_{NOM}$ what$_{ACC}$ Q

   omoidase-nai.
   remember-not

   'At that moment, someone showed something (to me). (lit.) But I can't remember who what.'

Polish, however, appears to contradict the above generalization. Consider (9).

(9) *Ktoś* coś obiecał Ewie, ale nie powiedziała kto co.
      someone$_{NOM}$ something$_{ACC}$ promised Eva$_{DAT}$ but not said$_{3,Sg}$ who what
  (lit.) 'Someone promised something to Eva, but she didn't say who what.'

Due to the absence of a universal quantifier in the antecedent clause in (9), a single-pair reading is forced in the sluice. Multiple wh-questions in Polish are claimed to allow both SP and PL readings (Citko & Grohmann 2001). Consequently, given the availability of a SP reading in multiple wh-questions in Polish, the unacceptability of (9) (with the SP reading in the sluice) is unexpected. However, for a number of native speakers of Polish, the SP interpretation for the wh-question in (10) is unacceptable, as reported in Lubańska (2005:66).

(10) Kto co kupił?
      who what bought
      'Who bought what?'

In light of these facts, the generalization proposed by Grebenyova (2007), according to which the interpretation of multiple wh-remnants corresponds to the interpretation available in multiple wh-questions in a given language, needs to be evaluated against more cross-linguistic data, an issue for further research.

7.3 The Licenser of Sluicing

7.3.1 Merchant (2001; 2004)

According to Merchant (2001; 2004), the process of ellipsis is implemented by an E-feature on a syntactic head. While the phonological and semantic properties of the E-feature are uniform for all elliptical processes, its syntactic requirements differ depending on the elliptical process (TP-, VP- or NP-ellipsis). In sluicing, the E-feature (termed $[E_s]$ by Merchant (2004:670)) has the syntactic requirements, as specified in (11):

(11) E [uWh*; uQ*]

According to Merchant (2004), the E-feature in sluicing is endowed with [Wh] and [Q] features, which are uninterpretable (marked by *u*), hence they need to be checked. In addition, the strong property of [Wh] and [Q], indicated by the asterisk, requires that E be in a local configuration with the syntactic head, which bears matching features. The head which possesses corresponding [Wh; Q] features, and is able to check the uninterpretable [uWh; uQ] on E, is C^0. Therefore, E co-occurs with C^0, the latter being the category that licences sluicing (Merchant 2001; 2004).[1]

7.3.2   Van Craenenbroeck and Lipták (2006)

The proposal that it is C^0 that licenses sluicing uniformly (Lobeck 1995; Merchant 2001; 2004) appears, however, problematic when we consider wh-ex-situ languages, in which the fronted wh-phrase moves to a position other than (i.e., below) CP. While the standard assumption regarding English wh-questions has been that the fronted wh-phrase occupies Spec-CP (Chomsky 1995 *et seq.*), a number of other wh-fronting languages (including, for example, Hungarian and Russian) do not display wh-movement in the traditional sense, i.e., the fronted wh-phrase does not move to Spec-CP. It has been argued that the fronted wh-phrase in wh-questions in Hungarian (Kiss 1987; 1992) and Russian (Stepanov 1998) undergoes focus movement, and the landing site of the fronted wh-phrase is a projection located in the complement of C^0. Assuming, as van Craenenbroeck & Lipták (2006:255) do, that "the type of sluicing found in a language depends on the type of wh-movement it exhibits", we expect that wh-remnants in languages like Hungarian and Russian undergo focus movement on a par with their counterparts in fully-fledged wh-questions.

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[1] Recall from chapter 3, §3.2, that Agree holds between a wh-phrase and Int^0 in matrix wh-questions and between a wh-phrase and $Force^0$ in embedded wh-questions in English.

If the wh-remnant in Hungarian and Russian undergoes focus movement, a direct expectation is that focused constituents should be legitimate sluicing remnants in the languages under consideration. This expectation is borne out. Consider the examples in (12) from Hungarian and (13) from Russian, cited from van Craenenbroeck & Lipták (2006:260) and Grebenyova (2007:60), respectively, in which the sluicing remnant is a contrastively focused constituent.

(12) János meghívott valakit   és azt   hiszem, hogy BÉLÁT [e].
     János invited   someone$_{ACC}$ and that$_{ACC}$ think   that Bélá$_{ACC}$
     'János invited someone and I think it was Bélá whom he invited.'

(13) A: Ty   skazala čto on budet uvažat′ Mašu?
        you said   that he will   respect Maša$_{ACC}$
        'Did you say that he will respect Maša?'

     B: Net. Ja skazala čto IVANA [~~on budet uvažat′ t~~].
        no   I said   that Ivan$_{ACC}$ he will respect
        'No. I said (that he will respect) IVAN.'

Furthermore van Craenenbroeck & Lipták (2006:260) observe that in Hungarian, not only wh-phrases and contrastively focused constituents but also other operators (such as distributive quantifiers) can be remnants in sluicing (see (14)).

(14) Tudtam, hogy János meghívott néhány embert,   de nem tudtam,
     knew   that János invited   some people$_{ACC}$ but not knew

     hogy mindenkit [e].
     that everyone$_{ACC}$

     'I knew that János invited some people, but I didn't know that he invited everyone.'

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In order to capture the cross-linguistic variations between English-type languages, in which sluicing is limited to interrogative clauses with a wh-phrase in Spec-CP, and Hungarian-type languages, in which sluicing occurs both in interrogative and declarative clauses, resulting in different types of operators as sluicing remnants, van Craenenbroeck & Lipták (2006) introduce a modification to the syntactic specifications of the E-feature (cf. (11)). Van Craenenbroeck & Lipták (2006:258) propose that (15) is valid, where uOp* stands for an uninterpretable and strong operator feature on E.

(15) E [uOp*]

Van Craenenbroeck & Lipták (2006) argue that the E-feature in English, the language in which wh-fronting involves checking of the [+Wh, +Q] features (i.e., an operator and a question feature) has the specification in (11). On the other hand, the E-feature in Hungarian, the language in which the fronted wh-phrase checks [+focus] feature (an operator feature), has the properties in (15). The variations in the syntactic requirements of the E-feature ((11) vs. (15)) are not stipulated but follow from language independent properties. Put differently, van Craenenbroeck & Lipták (2006:257) assume that the following generalization in (16) holds cross-linguistically:

(16) *The Wh/Sluicing Correlation*

The syntactic features that the [E]-feature has to check in a certain language are identical to the strong features a wh-phrase has to check in a regular constituent question in that language.

The variations in the syntactic specifications of the E-feature (cf. (11) vs. (15)) are assumed to account for cross-linguistic differences we find in sluicing. More specifically, since in English the E-feature has the properties in (11), it can only attach to the C head; consequently, C^0 is the licenser of sluicing in English and the only

sluicing remnant in this language is a wh-phrase. Conversely, in Hungarian, the E-feature has the properties in (15). Hence, E can co-occur/merge with any syntactic head (e.g. Foc^0), whose specifier is filled with an operator phrase, and consequently that head will license the elision of its entire complement. Put differently, sluicing in Hungarian can occur in any syntactic context, in which operator/variable dependency is established.

7.3.3 Sluicing Licenser in Polish

Polish, on the one hand, is like English in that the features involved in the derivation of wh-questions involve [Wh; Q] (see chapter 3). The syntactic head in Polish which bears the matching [Wh; Q] features is Int^0. When the [uWh*; uQ*]-bearing E-feature (see (11)) co-occurs with Int^0, the latter licenses the deletion of the entire complement, i.e., FocP, given the proposed split-CP structure for Polish ((21)), §3.1.2), repeated here in (17), and the wh-phrase (located in Spec-IntP) is the sluicing remnant (see the example of sluicing in Polish in (18)).

(17)

```
                ForceP
                  │
                Force'
                 ╱╲
            Force   TopP
                     │
                    Top'
                    ╱╲
                 Top   IntP
                        │
                       Int'
                       ╱╲
                    Int   FocP
                           │
                          Foc'
                          ╱╲
                       Foc   FinP
                              │
                             Fin'
                             ╱╲
                          Fin   TP
```
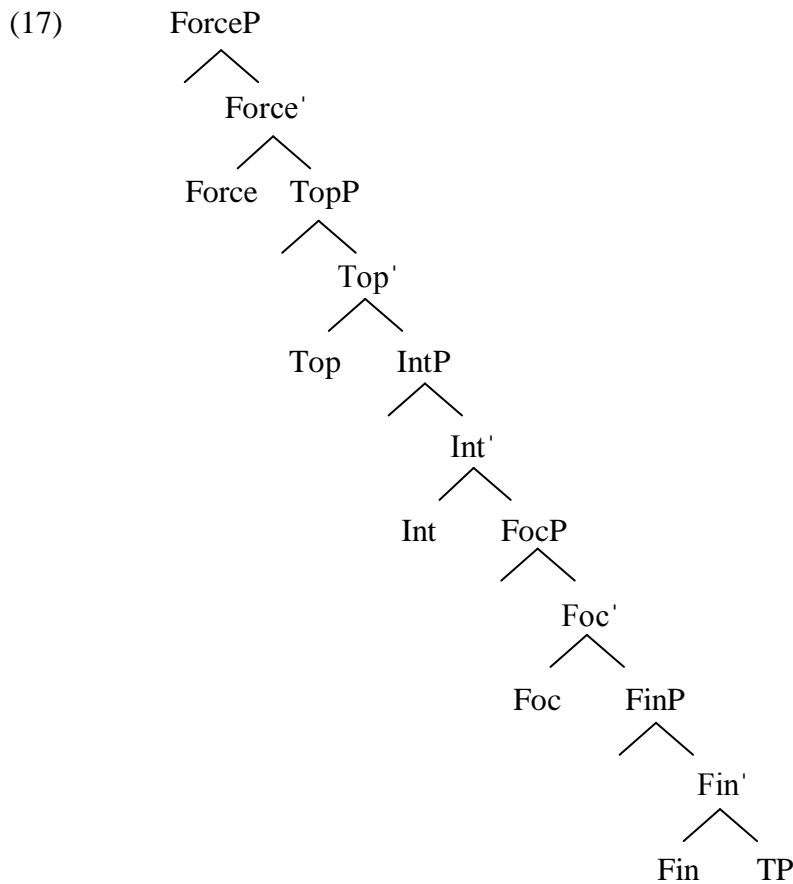
(18) Wiem   że Ewa   coś   ukrywa, ale nie wiem   co [~~Ewa ukrywa~~].
     know$_{1,Sg}$ that Eva$_{NOM}$ something$_{ACC}$ hides,   but not know$_{1,Sg}$ what$_{ACC}$
     'I know that Eva is hiding something, but I don't know what.'

On the other hand, Polish is like Russian and Hungarian, since it allows non wh-remnants, including contrastively focused phrases (see (19)-(20), Grebenyova 2007:60) and distributive quantifiers (21) to appear in sluicing.[2]

(19) A: Powiedziałaś, że szanuje   Marię?
         said$_{2,Sg,Fm}$ that respect$_{3,Sg}$ Maria$_{ACC}$
         'Did you say that he respects Maria?'

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[2] Van Craenenbroeck & Lipták (2006:260), following Kiss (1987), among others, assume the existence of DistPs in the left periphery, which host distributive quantificational elements. The same assumption can be adopted for Polish, i.e., there is a DistP in the left periphery, whose specifier hosts the distributive quantifier *każdego* in (21). The exact position of DistP is not, however, relevant to the present discussion.

B: Nie, powiedziałam, że JANA [s̶z̶a̶n̶u̶j̶e̶ ̶t̶].

no said$_{1,Sg,Fm}$ that John$_{ACC}$ [r̶e̶s̶p̶e̶c̶t̶s̶$_{3,Sg}$]

'No. I said (that he/she respects) JAN.'

(20) A: Nie pamiętasz gdzie Jan spotkał Marię?

not remember$_{2,Sg}$ where John$_{NOM}$ met$_{3,Sg,M}$ Maria$_{ACC}$

'You don't remember where John met Maria?'

B: Nie. Nie pamiętam gdzie BARBARA ZOSIĘ.

no not remember$_{1,Sg}$ where Barbara$_{NOM}$ Zosia$_{ACC}$

'No. I don't remember where BARBARA met ZOSIA.'

(21) Wiedziałam, że Janek zaprosi jakieś osoby z klasy,

knew$_{1,Sg,Fm}$ that John$_{NOM}$ will invite some people$_{ACC}$ from class

ale nie sądziłam, że każdego.
but not knew$_{1,Sg,Fm}$ that everyone$_{ACC}$

'I knew that John would invite some people from the class, but I didn't think that he would invite everyone.

The data in (18)-(21) suggest that the syntactic content of the E-feature in Polish corresponds both to (11) and (15), i.e., both variants ((11) and (15)) are possible in Polish. This, however, raises certain objections to the Wh/Sluicing correlation in (16), according to which the syntactic specification of the E-feature corresponds to the feature(s) checked by the wh-phrase in wh-questions in a given language. Wh-phrases in Polish wh-questions obligatorily check the [uWh] feature on Int^0 (and their own [uQ] feature) (see chapter 4). Consequently, the syntactic content of the E-feature in Polish should correspond to (11) only, i.e., [uWh*; uQ*], and other operators such as contrastively focused R-expressions or distributive quantifiers should not be able to occur as sluicing remnants, contrary to fact (cf. (19)-(21)).

A possibility is that the syntactic specification of the E-feature in (11) could be subsumed under (15), considering that wh-movement is an operator movement (see Chomsky 1977), i.e., movement to an operator position which establishes an operator-variable dependency. Given that focused phrases and quantifiers license the E-feature with [uOp*]-content, wh-phrases, being syntactic operators on a par with focused and quantified phrases, should also be able to license the [uOp*]-marked E-feature. Put differently, the wh-phrase should be able to function as a sluicing remnant under the agreement with the syntactic head (Int^0), to which E, with [uOp*] content, attaches. However, not all wh-phrases are syntactic operators. Whereas simple wh-phrases like *who*, *what* are syntactic operators, complex, i.e., d-linked, wh-phrases like *which girl* are not (Pesetsky 1987; van Craenenbroeck 2007). The fact that a d-linked wh-phrase can serve as a sluicing remnant in Polish (see (22)) suggests that the idea of reducing the syntactic content of the E-feature to [uOp*] uniformly must be rejected.

(22) Wiem   że pytał   o   te książki w kilku księgarniach,
     know$_{1,Sg}$ that asked$_{2,Sg,M}$ about these books   in several bookstores

   ale nie wiem   **w których**.
   but not know$_{1,Sg}$ in which

   'I know that he inquired about these books in several book stores but I don't know in which ones.'

The existing account of what licenses sluicing cross-linguistically, based on the division into E$_{[u\text{Wh}*;\ u\text{Q}*]}$ vs. E$_{[u\text{Op}*]}$ (van Craenenbroeck & Lipták 2006), with only one of the options applicable in a single language, cannot account for the Polish data in (18)-(21). Wh-movement in sluicing in Polish involves [uWh; uQ] feature checking, on a par with fully-fledged wh-questions in Polish. Hence, the syntactic requirements of the E-feature in sluicing correspond to [uWh*; uQ*]. However, other phrases which are

syntactic operators can also be remnants in sluicing in Polish. Consequently, the syntactic property of the E-feature should correspond to [uOp*]. I thus conclude that the syntactic content of the E-feature which licenses sluicing may have more than one syntactic specification in a single language, and in Polish it corresponds to [uWh*; uQ*] and [uOp*]. The [uWh*; uQ*]-marked E-feature co-occurs with Int^0 and a wh-phrase located in Spec-IntP is the remnant of sluicing (see (18)). On the other hand, the [uOp*]-marked E-feature co-occurs with a syntactic head, e.g. Foc^0, whose specifier hosts an operator phrase (a focused constituent), and the latter then acts as a sluicing remnant (see (19)-(20)).

It remains to be further investigated what the exact syntactic properties of the E-feature are in multiple wh-fronting languages. As expressed by van Craenenbroeck & Lipták (2006: 260, fn. 14), in a language like Bulgarian, where wh-phrases check both [Wh] and [Foc] features, "it remains to be determined what the syntactic feature specification of the [E]-feature is in such languages." I will leave this question for future research.

7.3.4   TopP in Sluicing

Van Craenenbroeck & Lipták (2006) argue that sluicing in Hungarian is licensed by the [+uOp*]-marked E-feature. The E-feature attaches to the syntactic head whose specifier is filled with an operator phrase and the complement of this syntactic head undergoes deletion. A direct prediction that follows from the proposal that sluicing is licensed under the [uOp*]-marked E-feature in Hungarian is that topics should not be able to occur as sluicing remnants, assuming that topics are not syntactic operators (van Craenenbroeck & Lipták 2006:268). This prediction is borne out. Van Craenenbroeck &

Lipták (2006:268) provide an example of sluicing in a relative clause (the construction which they dub relative deletion (RD), in which everything but the relative pronoun and an operator-related head is deleted), which illustrates that topic cannot serve as a sole sluicing remnant. Put differently, topic cannot license sluicing in Hungarian, as shown by the ungrammaticality of (23).

(23) *Kornél meghívta azt   a lányt, akit   Zoltán [e].
       Kornél PV-invited that$_{ACC}$ the girl$_{ACC}$, REL-who$_{ACC}$ Zoltán
       'Kornél invited the girl who Zoltán did.'

The remnant *Zoltán* in (23) acts as a topic since it lacks a pitch accent. Foci unlike topics obligatorily receive pitch accents/ focal stress.

The non-operator nature of topics does not seem to hold for Polish, however. In chapter 3, §3.1.1.1, it was illustrated that a wh-phrase can move to Spec-TopP in Polish. Consider the example in (24), in which the fronted wh-phrase precedes the particle *to* (it), the latter spells out the head of TopP in Polish and marks contrastive topicalization (see chapter 3, §3.1.1.).

(24) Kogo *to* Ania   zaprosiła na urodziny?
       who$_{ACC}$ it$_{PRT}$ Anna$_{NOM}$ invited   on birthday
       'Who was it that Anna invited to her birthday party?

Since simple wh-phrases like *who, what, when,* etc. are regarded as syntactic operators, the fact that they move to Spec-TopP in Polish implies that topicalized phrases in Polish can have operator-like properties (see also Den Dikken (2012) who assumes movement of a simple wh-phrase to a Spec-TopP position in Hungarian).[3] Furthermore, as

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[3] Huang (1984; 1989) argues that in Chinese, empty objects are variables bound by (empty) topics. Given that topics bind variables in Chinese, they act as syntactic operators. See also Saito & Hoji (1983) for the distinction between quasi-operators (referential expressions) and true operators (non-referential expressions).

expressed in Müller (1995:98), topicalization, on a par with wh-movement, is an instance of operator movement.

Consider now the examples of sluicing in Polish in (25) a-b.

(25) a. *Piotr   zaprosił kogoś   na kolację, ale nie powiedział kogo   to.
        Peter$_{NOM}$ invited someone$_{ACC}$ for dinner, but not said   who$_{ACC}$ it$_{PRT}$

    b. Piotr   zaprosił kogoś   na kolację, ale nie powiedział kogo.
        Peter$_{NOM}$ invited someone$_{ACC}$ for dinner, but not said   who$_{ACC}$

    'Peter invited someone for a dinner, but he didn't say who.'

The sluice is infelicitous when the wh-remnant resides in the specifier of a projection whose head is realized by the particle *to*, i.e., in Spec-TopP, as shown by the star symbol in (25a). When, on the other hand, the wh-remnant occupies Spec-IntP (the landing site of a fronted wh-phrase in Polish wh-questions, see chapter 3, §3.1.2), the sentence is fully grammatical (25b).

According to van Craenenbroeck & Lipták (2006), an element is Spec-TopP cannot license sluicing in Hungarian since topics are not syntactic operators. However, what moves to Spec-TopP in the Polish example in (25a) is a wh-operator. I propose that the unacceptability of (25a) in Polish is not related to operator/non-operator properties of topicalized phrases. I take the facts in (25a), i.e., the unavailability of sluicing with a wh-remnant in Spec-TopP, as an indication that TopP is inert/absent in sluicing contexts in Polish. The latter conclusion will turn out to have important consequences for the linear order of wh-phrases in sluicing in Polish, to which I will now turn.

7.4 Superiority Effects under Multiple Sluicing

It has recently been acknowledged in the literature that Superiority effects emerge under multiple sluicing in languages, which do not show Superiority effects in parallel non-sluiced contexts. The languages in question include Serbo-Croatian (Stjepanović 2003) and Russian (Grebenyova 2006; 2007). The aim of this section is to report judgments on Superiority effects in Polish multiple sluicing, which were gathered from native speakers of Polish by means of a questionnaire, and illustrate that Polish is another language in which wh-remnants exhibit strict ordering constraints, unlike their counterparts in fully-fledged wh-questions.

7.4.1 The Experimental Study

The grammaticality judgments obtained via a controlled experimental study on Superiority effects in multiple sluicing constructions in Polish have revealed that wh-remnants are subject to strict ordering constraints.

The judgments were obtained from 100 informants by means of a questionnaire. Five different versions of the questionnaire were constructed, and every version was answered by 20 informants. The questionnaires included different wh-sequences. A particular variant of a wh-sequence appeared three times in a single questionnaire. The variants were juxtaposed in pairs (e.g. *kto kogo* (who$_{NOM}$ who$_{ACC}$) vs. *kogo kto* (who$_{ACC}$ who$_{NOM}$)). Each questionnaire contained altogether 18 examples of multiple sluicing constructions and 64 filler sentences. Only embedded, and no matrix questions were tested, as according to the previous studies on Superiority effects in multiple wh-questions (Meyer, 2004a; b; §6.2.2), the type of context had no impact on informants' judgments.

7.4.2 The Judgments

On a par with other Slavic languages (e.g. Russian, Serbo-Croatian), Polish allows multiple sluicing constructions. However, the order in which wh-remnants occur in Polish is not free. Consider the examples in (26) and (27).[4]

(26) a. Każdy   kogoś   zaprosił do tańca,
    everyone_NOM someone_ACC invited to dance

   ale nie pamiętam **kto   kogo.**
   but not remember who_NOM who_ACC

   b. Każdy   kogoś   zaprosił do tańca,
    everyone_NOM someone_ACC invited to dance

   ale nie pamiętam ***kogo   kto.**
   but not remember   who_ACC who_NOM

   'Everyone invited someone to a dance, but I don't remember who invited whom.'

(27) a. Każdy   mi coś   kupił   z okazji urodzin,
    everyone_NOM me something_ACC bought on occasion of birthday

   ale nie pamiętam dokładnie **kto   co.**
   but not remember exactly   who_NOM what_ACC

   b. Każdy   mi coś   kupił   z okazji urodzin
    everyone_NOM me something_ACC bought on occasion of birthday

   ale nie pamiętam dokładnie   **?*co   kto.**
   but not remember exactly   what_ACC who_NOM

---

[4] The examples in (26)-(27) illustrate the existence of Superiority effects in sluicing in embedded contexts; the ordering of wh-remnants in main clauses was not examined in the experimental study; however, according to my judgment, the pattern of Superiority effects found and reported for embedded contexts corresponds to matrix clauses.

'Everyone bought me something for my birthday, but I don't remember exactly who bought what.'

The acceptability of (26a) as opposed to (26b), and (27a) vs. (27b), was tested in the study and the differences in the acceptability between (a)-(b) sentences in (26) and (27) emerged as statistically significant. By means of a chi-squared test (Field 2009), the results reveal that (26b) is degraded in comparison to (26a) (X^2 (1) = 59.2, p < 0.01), and so is the sentence (27b) as compared to (27a) (X^2 (1) = 25.3, p < 0.01).[5] While the unacceptability of (26b) may result independently of multiple sluicing (recall the animacy factor influencing judgments on Superiority effects in wh-questions (cf. (6) §6.2.2.1), the degraded status of (27b) as opposed to (27a) indicates that Superiority effects are operative in Polish multiple sluicing.

In order to verify whether the order of wh-remnants in (a)-(b)-examples in (26)-(27) results from quantifier parallelism (see Grebenyova (2006; 2007) for an account along these lines of Superiority effects in Russian multiple sluicing), examples with an object quantifier scrambled across the subject quantifier in the antecedent clause were included in the study. With respect to the antecedent clause in (27), (28) is the only possible scrambling counterpart.

(28) *Coś   każdy   mi kupił   z okazji urodzin.*
    something$_{ACC}$ everyone$_{NOM}$ me bought on occasion of birthday
    'Everyone bought me something for my birthday.'

---

[5] The null hypothesis was that there is no difference in acceptability between the order of wh-phrases in fully-fledged wh-questions and sluicing constructions (i.e., for example both orders *kto co* and *co kto* are equally acceptable in wh-questions and sluiced contexts). By convention, if p < 0.05, the result obtained from the experiment is statistically significant (i.e., there is less than 5% chance that the null hypothesis is right) and the null hypothesis is rejected in this case. Since the difference in acceptability between (a)-(b) sentences in (26) and (27) was less then 0.01 (p < 0.01), the difference in acceptability emerged as statistically significant, i.e., the null hypothesis is rejected in this case and unlike fully-fledged wh-questions, Superiority effects are operative under multiple sluicing in Polish in the context involving subject and object wh-remnants.

Examples with multiple sluicing, with the antecedent clause corresponding to (28), were included in the questionnaire; however, the sentences were generally rejected by the informants. More precisely, regardless of the order of the wh-remnants, multiple sluicing structures containing the antecedent clause in (28) were generally notated unacceptable. Scrambling of an indefinite quantifier across a universal quantifier in (28) (see also (29) below) imposes a single-pair reading on the wh-remnants. However, as illustrated in §7.2 (ex. (9)), Polish does not allow a single-pair interpretation in multiple sluicing constructions, which consequently may account for the fact why multiple sluicing structures with the antecedent clause in (28) were generally rejected by the informants.[6]

(29) *Kogoś   każdy*   zaprosił do tańca.
     someone$_{ACC}$ everyone$_{NOM}$ invited   to dance
     'Everyone invited someone to a dance.'

Instead of (29), (30) was used in the study (questionnaire) as the scrambling counterpart of the antecedent clause in (26). In (30), the indefinite quantifier follows the universal quantifier, thereby allowing a PL interpretation in the sluice.

(30) a. *Każdego   ktoś*   zaprosił do tańca,
        everyone$_{ACC}$ someone$_{NOM}$ invited to dance

        ale nie pamiętam **kto   kogo**.
        but not remember   who$_{NOM}$ who$_{ACC}$

     b. *Każdego   ktoś*   zaprosił do tańca,
        everyone$_{ACC}$ someone$_{NOM}$ invited   to dance

        ale nie pamiętam *****kogo   kto**.
        but not remember   who$_{ACC}$ who$_{NOM}$

---

[6] As reported in Grebenyova (2006:147), in another Slavic language, Serbo-Croatian, sluicing (including single sluicing) is prohibited when an object scrambles over the subject.

'Someone invited everyone to a dance, but I don't remember who invited whom.'

As illustrated by the star symbol in (30b), the difference in acceptability between (30a) and (30b) appeared statistically significant (X^2 (1) = 51.2, p < 0.01), with the order *kogo kto* (who$_{ACC}$ who$_{NOM}$) being strongly degraded in comparison with *kto kogo* (who$_{NOM}$ who$_{ACC}$), which corresponds to the pattern observed in (26).[7]

With regard to the ordering of object wh-remnants (direct and indirect object), there was an apparent inconsistency in the judgments and no significant preference for any particular sequence emerged. Both orders between the wh-remnants, given in (31), appear equally acceptable (X^2 (1) = 0.07, p > 0.05).

(31) Janek   każdemu   coś   kupił   na gwiazdkę,
John$_{NOM}$ everyone$_{DAT}$ something$_{ACC}$ bought on Christmas,

ale nie pamiętam **komu   co   / co   komu**.
but not remember whom$_{DAT}$ what$_{ACC}$ / what$_{ACC}$ whom$_{DAT}$

'John bought a Christmas present for everyone, but I can't remember what he bought for whom.'

The final context which was examined in the study involved an argument-adjunct wh-sequence. Consider the examples in (32) with the adverb *where* functioning as a wh-remnant.

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[7] The fact that after the application of scrambling, the required order of wh-remnants in (30) is still subject-object (see (26)) differentiates Polish from Russian. According to Grebenyova (2006; 2007), scrambling of the object quantifier across the subject quantifier in the antecedent clause forces the wh-object to precede the wh-subject in the sluiced clause in Russian, i.e., the counterpart of (30b) is grammatical, while the equivalent of (30a) is unacceptable in Russian (cf. Grebenyova 2007:74, ex. (56)). Considering that Polish and Russian do not pattern with respect to how Superiority is manifested under multiple sluicing, the account of Superiority effects in multiple sluicing in Russian in terms of quantifier parallelism, as proposed by Grebenyova (2006; 2007), cannot be extended to Polish.

(32) a. Każdy   z moich znajomych obecnie   gdzieś   studiuje,
everyone$_{NOM}$ from my friends   currently somewhere studies$_{3,Sg}$

ale nie pamiętam **kto   gdzie**.
but not remember who$_{NOM}$ where

b. Każdy   z moich znajomych obecnie gdzieś   studiuje,
everyone$_{NOM}$ from friends   currently somewhere studies$_{3,Sg}$

ale nie pamiętam *__gdzie kto__.
but not remember   where who$_{NOM}$

'All my friends are currently studying somewhere, but I don't remember who studies where.'

The study revealed that the sequence of the wh-remnants corresponding to *where who* (cf. (32b)), as opposed to *who where* (cf. (32a)), was judged unacceptable. The difference in acceptability between (32a) and (32b) turned out to be statistically significant ($X^2(1) = 18$, $p < 0.01$).

The focus of the next section will be to provide an explanation for the existence of Superiority effects under multiple sluicing in Polish, given the data presented in this section.

7.4.3 Accounting for Superiority Effects under Multiple Sluicing in Polish

In the discussion to follow, I will argue that it is the absence of TopP in the left periphery in sluicing contexts in Polish (see §7.3.4) combined with the tuck-in approach to movement to multiple specifiers (adopted in this thesis (see chapter 5, §5.1.2.2)) that accounts for the existence of Superiority effects under multiple sluicing in Polish.

Recall from chapter 5 that Polish does not exhibit Superiority effects in fully-fledged wh-questions (except for the animacy factor, see §6.2.2.1). In multiple wh-questions in Polish containing wh-subject and wh-object (see §5.1.2.1), it is the wh-subject that moves to the C system (Spec-IntP) to check the [uWh] feature of Int^0 under Agree by virtue of being closer to Int^0 than the wh-object: the former occupies Spec-TP, while the latter occupies Spec-vP. See the representation in (33b) for the wh-question in (33a).
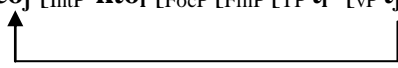
(33) a. Kto   co   kupił?

     who$_{NOM}$ what$_{ACC}$ bought

     'Who bought what?'

    b. [$_{ForceP}$ [$_{TopP}$ [$_{IntP}$ **kto$_i$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ **t$_i'$** [$_{vP}$ **co$_j$** [$_{vP}$ **t$_i$** [$_{VP}$ V **t$_j$**]]]]]]]]]?

In chapter 5, §5.1.2.1, I argued that Superiority effects are ameliorated (cf. (33a) vs. (34a)) by movement of the object wh-phrase from Spec-vP to Spec-TopP, as illustrated in (34b).

(34) a. Co   kto   kupił?

     what$_{ACC}$ who$_{NOM}$ bought

     'Who bought what?

    b. [$_{ForceP}$ [$_{TopP}$ **co$_j$** [$_{IntP}$ **kto$_i$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ **t$_i'$** [$_{vP}$ **t$_j'$** [$_{vP}$ **t$_i$** [$_{VP}$ V **t$_j$**]]]]]]]]]?
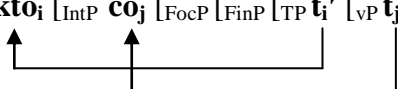
The obligatory landing site of a fronted wh-phrase in Polish wh-questions is Spec-IntP. In sluicing contexts in Polish, all wh-phrases move to multiple specifiers of IntP (the triggers for this movement will be discussed in the next section). The claim that wh-remnants, as opposed to their counterparts in fully fledged wh-questions, do not occupy different syntactic positions in the left periphery is confirmed by the fact that

while the wh-sequence in non-elided wh-questions can be interrupted, for example, by the conditional auxiliary *by* (would), (see (35); see also §3.3.2), it is impossible for such an intervening element to occur between wh-remnants in sluicing, as illustrated in (36).

(35) Kto *by* dokąd chciał wyjechać?
    who would where wanted go$_{INF}$
    'Who would like to go where?'

(36) Każdy by   chciał dokądś wyjechać, ale nie wiem *kto* (*by) *dokąd*.
    everyone would wanted somewhere go   but not know who (would) where
    'Everyone would like to go somewhere, but I don't know who would like to go where.'

Recall from §5.1.2.2 that the movement to multiple specifiers of a single projection proceeds in a tuck-in way (see (37)) for the sluicing construction in (27a)). The subject wh-phrase *kto* moves first followed by movement of the object wh-phrase *co* to the inner Spec-IntP. Since TopP, which hosts the wh-phrase *co* in (34b), is not projected in sluicing (as concluded in §7.3.4), there is no projection above IntP in the left periphery that could attract the object wh-phrase *co* from Spec-IntP, and thus ameliorate the Superiority effect. Consequently, Superiority effects arise in multiple sluicing constructions between subject and object wh-phrases (as observed in (26)-(27)) in Polish. The complement of Int^0 (i.e., FocP) undergoes PF-deletion, leaving the wh-phrases *kto* (who$_{NOM}$) and *co* (what$_{ACC}$) as sluicing remnants.

(37) $[_{ForceP} [_{IntP} \mathbf{kto_i} [_{IntP} \mathbf{co_j} [_{FocP} [_{FinP} [_{TP} \mathbf{t_i'} [_{vP} \mathbf{t_j'} [_{vP} \mathbf{t_i} [_{VP} V \mathbf{t_j}]]]]]]]]]$?

In multiple sluicing constructions containing two object wh-remnants, Superiority effects are not operative (see (31)). Recall from §5.1.2.2 that in fully-fledged wh-questions with two object wh-phrases, the absence of Superiority effects was attributed

to the possibility of scrambling of the direct object within VP. Consider the wh-questions in (38) a-b and their derivations given in (39) a-b, accordingly.

(38) a. Komu   co   powiedziałaś?

      whom$_{DAT}$ what$_{ACC}$ said$_{2,Sg,Fm}$

      'To whom did you say what?'

     b. Co   komu   powiedziałaś?

      what$_{ACC}$ whom$_{DAT}$ said$_{2,Sg,Fm}$

      'What did you say to whom?'

(39)   a. [$_{ForceP}$ [$_{TopP}$ [$_{IntP}$ **komu$_i$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ [$_{vP}$ **t$_i'$** [$_{vP}$ **co$_j$** [$_{VP}$ V   **t$_i$ t$_j$**]]]]]]]]]?
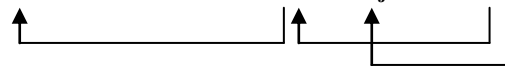
      b. [$_{ForceP}$ [$_{TopP}$ [$_{IntP}$ **co$_j$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ [$_{vP}$ **t$_j''$** [$_{vP}$ **komu$_i$** [$_{vP}$ **t$_j'$** [$_{vP}$ V **t$_i$**   **t$_j$**]]]]]]]]]]?
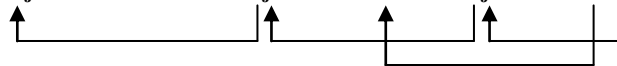
The fact that VP-internal scrambling takes place in (39b) results in the change of the base order of the objects (from V-IO-DO into V-DO-IO). The consequence of scrambling is that the DO *co* is closer to Int^0 than the IO *komu*, hence the former raises to Spec-IntP. When VP-internal scrambling does not take place, as in (39a), it is the IO *komu* that moves to Spec-IntP by virtue of being closer to Int^0 than the DO *co*. I assume that the same mechanism (VP-internal scrambling) is responsible for the lack of Superiority effects under multiple sluicing between two object wh-remnants in (31). Similarly to the discussion of subject and object wh-remnants (cf. (37)), the second wh-phrase undergoes movement to the inner Spec-IntP (see (40) a-b, based on (39) a-b), and the complement of Int^0 undergoes deletion.

(40)   a. [$_{ForceP}$ [$_{IntP}$ **komu$_i$** [$_{IntP}$ **co$_j$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ [$_{vP}$ **t$_i'$** [$_{vP}$ **t$_j'$** [$_{vP}$ V **t$_i$ t$_j$**]]]]]]]]]?

b. [$_{\text{ForceP}}$ [$_{\text{IntP}}$ **co$_j$** [$_{\text{IntP}}$ **komu$_i$** [$_{\text{FocP}}$ [$_{\text{FinP}}$ [$_{\text{TP}}$ [$_{vP}$ **t$_j''$** [$_{vP}$ **t$_i'$** [$_{vP}$ **t$_j'$** [$_{VP}$ V **t$_i$** **t$_j$**]]]]]]]]]]]?
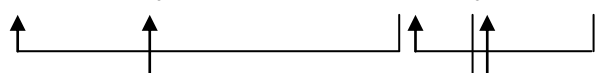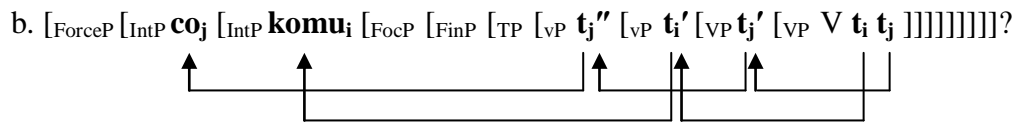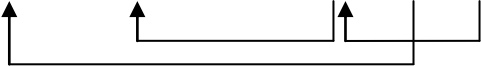
With respect to multiple sluicing structures containing argument and adjunct wh-phrases (see (32)), it is the subject wh-phrase *kto* (who) that obligatorily precedes the adverbial wh-phrase *gdzie* (where). Assuming that the adverb adjoins to vP (either to the left or to the right), it is located lower than the subject *kto*, the latter having moved to Spec-TP. The wh-phrase *kto* raises to Spec-IntP (by virtue of being closer to Int^0 than the adverb), followed by subsequent movement of the wh-phrase *gdzie* to the inner Spec-IntP, as illustrated in (41).

(41) [$_{\text{ForceP}}$ [$_{\text{IntP}}$ **kto$_i$** [$_{\text{IntP}}$ **gdzie$_j$** [$_{\text{FocP}}$ [$_{\text{FinP}}$ [$_{\text{TP}}$ **t$_i'$** [$_{vP}$ **t$_j$** [$_{vP}$ **t$_i$** [$_{VP}$ V]]]]]]]]]]?
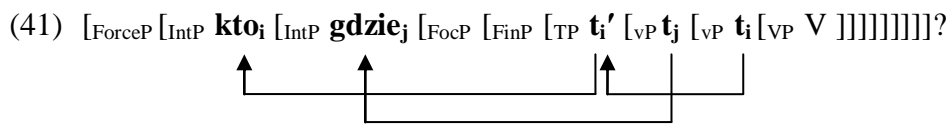
Since TopP is not projected in sluicing, the adjunct wh-phrase *gdzie* cannot move to Spec-TopP, which otherwise would ameliorate the Superiority effect, as is the case in fully-fledged multiple wh-questions in Polish. Compare the sluicing example in (41) with (43) a-b, which show the derivation of fully-fledged wh-questions in Polish and correspond to (42) a-b.

(42) a. Kto   gdzie studiuje?
        who$_{\text{NOM}}$ where studies
        'Who studies where?'

      b. Gdzie kto   studiuje?
        where who$_{\text{NOM}}$ studies
        'Who studies where?'

(43) a. [$_{ForceP}$ [$_{TopP}$ [$_{IntP}$ **kto$_i$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ **t$_i$′** [$_{vP}$ **gdzie** [$_{vP}$ **t$_i$** [$_{VP}$ V]]]]]]]]]?

  b. [$_{ForceP}$ [$_{TopP}$ **gdzie$_j$** [$_{IntP}$ **kto$_i$** [$_{FocP}$ [$_{FinP}$ [$_{TP}$ **t$_i$′** [$_{vP}$ **t$_j$** [$_{vP}$ **t$_i$** [$_{VP}$ V]]]]]]]]]?

The existence of Superiority effects under multiple sluicing in Polish has been attributed to the fact that TopP serves as an available landing site for the fronted wh-phrase in regular wh-questions, but not in sluicing constructions.

7.4.4 Movement to Multiple Specifiers of IntP

In the previous section it was illustrated that wh-phrases in sluicing in Polish undergo wh-movement to multiple specifiers of IntP.

The remaining question is what triggers the movement of all wh-phrases to multiple specifiers of IntP in sluicing. The answer is not straightforward, as it would require an investigation into what permits and disallows multiple sluicing cross-linguistically. However, I tentatively suggest that it is a particular property of the E-feature that attracts multiple wh-phrases to Spec-IntP. Adopting Bošković's (1998b) terminology, I propose that in languages which allow multiple sluicing, the E-feature possesses an '*Attract all-(F)eature*' property, whereas in languages which only allow single sluicing, the E-feature has an '*Attract one-(F)eature*' property. This means that the number of constituents that can be attracted to the specifier of the syntactic head with which the E-feature is merged is dependent on the property of the E-feature: Attract all-F requires that all elements with the relevant feature present in the structure are attracted by the syntactic head, whereas Attract one-F property allows only one

element with the relevant feature to be attracted by the syntactic head.[8] When the [uWh*; uQ*]-marked E-feature co-occurs with Int^0 in Polish, its Attract all-F property requires that all wh-phrases move to specifiers of the IntP projection. Similarly, when the [uOp*]-marked E-feature with its Attract all-F property co-occurs with Foc^0 in Polish, the latter attracts all focused constituents to Spec-FocP, which may result in multiple focused remnants (depending on the number of focused constituents present in the sentence), as is confirmed by the example in (20) above. The proposal that it is the Attract all-F vs. Attract one-F property of the E-feature that derives cross-linguistic differences in multiple vs. single sluicing is tentative at this point. I will leave the issue of what licenses multiple vs. single sluicing cross-linguistically under the PF-approach to sluicing as a question for further research.

7.5   Summary

This chapter was devoted to the phenomenon of multiple sluicing and the existence of Superiority effects in multiple sluicing constructions in Polish. Unlike wh-phrases in non-elided wh-questions, wh-remnants in Polish are subject to strict linear constraints. This fact was established based on the results of a controlled experimental study, which were reported here.

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[8] Bošković (1998b) originally proposed the Attract one-F(eature) head vs. Attract all-F(eature) head to explain Superiority effects. Under the Attract one-F scheme, Superiority effects are operative. The syntactic head with Attract one-F property attacts the highest element with the relevant feature since movement to the attractor must be shortest possible and thus most economical. On the other hand, Superiority effects do not arise under the Attract all-F scheme. The syntactic head with Attract all-F property attracts all elements with the relevant feature. From the point of view of economy, any attractee can move first to satisfy the Attract all-F property of the syntactic head since the same number of nodes is crossed (assuming that only maximal projections count). I borrow the concept of Attract one-F vs. Attract all-F from Bošković (1998b) to specify the number of constituents that can be attracted by a syntactic head. In contrast to Bošković (1998b), Superiority effects arise under the Attract all-F mechanism, which follows from the assumptions (the tuck-in approach to movement) independently adopted in this thesis.

I argued that the presence of Superiority effects under multiple sluicing in Polish is the result of the tuck-in movement of wh-phrases to multiple specifiers of IntP and the absence of the additional (apart from Spec-IntP) landing site for the fronted wh-phrase, i.e., Spec-TopP, in sluicing.

I investigated the nature of the E-feature in Polish. The types of elements which can serve as sluicing remnants in Polish, in comparison with other languages, led me to conclude that the E-feature licensing sluicing in Polish can be specified as either [uWh*; uQ*] or [uOp*]. Put differently, the E-feature in Polish can have more than one syntactic specification.

Finally, I attributed the availability of multiple vs. single sluicing to the properties of the E-feature: Attract all-F vs. Attract one-F, respectively.

CONCLUSIONS

This thesis was devoted to a minimalist study of binary wh-questions in languages which require overt wh-movement but differ with respect to the position of the non-initial wh-phrase. The split-CP approach (Rizzi 2001) was adopted and I argued that the feature responsible for wh-movement both in Polish and English is [uWh], located on the functional head Int^0 (except for embedded contexts in English). The theoretical foundation for the analysis advocated in this thesis assumed that sentences are sent to PF in units, which correspond to vP and ForceP (CP in Chomsky's 2000 *et seq.* terminology). The working hypothesis that I formulated was that natural languages vary as to whether they are subject to single Spell-Out or multiple Spell-Out. The hypothesis proved to account successfully for structural variations of wh-constructions between Polish and English in the context of both short and long-distance wh-extraction. In order to further verify the validity of this hypothesis, a thorough cross-linguistic examination of wh- and other constructions appears necessary. The hypothesis seems, however, plausible at this point, and opens up a question for future research. The question is of particular importance, since if it turns out to be corroborated by further research, it will signify that the roots of parametric variation are more profound than is generally postulated in Minimalism (Chomsky 1995 *et seq.*), the latter restricting parametric variation to the lexicon.

In the foregoing chapters, I attempted to provide support for the standard assumption (Rudin 1988; Citko 1997; Dornisch 1988) that wh-movement exists in Polish in the sense that a fronted wh-phrase checks a [Wh] feature and movement takes place to the CP area (contra Lubańska 2005 and Przepiórkowski 1994). I concluded that

wh-fronting in Polish is independent of focus movement, which consequently differentiates Polish from other multiple wh-fronting languages such as Bulgarian, Russian or Serbo-Croatian, which have been argued to be subject to focus movement in wh-questions (Stepanov 1998; Bošković 1998a; 1998b, 2002a). Cross-linguistically, the distribution of wh-phrases tends to pattern with the placement of focused constituents. However, I argued that Polish does not conform to this general pattern.

In Phase Theory, the displacement property in natural languages is induced by an EPP-feature. However, the existence of EPP-features (Chomsky 2001; cf. also Chomsky 2000; 2005), which replaced the concept of strength (Chomsky 1995), has remained unmotivated. The analysis of wh-constructions put forward in this thesis did not rely on the notion of the EPP-feature as a trigger for movement. The mechanism of Agree and Move which I have adopted (cf. Zeijlstra 2010), according to which i) Move is independent of Agree, ii) Agree requires a configuration where an element with an [uF] is c-commanded by an element with an [iF] and iii) Move occurs when an element bearing [uF] attracts an element with a matching [iF] (all assumptions contra Chomsky 2000; 2001), derive the displacement property independently of the EPP-feature, a significant improvement from the minimalist perspective.

Furthermore, the view of how successive-cyclic movement proceeds was reconsidered. I argued that intermediate movement steps can be derived in two ways: i) by PF considerations, which follow from the application of multiple Spell-Out, and ii) by the requirement that movement proceed in short steps. I argued that the PIC, which as formulated by Chomsky (2000; 2001) regulates Agree, Move and the size of the spelled-out domain should be eliminated from the grammar completely.

Finally, I introduced the phenomenon of sluicing. The existence of Superiority effects under multiple sluicing in Polish was attributed to the tuck-in approach to movement and the absence of TopP projection in sluicing constructions in Polish. The fact that Spec-TopP can serve as an additional landing site for a fronted wh-phrase in fully-fledged wh-questions in Polish, as opposed to sluicing constructions, is what allows Superiority violations, and thereby accounts for the arbitrary order of fronted wh-phrases in non-elided wh-questions. Furthermore, I suggested a new approach to the licensing of single vs. multiple sluicing cross-linguistically, which I derived from the properties of the E-feature. Future research may shed more light on this proposal.

ABBREVIATIONS

Acc – Accusative Case
AgrOP – Agreement Object Phrase
AgrSP – Agreement Subject Phrase
AspP – Aspect Phrase
Aux – Auxiliary
Cl – Clitic
Cond. Aux – Conditional auxiliary
CP – Complementizer Phrase
Dat – Dative Case
DO – Direct object
FinP – Finite Phrase
Fm – Feminine gender
FocP – Focus Phrase
Fut – Future tense
Gen – Genitive Case
Imperf – Imperfective aspect
Inf – Infinitive
IO – Indirect object
M – Masculine gender
ModP – Mood Phrase
Neg – Negation
Nom – Nominative Case
Obj – Object
OpP – Operator Phrase
Past – Past tense
Part – Participle
Perf – Perfective aspect
Pl – Plural number
Prt – Particle
Refl – Reflexive pronoun
Sg – Singular number
Sub – Subject
Subj – Subjunctive
TP – Tense Phrase
TopP – Topic Phrase
TrP – Transitive Phrase
VP – Verb Phrase
vP – small/light Verb Phrase

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