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The syntax of *WH*-movement in multiple (true and echo) questions: A Q-particle approach

Ekaterina Chernova

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The syntax of *WH*-movement in multiple (true and echo) questions: A Q-particle approach

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Memory presented in fulfillment of the requirements for the degree of Doctor by the Universitat de Girona

To my parents, to whom I owe everything

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Abstract

This dissertation studies typological distinctions among some *wh*-fronting languages with respect to syntax of multiple *wh*-questions. The main goal of this study is twofold: to provide a unified syntactic account of different patterns of *wh*-movement in true multiple *wh*-questions in general, and in echo *wh*-questions in particular. The dissertation proposes an account on how languages resorting to multiple *wh*-fronting (e. g. Russian) can be captured within Q-theory of *wh*-movement (Cable 2007, 2010), initially proposed for languages with single *wh*-fronting (e. g. English). Moreover, this study argues that analysing the formation of *wh*-questions with a unifying theory and in a comparative way can shed light not only on the canonical interrogative syntax, but also on such understudied phenomena as echo *wh*-questions. Generally, on the basis of echo *wh*-questions in languages of the English type, it is considered that there is no syntactic *wh*-movement in this type of interrogatives. This dissertation extends the crosslinguistic study of such questions by presenting novel evidence that multiple *wh*-fronting languages do exhibit overt *wh*-fronting in echo questions.

Resumen

La tesis doctoral estudia las diferencias paramétricas entre varias lenguas con movimiento *qu-* obligatorio respecto a la formación de las preguntas múltiples. El objetivo principal de este estudio consiste en proponer un análisis sintáctico unificado de diferentes patrones de movimiento *qu-* para las preguntas múltiples canónicas y para las preguntas de eco. En este trabajo se discute cómo en el marco de la Teoría-Q (Cable 2007, 2010), inicialmente desarrollada para lenguas con movimiento *qu-* simple (por ejemplo, el inglés), se puede captar la sintaxis de las interrogativas en lenguas con movimiento *qu-* múltiple (por ejemplo, el ruso). Además, el análisis de la formación de las preguntas *qu-* dentro de una teoría unificadora y desde una perspectiva comparativa también aclara otros fenómenos poco estudiados, como las preguntas *qu-* de eco. Hasta el momento, basándose en los ejemplos de las preguntas *qu-* de eco en lenguas como el inglés, se ha sostenido que este tipo de interrogativas no recurre al movimiento *qu-* sintáctico. En este trabajo se amplía el análisis comparativo de estas interrogativas a otras lenguas tipológicamente distintas y se demuestra que las que presentan movimiento *qu-* múltiple muestran evidencias de movimiento *qu-* explícito en las preguntas de eco.

Resum

La tesi doctoral estudia les diferències paramètriques entre diverses llengües amb moviment *qu-* obligatori respecte a la formació de les preguntes múltiples. L'objectiu principal d'aquest estudi consisteix en proposar una anàlisi sintàctica unificada de diferents patrons de moviment *qu-* per a les preguntes múltiples canòniques i per a les preguntes de ressò. En aquest treball es discuteix com en el marc de la Teoria-Q (Cable 2007, 2010), inicialment desenvolupada per a llengües amb moviment *qu-* simple (per exemple, l'anglès), es pot captar la sintaxi de les interrogatives en llengües amb moviment *qu-* múltiple (per exemple, el rus). A més, l'anàlisi de la formació de les preguntes *qu-* dins d'una teoria unificadora i des d'una perspectiva comparativa també aclareix altres fenòmens poc estudiats, com les preguntes *qu-* de ressò. Fins al moment, basant-se en els exemples de les preguntes *qu-* de ressò en llengües com l'anglès, s'ha sostingut que aquest tipus d'interrogatives no recorre al moviment *qu-* sintàctic. En aquest treball s'amplia l'anàlisi comparativa d'aquestes interrogatives a altres llengües tipològicament diferents i es demostra que les que presenten moviment *qu-* múltiple mostren evidències de moviment *qu-* explícit a les preguntes de ressò.

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Abbreviations

1	first person
2	second person
3	third person
ACC	accusative case
AUX	auxiliary
CL	clitic pronoun
COND	conditional
CUM	cumulative
DAT	dative case
DECL	declarative
DEF	definite
DELIM	delimitative
DSTR	distributive
EXCL	exclamative
FEM	feminine
FUT	future tense
GEN	genitive case
IMPF	imperfective aspect
INF	infinitive
INST	instrumental
LP	lexical prefix
MASC	masculine gender
NEG	negation
NOM	nominative case
PAST	past tense
PERF	perfective aspect
PL	plural
PRES	present tense
Q	question particle
REFL	reflexive pronoun
REL	relative pronoun
SG	singular
SLP	superlexical prefix
SPECIF	specific reading
SUBJ	subjunctive
UNSPECIF	unspecific reading

CHAPTER 1

Introduction

1. Scope and goals of the dissertation

This dissertation studies some typological distinctions among some *wh*-fronting languages with respect to the formation of canonical *wh*-questions, such as in (1), and non-canonical ones, such as in (2), namely echo *wh*-questions (hereafter *wh*-EQs):

(1) *Canonical wh-questions*

a. *What* did Mary say? (*English*)

b. *Čto* skazala Maša? (*Russian*)
what.ACC said Masha.NOM
'What did Masha say?'

(2) *Echo wh-questions*

a. *What* did $\underline{\text{who}}_{\text{E}}$ say? (*English*)

b. *Čto* $\underline{\text{kto}}_{\text{E}}$ skazal? (*Russian*)
what.ACC who.NOM said
'What did WHO say?'

The grammar of interrogative *wh*-movement has always been a controversial issue. Since the late 1960's, there has accrued a long list of studies concerning a fundamental question of the theory of *wh*-questions: "Why do (some) *wh*-words move in some languages?". Naturally, most of the theories of interrogative syntax have been focused on the syntactic behaviour of canonical, true *wh*-questions, such as those exemplified in (1).

As is well-known, the study of *wh*-movement has established various general types of languages regarding *wh*-fronting (for example, see Ross 1967; Chomsky 1977b; Freidin & Lasnik 1981; Cheng 1991; Richards 1997, 2001, 2010; Pesetsky 2000; Boeckx & Grohmann 2003; Cheng & Corver 2006; Cable 2007, 2010; among many others). It is generally accepted nowadays that there are two main language types with respect to the option of movement of the *wh*-word in a single *wh*-question: (i) *wh*-in-situ languages of the Chinese type, which do not exhibit overt *wh*-movement, as in (3), and (ii) *wh*-fronting languages of the

Germanic, Romance (and Slavic) types, with overt movement of at least one *wh*-phrase to the left periphery of a question, as in (4):

(3) *Languages with wh-in-situ (Chinese, Japanese, Sinhala, etc.)*

a. Hufei mai-le *shenme*? (*Chinese*)
Hufei bought- PERF what
'What did Hufei buy?'

b. **Shenme* Hufei mai-le?
what Hufei bought-PERF

(4) *Languages with wh-ex-situ (Indo-European languages)*

a. *What* did John buy? (*English*)

b. #John bought *what*?

When we turn to multiple *wh*-questions, we can clearly distinguish between two types of *wh*-fronting languages. On the one hand, Slavic languages require overt fronting of every *wh*-phrase, while, on the other, in Germanic and Romance languages generally only one *wh*-constituent moves overtly, the rest being left in-situ. This contrast is illustrated by the examples in (5) and (6):

(5) *Languages with single wh-fronting (Germanic, Romance)*

a. *Who*$_1$ sees *whom*$_2$? (*English*)

b. ¿*Quién*$_1$ ve *a quién*$_2$? (*Spanish*)
who.NOM sees who.ACC
'Who sees whom?'

(6) *Languages with multiple wh-fronting (Slavic)*

a. *Koj*$_1$ *kogo*$_2$ vižda? (*Bulgarian*)
who.NOM who.ACC sees
'Who sees whom?'

b. *Kto*$_1$ *kogo*$_2$ vidit? (*Russian*)
who.NOM who.ACC sees
'Who sees whom?'

Moreover, languages resorting to the same pattern of *wh*-movement in multiple questions can vary with respect to some minor parameters. For instance, while English is subject to a strict ordering of *wh*-phrases, Spanish is not, although both languages typically exhibit single *wh*-fronting:

(7) a. *Who*$_1$ sees *whom*$_2$? (*English*)
b. **Whom*$_2$ does *who*$_1$ see?

(8) a. *¿Quién*$_1$ ve *a quién*$_2$? (*Spanish*)
who.NOM sees who.ACC
'Who does see whom?'
b. *¿A quién*$_2$ ve *quién*$_1$?
who.ACC sees who.NOM

The same contrast regarding the ordering of *wh*-phrases holds for Bulgarian and Russian respectively, although both languages exhibit multiple *wh*-fronting (hereinafter, MWF):

(9) a. *Koj*$_1$ *kogo*$_2$ vižda? (*Bulgarian*)
who.NOM who.ACC sees
b. **Kogo*$_2$ *koj*$_1$ vižda?
who.ACC who.NOM sees

(10) a. *Kto*$_1$ *kogo*$_2$ vidit? (*Russian*)
who.NOM who.ACC sees
b. *Kogo*$_2$ *kto*$_1$ vidit?
who.ACC who.NOM sees

However, while different approaches have been proposed in order to analyse standard *wh*-questions across languages, *wh*-EQs, such as (2), are relatively unexamined constructions, despite their unquestionable interest for the general theory of question formation. Typically, *wh*-EQs, which are usually pronounced in immediate response to an utterance to request for repetition or to express surprise, seem to violate general rules of interrogative syntax, established for their canonical counterparts in (1).

Traditionally, *wh*-EQs have been taken as a counterpoint to standard assumptions about interrogative syntax in languages with overt *wh*-fronting. For instance, in English, *wh*-EQs do not necessarily exhibit *wh*-movement and the consequent subject-verb inversion, as shown in (11a), or such questions can apparently violate Superiority effects when containing more than one *wh*-phrase without any particular effect on their grammaticality, as in (11b):[1]

[1] Here I will primarily be concerned with *request-for-repetition*, or *unheard wh*-EQs (see Bartels 1997). As is noticed in the literature (e.g., Wachowich 1974a; Fiengo 2007; among others),

(11) a. Mary said $\underline{\text{what}}_{\text{E}}$? (*English*)
b. *What* did $\underline{\text{who}}_{\text{E}}$ say?

To sum up, *wh*-EQs are particular interrogative constructions that behave in a pretty unusual way. They are peculiar enough as to appear that "the grammatical rules of the language should not generate them", as claimed by Cooper (1983:149), or that their "relative unrestrictedness […] makes it unprofitable to attempt to integrate them into the analysis of the more usual types of questions" (Culicover 1976:73). However, I agree with Sobin's (2010:131) claim that *wh*-EQs "are of great interest and relevance to analyses of question formation".

Perhaps due to their atypical behaviour, *wh*-EQs are very little researched and the few existing accounts still need to be refined. There are few previous works on the syntax of such interrogatives. Thus, *wh*-EQs are usually considered as a non-syntactic, but a purely pragmatic phenomenon (see Blakemore 1994; Noh 1995, 1998; Iwata 2003, among others). However, among previous attempts of a syntactic characterization of such questions there can be singled out Sobin (2010) for English *wh*-EQs; Wachovicz (1974a) and Radkevich (2008) for *wh*-EQs in Slavic languages; Vlachos (2012) for Greek; Escandell (2002) for Spanish polar EQs and Dumistrecu (1992c) for Spanish quasi-EQs.

On the basis of the examples of *wh*-EQs in languages of the English-type, (11), it is traditionally considered that this type of interrogatives maintains the sentence-type of the echoed sentence and does not exhibit overt *wh*-movement (see Fiengo 2007; Sobin 1978, 1990, 2010, among others). However, this dissertation extends the crosslinguistic study of such questions by presenting novel evidence that MWF languages do exhibit instances of overt *wh*-movement in *wh*-EQs. One of the main empirical contributions of this dissertation consists in dealing with *wh*-EQs with multiple *wh*-items, as in (11b), across different *wh*-fronting languages. To the best of my knowledge, such type of *wh*-EQs has not been previously considered in the literature. Consider (12):

(12) a. A: *What* did (*mumble*) say? (*English*)
b. B: *What* did $\underline{\text{who}}_{\text{E}}$ say?

---

contrary to *amazement* EQs and similarly to true *wh*-questions, this type of EQs expresses speaker's ignorance about the item denoted by the echo *wh*-phrase and asks for a response. Consequently, unheard *wh*-EQs can be considered as a particular type of *wh-questions*, while amazement EQs are closer to exclamatives, since they express surprise and do not request for an answer. I will come back to this issue in chapter 5.

"Multiple" *wh*-EQs as in (12b), are usually produced in response to a previous canonical *wh*-question like (12a), certain portion of which (denoted by *mumble*) has been missed. By means of (12b), the speaker B, who does not understand the identity of the person who supposedly said something, asks the speaker A to repeat what she has just said. Consequently, such *wh*-EQs exhibit at least two *wh*-constituents: one *wh*-item is echo-introduced and usually emphatically stressed, while the rest is taken from the echoed interrogative utterance, as *who* and *what* from (12b) respectively.

I observe that *wh*-fronting languages can vary regarding the possibility of the echo *wh*-movement in "multiple" *wh*-EQs. In languages like English or Spanish, the echo *wh*-phrase can only remain in-situ, as in (13-14). However, in MWF languages like Russian the echo *wh*-word, apart from staying in-situ, can also undergo overt movement to various syntactic positions, as illustrated in (15):

(13) a. *What* did who$_{E}$ say? (*English*)
b. *Who$_{E}$ said *what*?

(14) a. ¿(Que) *qué* dijo quién$_{E}$? (*Spanish*)
b. *¿(Que) quién$_{E}$ *qué* dijo?

(15) a. *Čto* skazal kto$_{E}$? (*Russian*)
what.ACC said who.NOM
'What did who say?'
b. *Čto* kto$_{E}$ skazal?
what.ACC who.NOM said
c. ? Kto$_{E}$ *čto* skazal?
who.NOM what.ACC said

Moreover, unlike in true multiple *wh*-questions, where a proper response entails giving values for each *wh*-constituent, in *wh*-EQs with multiple *wh*-items, as in (13-15), only the echo-introduced *wh*-word receives wide scope, meanwhile, the scope of *wh*-word inherited from the echoed question is narrowed.

Here I uphold the idea that the syntactic properties of *wh*-EQs are less contrary to those of canonical *wh*-questions than they could appear and that *wh*-movement in EQs goes in parallel with the general pattern of *wh*-movement in canonical questions. I suggest that the attested differences between true and echo *wh*-questions follow from a particular syntactic structure, which underlies each type of questions. However, I claim that before we can draw up some general picture of a crosslinguistic typology of *wh*-movement in EQs, first we need a

unified theory of standard *wh*-movement in canonical questions across *wh*-fronting languages.

Therefore, the main goal of this thesis is twofold: to provide a unified syntactic account of different patterns of *wh*-movement in true *wh*-questions in general, and in *wh*-EQs in particular. I consider properties of true multiple *wh*-questions in a number of *wh*-fronting languages, with a special attention to Russian, a MWF language. I propose an account of the observed similarities and differences across *wh*-fronting languages with respect to *wh*-movement in multiple questions. Then, with an appropriate theory in hand, I propose the derivation for *wh*-EQs, which is able to account for the issue why echo *wh*-movement is not equally allowed in all *wh*-fronting languages.

2. Theoretical assumptions

The research presented in this dissertation is situated within the theoretical framework of *Minimalist Program* (MP) (from Chomsky 1993 through the present), a current development of the transformational generative grammar theory. I assume that the faculty of language is equipped with two fundamental computational operations: *Merge* and *Agree*.

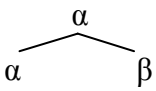
I assume a derivational model of grammar, in which syntactic hierarchical representations are built up out of lexical items by application of the operation *Merge*. This derivational operation takes two syntactic objects, α and β, and combines them into a larger unit, a new object K{α, β}. The application of Merge, being a *symmetric* operation, involves a creation of a binary unordered set {α, β} (Chomsky 2000), where one of the two members provides a label (γ) for the newly created object K, label being a head:

(16) Merge (α, β) = {γ, {α, β}}

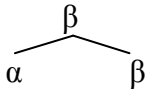
I assume that labels correspond to one of the two syntactic objects, α or β. If α acts as a head and selects β as a complement, then α assigns the label to the structure or *projects*, resulting at {α, {α, β}}. In contrast, if α does not take β as a complement, but rather *adjoins* to it, what assigns the label to the structure is β, giving rise to {β, {α, β}}.[2] The two possible outcomes of Merge concerning labelling are illustrated in (17a) and (17b) respectively:

[2] According to Chomsky (2004:117), "an adjunction construction is plainly not the projection of a head".

(17) a. *Projection*

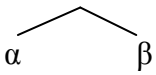


b. *Adjunction*

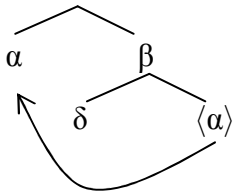


Moreover, I assume that there exist two logical possibilities for merger of α and β: either α is separate from β, or is contained inside β. In the former case, α does not form part of β and is taken out of the lexicon. In this case, I assume that α is merged to β via *external Merge*, as illustrated in (18a). In contrast, if α is a subpart of β, then the former is merged with the latter via *internal Merge*, as shown in (18b). With Chomsky (2004), I assume that *Move* is merely a particular type of Merge (internal Merge): an operation that takes a syntactic object which is already present in the structure and remerges it at some higher position. In this case, I assume that the moved element leaves behind a copy of itself, rather than a trace (since Chomsky 1993) —the core idea of the so-called *Copy Theory of Movement*:

(18) a. *External Merge*



b. *Internal Merge* (*Move*)



Following Chomsky (2004), I assume a derivational system in which the basic structure-building operation Merge can create different types of pairs (syntactic objects), each with a particular consequence at the interpretational level. On the one hand, external Merge sets thematic relations and assigns basic argument structure. On the other hand, internal Merge establishes functional relations between lexical items (e.g. nouns, verbs) and functional heads (e.g. C, T, *v*), giving rise to such phenomena as Case assignment, scope-binding relations or discourse structure. And, finally, Adjunction yields merger of non-argument elements (e.g. adverbs) into the structure.

Another fundamental operation of minimalism is *Agree* (Chomsky 2000, 2001). I assume that Agree is a feature-checking operation, which establishes syntactic relation between two objects or, more precisely, between two features [F] of that objects, within some local domain. Under the standard minimalist checking theory, some syntactic objects (in particular, the core functional categories as *v*, T and C) can enter the derivation with a set of *interpretable* and *uninterpretable* features. I standardly assume that if a feature [F] has an effect on

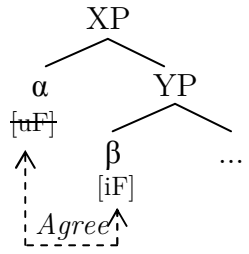
the semantic interpretation of an item in which it appears such feature is *interpretable* ([iF]); otherwise [F] is *uninterpretable* ([uF]) and must be valued and deleted. For instance, the nominal features [gender], [number] and [person] are interpretable on nouns, but are uninterpretable (weak) on *v*, T and C.

The computational level checks and deletes the uninterpretable features. Following Chomsky (2000, 2001) (see also Boeckx 2008; Bošković 2007a; Preminger 2012, among many others), I assume that an object α endowed with [uF], in order to check its formal imperfection, scans down the tree looking for a closest element it c-commands which bears the interpretable instance of that F ([iF]). The item with [uF], by virtue of not having a full value for its feature, acts as a *probe* (the 'target' of agreement) and searches for the closest item with a matching [iF], which, in turn, acts as a *goal*. (19) summarizes this point:

(19) α can agree with β iff:
   a. α carries at least one uninterpretable feature and β carries at least one matching interpretable feature;
   b. α c-commands β;
   c. β is the closest goal to α.

This is represented in (20), where the uninterpretable feature [uF] on the probe α is valued and deleted through agreement relation with the matching, semantically-contentful [iF] on the goal β:[3]

(20)



Moreover, with (Chomsky 2000, 2001), I assume that the two basic operations of minimalism —the structure-building Merge and the feature-checking Agree— work in tandem. This assumption is motivated by a non-trivial observation that normally an object that moves to the specifier position of a probe is "for the most part the same category with which the probe agrees", as pointed out by Richards (2009:62) (e.g. see (18b)).

[3] For a more detailed discussion of the mechanism of feature-valuation involved in formation of *wh*-questions see the next chapter.

Since Chomsky (1986, 1995a), movement of a syntactic object to a higher position (*qua* internal Merge) is regarded as being subject to the so-called *Last Resort* principle, an economy condition that imposes a ban on vacuous operations. Following Chomsky (2000 *et seq.*) and the logic of (19), I assume that internal Merge of an object α to some higher position is driven by a need to value some uninterpretable feature, a formal imperfection; otherwise the derivation would crash when it comes to interpretation (for discussion, see also Bošković 2007a; Zeijlstra 2012; Preminger 2012; among others).[4,5]

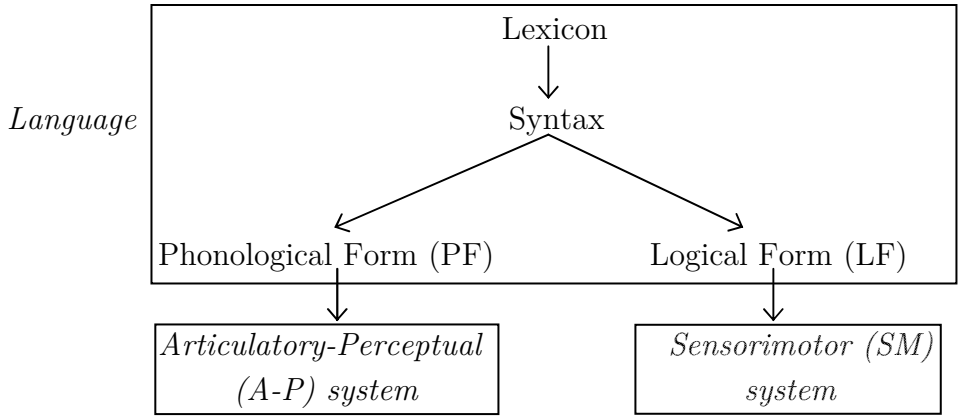
Furthermore, I adopt a system where the basic computational operations Merge and Agree obey the general economy principles, which means that they take place within local domains. I assume that the syntactic computation is strongly cyclic and proceeds in limited workspaces, or small units of cyclic transfer to the interfaces called *phases* (Chomsky 2001, 2004, 2008). At the points called *Spell-Out* (which correspond to *v*P and CP in Chomsky's phase theory),[6] the derivation is bifurcated into the interface levels: *Phonological Form* (PF) and *Logical Form* (LF). In turn, the two levels communicate with the *sensorimotor* (SM) and the *conceptual-intentional* (C-I) external systems respectively. A representation of this model of grammar is given below:

[4] A more detailed discussion of the machinery of Merge-Agree relations will be offered in chapter 2, within the context of *wh*-movement.

[5] A purely optional type of movement, which does not obey the Last Resort principle, has been also proposed in the literature. Its existence is motivated because it allows an interpretation that otherwise is not available (see Fox 2000; Chomsky 2001; Miyagawa 2005, 2006; Richards 2009, among others). For example, Richards (2009) claims that such type of movement is a result of the operation called *internal pair-merge*, that yields to movement by Adjunction, or Agree-less move. See also Nevins' (2004) *pure-EPP movement*, and Chomsky's 2008 *Edge-Feature*-driven movement. I will not consider optional movement in this dissertation.

[6] Many alternatives have been proposed, and a number of authors have argued that not only *v*P and CP, corresponding to the argument structure and the whole clause (including tense and force) respectively, but in fact every maximal projection is a phase (see Epstein *et al.* 1998; Epstein 1999; Bošković 2002c; Boeckx 2003b; Müller 2004; among others; for a summary of these visions, see the introduction to Gallego 2012).

(21) *Architecture of grammar (Y-model)*



The periodic transferring of portions of structure to the interfaces optimizes the mapping between syntax and the external systems and helps reduce the computational costs by "forgetting" the information corresponding to the previous derivational stages (see Abels 2003, Boeckx 2003a, 2007; Lasnik 2006; Gallego 2007, 2010, 2012). For example, consider the following complex *wh*-question:

(22) [$_{CP_3}$ *Which boy*$_i$ did Mary say [$_{CP_2}$ that John thinks [$_{CP_1}$ that Mary likes t_i]]]?

In (22), the *wh*-constituent *which boy*, although it appears at the leftmost position of the question, is interpreted as the internal argument of the lower verb *like* within the lower embedded clause, where it is base generated. Following Chomsky's (2001 *et seq.*) phase theory, I assume that internal Merge of the fronted *wh*-phrase to the matrix Spec,CP (CP_3 in (22)) does not proceed in a unique long leap, but rather occurs through the intermediate landing sites, or *escape hatches* (i.e., every specifier along the movement path). That is, the derivation of the complex sentence such as (22) proceeds in several local workspaces, in a step-by-step fashion:

(23) *Step-by-step derivation of (22):*

Step 1: John thinks that [$_{CP_1}$ *which boy* C_1 that Mary likes *which boy*] ?
Transfer

Step 2: Mary said [$_{CP_2}$ *which boy* C_2 that John thinks [$_{CP_1}$ *which boy* …]] ?
Transfer

Step 3: [$_{CP_3}$ *Which boy*$_i$ C_3 did Mary say [$_{CP_2}$ *which boy* …]]] ?
Transfer

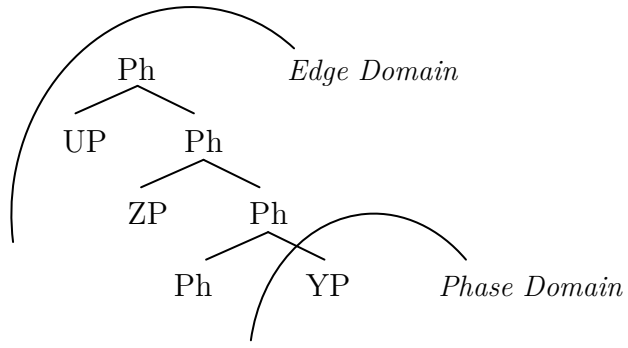
As shown in (23), once the derivation is done at a given stage, correspondent chunks of structure are spelled-out, thereby becoming inaccessible for the further computation —the gist of *Phase Impenetrability Condition* (PIC; Chomsky 2000, 2001):

(24) *Phase Impenetrability Condition* (from Chomsky 2001:14):
[Given structure [$_{ZP}$ Z ... [$_{HP}$ α [H YP]]], with H and Z the heads of phases]: The domain of H [the head of a strong phase] is not accessible to operations at ZP [the next strong phase]; only H and its edge are accessible to such operations.

In other words, PIC is a constraint which forces the system to "forget" about transferred portions of the structure, regulating the timing of transfer of the phase domain to the external components. Thus, PIC helps reduce the computational burden. Under the logic in (24), the transfer of the complement domain of a phase is delayed until the next phase head is projected, afterwards any further syntactic manipulation of the spelled-out chunk of structure is prohibited (for discussion of different implementations of this version of PIC, see Richards 2010 and Gallego 2007).

According to Chomsky (2004), there are two options of what portion of a phase must be spelled-out. In root contexts, the entire phrasal category (CP) is sent to the interfaces (see Richards 2007 and Obata 2010 for discussion). In non-root contexts, the transferred unit, the so-called *phase domain*, corresponds to the complement of a phase head (v and embedded C), while the head itself and its specifier constitute the *phase edge*:

(25)



The phase edge is accessible for the higher heads and further application of syntactic operations, so the derivation can proceed to the next phase. However, the phase domain, once transferred, becomes inaccessible, (24).

To sum up this introductory section, I adopt the current MP version of the Y-model of grammar, under which the language faculty is considered as a computational system that creates structures from lexical items via successive applications of the operation Merge and then sends the resulting expressions to the interface levels, PF and LF, (21). This is the core idea of Chomsky's (2000) *Strong Minimalist Thesis*, under which language communicates with the external systems of human biology in an optimal way.

This short general introduction of the model of grammar that I assume throughout this dissertation is sufficient for now. More specific theoretical claims and assumptions will be introduced at the point where they become relevant to the discussion at hand.

3. Structure of the dissertation

Chapter 2: Moving a Q-particle

The dissertation is composed of five chapters. Following Chapter 1 *Introduction*, Chapter 2 *Moving a Q-particle* provides the relevant theoretical background regarding the derivation of *wh*-questions. In this chapter, I review the main points of the so-called *Q-based theory* of *wh*-movement: since its first formulations (Katz & Postal 1964) untill the recent ones (Hagstrom 1998; Cable 2007, 2010). In this dissertation, I particularly follow Cable (2007, 2010), who argues that in all languages —either in *wh*-in-situ or *wh*-ex-situ— the syntactic and semantic relations between a *wh*-item and the interrogative C are established through the help of a question particle Q, which is externally merged with the *wh*-element. *Wh*-movement is considered as a secondary effect of Q-movement, which can arise in some languages, depending on a way in which Q is merged and projected. I also propose a slightly modified version of Cable's Q-based approach regarding the mechanism of *wh*-/Q-feature-checking. Applying Bošković's (2007a) proposal on a unidirectional upward agreement, I argue that internal Merge of Q-particle at Spec-CP is not target-driven (by C, as is standardly assumed), but rather is forced by the needs of the moving element itself. In other words, I revise the original Q-based approach with respect to the timing of application of Agree and internal Merge and suggest that Q-movement precedes Q-agreement.

Chapter 3: Multiple wh-questions through the prism of Q-theory

Chapter 3 covers certain well-known issues of the syntax of multiple *wh*-questions and the differences attested across different *wh*-fronting languages. I pay particular attention to formation of multiple questions in languages with obligatory multiple *wh*-fronting (MWF), namely in Russian and Bulgarian. As is

well-known, the two Slavic languages, although superficially very similar, exhibit different behavior with respect to several phenomena such as Superiority effects or whether the fronted *wh*-cluster can be interrupted by certain intervening material. The data suggest that in Bulgarian both fronted *wh*-phrases occupy the same position (multiple specifiers of CP), while in Russian one *wh*-phrase is moved higher (CP) than the rest (IP) (Rudin 1988; Richards 1997, 2001, among others). I discuss how Superiority effects emerge in Russian and revise existing theories which have tried to capture the puzzling *wh*-behavior in Russian. Finally, I show how Q-based theory, at least in its original formulation (Cable 2007, 2010), fails to account in a uniform manner for the parametric variation across MWF languages regarding *wh*-syntax and suggest that some further additions are needed.

Chapter 4: What moves where in Russian? Rethinking Q-theory

Chapter 4 is devoted to the analysis of multiple questions in Russian and Bulgarian, languages with MWF. With the findings of Chapter 2 and Chapter 3, I put forward a Q-based approach to the MWF phenomenon. I claim that there is a particular projection, AspP, which is endowed with phase properties in Slavic languages, as a result of *v*-to-Asp verb movement and a consequent, parameterized phase extension (in the spirit of Gallego 2007, 2010; den Dikken 2007). Consequently, all *wh*-goals must undergo Superiority-obeying tucking-in movement (Richards 1997, 2001) to the edge of AspP, in order to escape the extended phase domain. I propose that Russian and Bulgarian are subject to parametric variation regarding the number of Q-particles which are merged in a multiple *wh*-question. It captures the well-known observation that in Russian, unlike in Bulgarian, the fronted *wh*-phrases occupy structurally different positions. Finally, I tentatively propose how this account can be extended to Spanish multiple *wh*-questions and offer a possible parameter hierarchy for the emerging crosslinguistic variation regarding *wh*-movement.

Chapter 5: A derivational approach to the "echo challenge"

In chapter 5, I tackle another *wh*-related phenomenon such as *wh*-EQs in typologically different *wh*-fronting languages, particularly focusing on EQs with multiple *wh*-items. Following Sobin (2010), I assume a particular, double-CP structure of EQs and closely relate the syntactic properties of an EQ to the sentence-type of the previous, "echoed" utterance. However, I depart from Sobin by arguing that any type of EQs —either those with the fronted echo *wh*-word or those with *wh*-in-situ— exhibit certain instance of syntactic movement. In the

spirit of Q-based theory, I suggest that movement of the echo-introduced *wh*-word is a secondary effect of Q-movement. In particular, I argue that echo *wh*-fronting requires an available escape hatch within the lower CP, which corresponds to the echoed utterance. I claim that the possibility of overt echo *wh*-movement is parametrically restricted, since such movement proceeds successive cyclically, through the double-CP structure underlying *wh*-EQs. As a result, the final outcome of a *wh*-EQ crucially depends on the sentence-type of the utterance being echoed and on the typology of a language concerning the MWF phenomenon.

Chapter 6: Conclusions and further directions

Chapter 6 provides a summary and conclusion of all the findings of the dissertation and addresses possible extensions of the research undertaken here.

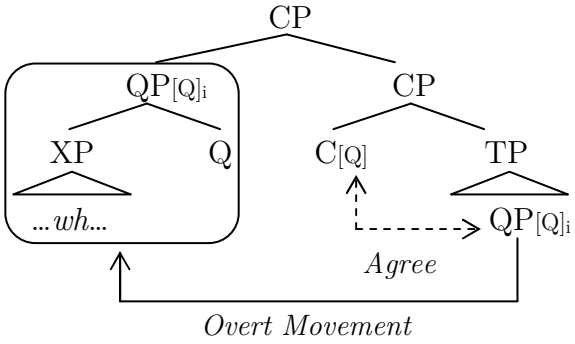
CHAPTER 2

Moving a Q-particle

1. Introduction

This chapter mainly concerns the theory of *wh*-movement in questions, focusing on the so-called Q-particle theory (Cable 2007, 2010). Under this approach, all interrogative movement to the left edge of a clause is an instance of movement of a question particle Q, which in some languages triggers *wh*-movement, the latter being a side effect of the former, as illustrated in (1):

(1) *Wh-movement as a secondary effect of Q-movement*



[adopted from Cable 2010:38]

This chapter is organized as follows. Section 2 addresses different attempts to capture *wh*-movement in terms of Q-fronting, since the first approaches (Katz & Postal 1964; Baker 1970) till the recent formulations (see Watanabe 1998; Hagstrom 1998; Cable 2007, 2010). While section 2.1 considers the general insights of Q-based approach, focusing on *wh*-in-situ languages (Hagstrom 1998), section 2.2 cares about the main insights of Q-theory regarding languages with overt *wh*-fronting (Cable 2007, 2010). I also address the prediction of Q-theory that the main difference between the two language-types lies in the way in which Q-particles are merged into the derivation and how they project. Section 3 offers a slightly modified version of Cable's approach, suggesting some additions, but maintaining all the advantages of the original proposal. In particular, section 3.1 addresses the driving force behind Q-movement to the left periphery of a question and the corresponding feature-checking mechanism. In spirit of Bošković (2007a), I propose that the interrogative movement is not target-driven as in Chomsky

(2000, 2001), but rather is moving-element-driven. In other words, movement of the Q-particle (or its maximal projection QP) is not driven by an uninterpretable feature [uF] on a probe C, but rather it is a formal imperfection ([uF]) on the goal itself (a moving element) that needs to be checked and deleted from the derivation. Hence, the Q-morpheme has to move over its formal checker, the interrogative C, by its own needs. Section 3.2 focuses on a relation established between Q and a *wh*-word at their base position, prior to the interrogative movement to the left periphery. In section 3.3 I discuss some advantages of the proposed view on Q-movement over the original hypothesis, with respect to the distinction between Q-projection and Q-adjunction languages. Finally, section 4 summarizes this chapter.

2. The syntax of *wh*-movement: moving a Q-particle

It is generally accepted nowadays that there are two main language-types with respect to movement of a *wh*-word in canonical, or true single *wh*-questions (see Cheng 1991; Richards 1997, 2001; Hagstrom 1998; Cheng & Rooryck 2000; Bošković 2000a, 2002a, 2007b; Pesetsky 2000; Dayal 2005; Cheng & Corver 2006; Cable 2007, 2010 and references therein). In some languages, such as Japanese or Mandarin Chinese, the *wh*-items typically remain in-situ:[1]

(2) a. Hufei mai-le *shenme*? (*Chinese*)
Hufei.NOM bought.PERF what.ACC
'What did Hufei buy?'
b. **Shenme* Hufei mai-le?
what.ACC Hufei.NOM bought.PERF [from Ambar 2003:215]

(3) a. John-ga *nani-o* kaimasita ka? (*Japanese*)
John.NOM what.ACC bought.polite Q
'What did John buy?'
b. **Nani-o* John-ga kaimasita ka?
what.ACC John.NOM bough.polite Q [from Hagstrom 1998:36]

[1] In this section I consider only true or *epistemic wh*-questions (Escandell 1999), i.e., the interrogative clauses uttered by a speaker who wants to fill the gap in her knowledge about a 'thing-in-the-world' designated by a *wh*-word (see Fiengo 2007). For now, I abstract from non-canonical readings of *wh*-questions, which will be considered in chapter 5. Thus, in what follows I ignore the echo reading of the sentences (b) in (4-5), under which the *wh*-in-situ is accepted.

In other big class of languages (typically, Indo-European, including English, Spanish or Russian), at least one *wh*-word obligatory undergoes overt movement to the left edge of a question:[2,3]

(4) a. *What* did John buy? (*English*)
b.#*John bought *what*?

(5) a. *¿Qué* compró Juan? (*Spanish*)
what bought Juan
'What did Juan buy?'
b.#*¿Juan compró *qué*?
Juan bought what

(6) a. *Čto* kupil Ivan? (*Russian*)
what.ACC bought Ivan
'What did Ivan buy?'
b.#*Ivan kupil *čto*?
Ivan bought what.ACC

Since the 1960s, there have been numerous attempts within the syntactic theory to account for the crosslinguistic differences with respect to *wh*-question formation and to determine why *wh*-phrases move to the left edge of a *wh*-interrogative clause in some languages, but not in others.

Within the framework of generative grammar, *wh*-questions have been always considered as an important source of information on multiple phenomena, such as clause structure, driving force of *wh*-fronting, cyclicity, locality conditions, islands, etc. (see Ross 1967; Chomsky 1977b, 1986; Chomsky & Lasnik 1977; Freidin & Lasnik 1981; Huang 1982; Lasnik & Saito 1984, 1992; Cinque 1990; Rizzi 1990, 1997, 2001b; Cheng 1991; Watanabe 1992a, 2006; Uriagereka 1995b;

[2] Here I do not split off languages with the so-called *mixed pattern*, which can exhibit both *wh*-in-situ and *wh*-ex-situ (for French, see Cheng 1997; Bošković 1999, 2000; Cheng & Roorick 2000, Boeckx 2000; Boeckx, Stateva & Stepanov 2001; Kayne & Pollock 2001; for Spanish, see Uribe-Etxebarria 2002; Reglero 2007; Etxepare & Uribe-Etxebarria 2005, 2012). I take these languages as those exhibiting *wh*-fronting, since the *wh*-in-situ option is typically restricted to a limited number of contexts and involves a different, non-canonical interpretation. For some *wh*-in-situ cases (namely, echo *wh*-questions), see chapter 5.

[3] Certainly, this second group can be further divided into languages with single *wh*-movement (e.g. Germanic, Romance) and languages with multiple *wh*-movement (e.g. Slavic). However, I ignore multiple *wh*-questions for now and will turn to them in the next chapters.

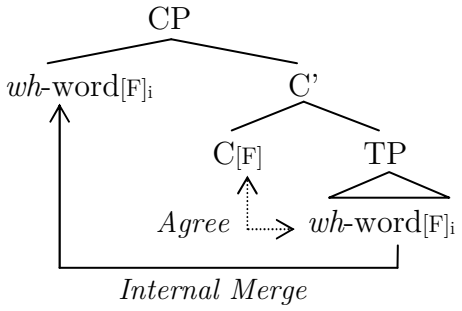
Pesetsky 1987, 2000; Richards 1997, 2001; Boeckx & Grohmann 2003; Cheng & Corver 2006; Cable 2007, 2010, among many others).

Since Bresnan (1970), it has been assumed that there is a particular discourse-oriented projection *Comp/CP* (above TP), which determines the clause-type of the sentence and is used as a landing site for syntactic objects displaced in result of *wh*-movement. Chomsky (1986) applies the X-bar schema to the Comp layer, proposing that it contains an obligatory constituent, a head C, which determines the nature of its maximal projection, CP. Since then, it has been assumed that there are at least two syntactic positions above TP where the fronted elements end up: Spec,CP is a landing site for the moved *wh*-phrases, while auxiliaries (and modals), complementizers and verbs are housed in C. This is illustrated below:

(7) a. [$_{CP}$ *What*$_k$ C *does*$_i$ [$_{TP}$ John t$_i$ [$_{VP}$ think t$_k$]]]?
b. John thinks [$_{CP}$ C *that* [$_{TP}$ Mary is pretty]].

Regarding overt *wh*-movement, traditionally it has been assumed it is a result of combination of several factors: (i) the *wh*-word has a particular feature [F]; (ii) the interrogative head C has a matching feature [F]; (iii) the *wh*-word must be located at Spec,CP in time for interpretation (as required for the so-called *wh-criterion*; see Rizzi 1996).[4] This view is illustrated in (8):

(8)



[adopted from Cable 2010:85]

The exact labelling of the particular property on the elements involved in *wh*-movement may vary. Thus, within *Government and Binding* syntactic theory (GB; since Chomsky 1981, 1982, 1986), this property is the morphosyntactic [wh] feature, morphologically manifested in *wh*-elements (*wh*-words like *who, what, where, how, why, which* and maximal *wh*-projections like *which boy*, *whose book*, etc.) (see Pesetsky 1982; May 1985; Chomsky 1991; Rizzi 1991; Lasnik & Saito 1992, among many others). On the other hand, within MP (Chomsky 1993 *et*

[4] For a detailed review of different previous accounts on *wh*-movement, the reader is referred to Cable (2010:4-5).

seq.), the relevant feature which contributes the interrogative force to a sentence and triggers overt movement of the *wh*-item is labelled as [Q] (from 'Question').

In this dissertation I adopt the so-called Q-based theory (see Hagstrom 1998; Cable 2007, 2010), which assumes that it is not a *wh*-phrase itself that establishes a direct syntactic and semantic relationship with C, but rather this relation is set up by a particular element associated with a *wh*-word, referred to as *Q-particle* (or *Q-morpheme*).

The Q-particle has been argued to be central to many analyses of *wh*-in-situ and *wh*-fronting languages. Many authors have proposed that, in addition to the interrogative C and the *wh*-word itself, there is a third participant in formation of a *wh*-question: a question particle (or a morpheme) *Q*. Katz & Postal (1964) were first in proposing the existence of a Q-morpheme which is responsible for the meaning contrast between declarative sentences, as in (9a), and interrogatives, as in (9b):

(9) a. John kissed Mary.
b. *Q* did John kiss Mary?

The Q-morpheme hypothesis has been extended to *wh*-interrogatives: *wh*-questions are supposed to resort to the deep-structure as in (9c), given the assumption that *wh*-words behave in a similar manner to indefinites, with a difference that the former are 'questioned':

(9) c. *Q* [*wh-someone*] kissed Mary? (='*Who* kissed Mary?')

Baker (1968, 1970) improves Katz & Postal's Q-morpheme approach and extends it to embedded questions. He argues that the morpheme Q acts as an operator that binds a *wh*-phrase, resulting in a quantifier-type expression that emerges from the combination of a constituent containing an indefinite and a *wh*-marker. In order to assign scope to the variable (the *wh*-word), Q triggers overt *wh*-movement into CP:

(10) *Wh-fronting involves Q-movement*
[CP [*Q* [*wh*-word]] [kissed Mary _]]?
↑_____|

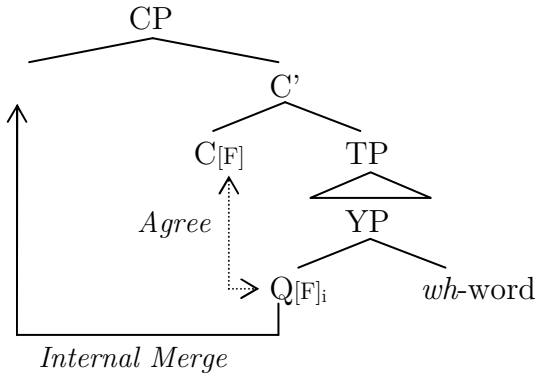
Much later, the idea that interrogative structures involve three crucial elements —an interrogative head C, a *wh*-element and a Q-particle— has been further developed and successfully extended to *wh*-in-situ languages (see Watanabe 1992a; Kishimoto 1997; Hagstrom 1998). It is argued that in such languages the

Q-morpheme is merged together with a *wh*-phrase, but then it moves into CP alone, leaving its sister in-situ:

(11) *Wh-in-situ involves Q-movement*
[Mary kissed _ [*wh*-word] [CP *Q*]]?

Recently, Cable (2007, 2010) extends further the main insights of the Q-based theory to *wh*-fronting languages and proposes a general Q-based theory, which captures relevant similarities and differences between the two languages-types. The author argues that the interrogative *wh*-movement is not triggered by any property of the *wh*-phrase itself, but rather it is a secondary effect of targeting the feature [F] of the Q-particle, as represented in (12) (*cf.* (8)):

(12)



[adopted from Cable 2010:85]

Under this view, in all languages the syntactic and semantic relations between C and the *wh*-item are rendered through the help of a Q-morpheme. However, in different languages, Q can resort to different ways in which it is merged and projected (as it will be discussed further).

In this dissertation, following Cable (2007, 2010), I consider *wh*-movement as a secondary effect of Q-movement, in a sense that the *wh*-word itself does not act as a scope-bearing operator, but rather the syntactic and semantics relations with the interrogative C are established through the help of a Q-particle merged with the *wh*-item. Before we move on, let me first briefly consider the origins of the Q-based theory; namely, some previous accounts on *wh*-questions in languages with *wh*-in-situ.

2.1. Q-movement in *wh*-in-situ languages

As argued in Cheng (2009:767), "one of the most fascinating aspects of *wh*-in-situ is that the in-situ *wh*-items, though in-situ, can take wide scope, on a par with moved *wh*-items". The question on how *wh*-constituents can be licensed in their

argument position in *wh*-in-situ languages like Chinese or Japanese, as illustrated in (2-3), has received much attention in the literature (see Huang 1982; Cheng 1991; Watanabe 1992a; Tanaka 1998, 1999a,b; Hagstrom 1998; Shimoyama 2001; Sternefeld 2001; Kishimoto 2005; Cable 2007, 2008a, 2010, among many others).[5]

One quite fascinating issue about *wh*-in-situ languages, which is particularly important for our Q-based approach, is that they do not show sensitivity to island violations, as opposed to languages with overt *wh*-fronting. Since Ross (1967), it has been observed that in *wh*-fronting languages *wh*-adjuncts cannot be extracted from an island, (13), in contrast with *wh*-arguments, whose extraction does not lead to so strong ungrammaticality, (14):

(13) a. * *Why*$_i$ do you wonder [$_{CP}$ whether John left t$_i$]? (*English*)
b. * *Why*$_i$ do you believe [$_{DP}$ the claim that John said Bill left t$_i$]?
[adopted from Lasnik & Saito 1992:50]

(14) a. ?? *What*$_i$ do you wonder [$_{CP}$ whether John bought t$_i$]? (*English*)
b. ?? *Who*$_i$ do you believe [$_{DP}$ the claim that John said Mary saw t$_i$]?
[adopted from Lasnik & Saito 1992:50]

In contrast, in *wh*-in-situ languages the *wh*-items are allowed to appear inside islands, as exemplified by the following example from Japanese:[6]

(15) Mary-wa [$_{DP}$ [$_{CP}$ John-ni nani-o ageta] hito-ni] atta-no? (*Japanese*)
Mary-NOM John-DAT *what*-ACC gave man-DAT met-Q
*'What did Mary meet the man who gave _ to John?'
[adopted from Hagstrom 2000:3]

[5] In the literature there are two main directions in solving the *wh*-in-situ challenge. On one approaches, *wh*-in-situ is simply interpreted by LF in its argument position, which implements that syntactic *wh*-movement is not indispensable for getting interrogative semantics (Tsai 1994; Shimoyama 2001). On an alternative view, *wh*-in-situ is licensed by some syntactic operation which does not affect word order. In this line, some approaches argue for the existence of covert movement (Huang 1982; Bošković 2000; Cheng & Rooryck 2000), while others opt for some non-covert-movement alternatives such as absorption or unselective binding (Baker 1970; Higginbotham & May 1981; Pesetsky 1987), remnant movement (Kayne 1994; Munaro, Poletto & Pollock 2001; Uribe-Etxebarria 2002) or movement of an interrogative Q-particle (Watanabe 1992a,b; Hagstrom 1998; Kishimoto 2005). In this dissertation, I adopt the Q-based approach to *wh*-movement (Cable 2007, 2010) that derives from the latter type of view on *wh*-in-situ.

[6] The apparent insensitivity of *wh*-in-situ languages to *wh*-island effects leads Huang (1982) to argue that only overt instances of *wh*-movement are subject to Subjacency.

However, certain parallelism between *wh*-ex-situ and *wh*-in-situ languages can still be noted, as evidenced by the examples in (16) from Japanese. Namely, observe that the *wh*-item modified by *ittai* (lit. 'one body'; similar to 'the hell') cannot appear in a complex DP, as in (16a), and adjuncts like *naze* 'why' are generally sensitive to islands even without *ittai*, as shown in (16b):

(16) a. *Mary-ga [$_{DP}$ [$_{CP}$ John-ni *ittai* *nani*-o ageta] hito-ni] atta-no?
Mary-NOM John-DAT the-hell what-ACC gave man-DAT met-Q
'What on earth did Mary meet [the man [who gave _ to John]]?'

b. *Mary-ga [$_{DP}$ [$_{CP}$ John-ni *naze* hon-o ageta] hito-ni] atta-no?
Mary-NOM John-DAT why book-ACC gave man-DAT met-Q
'Why Mary met [a man who gave John a book _]'

[from Pesetsky 2003:8]

Watanabe (1992a) analyses this non-uniform crosslinguistic picture of *wh*-movement and proposes that in both types of languages movement is always overt. The author proposes that what moves is not a *wh*-phrase itself, but an operator, *Op*. In English, the operator comes together with the *wh*-word (being overtly realized as the /wh-/ component of *wh*-words) and cannot be separated from it; as a result *Op*-movement always entails *wh*-movement. In contrast, in Japanese, the operator can detach from the *wh*-word and move alone, leaving the latter in-situ.

Watanabe's proposal implies that *wh*-questions involve overt movement of the operator in both types of languages; thus, in principle, both are subject to Subjacency effects (*cf.* Huang 1982). However, Japanese has at its disposal a way to avoid islands by separating the operator and the *wh*-item and moving only the former. Crucially, Watanabe's account opens up an alternative way of solving the *wh*-in-situ challenge, in place of covert *wh*-movement (Huang 1982). On this view, movement is overt, although what overtly moves is not a *wh*-phrase, but a different element: an operator (Watanabe 1992a,b), a feature (Pesetsky 2000; Watanabe 2001, 2002, 2006) or a particle (Hagstrom 1998; Kishimoto 2005; Cable 2007, 2010).

Hagstrom (1998) takes Watanabe's (1992) proposal further and argues that, in addition to the interrogative C and the *wh*-word, there is a third participant in *wh*-questions, a question particle *Q*. According to the author, what actually undergoes overt movement in Japanese questions is the Q-particle, phonetically realized as *ka*. This particle, which forms indefinites from *wh*-words such as *dare* 'who' or *nani* 'what' (which result in *dare-ka* 'someone' and *nani-ka* 'something'), can be also doubled as a question marker in *wh*-questions. Hagstrom argues that

in root *wh*-questions, the particle *ka* must raise to the right edge of a clause from a position adjacent to the *wh*-in-situ, as in (17a), while in embedded *wh*-questions, *ka* must be fronted to the right edge of the subordinated CP, as in (17b):

(17) a. John-ga *nani*-o kaimasita *ka*. (*Japanese*)
John-NOM what-ACC bought-polite Q
'What did John buy?' [from Hagstrom 1998:38]
b. John-ga [$_{CP}$ Mary-ga *nani*-o katta *ka*] sitteiru.
John-NOM Mary-NOM what-ACC bought Q know
'John knows what Mary bought.' [from Hagstrom 1998:16]

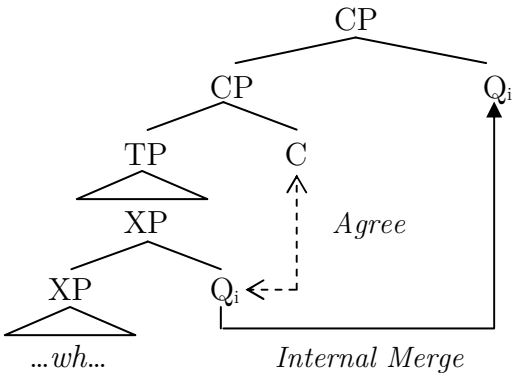
In order to account for the challenging fact that in Japanese *wh*-words are allowed to appear inside islands (*cf.* (15)), Hagstrom argues that in contexts of islands *ka* can be base-generated away from the *wh*-word. As a result, it starts its movement up to C from outside the island:

(18) Taroo-ga [$_{DP}$ Hanako-ni *nani*-o ageta hito-ni] t_i aimasita *ka*$_i$?
Taroo-NOM Hanako-DAT what-ACC gave man-to met Q
'What did Taro meet [the man that gave _ to Hanako]?'
[from Hagstrom 2000:6]

Thus, (15) and (18) are grammatical because movement of Q does not cross any island. Let us now turn back to the puzzling example in (16a), where the *wh*-item modified by *ittai* 'the hell' cannot appear inside the island. According to Hagstrom, *ittai* marks the base position of the particle *ka*. Since in (16a) *ittai* appears inside the island, it means that the Q-particle has moved out from inside the island, leading to the ungrammaticality of the sentence. That is, a *wh*-item can be contained inside an island if and only if the Q-particle is merged outside the island.

In sum, Hagstrom (1998) argues that the derivation of *wh*-questions in *wh*-in-situ languages is underlined by overt Q-movement: the Q-particle is adjoined to a *wh*-phrase or some larger projection, XP (see also Kishimoto 2005 for Sinhala). Then, the head C probes for the features of the Q-particle, and, once they agree, the Q-particle has to move up into Spec,CP alone, leaving its sister XP in-situ. This derivation is represented below:

(19)



[adopted from Cable 2010:37]

2.2. Q-movement in *wh*-ex-situ languages

Cable (2007, 2010) takes further Hagstrom's (1998) and Kishimoto's (2005) Q-based hypothesis and expands it into languages with overt *wh*-movement. On the basis of the behavior of Q in Tlingit, a *wh*-fronting language, Cable argues that agreement initiated by C is actually with the particle Q (realized in that language as *sá*), but not with the *wh*-phrase at all. As the following examples show, in Tlingit (also a head-final language, as Japanese) *sá* must c-command the *wh*-word or a phrase containing the *wh*-word from an adjacent position, contrary to what we have observed in Japanese (*cf.* (17)). In other words, in Tlingit the Q-particle cannot leave the *wh*-phrase stranded:

(20) a. [*Aadóo* jeet] *sá* wé sakwnéin aawatee? (*Tlingit*)
who.NOM hand.to Q that bread.ACC he.brought.it
'Who did he give the bread to?'

b. *[*Aadóo* jeet] wé sakwnéin *sá* aawatee?
who.NOM hand.to that bread.ACC Q he.brought.it

[adopted from Cable 2010:32]

Particularly, Cable's proposal aims to account for the phenomenon that *wh*-movement often triggers movement of a phrase which is larger than the *wh*-phrase itself —the so-called *pied-piping* (see Ross 1967; Webelhuth 1992; Kayne 1994; Ginzburg & Sag 2000; Grimshaw 2000; Abels 2003, 2012; Heck 2008; Watanabe 2006, among others). This phenomenon is illustrated by the English examples in (21), although it is also evidenced by the previous Tlingit sentences in (20):

(21) a. [*Whose* book] did you read? (*English*)
b. [To *whom*] did you speak?
c. [*How* long a book] did he write? [from Cable 2010:116]

Recall from (21) (as well as from (20)) that the moved constituent is not a *wh*-phrase itself, but rather a projection that contains a *wh*-word. Cable tries to get rid of the mechanism of feature percolation in pied-piping constructions and provides an account, under which the structures in (21) are straightforward cases of phrasal *wh*-fronting, triggered by movement of a Q-particle into the left edge of a clause. Why does Q-movement trigger overt *wh*-fronting in languages like English, but not in languages like Japanese? How the Q-theory can account for the crosslinguistic similarities and differences regarding formation of *wh*-questions?

Cable suggests that *wh*-in-situ and *wh*-ex-situ languages share nearly identical structure, and that in all natural languages *wh*-words receive interpretation through the help of a Q-particle, which must move to C in order to derive an appropriate interrogative structure, interpretable at the semantic component. The difference between the two language-types comes from the way in which the Q-particle is merged into the derivation and in which a label is assigned.

Thus, *wh*-in-situ languages resort to *Q-adjunction*, as illustrated in (19). According to the theory, the Q-particle can be merged anywhere in the structure where it c-commands the *wh*-phrase or some larger structure XP containing the *wh*-phrase. In such languages, the Q-particle *adjoins* to its sister, without projecting the label. It means that the node immediately dominating Q and its sister is the node projected by the sister of Q, XP. As a consequence, after checking the Q-feature with C, the particle Q moves alone up to Spec,CP and leaves the *wh*-phrase in-situ.[7] This is represented below:

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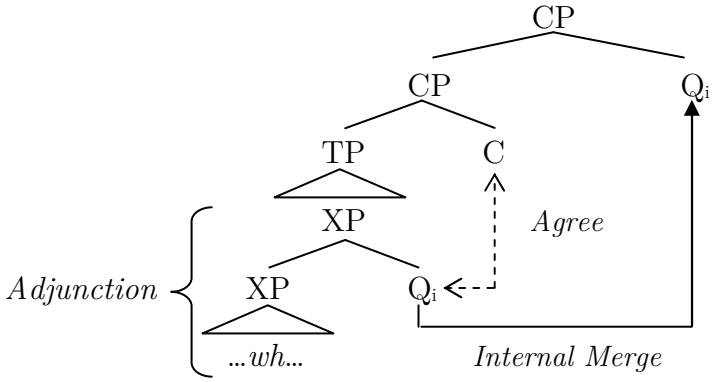
[7] Cable (2007, 2010) also observes that not all *wh*-in-situ languages behave exactly the same way. Particularly, the author notices that Sinhala Q-particle *da*, contrary to Japanese *ka*, cannot appear at the right edge of a clause, but rather should be adjacent to the *wh*-phrase as in *wh*-fronting languages:

(i) a. Chitra *monawa da* gatte?
Chitra what Q buy
'What did Chitra buy?'
b. * Chitra *monawa* gatte *da*?
Chitra what buy Q
c. Chitra [*mona* pota] *da* gatte?
Chitra what book Q bought?
'What book did Chitra buy?' [Kishimoto 2005:3-4, 13, cited in Cable 2010:35]

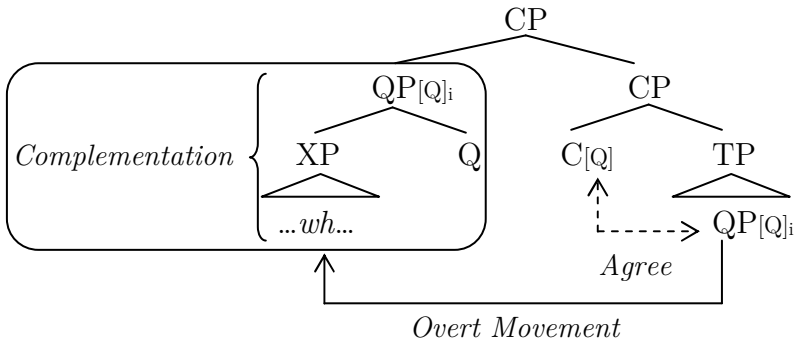
(22) *Wh-in-situ as a result of Q-adjunction*



[adopted from Cable 2010:37]

On the other hand, *wh*-fronting languages resort to *Q-projection*. In this language-type, the Q-particle generally merges with the *wh*-phrase (or XP) at its argument position and takes its sister as a complement, *projecting* a QP layer. As a result, the latter minimally dominates both Q and its *wh*-containing sister. So, the first node endowed with the Q-feature, which is visible for C, is QP (being the maximal projection of the head Q, the QP node inherits [Q] from the head). This entails that the attraction of the Q-feature into CP triggers movement of the whole QP projection (no feature percolation being necessary). This structure is represented in (23):

(23) *Wh-ex-situ as a result of Q-projection*



[adopted from Cable 2010:38]

Regarding the issue of the force driving Q-movement into CP, Cable assumes Chomsky's (2000) algorithm for probing and suggests that C bears an instance of the Q-feature which must be checked against the matching feature on the

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Thus, according to Cable, Sinhala is a Q-projection language with a structure similar to the one in (23), with a difference that QP-movement is covert.

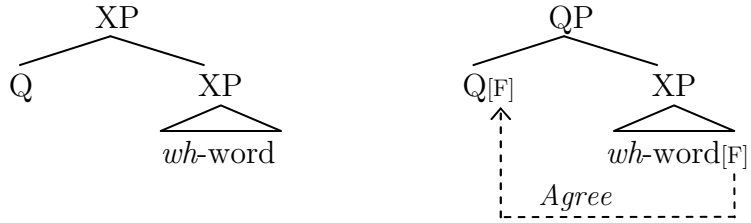
Q-particle itself. Consequently, the C head scans down the tree and finds some element bearing the matching feature: either a particle Q contained within XP in Q-adjunction languages or a QP node in Q-projection languages. Once the probe and the goal agree, the latter must be attracted into the specifier position of the former.

According to the Q-based theory, natural languages only have Q-movement at their disposal in order to get the appropriate interrogative semantics, while independent [wh]-driven movement does not exist. Thus, the Q-particle — explicitly realized as *sá* in Tlingit, *ka* in Japanese and Korean, or *da* in Sinhala— in fact is present in the interrogative structures of all human languages. Depending on a language, Q can either have phonological content or be silent (see also Baker 1968, 1970; Cheng 1991). On this view, interrogative syntax and semantics involve two crucial components. On the one hand, there is a particle Q, which agrees with a *wh*-word, assigns to it a quantification force and a role of a variable. And, on the other hand, there is a Q-probe on the interrogative C, which triggers the correspondent feature-checking and consequent movement of the Q-particle to its scope position, Spec,CP.

In principle, Q-theory allows the Q-particle to be merged anywhere in the tree where it c-commands the *wh*-phrase, as evidenced by the island contexts in *wh*-in-situ languages as in (18). According to Cable, this is because in *wh*-in-situ languages, which resort to Q-adjunction, the Q-particle does not need to agree with the *wh*-item. However, in contrast, in *wh*-fronting languages a locality-sensitive operation Agree between the instances of the feature [F] on the *wh*-item and the Q-particle must take place.[8] The contrast between the two different types of languages with respect to Q-labelling and Q/*wh*-agreement is illustrated below:

[8] Cable adopts the feature-valuation system developed in Pesetsky & Torrego (2007), where *valuation* and *interpretability* of a feature are independent notions. The similar idea of feature-checking between the *wh*-phrase and Q is proposed in Kratzer & Shimoyama (2002). Namely, Cable suggests that in *wh*-fronting languages a *wh*-element enters the derivation with an uninterpretable, valued instance of the Q-feature, while in languages with *wh*-in-situ the *wh*-words do not bear any instance of [Q]. On the other hand, the Q-particle itself can bear an interpretable, unvalued instance of [Q] in languages exhibiting *wh*-fronting, while in languages with *wh*-in-situ the relevant feature on Q is valued and, hence, does not require agreement. For a detailed discussion of such mechanism of agreement, the reader is referred to Cable (2010:145-147) (see also section 3.2). I will come back to this issue later in this chapter, when I propose certain modification of the feature-specification.

(24) a. *Q-adjunction (wh-in-situ)* b. *Q-projection* (*wh-ex-situ*)



In other words, the fact that Agree is sensitive to locality regulates the possible attachment sites of the Q-particle in *wh*-fronting languages: Q must c-command the *wh*-phrase within some local domain.

Under Cable's view, the feature-specification of the elements involved in interrogative syntax is subject to parameterization, as it is assumed to take place in some languages (mainly, in the most commonly studied languages of the English-type), but not in others (e.g., Japanese, Tlingit). That is, if Q does not need to agree with a *wh*-item it c-commands, a syntactic island between these two items will not affect the LF interpretability of the structure. For that reason, the Q-particle can be merged with a *wh*-word contained inside an island in languages like Japanese, as in (18), or Tlingit, as in (25a). However, this is not the case in languages like English, (25b), since in the latter Q must agree with the *wh*-word it c-commands, but the island between the two elements would prevent the feature-valuation, giving rise to ungrammaticality:

(25) a. [[*Wáa* kwligeyi]$_{CP}$ xáat]$_{NP}$ *sá* i tuwáa sigóo? (*Tlingit*)
how it.is.big.REL fish Q your spirit.at it.is.happy
'A fish that is how big do you want?'

b. *[$_{DP}$ A fish [$_{CP}$ that is *how* big]] Q do you want? (*English*)

[from Cable 2010:143, 144]

As a consequence, certain variation between different Q-projection languages is also expected: while those requiring Q/*wh*-agreement do not allow pied-piping past islands, (25b), the others do allow it, (25a). Meanwhile, pied-piping in general (and pied-piping past islands in particular) is not expected in languages like Japanese, since they resort to Q-adjunction and, consequently, exhibit *wh*-in-situ.[9]

[9] The discussion of *wh*-in-situ contained inside islands and its extraction will become of a particular relevance in chapter 5, with respect to *wh*-EQs in *wh*-fronting languages.

3. Proposal: first Q-Move, then Q-Agree

As already mentioned, in this dissertation I adopt the general mechanism of Cable's (2007, 2008a, 2010) Q-theory and assume that overt *wh*-movement in interrogatives is triggered by Q-movement. However, in what follows of this chapter, I put forward a slightly modified version of the mechanism of Q-movement. Namely, concerning the force triggering Q-fronting into CP, I follow Bošković's (2007a) insight and suggest that such movement is initiated by the formal requirements of the Q-particle itself. More precisely, I propose a modification with respect to the feature-specification of the elements involved in the correspondent feature-checking relation and the timing of the operations internal Merge and Agree (Bošković 2007a, 2008, 2011).

3.1. Interrogative features and their valuation

The issue of the feature-specification of the discourse-oriented constituents such as *wh*-items, Q-particles and similar is pretty speculative in general. First, within the GB era, it has been proposed that what forces obligatory *wh*-movement to the left edge of a clause is a morphosyntactic feature [wh] (see Pesetsky 1982; May 1985; Chomsky 1991; Rizzi 1996, among others). On this view, the *wh*-item moves into Spec,CP in order to check the [wh] feature on C, in order to obey the *wh*-criterion (Rizzi 1996):

(26) *[Wh]-driven movement (Pesetsky 1982; Chomsky 1991; Rizzi 1996)*
a. $[_{CP}\ C_{[+wh]}\ \ldots\ [\ldots\ XP_{[+wh]}\ \ldots]]$
b. $[_{CP}\ XP_{[+wh]i}\ C_{[+wh]}\ \ldots\ [\ldots\ t_i\ \ldots]]$

More recently, within MP (Chomsky 1993 *et seq.*), it has been standardly assumed that the head C has certain force features, which determine the sentence-type of a clause (CP). In particular, the interrogative head C has been argued to be endowed with a [Q] feature (from 'Question'), which contributes interrogative force to a sentence. On the other hand, a *wh*-element, in addition to the morphosyntactic feature [wh], has been argued to bear also an instance of the feature [Q]. As a result, the two items, C and the *wh*-word, can enter into a probe-goal relation (Chomsky 2000, 2001), which is then followed by overt movement of the *wh*-goal into the specifier of the probe C, in order to satisfy the

EPP-feature on C (notice that the fronted *wh*-phrase leaves behind a copy of itself, rather than a trace, as in (26)):[10]

(27) *[Wh]/[Q]/[EPP]-driven movement (Chomsky 2000, 2001)*

a. $[_{CP}\ C_{[uQ]} \ldots [\ldots XP_{[uwh][iQ]} \ldots]]$

b. $[_{CP}\ XP_{i\,\sout{[uwh]}[iQ]}\ C_{\sout{[uQ]}\sout{[EPP]}} \ldots [\ldots \sout{XP}_{i} \ldots]]$

Regarding a more precise mechanism of the relevant feature-checking, Chomsky (2000:128) postulates that "the *wh*-phrase has an uninterpretable *wh*-feature and an interpretable feature [Q], which matches the uninterpretable probe [Q] of a complementizer". Notice that, under this view, the feature [uwh] is not an independent property of the *wh*-item, but just a reflex of the feature [Q] (similarly to the [uCase] of NPs, which is a reflex of φ-features under the standard probe-goal feature valuation). On the other hand, postulation of [uwh] on the *wh*-item has been forced by Chomsky's (2000) *Activation Condition*, which requires that an element undergoing internal Merge and Agree has an uninterpretable feature in order to be visible for further syntactic operations. Also observe that in the system illustrated in (27) the role of a question operator, which presumably corresponds to [iQ], is assigned to a *wh*-phrase. Meanwhile, the interrogative C does not possess an operator, as it is endowed with the unvalued instance of [Q], which must be checked and deleted by LF.

Cable's (2007, 2010) Q-based account removes the *wh*-feature from the system as a leading property, responsible for overt interrogative movement of the elements. Now this role is assigned to [Q]. For the rest the feature-valuation mechanism obeys Chomsky's (2000, 2001) standard mechanism of probe-goal relations. That is, the C head acts as a probe due to the uninterpretable instance of [Q] and agrees with the Q-particle, which is endowed with the interpretable instance of the matching [Q]. Finally, Q-movement to Spec,CP takes place in order to satisfy the EPP-feature on C:

[10] The EPP-feature (the minimalist reformulation of Chomsky's 1981 *Extended Projection Principle*) is called to capture the intuition that the specifier position of the probe is filled with the goal, which the former agrees with. EPP is generally considered not as an independent syntactic feature, but rather a feature's property. For instance, Pesetsky & Torrego's (2001) propose that EPP is a movement property associated with syntactic features. Likewise, in Roberts & Roussou (2003), EPP is a movement diacritic on (φ-)probes and Adger & Svenonius (2011) refer to it as a "second-order feature".

(28) *[Q]/[EPP]-driven movement (Cable 2007, 2010)*

a. $[_{CP}\ C_{[uQ][EPP]}\ \ldots\ [\ldots\ Q/QP_{[iQ]}\ \ldots]]$

b. $[_{CP}\ Q/QP_{i[iQ]}\ C_{\sout{[uQ][EPP]}}\ \ldots\ [\ldots\ \sout{Q/QP}_{i}\ \ldots]]$

In this dissertation, I propose a further step in the simplification of the Q-agreement mechanism, in line with the current tendency to eliminate the EPP-feature (see Martin 1999; Grohmann, Drury & Castillo 2000; Boeckx 2001; Bošković 2002c, 2007a, 2008, 2011; Miyagawa 2010; Zeijlstra 2012, among others). I assume that existence of the EPP-property remains unmotivated at least on C, i.e., in what concerns Ā-movement, which seems to be required for independent syntactic and semantic reasons. Namely, I put forward a simplified version of the Q-movement mechanism, in the spirit of Bošković's (2007a) unidirectional upward Agree operation, which enables us to dispense with the general EPP-requirement on C.

As for the trigger of Q-movement into CP, I adopt a proposal by Bošković (2007a), who argues that the driving force behind *wh*-fronting is not any requirement on the C head, but rather a formal requirement on the moving *wh*-element itself. As is standardly assumed within MP, movement is triggered by some formal imperfection —an uninterpretable feature [uF]— that must be checked and deleted. However, Bošković proposes that this imperfection is housed not on the probe, but rather on the goal, i.e., on the moving element itself. The author argues that agreement should be uniformly construed as in (29) (represented at (30)):

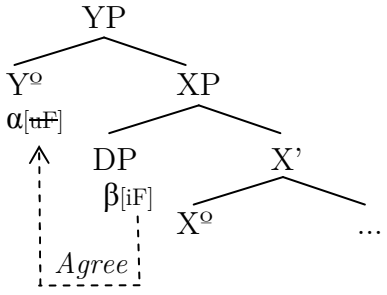
(29) α can agree with β iff:

a. α has some uninterpretable feature [uF] and β has a matching interpretable feature [iF];

b. α c-commands β;

c. β is the closest goal to α.

(30)

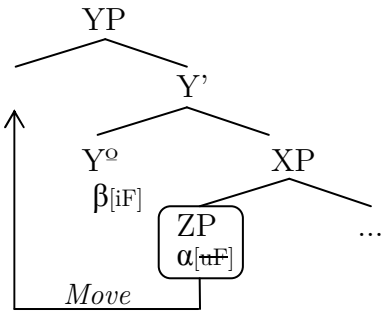


According to the logic in (29) and (30), the direction of valuation proceeds in an upward manner: the element that contributes the value (e.g., in the case of φ-features, the nominal) is required to be c-commanded by the element that receives its value derivatively (e.g., the verb).

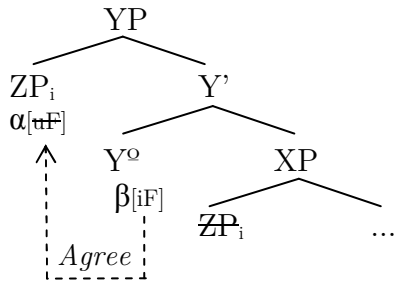
Secondly, according to Bošković, internal Merge (Move) is a mirror operation with respect to Agree. This means that movement takes place when the syntactic object α endowed with [uF] is initially c-commanded by β with the matching [iF]. That is, α must move over β in order to c-command its checker, as agreement can only take place when [uF] c-commands [iF] (see (29)). In other words, internal Merge is triggered by the need to value a formal imperfection — the uninterpetable feature— through Agree. This idea is represented below:

(31) *Principle 'First Move, then Agree' (Bošković 2007a)*

a.



b.



Applying Bošković's (2007a) insight to our Q-based theory, I propose that it is a formal requirement on the moving element —Q or QP, depending on the type of language (see section 2 for discussion)— that forces its own movement into the CP-level. Namely, I assume that the Q-particle bears an uninterpretable instance of the Q-feature ([uQ]), which needs to be valued against the interpretable instance of this feature ([iQ]) on C. Following Bošković, I suggest that feature-checking between C and the Q-particle proceeds in an upward manner. Assuming that the [uQ] feature on Q acts as a probe itself and assuming that a probe must c-command its goal, Q must undergo overt movement to Spec,CP as it needs to c-command its checker, [iQ] on C. Consequently, we can dispense with the additional EPP-requirement on C (*cf.* (28)). This view is represented below:

(32) *[Q]-driven movement*

a. $[_{CP}\ C_{[iQ]}\ \ldots\ [\ldots\ Q/QP_{[uQ]}\ \ldots]]$

b. $[_{CP}\ Q/QP_{i[uQ]}\ C_{[iQ]}\ \ldots\ [\ldots\ \cancel{Q/QP}_{i}\ \ldots]]$

Move

c. $[_{CP}\ Q/QP_{i\cancel{[uQ]}}\ \ C_{[iQ]}\ \ \ldots]$

Agree

As shown in (32b), internal Merge of the Q-particle happens not because of the EPP-feature on the probe (*cf.* Cable 2007, 2010), but in order to meet the appropriate feature-distribution: [uQ] c-commanding [iQ]. Otherwise, if Q-movement does not happen and the question particle remains in-situ, the structure as in (32a) will not survive at LF, due to the unvalued formal imperfection ([uQ]). Q-movement, however, results in an appropriate configuration: the element that receives the value (Q) c-commands the element that contributes its value through the derivation (C), (32b). As a result, Agree can proceed in an upward direction and [uQ] is removed from the structure, (32c).

In sum, I propose that Q-movement in interrogative structures is driven by the Q-particle, as it bears a formal imperfection on itself. Although the feature-distribution I put forward is slightly different from what has been originally proposed in Chomsky (2000, 2001) and assumed by Cable (2007, 2011), I believe that this machinery is more simple and elegant, which is a desirable result. Notice that the attempt to redistribute the interrogative features across the elements involved in the corresponding feature-valuation process is not in itself new. For example, Chomsky (2014) recently suggested that *wh*-movement into CP is due to the need of the former to check its *unvalued* instance of the Q-feature against the matching feature on C. Moreover, in the literature on successive cyclic interrogative movement, several authors have simply assumed (normally, by default) that the interrogative head C bears [iQ] and [uwh] features, while the *wh*-item enters the derivation with [iwh] and [uQ] (e.g., see the already mentioned Bošković 2007a and Zeijlstra 2012, among others).

3.2. On a relation between *wh*-words and Q-particles

I adopt Cable's (2007, 2010) proposal that interrogative syntax and semantics are achieved through the relation between C and the particle Q. So, I undertake the *wh*-words contained in a lexicon of all natural languages as being bare *wh*-proforms, whose quantificational force is underspecified. I also assume that these items bear the interpretable instance of the morphosyntactic *wh*-feature ([iwh]). This property, however, is not related to the interrogative interpretation.

The proposal that *wh*-items are underspecified is supported by numerous pieces of crosslinguistic evidence reported in the literature, showing that many languages use the same morphological forms for interrogative, indefinite and relative pronouns, as well as for existential and universal quantifiers (see Nishigauchi 1990; Cheng 1991; Haspelmath 1997; Hagstrom 1998; Zavitnevich 2005; Cable 2007, 2010, among others). This is exemplified by the following German examples:

(33) a. Da kommt *wer*. (*German*)
here comes who.NOM
'Someone is coming'
b. *Wer* kommt da?
who.NOM comes here
'Who is coming?'
[from Haspelmath 1997:170ff, cited in Siemund 2001:1025]

In some languages, however, the difference in semantics is established through the help of certain particles, as, for example, Japanese *ka* (see also section 2.1):

(34) a. John-ga *nani-ka*-o katta. (*Japanese*)
John-NOM what-Q-ACC bought
'John bought something.'
b. John-ga *nani*-o kaimasita *ka*.
John-NOM what-ACC bought-polite Q
'What did John buy?' [from Hagstrom 1998:17,38]

In (34a), the particle *ka* is adjoined to its sister, the *wh*-word *nani* 'what', so the whole conjunct is interpreted as a *wh*-indefinite. However, if *ka* is fronted to the right edge of the clause and the *wh*-word stays in-situ, (34b), the interrogative reading arises.

Likewise, in Russian, bare *wh*-forms can be interpreted in different manner depending on a particle they are combined with. For example, the existential reading of a *wh*-pronoun —either specific, as in (35a), or unspecific, as in (35b)— is achieved by its combination with certain existential suffixes, *–to* and *–nibud'* respectively, which differ in terms of specificity (see Zavitnevich 2005). Moreover, combination of a bare *wh*-word with a conditional particle *by* results in a universal quantifier, as illustrated in (35c). Finally, on the interrogative reading the *wh*-phrase is realized as a bare form, as shown in (35d), which, I suggest, evidences that in such cases the *wh*-element is merged with a phonetically null Q-particle (Cable 2007, 2010; see also chapter 4):

(35) a. *Kto-to* kupil cvety. (*Russian*)
who.NOM-SPECIF bought flowers.ACC
'Someone bought the flowers'
b. *Kto-nibud'* obyazatel'no kupit cvety.
who.NOM-UNSPECIF inevitably will.buy flowers.ACC
'Someone will inevitably buy the flowers'
c. *Kto by* ne pozvonil, ona ne obraduetsja.
who.NOM COND NEG phoned she.NOM NEG will.rejoice
'Whoever phones, she will not be glad'
d. *Kto*-Ø kupil cvety?
who.NOM-Q bought flowers.ACC
'Who bought the flowers?'

The similar mechanism is attested in English (e.g. Keenan & Paperno 2012), where the bare *wh*-form normally appears in both relative and interrogative readings, as in (36a,b), but its combination with certain suffixes gives rise to quantifiers: for example, *where* plus *ever* results in a universal quantifier *wherever*, (36c), and *where* plus *some* gives an existential *somewhere*, (36d):

(36) a. I know the person *who* read this book. (*English*)
b. *Who* read this book?
c. *Wherever* we go the weather is always bad.
d. At least we have got *somewhere*.

Thus, it seems logical to assume that the quantificational force —and the interrogative force in particular— is a property of a certain particle, which can be combined with a *wh*-word at the computational level and extends its force to its sister. This is also desirable from a conceptual point of view, since it allows a non-redundant representation of the lexicon. Otherwise, we would need to postulate that the lexicon contains different *wh*-entries with identical form, but different quantificational force (e.g., *wh*-interrogatives, *wh*-indefinites, etc.).

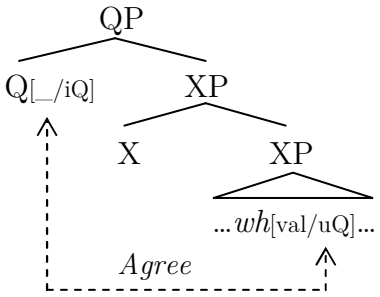
With respect to the nature of the *wh*-words, I follow a large number of proposals and assume that Ā-pronouns are complex morphological and syntactic objects (see Cardinaletti 1994; Ritter 1995; Wiltschko 1998, 2002; Koopman 1999; Déchaine & Wiltschko 2002; Di Sciullo 2003, 2005, among others) that have their internal syntactic structure as in (37):

(37) $[_{DP}$ Op D $[_{PhiP}$ Phi $[_{NP}$ N]]]

Recall from (37) that the specifier position of an Ā-pronoun, which I take being a DP, is filled with an operator. I suggest that these operator properties on the *wh*-items allow them to be combined with certain particles (e.g., interrogative, universal, existential, etc.) which assign them the quantificational force. The reader may notice that this idea, in essence, is reminiscent of the one originally developed in Katz & Postal (1964) and Baker (1968, 1970) (see also Zavitnevich 2005), and the one that is behind the Q-based hypothesis (Watanabe 1992a; Hagstrom 1998; Cable 2007, 2010, among others) (for discussion, see section 2). Applying this intuition to the theory of Q-movement, I assume that the operator properties on the *wh*-words allow them (but not other items contained in the lexicon) to be merged with Q-particles in interrogative constructions.

On Cable's (2007, 2010) view, the relation between a *wh*-item and a Q-particle is established through the Q-feature-valuation mechanism in spirit of Pesetsky & Torrego (2007), where feature interpretability is assumed to be separated from feature value (see fn. 8). That is, according to Cable, *wh*-items in some languages (e.g. English) are associated with a valued instance of the uninterpretable Q-feature ([val/uQ]), which is checked against the unvalued interpretable Q-feature on the Q-particle ([_/iQ]). This mechanism in illustrated in (38) (for head-initial languages of the English-type):

(38) *Wh-/Q-Agreement (Cable 2007, 2010)*



[adopted from Cable 2010:146]

Meanwhile, the *wh*-items of some other languages (e.g. Japanese) do not have any instance of Q, and the Q-particle simply bears valued interpretable Q-feature ([val/iQ]). So, no *wh*-/Q-agreement is expected.[11]

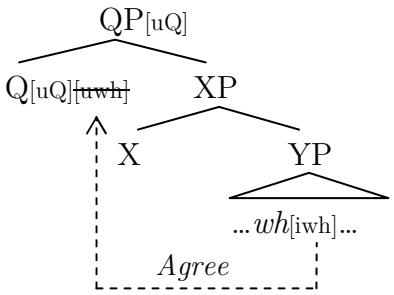
As previously argued, although I retain the general idea of (optional) *wh*-/Q-agreement, I depart from Cable by claiming that Q-particle itself is a bearer of the uninterpretable Q-feature ([uQ]). I propose that what is involved in a syntactic relation between the *wh*-item and Q is the *wh*-feature (recall, however, that this relation does not obligatorily occur in all languages; see Cable 2007,

[11] For a detailed discussion regarding this theory of agreement between a *wh*-item and a Q-particle, I refer the reader to Cable (2007, 2010).

2010). I assume that *wh*-items of all natural languages bear the interpretable instance of the *wh*-feature ([iwh]). I claim that what is subject to parameterization is the uninterpretable instance of the *wh*-feature on the Q-particle ([uwh]). When present, this feature signals that Q must be bound to some *wh*-constituent.

I assume that Q-particles of some languages —namely, of *wh*-fronting languages that do not allow pied-piping past islands (e.g. English)— bear [uwh] that must be checked against some [iwh]. The element that bears this feature uniformly across languages is a *wh*-item. Then, as expected, the Q-particle agrees with a *wh*-word it is merged with, in a unidirectional upward manner. The structure of a relation between a *wh*-item and a Q-particle in *wh*-fronting (head-initial) languages (e.g., English, Russian, Spanish, etc.) that I assume is given in (39) (*cf.* (38)):[12]

(39) *Wh-/Q-Agreement (revised)*



In the next section, I proceed with discussion about the reasons of Q-movement into the CP level, assuming unidirectional upward Agree.

3.3. Q-projection *vs.* Q-adjunction revised

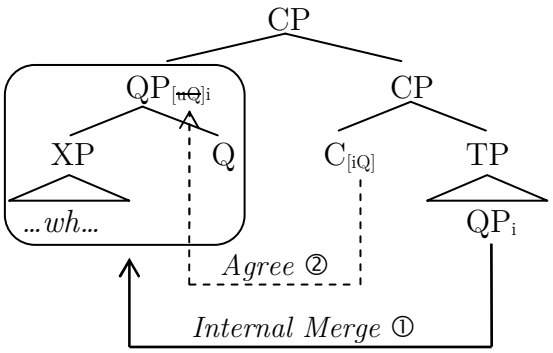
In this dissertation I put forward a simplified, EPP-less version of the account on Q-movement. On this view, I depart from Cable (2007, 2010) and take the Q-particle itself as a bearer of the uninterpretable Q-feature ([uQ]). This property of the Q-element indicates that it is uninterpretable due to the lack of scope value, so it must move to its scope position in order to get an appropriate, interrogative interpretation by LF. The appropriate scope position for Q-particle, I claim, is the specifier of the interrogative C head, which bears the interpretable instance of the Q-feature ([iQ]). Given that C determines the force of a sentence, I maintain that

[12] In contrast, in languages where pied-piping past islands is allowed (e.g. Tlingit, Japanese), the Q-particle is not associated with any instance of [wh], so it does not need to agree with the *wh*-stem it c-commands (for discussion, see Cable 2010:146).

the interrogative C, being associated with [iQ], marks the whole sentence as a question and assigns scope to the variable moved to its specifier position.

Once the Q-particle is fronted to Spec,CP (alone or contained within a QP projection, depending on a language-type), C's semantically-contentful feature [iQ] can derivatively assign a value to the fronted Q-constituent, through the upward Spec-head agreement relationship. The moved element —either Q or QP— leaves a copy trace in its base position, which identifies the original place of the variable, bound by the question operator in the functional domain. This derivation is represented in (40), with respect to *wh*-fronting (head-initial) languages, which resort to Q-projection:

(40) *Q-projection in wh-fronting languages*



In Q-projection languages, Q-particle, when merged with a *wh*-word or a larger *wh*-containing projection XP, takes its sister as a complement and projects a QP node that dominates both Q and its sister XP (and bears the feature [uQ]). Then, due to [uQ], the QP projection must move over its checker, the interrogative C head, in order to c-command [iQ] and agree. Once the QP appears at Spec,CP, the agreement can take place: [uQ] is checked and deleted and the fronted element receives scope. That is, under (40), Q-movement is followed by Q-agreement.

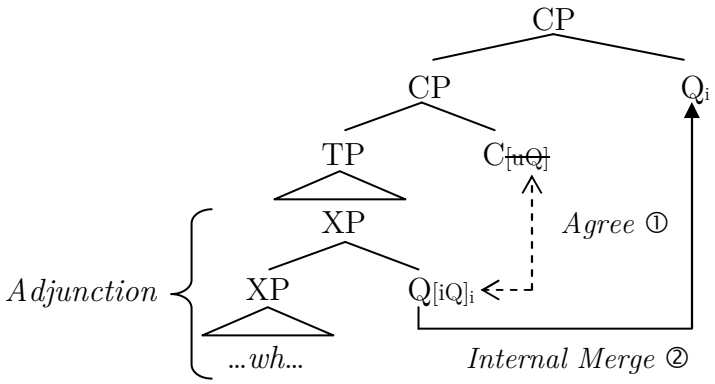
Regarding languages with *wh*-fronting, or Q-projection, the advantage of the Q-based approach in (40) over Cable's original proposal consists in a simplified mechanism, which dispenses with [EPP]. This is a desirable result from a conceptual point of view. However, the benefits of application of the principle "first Move, then Agree" become more evident when it applies to *wh*-in-situ languages.[13]

Recall from the previous sections that, under Hagstrom's (1998) and Cable's (2007, 2010) Q-based account, *wh*-in-situ languages are taken to resort to the

[13] I thank Michelle Sheehan for bringing this fact to my attention.

structure as in (22) (whose more detailed version is repeated below), where Q-particle is adjoined to its sister, XP, and does not project the label:

(41) *Wh-in-situ as a result of Q-adjunction (Hagstrom 1998; Cable 2007, 2010)*

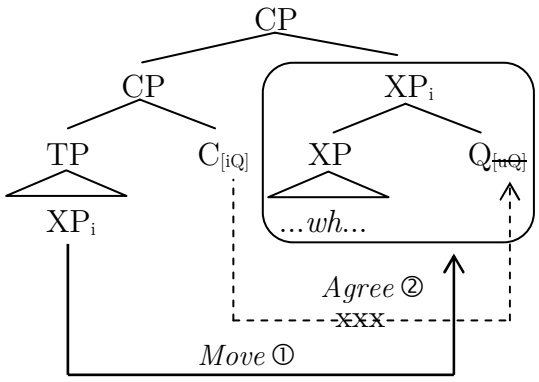


[adopted from Cable 2010:37]

In (41), the interrogative C cares [uQ] and agrees with Q-particle, which is endowed with [iQ]. Then, the probe triggers overt movement of the goal into the CP projection. Under this view, the *wh*-word is assumed to stay in-situ, because the Q-particle has not been projected and there is no QP projection dominating both Q and its sister. As a result, the Q-particle must move alone. This way, Q-adjunction does not yield pied-piping.

Although I assume that this is a correct conclusion, it has a certain flavour of stipulation: there is no an independent evidence that an adjoined Q cannot trigger pied-piping of XP. Recall, however, that our principle 'First Move, then Agree' independently rules out the undesirable fronting of the entire XP projection in Q-adjunction languages. Consider (42), which illustrates a resulting structure, which would be obtained by moving the XP projection into the CP level, assuming unidirectional upward Agree:

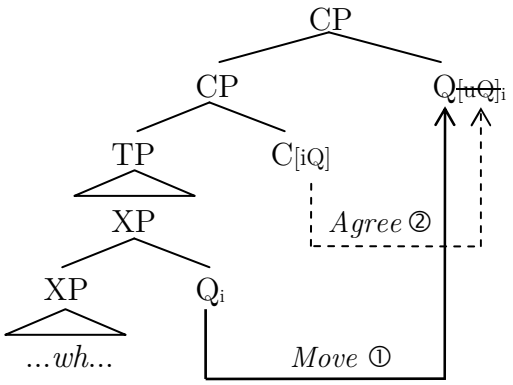
(42) *Q-adjuntion: pied-piping of XP blocks Q-agreement*



In (42), suppose that the whole XP moves over its checker C. The Q-particle needs to check its uninterpretable Q-feature against C's interpretable counterpart. Recall, however, that Q-agreement is not possible in (42): [uQ] does not properly c-command [iQ]. The XP node does not bear [uQ], as the Q-label has not been projected. Consequently, the Q-particle is embedded inside the complex XP. As a result, the feature [uQ] cannot be checked and the derivation crashes.

Our analysis thereby correctly predicts that in Q-adjunction languages the Q-particle must move alone, in order to c-command properly its checker C and delete all uninterpretable features through agreement. As illustrated below, this prediction is borne out:

(43) *An adjoined Q must move alone in order to agree*



Additionally, our analysis also makes a correct prediction when Q-projection languages are concerned (*cf.* (40)). In such languages, the Q-label is projected on the dominating node QP, so the entire complex object must be fronted over C, in order for the feature [uQ] to c-command [iQ]. Once [uQ] is valued, the derivation can be correctly interpreted at the interfaces.

In summary, our Q-based approach, which takes Q-movement as a previous step to Q-agreement, accurately accounts for the ungrammaticality of pied-piping of XP in Q-adjunction languages. Our analysis predicts that in such languages Q must move alone over its checker C, leaving the *wh*-item in-situ. Thus, on this view, the distinction between the Q-projection and Q-adjunction strategies is not stipulated, but naturally follows from an independently motivated theoretical mechanism: unidirectional upward Agree.

4. Summary

This chapter principally concerned the mechanism of formation of *wh*-questions. First, it provided a relevant theoretical background regarding question formation.

I offered a brief review of accounts which consider *wh*-movement as a secondary effect of movement of a Q-particle (since Katz & Postal 1964 till Hagstrom 1998 and Cable 2007, 2010). On this view, in all languages the syntactic and semantic relations between the interrogative head C and a *wh*-item are established through the help of a question particle Q, merged with the *wh*-element. However, the legitimacy of overt *wh*-movement is parameterized. It basically depends on a way in which the Q-particle is (externally) merged and projected. Thus, in some, but not all languages, Q *projects* a label, QP, which dominates both the head Q and its *wh*-containing sister. Meanwhile, in other languages, the Q-particle is *adjoined* to its sister, and only the latter projects the label. Consequently, this view predicts that languages with overt *wh*-fronting resort to Q-projection (i.e., the entire QP is fronted), while languages with *wh*-in-situ resort to Q-adjunction (i.e., Q moves alone, being unable to pied-pipe the *wh*-constituent).

Moreover, I proposed a simplified version of Cable's (2007, 2010) Q-based approach and revised the mechanism of *wh*-/Q-feature-checking. Following Bošković's (2007a) proposal on a unidirectional upward valuation, I propose a modification of the original Q-based theory regarding the timing of application of the operations Agree and internal Merge. I also adjust the distribution of the particular formal features involved in the derivation of *wh*-questions. I suggest that Q-movement to Spec,CP precedes Q-agreement and is triggered by the need to build an appropriate structure, in which an uninterpretable instance of the Q-feature on Q c-commands the interpretable one on C.

CHAPTER 3

Multiple *wh*-questions through the prism of Q-theory

1. Introduction: multiple *wh*-questions

The previous chapter introduced the revised version of Q-based theory, under which overt movement of *wh*-constituents in *wh*-fronting languages is considered as a secondary effect of movement of a Q-particle. As argued, Q-particle moves into the CP level, in order to c-command the interrogative head C and to undergo unidirectional upward Q-agreement. Since *wh*-fronting languages resort to Q-projection, where a QP node immediately dominates both Q-particle and its sister (a *wh*-word or a larger unit containing it), Q-movement into CP entails pied-piping of the whole QP projection.

With respect to single *wh*-questions (i.e., those with one *wh*-word), we can assume that they are derived along the same lines in all *wh*-fronting languages. Roughly, within Q-theory, the English, Spanish and Russian single *wh*-questions in (1) are derived as in (2):

(1) a. $[_{CP}\ [_{QP}$ Q *what*] C [did John buy t_i]]? (*English*)
b. ¿$[_{CP}\ [_{QP}$ Q *qué*] C [compró Juan t_i]]? (*Spanish*)
Ø what bought Juan
'What did Juan buy?'
c. $[_{CP}\ [_{QP}$ Q *čto*] C [kupil Ivan t_i]]? (*Russian*)
Ø what bought Ivan
'What did Ivan buy?'

(2) *Derivation of single wh-questions in wh-fronting languages* (non-final version)
Step 1: Q-particle is merged with a *wh*-word:
$[_{vP}\ [_{QP}$ Q *wh*$]_{[uQ]}$ *v*]
Step 2: Interrogative C is merged into the derivation:
$[_{CP}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ [_{QP}$ Q *wh*$]_{[uQ]}$ *v*]]]
Step 3: QP moves to Spec,CP:
$[_{CP}\ [_{QP}$ Q *wh*$]_{i[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ t_i$ *v*]]]
Step 4: QP and C undergo Q-agreement:
$[_{CP}\ [_{QP}$ Q *wh*$]_{i[\sout{uQ}]}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ t_i$ *v*]]]

As shown in (2), in every *wh*-fronting language the *wh*-item appears at the left edge of a clause as a result of being merged in its base position (*v*P-internally) with a (phonetically null) Q-particle. The *wh*-containing QP projection moves into Spec,CP, in order to check its uninterpretable Q-feature, and as a result the *wh*-phrase appears at the left edge of the clause.

However, as we will see along this chapter, different patterns of Q-movement can be much better appreciated when multiple *wh*-questions are considered (i.e., interrogative sentences containing more than one *wh*-word). As is well-known, languages with overt *wh*-movement can be divided into two main groups with respect to multiple *wh*-questions. Consider the examples below:

(3) a. *Who*$_1$ bought *what*$_2$? (*English*)
b. * *Who*$_1$ *what*$_2$ bought?
c. * *What*$_2$ did *who*$_1$ buy?

(4) a. ¿*Quién*$_1$ compró *qué*$_2$? (*Spanish*)
who bought what
'Who bought what?'
b. *¿*Quién*$_1$ *qué*$_2$ compró?
who what bought
c. ¿*Qué*$_2$ compro *quién*$_1$?
what bought who

(5) a. *Koj*$_1$ *kakvo*$_2$ e kupil? (*Bulgarian*)
who what is bought
'Who bought what?'
b. * *Koj*$_1$ e kupil *kakvo*$_2$?
who is bought what
c. * *Kakvo*$_2$ *koj*$_1$ e kupil?
what who is bought

(6) a. *Kto*$_1$ *čto*$_2$ kupil? (*Russian*)
who.NOM what.ACC bought
'Who bought what?'
b. * *Kto*$_1$ kupil *čto*$_2$?
who.NOM bought what.ACC
c. *Čto*$_2$ *kto*$_1$ kupil?
what.ACC who.NOM bought

In multiple (binary) *wh*-questions, in languages like English, (3), or Spanish, (4), only one *wh*-phrase appears preverbally at the leftmost position, while the rest remains in-situ. Meanwhile, in other group of languages —with the so-called *Multiple Wh-Fronting* (henceforth, MWF)— all *wh*-items obligatorily undergo movement to the left edge of a clause and appear preverbally. The Bulgarian and Russian examples in (5) and (6) illustrate the MWF phenomenon respectively.

Moreover, from the (c) sentences of the above examples, the reader may notice that, apart from the multiple *vs.* single dichotomy, there is an additional parameter of variation at stake. The most well-known contrast between different patterns of multiple questions formation is exhibited by different sensitivity to Superiority violations across languages, a phenomenon which has been under focus since Chomsky (1973). That is, some languages, like English and Bulgarian, are sensitive to Superiority violations, whereas others like Spanish and Russian are not.

This chapter offers an overview of the attested crosslinguistic variation regarding Q-movement in multiple questions between different *wh*-fronting languages. I mainly focus on two widely-discussed parameters of variation: whether all *wh*-items obligatorily appear at the left edge of a clause and whether *wh*-phrases are subject to strict word ordering. I also take into account certain additional aspects of parametric variation, such as sensitivity to Intervention effects and their correlation with Superiority.

In section 2, I focus on the distribution of Superiority effects in monoclausal binary questions in the two Slavic languages exhibiting MWF: Russian and Bulgarian. I address the traditional distinction between two types of MWF languages and consider two different influential proposals made in the literature: (i) CP- *vs.* IP-absorption distinction (since Rudin 1988; Richards 1997, 2001) and (ii) *wh*-movement *vs.* focus-fronting (since Bošković 1998b, 1999, 2001a, 2002a). In section 3, I contemplate the key properties of Russian multiple *wh*-questions with respect to Superiority and offer some novel data. In section 4, I outline a number of previous proposals made in the literature on Russian single and multiple *wh*-questions and discuss some challenges they face. In section 5, I introduce some basic assumptions that I adopt regarding the analysis of Superiority and Intervention effects within Q-theory. Section 6 summarizes the main points of this chapter.

2. Two types of MWF languages

Despite a large amount of literature on the MWF phenomenon in Slavic languages, it is far from a settled matter. As seen above, in multiple questions in MWF languages, all *wh*-phrases must be overtly fronted to the left edge of a clause. However, as already mentioned, Russian and Bulgarian behave differently with respect to Superiority effects. This is not the only contrast attested between the two MWF languages, as it will be shown below. In this section, I briefly outline two traditional approaches to *wh*-movement in Slavic languages, namely CP- *vs.* IP-fronting distinction (Rudin 1988; Richards 1997, 2001), on the one hand, and *wh*- *vs.* focus-movement (Bošković 1997a *et seq.*), on the other.

2.1. CP-fronting *vs.* IP-fronting

Since Rudin's (1988) influential paper, it has been widely-accepted in the literature that MWF languages, although superficially very similar, fall into two groups, with different syntactic properties.[1] Namely, Rudin distinguishes between two types of MWF languages: (i) Multiply-Filled Spec,CP ([+MFS]) languages, in which all *wh*-words move to Spec,CP, and (ii) [–MFS] languages, in which only one *wh*-phrase ends up at Spec,CP, while the rest move to Spec,IP. This distinction is schematized below:

(7) a. [*+MFS*] *languages (Bulgarian, Romanian)*
[$_{CP}$ wh_1 wh_2 [$_{IP}$ ...]]
b. [*–MFS*] *languages (Serbo-Croatian, Polish, Czech)*
[$_{CP}$ wh_1 [$_{IP}$ wh_2 ...]]

Richards (1997, 2001), who adopts and reformulates Rudin's original proposal, in turn distinguishes between (i) CP-absorption languages (corresponding to Rudin's [+MFS]) and (ii) IP-absorption languages (equivalent to Rudin's [–MFS]). The two structures are represented in (8a) and (8b) respectively:

(8) a. *CP-absorption (Bulgarian)*
[$_{CP}$ wh_1 wh_2 [$_{IP}$ ... [t_1 t_2]]
b. *IP-absorption (Serbo-Croatian, Polish, Czech, Russian)*
[$_{CP}$ wh_1 [$_{IP}$ t_1 wh_2 ... [t_1 t_2]]

[1] For relevant early studies on the MWF phenomenon, see Wachowicz (1974a,b) and Toman (1981).

On this view, only CP-absorption involves Ā-movement to multiple specifiers of the CP-level. The crucial difference with respect to IP-fronting languages under Richards' analysis, as opposed to Rudin's one, is that in these languages all the fronted *wh*-elements pass through IP, since *wh*-fronting is considered as adjunction to multiple IP-level projections, which is followed by movement of a single *wh*-word to Spec,CP. As I discuss below, Russian clearly patterns with IP-absorption languages in most regards, although it was not originally considered either by Rudin (1988) or by Richards (1997, 2001).

Various pieces of evidence support the distinction in (7) and (8), including data regarding extraction from *wh*-islands, Superiority effects and constituency of the fronted *wh*-phrases. The first relevant difference between CP-absorption and IP-absorption languages is that the former typically exhibit rigid ordering of the fronted *wh*-phrases, while the latter do not. This is illustrated below by Bulgarian and Russian examples, respectively:

(9) a. *Koj*$_1$ *kogo*$_2$ vižda? (*Bulgarian*)
who.NOM who.ACC sees
'Who sees whom?'
b. **Kogo*$_2$ *koj*$_1$ vižda?
who.ACC who.NOM sees [from Rudin 1988:472-473]

(10) a. *Kto*$_1$ *kogo*$_2$ uvidel? (*Russian*)
who.NOM who.ACC saw
'Who saw whom?'
b. *Kogo*$_2$ *kto*$_1$ uvidel?
who.ACC who.NOM saw

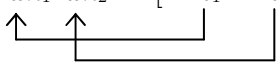
The empirical characterization of Superiority effects consists in that in Bulgarian the structurally highest *wh*-word, the one that asymmetrically c-commands the rest of *wh*-items at their base position, must precede them after *wh*-fronting. This requirement explains a well-known contrast between (9a) and (9b): the question in the latter example, as opposed to the former, violates Superiority and, thus, results ungrammatical. However, Russian is not sensitive to Superiority-violations, as both orders give a grammatical result, (10).

Under Richards' proposal, the distinction between (9) and (10) is captured in terms of different strategies of *wh*-movement. According to the author, CP-absorption languages resort to *movement* to multiple specifiers, under the assumption that this operation uniformly obeys *Attract Closest* (AC) principle:

(11) *Attract Closest*:
[A probe] K attracts α only if there is no β, β closer to K than α, such that K attracts β. [from Chomsky 1995:311]

Due to AC, the fronted *wh*-elements 'tuck in', in the sense that the highest QP moves to the outermost specifier of CP, while the rest are fronted to the inner specifiers, as illustrated below in (12). According to Richards, movement of the second *wh*-item to the inner specifier —although in principle it violates Chomsky's (1993) *Extension Condition*, since it does not expand the tree— obeys Chomsky's (1995) version of cyclicity, as both *wh*-phrases move to check a [uF]. Under this view, CP-fronting is movement to multiple specifiers of a single head C, so this operation, in addition to AC, is subject to another principle, *Shortest Move* (SM). While AC requires attraction of the first *wh*-phrase as the closest available mover, SM forces the second *wh*-phrase to be internally merged to the lower specifier, which is the closest available landing site. Consequently, the combination of AC and SM gives rise to 'tucking-in' and triggers Superiority effects:

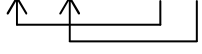
(12) $[_{CP}\ wh_1\ wh_2\ \ldots\ [\ldots\ t_1\ \ldots\ t_2\ \ldots]]$



In questions with multiple *wh*-elements, Superiority refers to the fact that the base order of constituents prior to movement has to be preserved at their new position. The pattern of CP-fronting is illustrated in (8a). It is expected then that, due to AC and SM, only Superiority-satisfying questions can be generated in the CP-absorption type of languages.

In IP-absorption languages, in contrast, *wh*-phrases are *adjoined* to multiple IP-level projections, under assumption that Adjunction, as opposed to Move, can presumably occur in any order. As a result, both Superiority-obeying and Superiority-violating questions can arise in IP-absorption languages, as sketched in (13) below:

(13) a. *IP-absorption: Superiority-obeying order*
$[_{CP}\ wh_1\ [_{IP}\ t_1\ wh_2 \ldots\ [t_1\ t_2]]]$



b. *IP-absorption: Superiority-violating order*
$[_{CP}\ wh_2\ [_{IP}\ t_2\ wh_1 \ldots\ [t_1\ t_2]]]$

As shown in (13), in IP-absorption languages, first, the *wh*-items are adjoined (in free order) into the multiple IP-level projections, and then one *wh*-word, namely, the closest one to C, is attracted to Spec,CP, in order to satisfy AC.[2]

Secondly, it has been noticed that IP-absorption languages license certain intervening material (e.g. clitics, parentheticals, adverbs, etc.) to appear after the first of the fronted *wh*-phrases, while such split of the *wh*-cluster is not allowed in languages with CP-fronting. The contrast is illustrated by the following Bulgarian and Russian examples:

(14) a. **Koj*$_1$ <u>ti</u> e *kakvo*$_2$ kazal? (*Bulgarian*)
who.NOM you has what.ACC told
'Who told you what?' [from Rudin 1988:461]

b. **Koj*$_1$ <u>spored tebe</u> *kakvo*$_2$ e kazal?
who.NOM according.to.you what.ACC has said
'Who, in your opinion, said what?' [from Rudin 1988:468]

(15) a. *Kto*$_1$ <u>tebe</u> *čto*$_2$ skazal? (*Russian*)
who.NOM you what.ACC said
'Who said you what?'

b. *Kto*$_1$ <u>po-tvoemu</u> *čto*$_2$ skazal?
who.NOM according.to.you what.ACC said
'Who, in your opinion, said what?'

Therefore, apart from Superiority, the next crucial distinction between Russian and Bulgarian is that in the latter the *wh*-cluster cannot be interrupted by clitics or parentheticals, as shown in (14a) and (14b) respectively. Meanwhile the corresponding Russian examples, (15a) and (15b), are grammatical. This contrast suggests that in the CP-absorption language-type (Bulgarian) the fronted *wh*-phrases form an indivisible unit by being located at the same projection. On the other hand, in languages with IP-fronting (Russian), the leftmost *wh*-item forms a separate constituent from the rest of the fronted *wh*-words. In fact, the corresponding structures in (8) correctly predict the aforementioned distinction. Through the thesis, I will take these two properties —Superiority and

[2] Observe, however, that the distinction between the two operations (Move and Adjunction) underlying Richards' proposal is quite weak. Notice also that the derivation of the Superiority-violating order in (13b), with nested paths, violates AC at the IP-level, as the *wh*$_2$ moves to the outer specifier. I will turn to discussion of Richards' proposal in the next chapter. For now, I limit myself to report the account and, mainly, to highlight the underlying idea that in the two languages *wh*-movement targets different positions, which, I think, is on track. Keep this idea in mind.

wh-constituency— as being relevant distinctions between Russian and Bulgarian multiple questions.

The last difference extensively discussed in the literature on MWF concerns extraction from *wh*-islands. Given that CP-absorption languages make use of multiple specifiers of CP, the structure (8a) predicts that in this language-type *wh*-movement out of weak islands should be allowed in principle. In contrast, given that in IP-absorption languages the IP-level has multiple specifiers, while the CP-level has only one, the structure in (8b) does not allow extraction from *wh*-islands. These predictions seem to be correct, as the following contrast between Bulgarian and Russian shows:

(16) a. ? *Koja ot tezi knigi*$_i$ se čudiš [*koj* znae [*koj* prodava t$_i$]]? (*Bulgarian*)
which of these books wonder.2SG who knows who sells
'Which of these books do you wonder who knows who sells?'
[from Rudin 1988:457]

b. * *Komu*$_i$ ty sprosil [*kogda*$_j$ Ivan pozvonil t$_i$ t$_j$]]? (*Russian*)
who.DAT you asked when Ivan phoned?
'Who did you ask when Ivan phoned?' [from Bailyn 2011:101]

Nevertheless, as discussed in Bošković (1998c), the behavior of Bulgarian with respect to extraction from *wh*-islands is far from being clear. Recall that in the Bulgarian example in (16a) the extracted *wh*-phrase is D-linked. As noticed by Rudin (1988) herself, extraction of non-D-linked *wh*-constituents from weak islands results much worse, as shown in (17a). Moreover, Bošković (1998c, 2003b) reports that adjunct extraction from *wh*-islands results always ungrammatical, (17b):

(17) a. * *Kakvo*$_i$ se čudiš [*koj* znae [*koj* prodava t$_i$]]? (*Bulgarian*)
what wonder.2SG who knows who sells
'What do you wonder who knows who sells?' [from Rudin 1988:457]

b. * *Zašto/poradi kakva* pričina$_i$ znae [dali Boris e zaminal t$_i$]]?
why for which reason knows whether Boris is left
'Why/for which reason does he know whether Boris left?'
[from Bošković 2003b:33]

The examples above contradict (or, at least, challenge) the claim that Bulgarian is not sensitive to *wh*-islands violations. In addition, Bošković (2003b, 2008) offers another argument that questions the supposed relation between MWF and the possibility of extraction from *wh*-islands. According to the author, these two

phenomena might not be related to each other, since certain non-MWF languages (e.g. Icelandic, Hebrew and Norwegian) are not sensitive to *wh*-island violations as well. Therefore, in this dissertation I will abstract from considering extraction from *wh*-islands as a relevant test for distinguishing between Russian and Bulgarian multiple questions.[3]

To sum up what we discussed so far, Bulgarian and Russian, apart from sharing the property of being MWF languages, differ systematically in several regards. The differences are summarized in the table below:

(18)

	CP-absorption: Bulgarian	*IP-absorption: Russian*
Superiority effects	✓	✗
Constituency of the fronted *wh*-items	✓	✗
Wh-islands violations[4]	✗	✓

So far, to advance the outcome of the next chapter, what is crucial for our proposal at this point is the identification of the IP-level projections as intermediate landing-sites for the fronted *wh*-phrases in MWF languages. I will argue that this intuition is correct, although certain important modifications will be proposed. Observe that neither Rudin (1988) nor Richards (1997, 2001) offer any particular explanation of what exactly motivates *wh*-movement into the IP layer. The proposal which I will develop in the next chapter motivates such movement in terms of phase extension hypothesis (see den Dikken 2007, Gallego 2007, 2010 and others). Namely, that in Slavic the *v*P phase extends to a higher projection, AspP, a process which is parasitic on obligatory *v*-to-Asp phase head movement (see Svenonius 2004a,c; Dyakonova 2009, among others). I will argue

[3] In addition to the challenges pointed out by Bošković (1998c, 2003b, 2008), it should be mentioned that any extraction from a finite clause results ungrammatical in Russian. In fact, only extraction from subjunctive complements is allowed (I will come back to the latter in the next chapter):

(i) a. * *Kogo*$_i$ ty dumaeš [(*čto*) Ivan priglasil t$_i$]? (*Russian*)
who.ACC you think that Ivan invited
'Who do you think that Ivan invited?'

b. *Kogo*$_i$ ty xočeš [*čtoby* Ivan priglasil t$_i$]?
who.ACC you want that.SUBJ Ivan invited
'Who do you want Ivan to invite?' [from Khomitsevich 2007:134-135]

For discussion of conditions on extraction from *wh*-islands in Russian as well as possible accounts, the reader it referred to Glushan (2006), Antonenko (2006), Khomitsevich (2007), Dyakonova (2009), Scott (2012) and references therein.

[4] I will come back to this point later in this chapter.

that such proposal solves in a natural way the flagged problems of Richard's account regarding derivation of Superiority-violating orders and other issues.

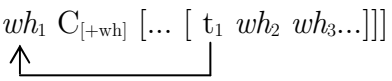
To sum up, under the CP- *vs.* IP-absorption hypothesis, both types of MWF languages resort to standard *wh*-movement. However, this movement targets different (A- or Ā-) syntactic positions depending on a language.

2.2. *Wh*-movement *vs.* focus-movement

Another traditional view on differences between MWF languages distinguishes between *wh*-movement *vs.* focus-fronting. It has been observed in the literature that *wh*-questions share significant syntactic and semantic properties with focus-constructions across many languages (see Horvath 1986; Kiss 1995; Stjepanović 1999; Bošković 1997a,b,c, 1999, 2000, 2002a,b, 2003b; Rizzi 1997, 2001b; Aboh 2007a and others). This parallelism has been frequently explained under the traditional assumption that *wh*-operators are universally focused. The widespread acceptance of this view has lead to the emergence of various claims that in some languages overt *wh*-movement is not [wh]-driven as, for example, in English, but rather is due to an independent requirement of the focused items being fronted.

Bošković (1999, 2002a) distinguishes between two types of *wh*-fronting: *wh*-movement and focus-movement. According to him, true syntactic [wh]-driven movement is triggered by an unvalued *wh*-feature on the interrogative head C, which requires its specifier to be filled with one *wh*-element bearing the matching interpretable feature. Thus, C attracts the closest *wh*-constituent, in order to satisfy AC. Therefore, as expected, true [wh]-driven movement yields Superiority-satisfying structure. This is shown in (19):

(19) *Wh-movement*



On the other hand, focus-movement is driven by an unvalued instance of the focus-feature on *wh*-words, which are inherently focused (since Horvath 1986). In MWF languages, according to Bošković, every *wh*-word in a multiple question is specified with a strong focus-feature ([+F]), so that every *wh*-phrase will have to move to the closest available checking position. Given that focus-movement is not target-driven, but moving-element-driven (see below), the moving *wh*-phrases can front in any order to a position below CP, Foc(us)P. As a result, Superiority effects between the focus-fronted elements do not arise, as shown in (20):

(20) *Focus-movement*

a. [$_{CP}$ C$_{[+wh]}$ [$_{FocP}$ *wh*$_{1[+F]}$ *wh*$_{2[+F]}$... [t$_1$ t$_2$....]]]

b. [$_{CP}$ C$_{[+wh]}$ [$_{FocP}$ *wh*$_{2[+F]}$ *wh*$_{1[+F]}$... [t$_1$ t$_2$....]]]

Under Bošković's account, Superiority is taken as a test for existence of true *wh*-movement in a particular language: if Superiority is exhibited, then C is endowed with the uninterpretable instance of the *wh*-feature; if there is no Superiority, there is no *wh*-feature on C.

Bošković argues that MWF in Bulgarian is a result of combination of the two types of movement. That is, only the highest *wh*-phrase undergoes true *wh*-movement to Spec,CP, being attracted by the unvalued *wh*-feature on C, while the rest undergo focus-fronting to FocP. Consequently, only one *wh*-phrase has to obey Superiority requirement and hence moves first. Movement of the rest *wh*-words can occur in any order. Such view, apart from accounting for Superiority effects in Bulgarian binary *wh*-questions, as seen in (9), also correctly predicts that in ternary questions the second and the third *wh*-elements will not necessarily obey Superiority:

(21) a. *Koj*$_1$ *kogo*$_2$ *kak*$_3$ e tselunal? (*Bulgarian*)
who.NOM who.ACC how is kissed
'Who kissed whom how?'

b. *Koj*$_1$ *kak*$_3$ *kogo*$_2$ e tselunal?
who.NOM how who.ACC is kissed [from Bošković 2002a:366]

Notice, however, that in order for this account to ensure Superiority requirement on the first *wh*-phrase, it is essential that the unvalued (or strong) *wh*-feature on C is checked before the unvalued focus-feature on the *wh*-words. Otherwise, if the system chooses to check first the focus-feature on the *wh*-words, they will front in any order, giving rise to a Superiority-violating structure. In order to prevent Superiority violations to occur in Bulgarian, Bošković (1999) suggests that its C head bears two features. On the one hand, the unvalued *wh*-feature requires movement of the closest possible *wh*-item. On the other, the so-called *Attract-all-focus*-feature on C ensures overt movement of all available goals to the inner specifiers. However, as pointed out by Richards (2001:214-215), it is still not clear how this system requires checking the 'single-attracting' [wh] feature on C first (see Richards 2001 for a detailed discussion).

Recall that the Superiority-violating ordering of the second and the third *wh*-items in (21b) is also predicted by Richard's (1997, 2001) CP-absorption hypothesis, in combination with the so-called *Principle of Minimal Compliance* (PMC):

(22) *Principle of Minimal Compliance*
If the tree contains a dependency headed by H which obeys constraint C, any syntactic object G which H "immediately c-commands" can be ignored for purposes of determining whether C is obeyed by other dependencies. [from Richards 2001:199]

According to Richards, PMC allows an attractor, which has satisfied certain constraint, to be free of it for the rest of the derivation. Under this view, all three *wh*-items in (21) are attracted by the head C and undergo true *wh*-movement. First, C attracts the highest *wh*-phrase in order to satisfy AC. Then, due to the PMC, AC no longer applies to C and it is free to attract next either the second, (21a), or the third *wh*-phrase, (21b). Consequently, ordering of these constituents is no longer subject to Superiority. My intuition, however, is that Richard's PMC is no less stipulative than Bošković's Attract-all-focus-feature. Therefore, an alternative solution for the Superiority-puzzle is required.

Nevertheless, the general counter-argument of the different behavior of focus-movement and *wh*-movement with respect to Superiority comes from Bošković's (2007a) recent work on the directionality of Agree, which is discussed in chapter 2. Bošković (1999:166) claims that "focus movement and *wh*-movement differ with respect to where the formal inadequacy driving the movement lies". Thus, the author assumes that *wh*-movement is target-driven (hence, it attracts only one *wh*-element), while focus-movement is moving-element-driven (hence, all the *wh*-words have to move in order to check their formal inadequacy). Nevertheless, this distinction between the two types of Ā-movement is strongly weakened under Bošković (2007a), in which the trigger of movement, a formal inadequacy, is argued to be housed always on the moving-elements themselves. Regarding MWF languages (particularly, Bulgarian), Bošković's (2007a) unidirectional upward Agree system implies that all *wh*-phrases in the derivation are obligatorily specified with some unvalued feature (uF) (presumably, [focus]). Hence, they would all undergo Ā-movement giving rise to Superiority-obeying structure, due to AC. However, this hypothesis, at least in its current formulation, does not predict the attested differences among the two MWF languages (Bulgarian and Russian) with respect to Superiority effects and the constituency of the *wh*-cluster. Thus, some additional refinements are needed.

3. Previous studies on *wh*-questions in Russian

This section is devoted to a detailed discussion of facts and previous existing proposals regarding the puzzling *wh*-behavior of Russian. As previously mentioned, the attested insensitivity to Superiority violations put Russian in contrast to Bulgarian, another language with obligatory MWF. As the reader will see, there is no unanimity among researches as to what is the force triggering *wh*-movement in Russian (neither in single, nor in multiple questions). Some studies considered it as a language resorting to a standard, [wh]-driven movement (Zavitnevich 2002, 2005; Bailyn 2011; Scott 2012). Meanwhile, some others claimed that Russian in its core is a *wh*-in-situ language, where *wh*-fronting is [focus]-driven (Stepanov 1998; Strahov 2001; Bošković 2002a, among others). Finally, it has been also proposed that Russian is similar to French in that it can resort both to *wh*-ex-situ and *wh*-in-situ (Dyakonova 2009). In this section, I outline some previous theories on MWF in Russian and isolate some challenges they face.

3.1. Russian as a *wh*-in-situ language

The distinction between *wh*-movement *vs.* focus-fronting, proposed by Bošković (1998 *et seq.*) has been highly influential in the literature on MWF in Russian. Taking Superiority effects as a diagnostic for *wh*-movement, several authors have claimed that Russian at its core is a *wh*-in-situ language of the Chinese-type (see Stepanov 1998; Strahov 2001; Bošković 2002a, among others). It has been claimed that Russian lacks true syntactic [wh]-driven movement and all *wh*-words in a multiple question undergo pure focus-fronting to a position below CP.

Stepanov (1998) was the first who applied Bošković's (1997a *et seq.*) *wh*-in-situ hypothesis to Russian. The author reports that multiple *wh*-phrases in Russian are not subject to rigid ordering in any contexts: neither in matrix *wh*-questions, as already shown above, nor in embedded questions, as shown below:[5]

[5] In contrast, Scott (2012) reports that Superiority-violating orders are unacceptable in embedded clauses, as opposed to root contexts. According to my own judgements and the intuitions of at least 10 more native speakers, embedded questions with Superiority-violating orders are acceptable. However, such questions always require an appropriate context, under which only the wh_2 designates an unknown set of entities for both speaker and hearer, being the real interest of the request, while wh_1 has a distributive reading. For instance, (23b) is appropriate under the context as in (i) (for a detailed discussion, see Appendix A):

(i) Context: Masha knows that Ivan and Boris kissed some girls, but she does not know which boy kissed whom.

In addition, it is also possible that there exist certain speaker variation concerning embedded questions, which I ignore here.

(23) a. (Maša ne znaet) *kto*$_1$ *kogo*$_2$ poceloval. (*Russian*)
Masha$_{\text{NOM}}$ not know who$_{\text{NOM}}$ who$_{\text{ACC}}$ kissed
'Masha doesn't know who kissed whom?'
b. (Maša ne znaet) *kogo*$_2$ *kto*$_1$ poceloval.
Masha$_{\text{NOM}}$ not know who$_{\text{ACC}}$ who$_{\text{NOM}}$ kissed

According to Stepanov (and also Bošković 2002b), in (23) all *wh*-phrases undergo IP-internal focus-fronting in free order, to some designated position below CP.

Another typical property of *wh*-in-situ languages manipulated in the literature is the availability of Single-Pair (SP) and Pair-List (PL) interpretations for multiple *wh*-questions. According to the literature, crosslinguistically the PL reading is available more uniformly, whereas the SP reading can be inaccessible in some languages. Particularly, it has been claimed that the SP reading is not available in languages with true [wh]-driven movement like Bulgarian and English (e.g. Wachowicz 1974; Bošković 2002a,b, 2003a). In this respect, again, Russian apparently patterns with *wh*-in-situ languages, since it seems to allow both readings (see Stepanov 1998; Bošković 2002a; Liakin 2005, among others). That is, (24a) can be answered either by (24b) or (24c), with PL and SP readings respectively (the latter reply is available only under an appropriate, restrictive context):

(24) a. *Kto kogo* udaril? (*Russian*)
who.NOM who.ACC hit?
'Who hit whom?'
b. (Context: Some of my young students have fought, and I want to know the details of the fight.)
Petja udaril Vanju, a tot udaril Denisa.
Petja.NOM hit Vanja.ACC and that hit Denis.ACC
'Petja hit Vanja, and he hit Denis'
c. (Context: I know that Petja and Vanja fought, but I ignore who began the fight.)
Petja udaril Vanju.
Petja.NOM hit Vanja.ACC
'Petja hit Vanja'

Nevertheless, these facts are far from being clear. For instance, several authors (e.g. Kazenin 2002; Grebenyova 2004, 2006; Gribanova 2009) report that SP reading is not available in standard multiple *wh*-questions in Russian. On the

other hand, my own judgments coincide with those reported in (24): SP reading is accessible, but only under an appropriate SP context. Personally, I fail to see how availability of the SP-reading can be constrained by syntactic structure (e.g. see Hagstrom 1998; Bošković 2003a; Gribanova 2009). As pointed out by Michal Starke through personal communication, the PL reading must exhaust the possible pairs. However, if there is only one possible pair under a certain context, then the SP answer felicitously exhausts it. Therefore, I do not really see how availability of the SP reading in Russian multiple questions supports the *wh*-in-situ hypothesis either.

In fact, the *wh*-in-situ hypothesis, when applied to Russian, has been repeatedly criticized in the literature (see Dyakonova 2009; Bailyn 2011; Scott 2012 and others). One of the principal inconveniences for claiming that Russian *wh*-elements undergo obligatory focus-movement is that there is no fixed position for focused constituents in this language (for discussion, see Bailyn 1995a, 2011; Neeleman & Titov 2009 and references therein). In Russian, the focused non-*wh*-elements can be found both preverbally and postverbally, as shown in (25):

(25) a. On pozvonil MAŠE. (*Russian*)
he phoned Masha.DAT
'He phoned Masha'
b. On MAŠE pozvonil.
he Masha.DAT phoned
c. MAŠE on pozvonil.
Masha.DAT he phoned

Neeleman & Titov (2009) (see also Neeleman *et al.* 2009) convincingly argue that in Russian the neutral focus position is on the right-edge of a clause, while leftward movement occurs in order to check an additional [contrast] feature on the focused element. Meanwhile, interrogative *wh*-movement is obligatory in non-echo *wh*-questions, as opposed to focus movement:

(26) a. *On pozvonil *komu*? (non-echo-reading) (*Russian*)
he phoned who.DAT
'Who did he phoned?'
b. On $komu_i$ pozvonil t_i?
he who.DAT phoned
c. $Komu_i$ on pozvonil t_i?
who.DAT he phoned

It follows then that the first difference between the focused non-*wh*-elements and *wh*-words in Russian is that the former *can*, but do not *have to* undergo overt movement, as opposed to the latter. The second important difference is that the focused non-*wh*-elements cannot be iterated in the same sentence, while the *wh*-words obviously can (e.g. in a multiple *wh*-questions):

(27) (Context: I heard that you bought a car.) (*Russian*)
   a. Net. *PETROVY kupili MOTOCIKL.
      no Petrovs bought moto
      'No. PETROVS bought a MOTO'
   b. Net. *PETROVY MOTOCIKL kupili.
      no Petrovs moto bought [from Dyakonova 2009:188]

Furthermore, following Bošković's (1997a *et seq.*) analysis of multiple questions in Serbo-Croatian, Stepanov argues that even in echo questions the *wh*-words, being inherently focused, must be obligatorily fronted in Russian. However, as I will argue in chapter 5, the echo *wh*-phrases have several options regarding fronting: they can either undergo movement or remain in-situ, contrary to the non-echo *wh*-items, which lack the *wh*-in-situ option (see also Strahov 2012; Chernova 2013a,b):

(28) a. Petrovy kupili *čto*$_{\text{ECHO}}$? (*Russian*)
      Petrovs bought what.ACC
      'Petrovs bought WHAT?'
   b. Petrovy *čto*$_{\text{ECHO}}$ kupili?
      Petrovs what.ACC bought
   c. *Čto*$_{\text{ECHO}}$ Petrovy kupili?
      what.ACC Petrovs bought

Finally, under the *wh*-in-situ hypothesis about Russian multiple *wh*-questions, all *wh*-elements are assumed to end up at the same position, presumably FocusP. If so, the analysis fails to capture the fact that in Russian, as opposed to Bulgarian, the fronted *wh*-words do not form an indivisible cluster, as they can be separated by certain intervening material (*cf.* (14) *vs.* (15)).

Let us turn back to (26b). The fact that in Russian interrogatives the fronted *wh*-words do not necessarily appear clause-initially leads Strahov (2001) to take further Stepanov's proposal and to argue that Russian *wh*-movement is an instance of general scrambling. Following Cheng (1991), Strahov claims that in Russian, just as in other *wh*-in-situ languages, a clause is typed as interrogative

by a phonologically null question operator, which bounds the *wh*-words from a distance. Therefore, *wh*-words do not undergo movement in order to get scope, but rather they seek to check their [topic] or [focus] features by movement to the correspondent projections in Rizzi's (1997) Left Periphery.

First, this view is challenged by the fact that, according to Müller & Sternefeld (1993:466), Russian *wh*-movement is "heavily restricted" in comparison to scrambling, which "appears to operate in a rather unconstrained manner". For instance, the authors show that scrambling can escape out from subject- and *wh*-islands, as opposed to *wh*-movement. This is illustrated by the following contrastive pairs:

(29) a. Mne Katju$_i$ kažetsja [$_{CP}$ čto [otpustit' t$_i$ odnu tak pozdno]] (*Russian*)
to.me Katja.ACC seems that to.let.go alone so late
bylo by bezumiem.
be COND insanity
'It seems to me that it would be insane to allow Katja to go alone so late at night.'

b.?* *Kogo*$_i$ tebe kažetsja [$_{CP}$ čto [otpustit' t$_i$ odnu tak pozdno]] bylo
who.ACC to.you seems that to.let.go alone so late be
by bezumiem?
COND insanity
'Who do you think that it would be insane to allow to go alone so late at night?' [from Müller & Sternefeld 1993:467]

(30) a. Ty doktor$_i$ videl [$_{CP}$ *kogda* t$_i$ pod"ezžal]? (*Russian*)
you the.doctor.NOM saw when came
'Did you see when the doctor came?'

b. * *Kto*$_i$ ty videl [$_{CP}$ *kogda* t$_i$ pod"ezžal]?
who.NOM you saw when came
'Who did you see when came?' [from Müller & Sternefeld 1993:467-468]

On the basis of these facts, Müller & Sternefeld conclude that scrambling and *wh*-movement are instances of different phenomena in Russian.

Another counterargument to Strahov's conclusion is that in embedded contexts, as opposed to matrix ones, the *wh*-words must occupy the leftmost position and cannot appear clause-internally (*cf.* (26b)):[6]

[6] Importantly, true *wh*-in-situ languages like Chinese do not exhibit such asymmetry between root and embedded contexts. In fact, it is an additional argument against Russian being a *wh*-in-situ language:

(31) Maša xočet znat' [*komu* on (**komu*) pozvonil (**komu*)]? (*Russian*)
Masha wants know.INF who.DAT he phoned
'Masha wants to know who did he phoned'

According to Strahov's analysis, in multiple *wh*-questions the first *wh*-word is topicalized (D-linked) and, as such, undergoes fronting to TopicP, while the inner *wh*-phrase, which asks for unknown information, is located in FocusP. As discussed in Appendix A, my own judgments and the ones reported in Strahov do not coincide. But even if we leave aside these fragile semantic distinctions, there is a general counterargument against the obligatory movement of D-linked *wh*-constituents. As discussed in Pesetsky (1987, 2000), crosslinguistically D-linked *wh*-items do not necessarily undergo movement and can remain in-situ. As shown in (32) (see also fn. 17), Russian is not an exception in this respect: the D-linked *wh*-phrases can remain in-situ (see also Pesetsky 2000 for Bulgarian):[7]

(32) a. *Kogo*$_2$ tebe napominaet *kakoj risunok*$_1$? (*Russian*)
what.ACC you.DAT reminds which drawing.NOM
'Which picture reminds you who?'
b. *Kto*$_1$ pročitaet *kakuju knigu*$_2$?
who.NOM will.read which book.ACC
'Who will read which book?'

The conclusion to draw from this discussion is that the *wh*-in-situ approaches to Russian fail to predict a productive set of data. In the next section, I will briefly outline some previous accounts arguing in favor of the syntactic *wh*-movement in Russian.

3.2. Russian as a *wh*-fronting language

Another group of analyses of Russian multiple *wh*-questions do not dispense with [wh]-driven movement and defend that the leftmost *wh*-word occupies a different

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(i) a. Hufei mai-le *sheme*? (*Chinese*)
Hufei bought what
'What did Hufei buy?'
b. Qiaofong xiang-zhidao Hufei mai-le *sheme*.
Qiaofong whant.know Hufei bought what
'Quiafong wonders what Hufei bought' [from Cheng 1991:11]

[7] See also Dyakonova (2009), who reports similar judgements.

position from the rest of *wh*-items (see Zavitnevich 1999, 2002, 2005; Scott 2012), an intuition which I agree with.[8]

Zavitnevich (1999, 2002, 2005), following Cheng (1991), argues that Russian *wh*-words are bare *wh*-proforms without quantificational force. The interrogative value is acquired when the *wh*-words combine with an interrogative operator in course of the derivation (see chapter 2). The author argues that *wh*-movement is triggered by a question operator realized on the *wh*-item, in order to check the strong Q-feature in the CP domain.

According to Zavitnevich, in singe *wh*-questions the Q-feature is usually carried by C; hence, the sentence-initial position of the *wh*-phrase is obtained. However, as suggested in Zavitnevich (1999), sometimes some different head below CP, namely FocusP, can carry the Q-feature (in addition to [focus]). In this case, the *wh*-phrase does not reach the CP domain and ends up at the lower position. For this reason, *wh*-phrases can be preceded by some non-*wh*-material. This is what we saw in the example (26b), in which the *wh*-word is preceded by the subject.[9]

On the other hand, according to Zavitnevich (2002, 2005), only one *wh*-phrase bears the Q-feature in multiple *wh*-questions. Under these analyses (*cf.* Zavitnevich 1999), this single *wh*-word —a true question operator— moves to CP for clause-typing reasons. The rest of *wh*-elements act as universal quantifiers, as they lack interrogative force. Such *wh*-words must be unselectively bound by the interrogative operator from the CP domain. Moreover, the inner *wh*-words are contrastively focused and move to FocusP for [focus]-checking reasons.

The reader may notice that this analysis (as well as all others discussed so far) aims to capture the same idea first proposed by Rudin (1988): in languages of the IP-absorption type only one *wh*-word moves to CP, while the rest end up at a lower syntactic position (call it IP or FocusP). In particular, Zavitnevich's analysis of multiple questions aims to account for the fact that the fronted

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[8] The reader may notice that this intuition was already behind the IP-absorption hypothesis (Rudin 1988; Richards 1997, 2001).

[9] For a similar proposal on English *wh*-questions, see den Dikken (2003), who, on the basis of the examples like (ia), argues that in English matrix single *wh*-questions a *wh*-word undergoes focus-movement to Spec,FocusP. Likewise, the author argues that in multiple questions, as in (ib), the in-situ *wh*-phrase first moves to FocusP and then it is followed by remnant movement of TP, which brings the other *wh*-word to a structurally higher position, called WP. As a result, we obtain a surface order, in which the lower *wh*-phrase apparently remains in-situ:

(i) a. $^{?}[_{\text{TopP}}$ To Mary, $[_{\text{FocP}}$*what* should we give]]? (*English*)

b. $[_{\text{WP}}\ [_{\text{TP}}$ *Who* is in love $t_i]_j$ $[_{\text{FocP}}$ with *who*$]_i$ $[_{\text{IP}}\ t_j]]]$? [from den Dikken 2003:89-90]

wh-phrases need not to be adjacent and can be separated by certain intervening material, including a non-*wh*-nominal:[10]

(33) *Kto* Maše *čto* podaril? (*Russian*)
who.NOM Masha what.ACC gave
'Who gave what to Mary?'

According to Zavitnevich, in (33) the first *wh*-phrase occupies Spec,CP, while the second one ends up in Spec,FocusP. Therefore, the topicalized NP *Maše* 'Masha.DAT' can intervene between the two *wh*-phrases.

Notice, however, that this analysis does not completely dispense with [focus] as a triggering force of *wh*-fronting and, hence, it is still subject to the same objections as the *wh*-in-situ hypothesis. Namely, it mantains the problem of why focus-fronting of non-*wh*-NPs is optional, while *wh*-words are obligatorily fronted. Moreover, as pointed out by Dyakonova (2009), Zavitnevich's account fails to predict the grammaticality of questions as in (34), which are productive in Russian:

(34) Maša budet *komu*$_i$ znovit' t$_i$? (*Russian*)
Masha will who.DAT phone.INF
'Whom will Masha phone?'

In (34), the fronted *wh*-word occupies a position between the auxiliary verb (presumably in T) and the infinitive (in *v*). Such constructions can be hardly captured by any theory that assumes obligatory *wh*-movement into CP (or into the immediately following FocusP).

Let us turn now to another analysis of multiple *wh*-questions in Russian. Examples like (34) also challenge the so-called *Higher Operator Phrase* (HOP) account developed by Scott (2012). The author proposes that Russian is a CP-absorption language, which is strictly subject to Superiority effects at the CP-level, just as Bulgarian. However, Russian makes use of an extra layer, HOP, located above CP, which counts with a single specifier. The HOP projection can host a number of discourse-related elements, including non-*wh*-elements or any of the fronted *wh*-phrases, which can undergo further raising from CP to HOP. Scott

[10] Observe an interesting difference between English and Russian illustrated in (ii), namely, that in English the topicalized *wh*-phrase cannot follow the highest *wh*-phrase, as opposed to Russian (*cf.* (33)):
(ii) * *Who*, to Mary, should give *what*? [from Den Dikken 2003:90] (*English*)

claims that movement of the lower *wh*-phrase to HOP masks the Superiority effects. The emerging picture under the HOP hypothesis is represented in (35):

(35) *Higher Operator Phrase Hypothesis (Scott 2012)*
a. [HOP *wh*$_1$ [CP t_1 *wh*$_2$ ... [... t_1 ... t_2]]]?
b. [HOP *wh*$_2$ [CP *wh*$_1$ t_2 ... [... t_1 ... t_2]]]?
c. [HOP NP_i [CP *wh*$_1$ *wh*$_2$ ... [... t_1 ... t_2 ... t_i]]]?

Observe that in (35) the *wh*-words respect the Superiority requirement at the CP level. In (35a), the highest *wh*-word has been fronted to Spec,HOP, giving rise to a Superiority-obeying structure. In (35b), it is the lower *wh*-phrase that occupies Spec,HOP, yielding to a Superiority-violating order. However, when HOP is occupied by a non-*wh*-NP, as in (35c), *wh*-movement to HOP cannot take place and Superiority emerges. With the derivations in (35) in mind, consider the following example:

(36) a. Maše *kto*$_1$ *čto*$_2$ podaril? (*Russian*)
Masha.DAT who.NOM what.ACC gave
'Who gave what to Masha?'
b.$^{(*)}$Maše *čto*$_2$ *kto*$_1$ podaril?
Masha.DAT what.ACC who.NOM gave

Recall that, according to Scott's analysis, the fronted *wh*-phrases are at CP in a Superiority-obeying order, while the dative NP *Maše* in (36) is housed in HOP. Roughly, the example in (36a) has the underlining order as in (35c) and is allowed in Russian. Notice that, on Scott's view, the question in (36b) is expected to be ungrammatical, as the HOP projection is occupied by the NP and the *wh*-phrase must obey Superiority. Nevertheless, to my ear, the question in (36b) indeed sounds odd, but only if it is pronounced 'out of the blue'. However, if an adequate context is provided, the sentence improves. Consider this example again, but under the context provided below:

(36') (Context: Ivan and Boris were invited to a children party to celebrate birthdays of three girls: Katia, Natasha and Masha. I know what gifts each boy gave to Katia and Natasha, but I don't know what exactly each boy gave to Masha.)
b. A Maše *čto*$_2$ *kto*$_1$ podaril? (*Russian*)
and Masha.DAT what.ACC who.NOM gave
'Who gave what to Masha?'

The question in (36b) seeks to complete the lack of information concerning the participants and the presents. The speaker has a presupposition that each boy gave something to Masha. Under this context, the dative NP is topicalized and the *wh*-subject has a specific reading, in a sense that both speaker and hearer know that it refers to Ivan and Boris. In contrast, the meaning of the wh_2, *čto* 'what.ACC', is ignored by the speaker (for discussion, see Appendix A). Thus, under the appropriate specific context, the sentence in (36b) is felicitous. Consequently, the HOP hypothesis, namely the structure in (35c), rules out the sentence wrongly.

Scott claims that HOP is a root phenomenon, which implies that in embedded questions *wh*-elements cannot move higher than CP. Thus, on the one hand, the HOP analysis predicts that Superiority cannot be violated in embedded questions. On the other, under this proposal, it is expected that the fronted *wh*-words cannot be preceded by topicalized NPs in embedded questions. The latter prediction seems to be correct, as illustrated below:

(37) a. *Ja xoču znat' Maše kto_1 $čto_2$ podaril? (*Russian*)
I want know.INF Masha.DAT who.NOM what.ACC gave
'Who gave what to Masha?'
b. *Ja xoču znat' Maše $čto_2$ kto_1 podaril?
I want know.INF Masha.DAT what.ACC who.NOM gave

In principle, this result is also expected under standard assumptions about different composition of the left periphery (Rizzi 1997) of matrix and embedded clauses. Namely, the left-peripheral activity of the embedded CPs is more restricted than the activity of matrix CPs. In particular, it has been widely assumed that the embedded CP layer lacks projections that license topicalization (e.g. see Benincà & Poletto 2004; Haegeman 2004 and references therein).

Next, I fail to see how the HOP analysis accounts for the fact that certain material such as NPs, particles, parentheticals, adverbs, etc. can interpolate between the fronted *wh*-phrases in both root and embedded contexts. Crucially, the *wh*-items can still appear in both Superiority-obeying and Superiority-violating orders (the latter, again, is restricted to appropriate contexts). This is exemplified below with respect to NP-subjects, (38), and the conditional particle *by*, (39):

(38) a. (Ja xoču znat') *čto*$_1$ Maša *komu*$_2$ skazala. (*Russian*)
I want know.INF what.ACC Masha who.DAT said
'(I want to know) what did Mary said to whom?'
b. (Ja xoču znat') *komu*$_2$ Maša *čto*$_1$ skazala.
I want know.INF who.DAT Masha what.ACC said

(39) a. (Mne interesno) *kto*$_1$ by *kogo*$_2$ priglasil na tanec. (*Russian*)
to.me interesting who.NOM COND who.ACC invited to dance
'(I am interested) who would invite to dance whom'
b. (Mne interesno) *kogo*$_2$ by *kto*$_1$ priglasil na tanec.
to.me interesting who.ACC COND who.NOM invited to dance

Regarding root contexts, the grammaticality of the examples in (38) and (39) is unexpected under Scott's proposal. Notice that, on this view, the leftmost *wh*-word is in HOP, while the inner is in CP. In other words, if the HOP projection is occupied by a *wh*-word, then what projection does host the intervening material? With respect to embedded questions, the grammaticality of the above examples is also surprising for same reason: the *wh*-words occupy multiple specifiers of the embedded CP and, hence, must form an indivisible cluster, just as in Bulgarian.

Furthermore, according to the derivation in (35a), in standard non-embedded multiple questions like *Kto kogo uvidel?* 'Who did see whom?' the highest *wh*-word is housed in HOP, while the inner *wh*-word is in CP. This distribution of *wh*-words, however, seems to be contradicted by adverb placement, if we take Cinque's (1999) *Adverb's Hierarchy* as a test. Although it is generally difficult to determine the exact placement of adjuncts, let us nevertheless assume, as is standard, that high, speaker-related adverbs like *frankly* are adjoined to CP. Then, under Scott's analysis, we would expect that *frankly* will be able to intervene between the fronted *wh*-phrases, assuming that the wh_1 is in HOP and the wh_2 is in CP. On the other hand, we expect that lower, IP-level adverbs like *once* and *perhaps* can only follow the *wh*-cluster, but are not allowed to appear in between. However, as shown in (40), these predictions are not borne out:

(40) a. (Otkrovenno govorja) *kto* (*otkrovenno govorja) *kogo* poceloval?
frankly who.NOM who.ACC kissed
'Frankly speaking, who kissed whom?' (*Russian*)
b. *Kto* (odnaždy) *kogo* (odnaždy) poceloval?
who.NOM once who.ACC kissed
'Who once kissed whom?'

c. *Kto* (vozmožno) *kogo* (vozmožno) poceluet?
who.NOM perhaps who.ACC will.kiss
'Who will perhaps kiss whom?'

Contrary to what is expected under the HOP analysis, the CP-level adverb *otkrovenno govorja* 'frankly' cannot intervene between the *wh*-words, but can precede them, (40a), while the IP-level adverbs *odnaždy* 'once' and *vozmožno* 'perhaps' in (40b,c) can appear between the *wh*-words or follow them.

If we consider *wh*-extraction out from embedded clauses, we see that Russian allows both multiple and single long-distance *wh*-extraction (out of subjunctives; see fn. 3), as illustrated by (41a) and (41b) respectively. In contrast, as first reported by Rudin (1998), Bulgarian only allows multiple *wh*-extraction, as in (42):

(41) a. *Kto*$_1$ *kogo*$_2$ ty xočeš [čtoby t$_1$ poceloval t$_2$?] (*Russian*)
who.NOM who.ACC you want that.SUBJ kissed
'Who do you want to kiss whom?'
b. *Kto*$_1$ ty xočeš [čtoby t$_1$ *kogo*$_2$ poceloval t$_2$?]
who.NOM you want that.SUBJ who.ACC kissed

(42) a. *Koj*$_1$ *kŭde*$_2$ misliš [če t$_1$ e otišul t$_2$]? (*Bulgarian*)
who.NOM where think.2SG that.SUBJ has gone
'Who do you think (that) went where?'
b. **Koj*$_1$ misliš [(če) *kŭde*$_2$ t$_1$ e otišul t$_2$]?
who.NOM think.2SG that.SUBJ where has gone
[adopted from Rudin 1988:450]

On Scott's view, Russian and Bulgarian are both CP-absorption languages. Hence, the HOP analysis predicts that Russian should behave in the same manner as Bulgarian regarding *wh*-extractions. However, this prediction is not borne out. The expected parallelism between the two Slavic languages with respect to *wh*-movement to HOP is neither borne out. Rudin (1988) reports that in Bulgarian a topicalized subject is allowed to precede the *wh*-cluster, which points towards some TopicP (call it HOP) projection above CP:

(43) Boris *na kogo* *kakvo* kaza [če šte dade]? (*Bulgarian*)
Boris to who.DAT what.ACC said that will give
'What did Boris say that (he) would give to whom?' [from Rudin 1988:451]

If both languages are of the CP-absorption type and both have the HOP projection above CP, then it is not clear why this projection is available for *wh*-movement only in Russian, but not in Bulgarian.

Finally, Scott does not address an important question from a theoretical point of view, namely, what exactly motivates the optional movement into HOP of the *wh*-constituents. Subsequently, the proposal, despite its attractiveness, unfortunately has a number of problems.

Let me conclude this section by highlighting again the core intuition behind the *wh*-movement proposals considered so far: in Russian, the leftmost *wh*-word occupies a higher position then the rest of *wh*-elements. This idea is supported by the fact that different kinds of intervening material —including topicalized NPs and subjects— can separate the *wh*-cluster. Moreover, we saw that *wh*-words do not necessarily occupy the leftmost position and can be preceded by topics. In the next subsection, I will briefly consider a proposal that tries to capture these facts in terms of optional *wh*-movement.

3.3. Russian as a language with optional *wh*-movement

Dyakonova (2009) argues that Russian must be grouped together with French, since both languages allow two strategies of formation of *wh*-questions: *wh*-ex-situ and *wh*-in-situ (for French, see Mathieu 1999; Bošković 1998b, 2000; Boeckx 2000; Cheng & Rooryck 2000 and others).[11] As is well-known, French allows non-echo questions both with a fronted *wh*-item and with *wh*-in-situ, the latter option being restricted to matrix contexts:

(44) a. (*Je me demande) tu as vu *qui*. (*French*)
I REFL wonder you have seen who.ACC
'(I wonder) who have you seen?'

b. (Je me demande) *qui* as-tu vu t_i.
I REFL wonder who.ACC have-you seen [from Dyakonova 2009:197]

As discussed in previous sections, similarly to French, Russian *wh*-phrases, when fronted, do not necessarily appear at the leftmost position (recall that the *wh*-in-situ option is generally restricted to echo questions). As noticed by Dyakonova, Russian questions in which the *wh*-word does not occupy a clause-initial position obtain a particular interpretation, different from questions with overt *wh*-movement. This interpretation is similar to the French questions with *wh*-in-situ, as in (44a). Namely, such questions usually imply that the event being

[11] See also Bošković (2001b) for a similar analysis of multiple questions in Serbo-Croatian.

asked about is presupposed to be necessarily true. Thus, (44a) cannot be answered with a negative answer, like *nobody*, as well as its Russian counterpart in (45):[12]

(45) (V magazine) ty *kogo* uvidel? (*Russian*)
in the.shop you who.ACC saw
'Who did you see (in the shop)?

Moreover, Dyakonova observes that in Russian questions, when a *wh*-word does not occupy the leftmost position, it cannot appear within the scope of negation and Intervention effects arise. However, no Intervention effects will obtain if the *wh*-word appears clause-initially, i.e., above negation. This is illustrated in (46):

(46) a. *Kuda* ty ne budeš' bol'še ezdit'? (*Russian*)
where you NEG will.2SG from.now.on go.INF
'Where are you not going anymore?'
b. ??Ty ne budeš' *kuda* bol'še ezdit'?
you NEG will.2SG where from.now.on go.INF
[from Dyakonova 2009:198-199]

A similar correlation between the *wh*-phrases and negation has been attested in French. This is illustrated below:

(47) a. *Jean ne mange pas *quoi*? (*French*)
Jean NEG eats NEG what.ACC
'What doesn't Jean eat?'
b. *Que* Jean ne mange-t-il pas?
what.ACC Jean NEG eats.he NEG [from Dyakonova 2009:198]

On the basis of these and other data, Dyakonova elaborates the following proposal for single *wh*-questions in Russian. In the spirit of Cable's (2007) theory, the author argues that interrogative clause-typing is achieved by a Q-particle, which has to move to CP (in her terminology, Inter(rogative)P). Dyakonova claims that in Russian the Q-particle can enter into the derivation in two different ways. As in standard *wh*-fronting languages, Q in Russian tends to merge together with the *wh*-phrase in its base position (see chapter 2 for

[12] For a more detailed comparison between Russian and French, the reader is referred to Dyakonova (2009).

discussion). In this case, it projects a QP phrase, which moves to CP and pied-pipes the *wh*-word. As a result, overt *wh*-movement is obtained.

On the other hand, along the lines of Cheng & Rooryck's (2000) proposal, Dyakonova argues that Q in Russian can be also merged directly on the head of InterP, similarly to *wh*-in-situ languages. Roughly, assuming Pesetsky & Torrego's (2007) feature specification mechanism, Dyakonova claims that the Q-feature on C is underspecified for a *wh*-value ([uQ: _]), in the sense that it has to agree with some *wh*-item. Such *wh*-agreement in principle can be made at distance, but for some reasons C cannot "see" the *wh*-word at its base position, inside *v*P. As a result, the *wh*-word has to raise to the preverbal area.

To make the discussion in hand more concrete, consider the questions in (48a). Leaving the irrelevant details aside, according to Dyakonova, the question is derived along the lines in (48b):

(48) a. My na vyxodnyh budem *čto*$_{i}$ delat' t_{i}? (*Russian*)
we on weekends will.1PL what.ACC do.INF
'What are we going to do on weekends?'

b. $[_{\text{InterP}}$ Inter$^{\circ}_{[\text{Q: }_]}$ $Q_{[\text{iQ}]}$ $[_{\text{IP}}$ my budem *čto*$_{[\text{wh}]}$ delat' $t_{i}]]$?
↑ *Agree* ↑

[adopted from Dyakonova 2009:211]

Assuming Svenonius' (2004a) analysis of aspectual prefixes and den Dikken's (2007) phase extension hypothesis, Dyakonova suggests that in Russian the phase *v*P might extend to AspP after obligatory *v*-to-Asp verb movement. The author argues that in (48), the *wh*-phrase, a goal, will become opaque due to PIC, if it remains inside *v*P. In order to prevent this, the *wh*-word moves to Spec,AspP. To advance, in the next chapter I will adopt and further elaborate the aforementioned Dyakonova's (2009) insight. In particular, I will extend it to multiple *wh*-questions.

Unhappily, Dyakonova does not offer any articulated account of the attested puzzles regarding the MWF phenomenon in Russian, such as Superiority effects, *wh*-constituency and intervening material, among others. Following Cable (2007), Dyakonova vaguely suggests that the lack of Superiority effects is because of a different feature specification of the interrogative head present in Russian lexicon and that such C can agree with only one Q. However, the whole set of the relevant data discussed so far is left aside and does not easily follow from this assumption. As we will see in the next section, Cable's (2007, 2010) Q-theory, in its original formulation, does not easily account for the complex set of Russian

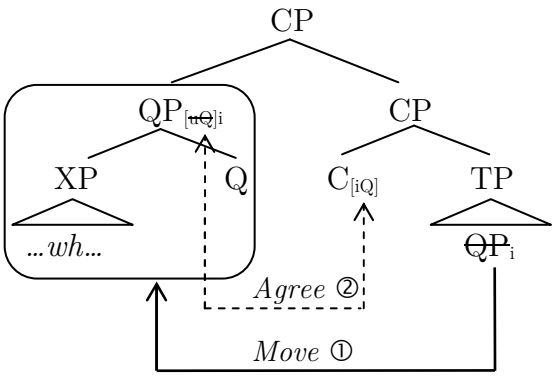
data. Therefore, some additions to the Q-based theory will be offered in the next chapter.

4. Superiority and Intervention effects through the prism of Q-movement

In this section, I introduce a number of assumptions regarding the analysis of Superiority and Intervention effects within Q-theory that I adopt in this work. Recall from the previous chapter that under Q-analysis interrogative *wh*-movement is considered as a secondary effect of Q-movement into the CP domain, which is triggered by the need of the Q-particle to check its Q-feature.

In sum, in *wh*-fronting languages, the Q-particle is merged with a *wh*-word and projects a QP-layer dominating both Q and its sister. Since Q-feature-checking is achieved by the agreement relation between QP and C (the former c-commanding the latter), QP has to move over C, to the specifier position. Movement of QP pied-pipes the whole projection and, as a result, the *wh*-phrase appears at the CP domain. The resulting structure is repeated in (49), for the reader's convenience:

(49)



The structure in (49) corresponds to a single *wh*-question with overt movement in a *wh*-fronting language. Now, with the main notions of our Q-theory refreshed, we are in position to consider multiple *wh*-questions.

4.1. Superiority effects and number of Q-particles

Concerning Superiority, within Q-theory these effects are captured in terms of a number of Q-particles present in the derivation of a multiple *wh*-question. Consider first the well-known contrast from the English multiple *wh*-questions in (50):

(50) a. *Who*$_1$ bought *what*$_2$? (*English*)
b. * *What*$_2$ did *who*$_1$ buy?

The empirical characterization of the Superiority effects consists in that in English only the structurally highest *wh*-constituent (the one that asymmetrically c-commands the rest of *wh*-elements) must undergo fronting to the clause-initial position. This requirement explains the contrast between (50a), in which the *wh*$_1$ is fronted and the *wh*$_2$ is pronounced in its base position, and (50b), in which the *wh*$_2$ is moved to the leftmost position over the *wh*$_1$. That is, (50b), unlike (50a), violates Superiority and results ungrammatical.

On the other hand, German, as opposed to English, does not exhibit strict ordering of *wh*-constituents and allows movement of the structurally lower *wh*-item over the highest one:[13]

(51) a. *Wer*$_1$ hat *was*$_2$ gekauft? (*German*)
who has what seen
'Who bought what?'
b. *Was*$_2$ hat *wer*$_1$ gekauft?
what has who bought [from Cable 2010:123]

Cable (2007, 2010) relates the number of Q-particles merged in a derivation of a multiple question to the type of the interrogative head present in a lexicon of a particular language (see also Pesetsky 2000). More precisely, the author argues that some interrogative heads require agreement with multiple Q-particles in multiple questions, while others can bind only one Q-particle. Put differently, in the former type of languages each *wh*-word is dominated by a QP, while in the latter, only one of the multiple *wh*-words —either the highest or the lower one— is contained inside a QP. The Minimal Link Condition (Chomsky 1995a), or Attract Closest principle (Richards 1997, 2001) ensure that derivations with multiple QPs obligatory give rise to Superiority-satisfying orders. So, in the

[13] It is worth noting that even in languages which in principle allow both orders there is a general preference for Superiority-obeying questions over Superiority-violating ones (see Rudin 1996 and Meyer 2004 for Russian; Featherson 2005 for German; Kotek 2014a for Hebrew, among others). Traditionally, this preference is attributed to the major computational complexity of the Superiority-violating questions with respect to those satisfying the Superiority requirement. What is important is that Superiority-violating orders are not interpreted as ungrammatical by the speakers of some languages (e.g. German, Russian), as opposed to the speakers of others (e.g. English, Bulgarian). It means that German and Russian grammar can in principle generate Superiority-violating structures, in contrast to English and Bulgarian. Concerning Superiority-violating orders in Russian, see Appendix A.

English multiple *wh*-question in (50a), Superiority effects naturally follow from the following paradigm:

(52) *Superiority effects in multiple questions* (*English*)

a. Q-particles are distributed; one Q is merged with every *wh*-word:
$[_{vP}\ [_{QP}\ Q\ wh_1]_1\ v\ [_{QP}\ Q\ wh_2]_2\ ]$

b. The structurally highest QP moves to Spec,CP, obeying AC:
$[_{CP}\ [_{QP}\ Q\ wh_1]_{1[uQ]}\ \ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ t_1\ \ [_{QP}\ Q\ wh_2]_2\ v\ ]]]$

b'. The structurally lower QP moves to Spec,CP, violating AC:
$^{*}[_{CP}\ [_{QP}\ Q\ wh_2]_2\ \ C\ [_{TP}\ T\ [_{vP}\ [_{QP}\ Q\ wh_1]_1\ \ t_2\ v\ ]]]$

Given that in English every *wh*-word is dominated by a QP, we predict that the highest QP will dominate the highest *wh*-word. Being Q-movement standardly subject to AC, it requires that the structurally higher QP must undergo overt movement, (52b). Within Q-theory, it is standardly assumed that in a *wh*-question every QP must move to the left periphery of a clause in time for interpretation. That is, one way is to assume that overt movement of the highest QP, (52b), is followed by a subsequent covert movement of the structurally lower QP.

Another way to ensure that QPs appear at the specifier positions of CP by LF is to assume that both undergo overt movement (see Richards 1997, 2001; Pesetsky 2000, among others). Suppose that one Q has been merged with every *wh*-word. In such case, the interrogative head will require agreement with every QP. In order to agree and to check their Q-feature, the QPs must move overtly to a position, from where they c-command the interrogative head C endowed with the matching feature. In this case, Superiority effects in English multiple questions follow straightforwardly:

(53) *Superiority-obeying multiple question* (*English*)

a. Q-particles are distributed; one Q is merged with every *wh*-word:
$[_{vP}\ [_{QP}\ Q\ wh_1]\ v\ [_{QP}\ Q\ wh_2]\ ]$

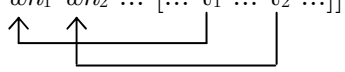
b. Every QP is fronted to Spec,CP:
$[_{CP}\ [_{QP}\ Q\ wh_1]\ [_{QP}\ Q\ wh_2]\ C\ [_{TP}\ T\ [_{vP}\ t_1\ t_2\ v\ ]]]$

c. PF rule applies (parameterized for English):
Pronounce the highest QP in CP in its new position, and the rest of QPs in their base positions:
$[_{CP}\ [_{QP}\ Q\ wh_1]\ \cancel{[QP]}_2\ C\ [_{TP}\ T\ [_{vP}\ t_1\ v\ [_{QP}\ Q\ wh_2]\ ]]]$

In (53), overt syntactic fronting of QPs into the multiple specifiers of CP is followed by a particular PF rule, parameterized for English, (53c) (see Pesetsky 2000). This rule triggers the final surface word order of the English multiple *wh*-question in (50a), in which only the highest *wh*-word is pronounced at the left periphery of the question.

Observe that in (53b) multiple QPs maintain their c-command relation within the CP level. In principle, this result can be achieved in two manners. As discussed earlier in this chapter, one option is Richards' (1997, 2001) 'tucking-in', which is the result of combination of two syntactic principles, Attract Closest (AC) and Shortest Move (SM). The highest QP moves to the outermost specifier of CP, while the rest are fronted to the inner specifiers. This is represented in (12), repeated below:

(12) *Tucking-in (Richards 1997, 2001)*

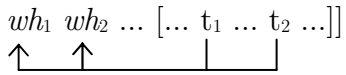


Another way to obtain the obligatory Superiority-obeying order in derivations with multiple QPs is to assume that multiple Agree and multiple internal Merge are single simultaneous operations (see Hiraiwa 2001, 2005):

(54) *Multiple Agree and Multiple internal Merge*
Multiple Agree (multiple feature checking) with a single probe is a *single simultaneous syntactic operation*; Agree *applies to all the matched goals at the same derivational point derivationally simultaneously.* Multiple Move (movement of multiple goals into multiple specifiers of the same probe H) is also a single simultaneous syntactic operation that applies to all the agreed goals. [from Hiraiwa 2001:69-70; emphasis added, EC]

In principle, Richards' 'tucking-in' naturally follows from Hiraiwa's multiple Move, since internal Merge of multiple goals checking the same feature (QPs, in our case) happens derivationally simultaneously. As a result, multiple Move preserves the initial c-command relation between the fronted goals. Roughly, this is represented below:

(55) *Multiple Move (Hiraiwa 2001, 2005)*

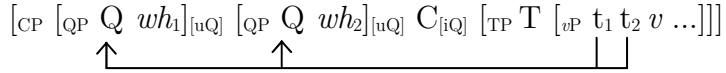


Here I follow Hiraiwa's (2001, 2005) view, which unambiguously predicts that in structures like (53) only a Superiority-obeying order is legitimized. The Superiority-violating one is excluded, because it disrupts the original c-command relation of the *wh*-words in a countercyclic manner.

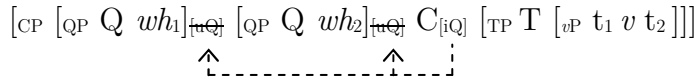
With this discussion in mind, consider again the point of the derivation in (53b) (repeated below as (56)), when multiple QPs are fronted into CP derivationally simultaneously:

(56) *Superiority-obeying multiple question* (*English*)

a. QPs undergo multiple internal Merge to Spec,CP:



b. C and QPs undergo multiple Q-agreement:



In (56), there are two QP projections in the derivation, each one bearing an uninterpretable instance of the Q-feature. Given unidirectional upward Agree, every QP must move to Spec,CP in order to c-command the interpretable instance of the Q-feature on C. As shown in (56b), both QPs move derivationally simultaneously and preserve their original c-command relation. Next, the head C simultaneously assigns value to the fronted QPs through the upward Q-feature Agree. Therefore, assuming that in the derivation of multiple questions multiple QPs move derivationally simultaneously, we predict that Superiority-violating orders are disallowed in English.

Let us consider now how Q-based theory predicts the fact that some languages allow both Superiority-obeying and Superiority-violating orders. Within this theory, insensitivity to Superiority effects in a language is due to the fact that the corresponding derivations contain fewer Q-particles than *wh*-words. More precisely, there is only one Q merged *v*P-internally (while another one is incorporated into the semantics of the interrogative C of a particular type). In principle, this single Q is free to merge with any of the multiple *wh*-words. If the Q-particle is merged with the highest *wh*-word, a Superiority-satisfying order will arise. However, if Q is merged with the lower *wh*-word, a Superiority-violating order will be derived.

With this assumption in mind, consider again the German multiple *wh*-questions in (51). Within Q-theory, these questions are captured by two possible syntactic structures, represented in (57) and (58) respectively.[14] That is, under our Q-based analysis, the Superiority-obeying order of the German example in (51a) is derived as follows:

(57) *Superiority-obeying multiple question, (51a)* (*German*)

a. Q-particles are distributed; the highest *wh*-word is merged with Q:
$[_{vP}\ [_{QP}\ Q\ wh_1]\ v\ [_{XP}\ wh_2]\ ]$

b. QP_1 undergoes internal Merge to Spec,CP:
$[_{CP}\ [_{QP}\ Q\ wh_1]_{[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ t_1\ v\ [_{XP}\ wh_2]\ ]]]$

c. C and QP_1 undergo Q-agreement:
$[_{CP}\ [_{QP}\ Q\ wh_1]_{\sout{[uQ]}}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ t_1\ v\ [_{XP}\ wh_2]\ ]]]$

Notice that in (57) a single Q-particle has been merged with the highest *wh*-word and only one QP (represented as QP_1) has been projected.

The Superiority-violating structure is derived along the same lines, with the difference that a single Q has been merged with the lower *wh*-phrase:

(58) *Superiority-violating multiple question, (51b)* (*German*)

a. Q-particles are distributed; the lower *wh*-word is merged with Q:
$[_{vP}\ [_{XP}\ wh_1]\ [_{QP}\ Q\ wh_2]\ v]$

b. QP_2 undergoes internal Merge to Spec,CP:
$[_{CP}\ [_{QP}\ Q\ wh_2]_{[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ [_{XP}\ wh_1]\ v\ t_2\ ]]]$

c. C and QP_2 undergo Q-agreement:
$[_{CP}\ [_{QP}\ Q\ wh_2]_{\sout{[uQ]}}\ C_{[iQ]}\ [_{TP}\ T\ [_{vP}\ [_{XP}\ wh_1]\ v\ t_2\ ]]]$

The derivation in (58) does not violate Superiority requirement in a technical sense, since there is only one available QP for movement to CP. As expected under Cable's approach, in both derivations, (57) and (58), the *wh*-words that are not contained within a single QP remain in-situ.

Moreover, according to Cable, structures with a single QP also underlie the so-called *D(iscourse)-linked* multiple *wh*-questions. As observed by Pesetsky (1987, 2000), Superiority effects disappear in English D-linked interrogatives:

[14] However, see Grohmann (2003b), who proposes a MWF analysis for German, under which in multiple questions all *wh*-phrases undergo overt (topic-driven) movement to the left periphery.

(59) a. *Which person*$_1$ bought *which book*$_2$? (*English*)
b. *Which book*$_2$ did *which person*$_1$ buy? [from Pesetsky 2000:16]

Within Q-theory, the Superiority-obeying *wh*-question in (59a) is derived along the lines sketched in (57) for German, while the Superiority-violating question in (59b) is derived as in (58). That is, similarly to German standard multiple questions, English D-linked *wh*-questions have a particular type of a C head, which incorporates one Q into its own semantics. Therefore, only one Q-particle is merged with a single D-linked *wh*-phrase, either the highest or the lower one.

4.2. Correlation between Superiority and Intervention effects

The reader may wonder why the Superiority-obeying questions such as the German *wh*-question in (51a) or the English D-linked question in (59a) are assumed to contain only one Q-particle. As we saw, Superiority-satisfying questions can be also derived from structures containing multiple QPs, as in (52).

Regarding this issue, Cable (2007, 2010) discusses an interesting piece of evidence, namely a well-attested crosslinguistic correlation between Superiority and Intervention effects (see also Beck 1996, 2006; Pesetsky 2000; Kotek 2014a,b). This correlation suggests that in certain languages Superiority-satisfying orders can arise either as a result of a derivation with multiple QPs or as a result of a derivation with a single QP dominating the highest *wh*-word.

The empirical description of Intervention effects is the following. The well-formed German multiple *wh*-question (60a) becomes unacceptable when the *wh*-in-situ appears below negation, as in (60b):

(60) a. *Wer*$_1$ hat Hans *wo*$_2$ angetroffen? (*German*)
who has Hans where met
'Who met Hans where?'
b. ?? *Wer*$_1$ hat <u>niemanden</u> *wo*$_2$ angetroffen?
who has nobody where met
'Who met nobody where?' [from Cable 2010:122]

On the other hand, in English standard, non-D-linked multiple *wh*-questions do not exhibit sensitivity to Intervention effects. As shown in (61a), the in-situ *wh*-item can appear within the scope of negation. In contrast, as first observed by

Pesetsky (1987), the English D-linked *wh*-questions do show sensitivity to Intervention effects with Superiority-violating orders, as illustrated in (61b):

(61) a. *Who*$_1$ didn't read *what*$_2$? (*English*)
b. * *Which book*$_2$ didn't *which person*$_1$ read? [from Pesetsky 2000:60]

Cable relates this puzzle to the number or Q-particles and generalizes the attested differences as follows:

(62) *Correlation between Superiority and Intervention effects*
In any language L, the *wh*-in-situ in a multiple question of L is subject to Intervention Effects *iff* L is not subject to Superiority effects.
[from Cable 2010:132]

Following Beck (2006), Cable assumes that in multiple *wh*-questions Intervention effects arise when an intervener (i.e., a focus-sensitive operator such as negation) is placed between the in-situ *wh*-word and the interrogative head. Recall from the discussion in chapter 2 that, within Q-theory, the *wh*-words do not have quantificational force by themselves. In order to be interpreted by LF, they must appear within domain of a certain operator that regulates their semantics. In questions, they are c-commanded by a Q-particle which assigns them the interrogative value and then, through the help of Q, the *wh*-words can establish the semantic relation with C. Intervention effects appear if the *wh*-word is c-commanded by some focus-sensitive operator other than Q. For instance, negation behaves as an *offending operator*. The configuration resulting in an Intervention effect is represented below:

(63) *Configuration resulting in an Intervention effect*
[$_{CP}$ C [... Q [... offending operator $\underbrace{\text{[... [}wh\text{-word] ...]}}_{\text{no Q-particle}}$]]
[adopted from Cable 2010:127]

As shown in (63), the offending operator prevents the *wh*-in-situ from being bound by the interrogative C and getting semantic interpretation. In other words, the relation between C and the *wh*-in-situ is short-circuited by the semantic content of the intervener. As a consequence, the semantic derivation crashes and ungrammaticality arises.

Recall that Q-theory allows a multiple *wh*-question to contain fewer Q-particles than *wh*-words. Under Cable's (2007, 2010) proposal, the degraded status of the German multiple *wh*-question in (60b) is captured as in (64):

(64) *Intervention effect in German*

??[$_{CP}$ [$_{QP}$ Q *wer*]$_1$ hat $\underbrace{\textit{niemanden}\ [\ t_1\ [_{XP}\ \textit{wo}_2]}$ angetroffen]]

Intervention effect configuration

[adopted from Cable 2010:131]

In (64), the *wh*-in-situ *wo* 'where' has not been merged with a Q-particle, so it is vulnerable to the Intervention effect caused by negation, which is located between the *wh*-in-situ and C.[15] In contrast, the English non-D-linked question in (61a) does not show Intervention effects, because there is one Q-particle for each *wh*-word. Moreover, since every QP undergoes movement to the left periphery (although, the lower QP later is pronounced in its base position), in the syntactic and LF structures both QPs end up higher than negation. Consequently, the Intervention effects are absent. The correspondent derivation of the English question in (61a) is represented below:

(65) [$_{CP}$ [$_{QP}$ Q *who*$_1$] [$_{QP}$ Q *what*$_2$] [did*n't* bought ... t_1 ... t_2 ...]] (*English*)

The diagram in (66) summarizes the main points of Cable's Q-theory regarding the established correlation between Superiority and Intervention effects in multiple *wh*-questions:

(66) a. *Multiple QPs: Superiority effects, no Intervention effects* (*English*)
[$_{CP}$ [$_{Spec,CP}$ [$_{QP}$ Q *wh*$_1$] [$_{QP}$ Q *wh*$_2$]] C [... *offending operator* ... t_1 ... t_2 ...]]

b. *Single QP: Intervention effects, no Superiority effects* (*German*)
*[$_{CP}$ [$_{Spec,CP}$ [$_{QP}$ Q *wh*$_2$]] C [... *offending operator* ... $\underbrace{[_{XP}\ \textit{wh}_1]}$ ... t_2 ...]]

no Q-particle

Let me conclude the two previous subsections by summarizing the main points of Q-theory with respect to Superiority. The interaction between Superiority and Intervention effects relies crucially on the number of Q-particles merged into the tree. Superiority effects arise in multiple *wh*-questions, in which every *wh*-item is dominated by a QP. In this case, all QPs undergo multiple internal Merge to the

[15] According to Cable, the same structure underlies the English D-linked Superiority-violating question in (61b). For a detailed analysis, the reader is referred to Cable (2007, 2010).

left periphery of the sentence, obeying the initial c-command relation (in other words, they 'tuck in'). Languages resorting to this pattern of movement typically exhibit Superiority effects, but fail to show Intervention effects. In contrast, if a multiple *wh*-question contains only one QP —which can dominate either the highest of the lower *wh*-constituent—, such question will not show sensitivity to Superiority violations, but will exhibit sensitivity to Intervention effects.

However, it is worth noting that Cable's formulation of the Q-theory has been designed to capture the data from English and German, languages, in which only one *wh*-phrase is pronounced at the leftmost position in a clause. What about MWF languages, then? Can Q-theory account for the MWF phenomenon and the differences between Russian and Bulgarian? These questions are addressed in the follows of this section.

4.3. Superiority and Intervention effects in MWF languages

In this dissertation I adopt Cable's (2007, 2010) insight that presence or absence of Superiority effects depends on how many QPs there are in a derivation of a multiple *wh*-question. More precisely, Superiority and Intervention effects are closely related to whether every *wh*-phrase is c-commanded by a QP projection or not. To advance the outcome of the next chapter, I will argue that Bulgarian and English questions, which require Superiority-obeying order, are similar in that their corresponding derivations contain multiple QPs, one for every *wh*-word. On the other hand, I will propose that Russian *wh*-questions, which allow both Superiority-obeying and Superiority-violating orders, share a common property with German *wh*-interrogatives and English D-linked questions: their derivations contain only one QP.

However, let us first briefly consider whether Q-based theory, in its original formulation (Cable 2007, 2010), predicts the MWF phenomenon. At a first sight, the general pattern of formation of multiple *wh*-questions in Bulgarian seems to follow straightforwardly from Q-theory. Bulgarian is similar to English in that both are sensitive to Superiority violations and do not exhibit Intervention effects:

(67) a. *Koj*$_1$ *kogo*$_2$ (*ne*) celunal? (*Bulgarian*)
who.NOM who.ACC NEG kissed
'Who did(n't) kiss whom?'
b. **Kogo*$_2$ *koj*$_1$ (ne) celunal?
who.ACC who.NOM NEG kissed

On the one hand, the insensitivity to negation in (67a) is captured by postulating that the question contains multiple QPs, which undergo multiple Superiority-

satisfying movement into the CP layer. As a result, both *wh*-containing QPs appear above negation, so that Intervention effects do not arise. Observe that the question in (67b) is ungrammatical not because of the Intervention effects, but because of the Superiority violation, similarly to the English question **What₂ didn't who₁ buy*?.

On the other hand, it seems plausible to claim that the only difference between Bulgarian and English is that the PF rule in (53c) (repeated below for the reader's commodity) holds only for the latter, but not for the former language:

(53) c. *PF rule (parameterized for English)*
Pronounce the highest QP in CP in its new position, and the rest of QPs in their base positions.

Another way to achieve the same result is to postulate a different PF rule for Bulgarian, in the spirit of Pesetsky (2000): all QPs must be pronounced in their new position in the CP domain.

However, if we simply apply Q-theory to the MWF phenomenon, certain questions remain unresolved. For instance, Russian multiple *wh*-questions constitute a potential problem for Q-theory (see also Appendix A). As discussed, Russian multiple *wh*-questions allow for both Superiority-obeying and Superiority-violating orders, and negation only affects the grammaticality of a sentence when appearing above the lower *wh*-item. Concerning the correlation between Superiority and Intervention effects in multiple *wh*-questions, consider the following example (the context is provided):

(68) (Context: I know that Boris is generally very frank with Masha and Irina, his close friends. The two girls have certain failings, which Boris does not like, but he has never mentioned them.)

a. *Komu₁ o čjom₂* nikogda ne govoril Boris? (*Russian*)
who.DAT about what.PREP never NEG said Boris
'Who did Boris never said about what?'

b. *O čjom₂ komu₁* nikogda ne govoril Boris?
about what.PREP who.DAT never NEG said Boris

c. ??*Komu₁* nikogda *o čjom₂* ne govoril Boris?
who.DAT never about what.PREP NEG said Boris

d. ??*O čjom₂* nikogda *komu₁* ne govoril Boris?
about what.PREP never who.DAT NEG said Boris

On the one hand, the availability of Superiority-obeying and Superiority-violating orders, in (68a) and (68b) respectively, is captured straightforwardly in terms of a single QP dominating a single *wh*-word and pied-piping it into CP. Such view is corroborated by the fact that the negative operator *never* is allowed to follow the fronted *wh*-cluster, as in (68a,b), but it cannot be placed between the *wh*-words, as in (68c,d). Within Q-theory, the oddness of (68c,d) follows from the Intervention effect created by the offending operator on the lower *wh*-word. The configuration resulting in an intervention effect is represented below, for (68c) and (68d) respectively:

(69) *Intervention effect in Russian specific multiple questions*

a. ??[$_{CP}$ [$_{QP}$ Q *Komu*$_1$] *nikogda* [t$_2$ [$_{XP}$ *o čjom*$_2$] ne govoril Boris]]?

Intervention effect configuration

b. ??[$_{CP}$ [$_{QP}$ Q *O čjom*$_2$] *nikogda* [[$_{XP}$ *komu*$_1$] t$_2$ ne govoril Boris]]?

Intervention effect configuration, (74)

The reader is invited to confirm that the structures in (69) are very reminiscent of the Intervention effect configuration proposed for German in (64). The only difference is that the lower, 'offended' *wh*-phrase does not remain in-situ in Russian.

However, precisely this difference is a crucial one, as it brings up a puzzling challenge for the Q-based theory under its current formulation. On the one hand, if we assume that Russian multiple *wh*-questions possess only one QP, we correctly predict the lack of Superiority effects and sensitivity to Intervention effects. Unfortunately, then we fail to explain why the *wh*-phrase, which is not dominated by a QP, does not (and, actually, cannot) remain in-situ. Assuming that *wh*-movement is a secondary effect of QP-movement, fronting of the *wh*-item which is not dominated by any QP contradicts the core of the Q-based analysis. What is the force driving such movement? In a sense, at this point Q-theory faces a similar problem as all previous accounts that we considered earlier in this chapter.

To conclude, the MWF phenomenon does not easily follow from Q-based theory, at least in its original formulation. In the next chapter I will propose a formal solution to this and other puzzles regarding the MWF phenomenon.

5. Summary and conclusions

In this chapter, we saw that in MWF languages like Russian and Bulgarian all *wh*-phrases must undergo overt movement to the left edge of a clause, both in single and multiple *wh*-questions. However, the two Slavic languages, although superficially very similar, exhibit different behavior with respect to several phenomena such as Superiority effects or whether the *wh*-cluster can be interrupted by certain intervening material, among others. The data suggest that in Bulgarian both *wh*-phrases are housed at the same syntactic projection, CP, while in Russian one *wh*-phrase is located in CP and the rest are fronted to some lower position, inside the IP-level. However, then a question arises on what forces the *wh*-words to undergo the IP-internal Ā-movement.

We also saw that the MWF phenomenon does not easily follow from the Q-based theory in its current formulation. So far, the same mystery remains: what forces the *wh*-words to undergo movement into the IP level? We saw that previous proposals on Russian multiple *wh*-questions were neither able to provide a satisfactory answer to this puzzle. How can we capture the MWF phenomenon under Q-theory? In the next chapter I will develop a revised version of Q-theory. Namely, I will propose some modifications which will enable the Q-based analysis to capture the MWF phenomenon, on the one hand, and, on the other, to account for the relevant parametric differences between Russian and Bulgarian and their relation to other *wh*-fronting languages.

Appendix A
Superiority effects in Russian *wh*-questions: data

In this appendix, I would like to consider one of the most well-known properties of Russian multiple questions, namely, the free ordering of the fronted *wh*-items. As is standardly assumed (and as is discussed throughout this chapter), Russian multiple *wh*-questions behave differently with respect to Superiority from their Bulgarian counterparts (see Stepanov 1998; Strahov 2001; Bošković 2002a, Dyakonova 2009, among many others).

First, let us consider Bulgarian. As reported in Krapova & Cinque (2008), Bulgarian *wh*-questions tend to obey a strict hierarchy of the *wh*-items, which is represented in (70):

(70) *Hierarchy of wh-words in Bulgarian*

koj > *kogo* > *na kogo* > *koga* > *kŭde* > *kakvo/kolko* > *kakvo/na kolko* > *kak*

who whom to whom | when where | what/how many | what/to how many | how

+human > adjuncts > subject +/–human > object +/–human > adjunct

[adopted from Krapova & Cinque 2008:324]

As follows from (70), both *wh*-arguments and *wh*-adjuncts are subject to strict word ordering in Bulgarian.[16] In addition to the examples considered throughout this chapter, the examples below, taken from Krapova & Cinque's work, illustrate the strict *wh*-hierarchy:

(71) a. *Kogo*$_1$ *na kogo*$_2$ šte predstaviš? (*Bulgarian*)
who.ACC who.DAT will introduce.2SG
'Whom will you introduce to whom?'
b. **Na kogo*$_2$ *kogo*$_1$ šte predstaviš?
who.DAT who.ACC will introduce.2SG
[from Krapova & Cinque 2008:177]

(72) a. *Na kogo*$_1$ *koga*$_2$ šte se obadiš? (*Bulgarian*)
who.DAT when will call.2SG
'Who will you call when?'
b. **Koga*$_2$ *na kogo*$_1$ šte se obadiš?
when who.DAT will call.2SG [from Krapova & Cinque 2008:176]

[16] Notice that the proposed hierarchy is quite complex and takes into account various different parameters such as animacy, case, argument structure, etc.

(73) a. *Koga*$_1$ *kŭde*$_2$ šte hodiš tova ljato? (*Bulgarian*)
when where will go.2SG this summer
'When will you go where, this summer?'
b. **Kŭde*$_2$ *koga*$_1$ šte hodiš tova ljato?
where when will go.2SG this summer
[from Krapova & Cinque 2008:174]

Crucially, if we try to apply this hierarchy to Russian, it becomes clear that both Superiority-obeying and Superiority-violating orders are possible in this language, as opposed to Bulgarian:

(74) a. *Kogo*$_1$ *komu*$_2$ ty predstaviš'? (*Russian*)
who.ACC who.DAT you will.introduce.2SG
'Whom will you introduce to whom?'
b. *Komu*$_2$ *kogo*$_1$ ty predstaviš'?
who.DAT who.ACC you will.introduce.2SG

(75) a. *Komu*$_1$ *kogda*$_2$ ty pozvoniš'? (*Russian*)
who.DAT when you will.call.2SG
'Who will you call when?'
b. *Kogda*$_2$ *komu*$_1$ ty pozvoniš'?
when who.DAT you will.call.2SG

(76) a. *Kogda*$_1$ *kuda*$_2$ ty poedeš'? (*Russian*)
when where you will.go.2SG
'When will you go where?'
b. *Kuda*$_2$ *kogda*$_1$ ty poedeš'?
where when you will.go.2SG

It is worth noting, however, that, despite the apparent free ordering of the *wh*-words, there is a general preference for Superiority-obeying questions over Superiority-violating ones among Russian speakers, as it has been sometimes reported in the literature (e.g. see Rudin 1996; Meyer 2004). Moreover, some speakers simply do not accept Superiority-violating questions when those are uttered 'out of the blue'.

Capturing intuitions about acceptability of both orders under certain contexts can be very difficult, as speakers' intuitions become fragile in this area. However, making relevant distinctions in the semantic acceptability could be

helpful when developing a syntactic proposal. Unfortunately, context-sensitivity of available orders is generally omitted in the relevant literature.

More precisely, here I would like to highlight that Superiority-violating questions generally require a special previous context, which renders the meaning of the structurally higher *wh*-phase, the wh_1, being common for both speaker and hearer. In other words, in Superiority-violating structures the wh_1 is D-linked in some sense (see Pesetsky 1987, 2000) and remains below the wh_2, which stands for an unknown set of entities.[17] Here I will refer to this reading as 'specific'. To make this point clearer, consider the following examples:[18]

(77) (Context: I know that two of my students, Ivan and Boris, are going somewhere for vacations, each one to a different place, but I don't know where they will go exactly.)

a. *Kto*$_1$ *kuda*$_2$ poedet? (*Russian*)
who.NOM where will.go
'Who will go where?'

b. *Kuda*$_2$ *kto*$_1$ poedet?
where who.NOM will.go

In (77), the speaker can identify the participants (Ivan and Boris), but ignores the destination. Therefore, the wh_1 is specific, as it stands for a known set of entities, while the wh_2 is unknown for both speaker and hearer. Observe that such

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[17] Gillian Ramchand through personal communication suggests that it is possible that specific *wh*-words constitute in Russian the same phenomenon as the D-linked *wh*-phrases in English. Observe, however, that the specific *wh*-words I am dealing with here are different from the D-linked (complex) *wh*-phrases considered by Pesetsky (1987, 2002). As illustrated below, in Russian, the regular D-linked *wh*-phrases like *kakoj mal'čik* 'which boy' can remain in-situ, while this is not possible with the *wh*-word like *kto* 'who' (under more or less unmarked contexts), as in (77).

(i) a. *Kuda* poedet *kakoj mal'čik*?
where will.go which boy.NOM
'Where will go which boy?'

b. * *Kuda* poedet *kto*?
where will.go who.NOM
'Who will go where?'

I will address a question on how the *wh*-in-situ option is derived in *wh*-fronting languages in chapter 5.

[18] In this discussion, I ignore another type of interpretation, under which both *wh*-items designate some known set of entities. In fact, such questions could be taken as false interrogatives, in the sense that there is no actual speaker's ignorance behind them, which a true question always seeks to reduce. I leave such constructions for future research.

contexts allow both Superiority-obeying, (77a), and Superiority-violating, (77b), orders. For instance, the multiple questions in (77) can be paraphrased by a single *wh*-question as below, in which the known set (the participants) is designated by a distributive phrase *každyj iz nix* 'each of them.NOM', while the interrogative *wh*-pronoun states for the unknown set (the destination). However, the general meaning of the question remains unchanged (*cf.* (77)):

(78) a. Každyj iz nix *kuda* poedet? (*Russian*)
each of them where will.go
'Where will each one go?'
b. *Kuda* každyj iz nix poedet?
where each of them will.go

That is, if a *wh*-word designates a known set of entities in a question, it acts as a distributive universal quantifier over an established set of entities (see Strahov 2001). In order to complete her knowledge about the destination, the speaker can ask a distributive binary question as in (77), with any ordering of the multiple *wh*-items. However, consider now another example:

(79) (Context: I know that some of my students will go for vacations to London, while others will go to Paris; but I ignore who exactly will go to which place.)
a. *Kto*$_1$ *kuda*$_2$ poedet? (*Russian*)
who.NOM where will.go
'Who will go where?'
b. ? *Kuda*$_2$ *kto*$_1$ poedet?
where who.NOM will.go

In (79), the speaker can identify the destination (Paris and London), but she ignores the participants. As opposed to (77b), in which the *wh*$_2$ *kuda* 'where' designates the unknown set, in (79b) the *wh*$_2$ has specific reading and sounds odd at the leftmost position. Therefore, the *wh*$_1$, which states for the unknown set in the above context, cannot remain below the specific *wh*$_2$. That is, we see that Superiority-violating orders become odd if the *wh*$_2$ occupying the leftmost position is specific, while the inner *wh*$_1$ is unspecific.

Finally, if both *wh*-words in a binary question stand for unknown sets, such contexts generally require a Superiority-obeying order. This is illustrated below:

(80) (Context: I know that my students will go somewhere for vacations, but I don't know who will go where.)

a. *Kto*$_1$ *kuda*$_2$ poedet? (*Russian*)
who.NOM where will.go
'Who will go where?'

b. ? *Kuda*$_2$ *kto*$_1$ poedet?
where who.NOM will.go

In (80), both variables are unknown, so that both *wh*-words are interrogative, in the sense that they seek to reduce speaker's ignorance. In this case, the Superiority-violating order in (80b) is infelicitous.[19] The generalization of these facts can be formulated as follows:

(81) *Correlation between Superiority effects and interpretation in Russian*
Superiority-violating order ($wh_2 > wh_1$) is allowed only if the wh_2 is unspecific, i.e., it designates an unknown set of entities both for speaker and hearer, the wh_1 being specific. Superiority-obeying order ($wh_1 > wh_2$) is required when either both *wh*-items are unspecific or when the wh_1 is unspecific and the wh_2 is specific.

To sum up, the ordering of the fronted *wh*-phrases in Russian seems to be constrained by interpretive rules related to the discourse salience. Generally, the existing literature on Superiority effects in Russian (and Bulgarian) ignores the interpretational differences between the two available orders of the fronted *wh*-words. I am aware that the reported judgements are very subtle and are quite difficult to test and describe. And, of course, a much more extensive research is required, which I leave for future.

Nevertheless, keep the generalization in (81) in mind. I will come back to this issue in the next chapter, when developing a syntactic account for the Russian pattern of *wh*-movement. I suggest that the analysis I propose can also capture the attested semantic differences.

[19] For similar judgements, see also Liakin (2005). The author claims that questions as in (77), in which the structurally lower wh_2 designates the unknown set, obligatorily trigger a Superiority-violating order. As the reader may observe, my data coincide with this claim only partially. On the other hand, see Strahov (2001), who argues that the D-linked *wh*-phrase must always be the leftmost one in the *wh*-cluster. Again, my own judgements and the judgements of the consulted speakers contradict this intuition: if the wh_2 is specific, it cannot violate Superiority; however, if it designated an unknown set, as opposed to the wh_1, then Superiority violation is allowed. Moreover, these intuitions may be subject to speaker variation.

CHAPTER 4

What moves where in Russian? Rethinking Q-theory

1. Introduction

In this chapter, I will propose some additions to the original Cable's (2007, 2010) Q-based theory, in order to enable it to capture the MWF phenomenon observed in Slavic languages. Importantly for Russian data, one of the advantages of Q-theory is that it does not presuppose any correlation between Superiority effects and existence of syntactic *wh*-movement in a language (*cf.* Stepanov 1998; Bošković 2002a; Scott 2001 and others). Nonetheless, as discussed earlier, Russian data present a challenge to Q-theory when it comes to reconciliation between insensitivity to Superiority violations and obligatory *wh*-fronting of all *wh*-words in a multiple question.

As argued in the previous chapter, Q-based theory seems to face the same problem as other previous approaches to the MWF phenomenon in Russian *wh*-questions. Following original Cable's (2007, 2010) insight, I suggest that derivations of Bulgarian multiple *wh*-questions contain multiple Q-particles, one for every *wh*-word. As a consequence, multiple QPs are projected and undergo multiple internal Merge to the CP domain and, as a result, a Superiority-obeying question necessarily arises. On the other hand, I assume that derivations of Russian multiple *wh*-questions have only one QP, dominating either the highest *wh*-word or the lower one. If Q is merged with the highest *wh*-element, we obtain a Superiority-obeying order, and if Q selects the lower *wh*-phrase as its sister, a Superiority-violating order arises. I argued that there is no true violation of Superiority in the latter type of Russian questions; rather, the structurally higher *wh*-word has no need in moving into the CP layer, as it lacks the uninterpretable Q-feature.

If this view is on track, something must be said about whether there is any independent evidence for the existence of (multiple) Q-particles in Bulgarian, apart from a purely theoretical presupposition. As well, it must be explained why in Russian a *wh*-phrase which are not dominated by any QP still undergo overt movement to some preverbal position (which must be identified as well).

In sum, one might wonder whether there is something special about Slavic languages, where all *wh*-words —either dominated by a QP or not— obligatorily undergo movement to the left of a multiple question. Why such movement is

available in Slavic, but not in other *wh*-fronting languages? Is there any particular projection sandwiched between CP and TP, which is exclusively dedicated to host the fronted *wh*-phrases in MWF languages (similar to Bošković's 1997a *et seq.* FocusP or Uriagereka's 1995b FP)? Another way of thinking is that Slavic languages can make use of a certain functional A-position within the IP-level, which for some reason can additionally host Ā-items. We need an account that, on the one hand, uniformly predicts the puzzling properties of *wh*-movement in Russian and, on the other, accounts for the similarities and differences between the two Slavic languages. These and other questions will be considered in this chapter.

The chapter is organized as follows. In section 2, I discuss some issues concerning the interrogative Q-particle in Slavic languages, such as placement of Q inside the QP projection, its phonological content (if any), further movement and its relation to other phenomena such as left branch extraction, etc. In section 3, I propose that interrogative C is endowed with a set of features related to *wh*-movement. In section 4, I argue that in Slavic languages *v*P phase extends to AspP, a parametric option which crucially relies on obligatory *v*-to-Asp verb movement. In section 5, I consider the last step, namely, QP-movement into the CP layer. In section 6, I outline the final derivation for multiple *wh*-questions in Russian and Bulgarian, assuming the previously discussed issues. In section 7, I address some particular predictions made by our Q-based theory with respect to multiple *wh*-questions in Russian, such as adverb placement inside the *wh*-cluster (if allowed), subject position, Intervention effects, *wh*-extraction from embedded clauses, among others. In section 8, I discuss multiple *wh*-questions through the prism of Q-movement and phase extension and draw a direction for deriving a parameter hierarchy for *wh*-movement across languages. Section 9 concludes this chapter.

2. Q-particle in Slavic

As already discussed, with Cable (2007, 2010), I assume that Superiority emerges when the derivation contains more than one Q-particle, i.e., one Q for every *wh*-word. In Q-projecting languages, it means that a Superiority-sensitive structure contains multiple QPs. In contrast, if there is only one Q-particle for multiple *wh*-elements, only one QP will be projected and the resulting structure will not exhibit sensitivity to Superiority violations.

Regarding different sensitivity to Superiority effects between Russian and Bulgarian, I propose that the two languages differ with respect to the number of Q-particles merged in the derivation of a multiple *wh*-question. In Bulgarian

multiple *wh*-questions, there is one Q-particle for every *wh*-word; hence, Superiority obligatorily arises. In contrast, in Russian *wh*-questions only one Q-particle enters the derivation and merges with one of the *wh*-words; a Superiority-violating order is derived. However, is there any empirical evidence for the existence of Q-particles in the Slavic languages under consideration? In what follows of this section, I argue that placement of the interrogative marker *li* provides a fruitful testing ground for our Q-based theory.

2.1. The interrogative marker *li*

Li appears in interrogative constructions of most south Slavic languages (Bulgarian, Macedonian and Serbo-Croatian)[1] and also in Russian *yes/no*-questions. Primarily, *li* is used in polar questions (see Franks & King 2000; Bošković 2001a,b, among others), where it follows the fronted constituent: either the finite verb, as in (1), or a focused item, as in (2). When *li* is adjoined to a non-verbal constituent (e.g. NP), (2b), the question gets a different interpretation from the one in (1). For instance, in (1b), the speaker asks about the whole predicate (*Does Anna read the book?*), while in (2b), the speaker focuses her interest on a particular constituent, the one followed by *li* (*Is it a book that Anna reads?*):[2]

(1) a. Čete li knige? (*Bulgarian*)
reads Q books
'Is he/she reading books?' [from Bošković 2001a:211]

b. Čitaet li Anna knigu? (*Russian*)
reads Q Anna the.book
'Does Anna read the book?'

[1] Here the label "Serbo-Croatian" covers Serbian, Croatian and Bosnian languages.

[2] In Russian, the presence of *li* in *yes/no*-questions obligatory triggers interrogative verb movement, both in root and embedded clauses, as shown in (ia). Another strategy of *yes/no* question-marking is through the help of the interrogative intonation. In the latter case, *li* is phonetically null and the verb does not undergo obligatory fronting, as in (ib):

(i) a. (Ivan interesuetsja) čitaet li Anna knigu. (*Russian*)
Ivan is.interested reads Q Anna the.book
'Ivan wonders whether Anna reads the book'

b. Anna pročitala (*li) knigu?
Anna has.read Q book
'Has Anna read the book?'

(2) a. Knige li čete nejnata majka? (*Bulgarian*)
books Q reads her mother
'Is it books that her mother is reading?' [from Bošković 2001a:197]
b. Knigu li čitaet Anna?
book Q reads Anna
'Is is a/the book that Anna reads?'

When used in *wh*-questions, *li* adds an emphatic force to the question's interpretation (notice, however, that *li* must be null in Russian *wh*-interrogatives):

(3) a. *Koj* (li) kupuva kolata? (*Bulgarian*)
who.NOM Q buys car
'Who the hell is buying the car?'
b. *Kto* (*li) kupil mašinu? (*Russian*)
who.NOM Q bought car
'Who bought the car?'

In what follows, I restrict my attention to the fronted nominal constructions with *li*, such as in (2) and (3). Adopting Cable's (2007, 2010) insights, I assume that the fronted constituents appear at the left edge of a clause as a result of Q-movement into the CP level from their base position, in which they have been merged with a Q-particle. I argue that the interrogative Q has two allomorphs in the lexicon of Russian and Bulgarian: a phonetically realized Q, [li], and a phonetically null one, [Ø] (see also Grebenyova 2004). In Russian *wh*-questions, as opposed to Bulgarian ones, Q must be phonetically null, perhaps due to some PF constraint. Therefore, within Q-theory, the structure of a single *wh*-question like (3) might be as in (4) (see also chapter 2):

(4) a. $[_{CP}\ [_{QP}$ *Koj* li/Ø$]_i$ [t_i kupuva kolata]]? (*Bulgarian*)
who Q buys car
'Who the hell is buying the car?'
b. $[_{CP}\ [_{QP}$ *Kto* Ø$]_i$ [t_i kupil mašinu]]? (*Russian*)
who Q bought car
'Who bought the car?'

Additionally, it is worth noting that the interrogative marker *li*/Ø fulfills a number of specific properties established for (Q-)particles across languages (see Bailey 2010; Biberauer & Sheehan 2011 and others). Namely, *li*/Ø meets the a number of features of particles: typically (a) particles constitute a closed lexical

class; (b) they are often stressless or may be phonologically null; (c) they lack descriptive content; (d) they are invariant in form; (e) they are typically monosyllabic; (f) they are sensitive to sentence type, among other properties (for a full list and discussion, see Bailey 2010).

With respect to the focused interpretation of the fronted constituents followed by *li*, I agree with Grebenyova (2004:13), who claims that "this additional semantic property of *li* should not prevent us from analyzing it as a legitimate Q-morpheme, for such 'fusion' of functional and lexical semantic material is a common property of Slavic languages (e.g. aspectual prefixes carrying additional lexical meaning along with grammatical information)".

Importantly, Bulgarian offers an interesting piece of evidence that our Q-based analysis of *li*/Ø is on track. Consider the following Bulgarian multiple *wh*-questions:

(5) a. *Koj* *kogo* obica? (*Bulgarian*)
who.NOM who.ACC loves
'Who loves who?'

b. *Koj* li *kogo* obica?
who.NOM Q who.ACC loves

c. ? *Koj* li *kogo* li obica? (R. Pancheva, A. Markova, p.c.)
who.NOM Q who.ACC Q loves

d. ? *Koj* *kogo* li obica? (R. Pancheva, A. Markova, p.c.)
who.NOM who.ACC Q loves

While multiple *wh*-questions like (5a) and (5b) have been widely attested in the literature and are preferred, the questions in (5c) and (5d) have not been previously reported, to the best of my knowledge. However, as pointed out by Roumiana Pancheva and Angelina Markova through personal communication, such constructions are allowed in Bulgarian, although marginally. As is obvious, the sentences in (5b,c) challenge any theory of Bulgarian multiple *wh*-questions that analyzes *li* as an overt realization of the interrogative C (see King 1994; Rudin 1993; Rudin, King & Izworski 1998; Rudin *et al.* 1999, Bošković 2001a, 2002a and others).

Consider, for instance, Bošković's (2001a) analysis, which incorporates both syntactic and phonological factors. Under this approach, non-*li*-questions like (5a) are derived differently than questions with *li* like (5b). According to Bošković, if a question does not contain *li*, it means that the C level has not been projected and the fronted *wh*-phrases are located somewhere below CP (presumably, in FocusP). In contrast, following Rudin (1988) and Rudin *et al.* (1999), Bošković argues that

in questions like (5b) the *wh*-elements are fronted to CP at the syntactic level, leaving their copies below in the structure. Thus, the syntactic structure of the question in (5b) is represented in (6a): all *wh*-words precede the interrogative complementizer *li* at the syntactic level. However, according to Bošković, this derivation is independently ruled out at the PF level, by a particular phonological requirement on *li*, which forces this element to occupy the second position in a clause. So, in order to satisfy the PF rule, a lower copy of one of the fronted *wh*-items is pronounced, as shown in (6b):[3]

(6) a. Syntax: *[$_{CP}$ *Koj* *kakvo* [$_{C}$ li kupuva]]?
who.NOM what.ACC Q buys
'Who on earth is buying what?'

b. Phonology: [$_{CP}$ *Koj* ~~*kakvo*~~ [$_{C}$ li *kakvo* kupuva]]?

[from Bošković 2001a:212-213]

On the one hand, the analysis in (6) correctly rules out Superiority-violating orders in Bulgarian and, on the other, correctly predicts the word order in (5b). However, such view cannot account uniformly for *li*-questions, (5c,d), and non-*li*-questions, (5a). In particular, the example in (5c) results quite problematic for any analysis considering *li* as an interrogative complementizer, because it forces us to postulate wrongly that the question has two C heads. Finally, the grammaticality of (5d) is also unexpected, since *li* following the *wh*-cluster violates the PF rule (*cf.* (6b)). In contrast, our Q-based approach, which postulates that there is one Q-particle for every *wh*-item in Bulgarian multiple questions, uniformly accounts for the whole set of the puzzling data and correctly rules out the Superiority-violating orders. Therefore, I suggest that the sentences in (5) are derived along the lines sketched in (7):

(7) a. [$_{QP}$ *Koj*$_1$ Ø] [$_{QP}$ *kogo*$_2$ Ø] obica t_1 t_2?
who.NOM Q who.ACC Q loves

b. [$_{QP}$ *Koj*$_1$ li] [$_{QP}$ *kogo*$_2$ Ø] obica t_1 t_2?

c. ? [$_{QP}$ *Koj*$_1$ li] [$_{QP}$ *kogo*$_2$ li] obica t_1 t_2?

d. ? [$_{QP}$ *Koj*$_1$ Ø] [$_{QP}$ *kogo*$_2$ li] obica t_1 t_2?

[3] Bošković (2001a) avoids speculating on the exact location of the lower copy of the second *wh*-word in (6b).

In (7a), both Q-particles are phonetically null, as opposed to (7c), in which both Qs are phonetically realized as *li*. In (7b) and (7d) only a single Q is overtly realized: the highest one in the former and the lower one in the latter.[4]

In the following subsections, I show that our Q-based account not only sheds light on the behavior of the interrogative clitic *li*, but also provides a unified account of puzzling and apparently unrelated set of data observed in some Slavic languages. In particular, I argue that there can be drawn a parallel between placement of *li* in the fronted NPs and extraction out of NPs, and that the attested parametric variation naturally follows from the proposed analysis. Furthermore, this approach offers a contribution to the existing raging debate in the literature regarding clitic placement, which might be constrained by different reasons: (i) purely syntactic (e.g. Roberts 1994, 2010; Martins 1994, 2000; Dimitrova-Vulchanova 1995; Uriagereka 1995a; Progovac 1996; Rivero 1997; Franks 1997, 1998, 1999; Raposo 2000; Raposo & Uriagereka 2005), (ii) purely prosodic (e.g. Radanović-Kocić 1996), or (iii) both syntactic and prosodic (e.g. Halpern 1995; Embick & Izvorski 1997; King 1996; Bošković 2001a,b).[5] My analysis is an argument in favor of that at least placement of the interrogative clitic *li* is accomplished syntactically.

2.2. The enclitic nature of Slavic Q

Crucially, the Q-particle *li* is enclitic, as suggested by the fact that it cannot occur in initial position: neither in *yes/no* nor in *wh*-questions. This is illustrated by (8a) and (8b) respectively:

(8) a. *Li pridjot Anna na prazdnik? (*Russian*)
Q will.come Anna to party
'Will Anna come to the party?'

b. *Li *koj* kupuva kolata? (*Bulgarian*)
Q who.NOM buys car
'Who buys the car?'

Notice that *li*'s enclitic nature is unexpected under the original formulation of Q-theory (Cable 2007, 2010), which predicts that in head-initial languages Q has

[4] I suggest that the marked status of the questions in (7c) and (7d) might be result of a PF constraint: it has a preference for overt realization of a single Q (if any), and, moreover, for overt realization of the highest Q. I am aware that this suggestion is stipulative and requires a detailed research, which I leave for future.

[5] For a detailed overview and discussion of different views on clitic placement, the reader is referred to Bošković (2001a).

to precede the *wh*-word it is merged with. For instance, this prediction is borne out in Edo, a head-initial Niger–Congo language, in which the interrogative particle *dè* precedes the *wh*-word:

(9) a. Dè *ọ̀mwàn* nè Adésúwà bọ́!ọ́? (*Edo*)
Q who that Adesuwa comfort
'Who did Adesuwa comfort?'
b. Dè *èmwìn* nè Òzó há!é Úyì rè?
Q what that Ozo pay Uyi it
'What did Ozo pay Uyi?' [from Baker 1999, cited from Cable 2010:104]

Given that Slavic languages are also head-initial, we would expect the Q-particle to precede its sister. Moreover, this expectation is borne out in languages like Polish, Belarusian and Ukrainian, which lack the interrogative marker *li*, but instead make use of *czy*, *ci* and *čy* respectively. As shown in (10), in these languages the Q-particle also appears clause-initially:

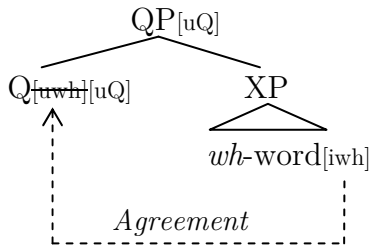
(10) a. Czy się nie przeliczyłe-ś? (*Polish*)
Q REFL NEG miscounted.M-aux.2SG
'Haven't you miscounted?'
b. Ci ne xoladna tabe? (*Belarusian*)
Q NEG cold to.you
'Aren't you cold?'
c. Čy ty tam buv? (*Ukrainian*)
Q you there was
'Where you there?' [from Franks & King 2000:156,194)

Nevertheless, in other Slavic languages like Bulgarian, Serbo-Croatian and Russian the Q-particle *li*/*Ø* is enclitic.[6] So, our theory must be able to account for the puzzling fact that Q projects a head-final QP structure in head-initial languages.

[6] As reported in Bailey (2010), the second position requirement on Q-particles is not too rare across languages (see also Dryer 2008b):
(i) a. me-ne fugis? (*Latin*)
I.ACC-Q flee.2SG
'Is it me you are running away from?' [Virgil, Aeneid 4.314, cited from Bailey 2010:26]
b. sataa-ko ulkona? (*Finnish*)
rains-Q outside
'Is it raining?' [from Bailey 2010:26]

First, as discussed in chapter 2, I assume that in *wh*-fronting languages (including Slavic) the Q-particle must undergo agreement with a *wh*-word it immediately c-commands (see Cable 2007, 2010), which is accomplished in the following way. With Cable (2007, 2010), I take Q as being endowed with two features in *wh*-fronting languages: [Q] and [wh] (for discussion, see chapter 2). I propose that in all languages Q-morpheme bears an unvalued instance of the Q-feature ([uQ]), which is the trigger of interrogative movement into CP. In addition, I believe that in *wh*-fronting languages Q and the *wh*-word establish certain syntactic (and semantic) relation at their base position. Namely, Q-particle is endowed with an unvalued instance of the *wh*-feature ([uwh]), which must be checked against some interpretable instance of this feature by LF. The only logical bearer of the interpretable instance of the *wh*-feature is the *wh*-word itself. As a consequence, once Q is merged with a *wh*-item, the [uwh] on the former is checked and deleted through upward *wh*-agreement. The structure in (11) represents a general picture of Q/*wh*-agreement in *wh*-fronting languages:

(11)



Secondly, following a large amount of literature on Slavic clitics (e.g. Franks & Progovac 1994; Roberts 1994; King 1994, 1996; Rivero 1997; Franks 1998, 2000; Franks & King 2000, Bošković 2001a,b and others), I assume that in Slavic languages like Bulgarian, Serbo-Croatian and Russian the Q-particle is specified as an enclitic, or a second position particle. However, I argue that *li* occupies the enclitic position in the course of syntactic derivation.

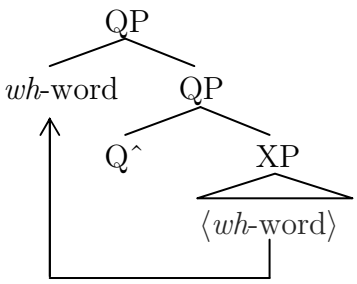
Namely, I propose that the head-final QP structure is derived via roll-up movement at the base position, i.e., leftward movement of the complement to the specifier of the selecting head (see Holmberg 2000; Julien 2002; Adger, Harbour & Watkins 2009). I argue that in Slavic Q is endowed with a linearization (or PF-legible) diacritic ˆ (see Biberauer & Sheehan 2001; Biberauer, Newton & Sheehan 2009; Biberauer, Holmberg & Roberts 2009, 2014; Bailey 2010, among others).[7]

[7] Roll-up movement, which I assume here, therefore violates anti-locality (*cf.* Pesetsky & Torrego 2001; Abels 2003; Grohmann 2003a, 2011, among others). However, following Biberauer, Holmberg & Roberts (2009, 2014), I assume that this movement-trigger is very different from formal features involved in Agree operations (e.g. φ-features, *wh*-features, etc.); e.g. it cannot be

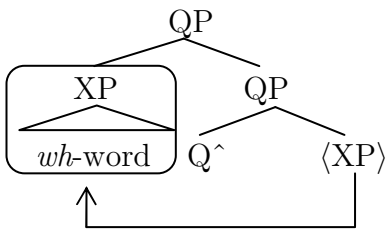
This movement-trigger is relevant for the PF interface and, when endowed with a lexical head Q, signals a need for roll-up movement of the sister of Q and thereby produces a head-final structure with a complement-head order.

Observe that our account predicts that in languages, in which Q-particle carries a linearization diacritic (Q^), the projected Q can attract to its specifier either the *wh*-word alone or the whole *wh*-containing constituent XP. These options are illustrated in (12a) and (12b) respectively:

(12) a.



b.



The analysis in (12) correctly predicts the following Bulgarian facts: *li* can be either encliticized to the leftmost constituent of fronted phrase or to the whole phrase. In (13), this is shown for the fronted NP:

(13) a. [*Novata* li kola]$_i$ prodade t$_i$? (*Bulgarian*)
new Q car sold new car Q sold
'Was it the new car that he/she/you sold?'

b. [*Novata kola* li]$_i$ prodade t$_i$?
new car Q sold [from Bošković 2001a: 227,232]

Likewise, in *wh*-questions *li* can either follow the *wh*-adjective, as in (14a), or the whole *wh*-containing NP, as in (14b):

(14) a. [*Cija* li kola]$_i$ xaresva Petko t$_i$? (*Bulgarian*)
whose Q car likes Petko
'Whose car does Petko like?'

b. [*Cija kola* li]$_i$ xaresva Petko t$_i$?
whose car Q likes Petko [from Bošković 2001a:228]

Interestingly, however, the ordering patterns as in (13b) and (14b) (corresponding to the structure in (12b)) are not allowed in Serbo-Croatian and Russian. In these

valued and has no semantic effects. Therefore, it does not mean that anti-locality does not hold for Agree-related movement (see Abels 2003). I assume that this linearization diacritic has an effect at PF.

languages, when the fronted phrase comprises more than one element, the Q-particle obligatorily follows the first word, as in (15a) and (16a). Constructions, in which the Q-particle follows the whole fronted element, result ungrammatical in these languages, as shown in (15b) and (16b):

(15) a. [*Interesnuju* li knigu]$_i$ ty čital t$_i$? (*Russian*)
interesting Q book you read
'Did you read an interesting book?'
b. *[*Interesnuju knigu* li]$_i$ ty čital t$_i$?
interesting book Q you read

(16) a. [*Čiju* li ženu]$_i$ (Petar) voli t$_i$? (*Serbo-Croatian*)
whose Q wife Peter loves
'Whose wife does Peter love?'
b. *[*Čiju ženu* li]$_i$ (Petar) voli t$_i$?
whose wife Q Peter loves [from Bošković 2001a:27]

Now, consider the examples in (17), illustrating the so-called *left branch extraction* phenomenon (LBE; since Ross 1967; see also Uriagereka 1988; Corver 1992; Bošković 2005a,b, 2009; Cable 2007, 2010 and others). Observe that while in Serbo-Croatian and Russian it is possible for *wh*-adjectives to be extracted out of NPs, as shown in (17a) and (17b) respectively, the same is not true for Bulgarian, as in (17c):

(17) a. *Čiju*$_i$ li Petar [$_{NP}$ t$_i$ ženu] voli? (*Serbo-Croatian*)
whose.ACC Q Peter wife.ACC loves
'Whose wife does Peter love?' [from Bošković 2001a:28]
b. *Kakuju*$_i$ ty čital [$_{NP}$ t$_i$ knigu]? (*Russian*)
which.ACC you read book.ACC
'Which book did you read?'
c. *Kakva$_i$ prodade Petko [$_{NP}$ t$_j$ kola]? (*Bulgarian*)
which.ACC sold Petko car.ACC
'What kind of a car did Petko sell?' [from Bošković 2001a:228]

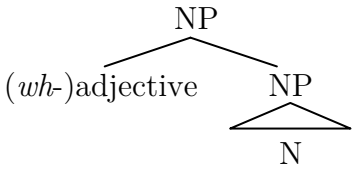
In the following subsection, I develop an analysis which captures the parametric variation regarding the placement of *li* within the fronted NP-constituents. I also show how the attested patterns are related to whether a language allows for LBE out of NPs or not.

2.3. Placement of *li* and left branch extraction

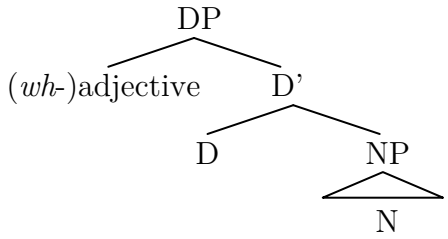
I argue that the differences between Slavic languages, which we discussed so far, do not constitute a challenge for our Q-theory, but rather follow from it straightforwardly. Adopting the main insights of certain already established analyses of nominal structures in Slavic languages (see below), I suggest that the portion of material which can be triggered out of NPs crucially depends on the internal structure of NPs projected in a language. Since the latter phenomenon exhibits parametric variation, the former does so as well. Furthermore, I argue that the analysis in (12) allows us to draw a parallel between the data in (13-16) and the phenomenon of LBE in (17). Namely, I show that those languages, in which the roll-up movement of the whole *wh*-/focused-NP is prohibited, do allow LBE. In contrast, languages in which the whole complex sister of Q can be attracted to its specifier do not allow LBE.

Let us first consider the differences between Slavic languages concerning LBE. It has been widely observed in the literature that languages in which LBE is allowed lack overt articles (see Uriagereka 1988; Bošković 2005a,b, 2009 and others). For instance, Bošković (2005a) proposes that LBE is constrained by the internal structure of NP. According to Bošković, in languages in which LBE is allowed the *wh*-/focused-adjectives are adjuncts to NP. Otherwise, if the adjective is a specifier of a functional projection DP, LBE is disallowed. In other words, languages with a NP-structure as in (18a) should permit LBE, as opposed to the languages, which resort to the structure in (18b):

(18) a. *LBE is allowed*

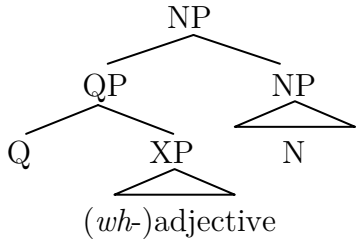


b. *LBE is disallowed*



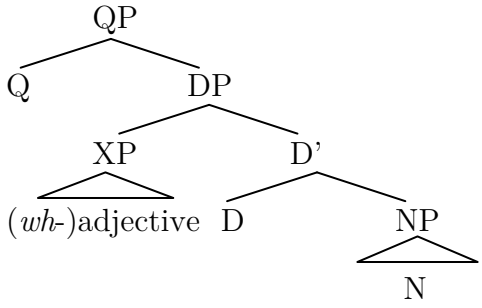
Cable (2007, 2010), assuming Bošković's insight, suggests a Q-based account of LBE. According to the author, in languages with the nominal structure as in (18a), a Q-particle can intervene between the *wh*-adjective and the *lexical* projection NP, because the former, being an adjunct, is not properly contained within NP. The Q-intervention is illustrated in (19):

(19) *Q selects XP as a complement, (18a)*

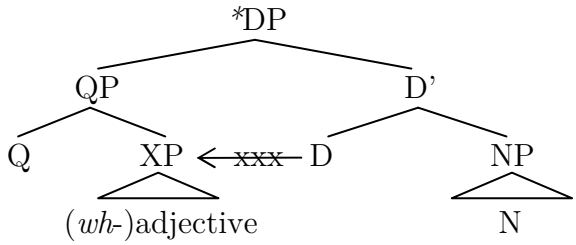


While the QP-construction in (19) is allowed in languages resorting to (18a), it is banned from languages with the nominal structures as in (18b), in which the *wh*-adjective is the specifier of the *functional* projection DP. As argued in Cable (2010:57), "a QP cannot intervene between a functional head F and a phrase selected by F". In these languages, the Q-particle can be merged only with the whole *wh*-containing DP, as illustrated in (20), but cannot intervene between D and XP selected by D, (21):

(20) *Q selects DP as a complement, (18b)*



(21) **QP intervenes between D and XP selected by D, (18b)*

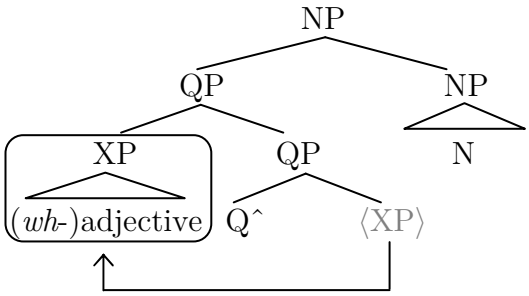


Thus, Cable's proposal captures the fact that Russian and Serbo-Croatian allow for LBE, (17). However, no specific prediction is made on the Bulgarian data in (13-16). Below I show that these facts naturally follow from the structures in (19-21).

On one hand, following Bošković (2005a), I assume that Serbo-Croatian and Russian have their NP-structure as in (18a). On the other hand, with Cable (2007, 2010), I assume that these languages allow for Q-intervention as in (19), where Q

merges with XP containing the *wh*-adjective (XP being an adjunct to NP and not a specifier of a functional DP). As a result, the linearization diacritic ˆ on Q triggers roll-up movement of Q's sister to the specifier and the resulting QP projection dominates Q and XP. This is illustrated in (22):

(22) *QP-structure leading to LBE in Russian and Serbo-Croatian*



Consequently, when QP moves up into CP and pied-pipes the *wh*-adjective, NP projection remains in-situ. So, the structure in (22) accurately accounts for the following Serbo-Croatian and Russian questions with LBE and also for placement of the clitic *li*/Ø within the fronted phrase:

(23) a. [$_{QP}$ *Čiju*$_i$ li t$_i$]$_k$ Petar [$_{NP}$ t$_k$ ženu] voli? (*Serbo-Croatian*)
whose.ACC Q Peter wife.ACC loves
'Whose wife does Peter love?'

b. [$_{QP}$ Skupe$_i$ li t$_i$]$_k$ Ana [$_{NP}$ t$_k$ knjige] čita?
expensive.ACC Q Ana books.ACC reads
'Does Ana read expensive books?'

(24) a. [$_{QP}$ *Čju*$_i$ Ø t$_i$]$_k$ ty čital [$_{NP}$ t$_k$ knigu]? (*Russian*)
whose.ACC Q you read book.ACC
'Whose book did you read?'

b. [$_{QP}$ Interesnuju$_i$ li t$_i$]$_k$ ty čital [$_{NP}$ t$_k$ knigu]?
interesting.ACC Q you read book.ACC
'Did you read an interesting book?'

Regarding the impossibility of LBE in Bulgarian, I propose the following. Adopting Bošković's (2005a) and Cable's (2007, 2010) insights, I assume that this language projects a functional DP projection, as in (18b). As a result, Q never can intervene between the functional head D and its specifier (see (21)), but rather Q c-commands the whole DP (see (20)). Hence, QP-movement into CP

will pied-pipe the entire DP projection. Therefore, our analysis in (20) predicts that Bulgarian disallows LBE of adjectives:

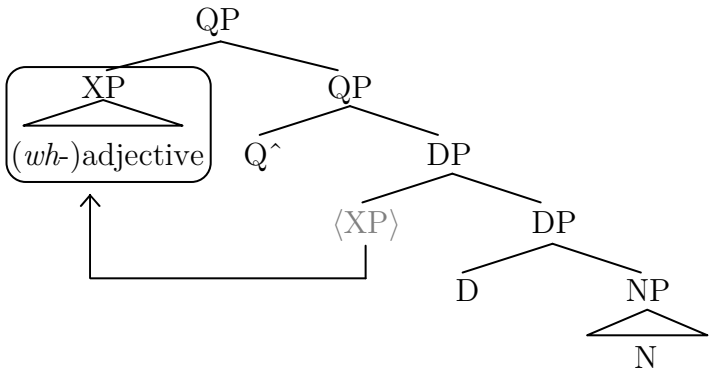
(25) a. *[$_{QP}$ [$_{DP}$ *Kakva*] Ø]$_i$ prodade Petko [$_{DP}$ t$_i$ kola]? (*Bulgarian*)
which.ACC Q sold Petko car.ACC
'What kind of a car did Petko sell?'
b. *[$_{QP}$ [$_{DP}$ *Čija*] Ø]$_i$ xaresva Petko [$_{DP}$ t$_i$ kola]?
whose.ACC Q likes Petko car.ACC
'Whose car does like Petko?'

Now let us turn to the placement of *li*/Ø inside the fronted nominal constituents, which is closely related to the LBE phenomenon we discussed above. In order to account for the attested variation between different Slavic languages, I adopt the main arguments of Bošković's (2005a) proposal, represented in (18), and propose to capture the parametric variation in terms of internal structure of NP.

Consider again the structure in (20) for Bulgarian, in which Qˆ is merged with DP and projects a QP layer, dominating both Qˆ and its sister. Observe that (20) predicts that interrogative Q-movement into CP will obligatorily pied-pipe the whole DP in Bulgarian. But what does the structure in (20) tell us regarding the roll-up movement of the complement of Qˆ?

As shown in (12), there are in principle two possible options with respect to how much material can be rolled-up into the specifier of QP (prior to interrogative movement into CP). I argue that in Bulgarian both options, (12a) and (12b), are available. Consider the first option, when the movement diacritic ˆ on Q attracts to its specifier only XP (the specifier of DP). The resulting QP-structure is represented in (26):

(26) *Q-particle follows the first DP-constituent (Bulgarian)*



I argue that the QP-structure in (26) underlies the Bulgarian questions in (13a) and (14a), in which the Q-particle *li* follows the leftmost constituent of the

fronted DP, the *wh-*/focused-word (as expected under (26), QP-movement into CP pied-pipes the whole DP):

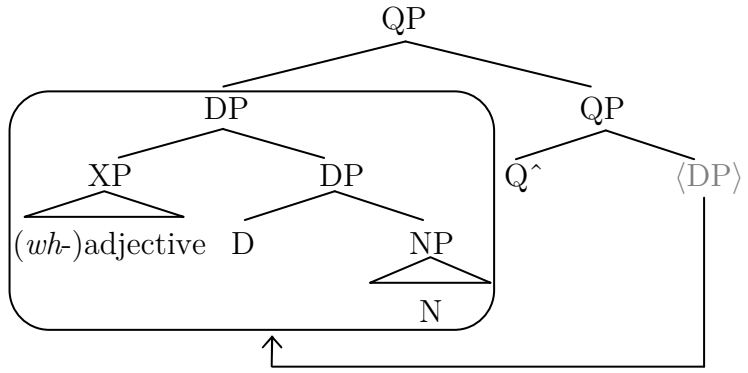
(27) a. $[_{QP}$ *Čija*$_i$ li $[_{DP}$ t_i kola$]]_k$ xaresva Petko t_k? (*Bulgarian*)
whose Q car likes Petko
'Whose car does Petko like?'

b. $[_{QP}$ *Kakva*$_i$ li $[_{DP}$ t_i kola$]]_k$ prodade Petko t_k?
what.kind Q car sold Petko
'What kind of a car did Petko sell?'

c. $[_{QP}$ Novata$_i$ li $[_{DP}$ t_i kola$]]_k$ prodade t_k?
new Q car sold
'Was it the new car that he/she/you sold?

In contrast, when Q^ triggers roll-up movement of the whole DP projection, we obtain the QP-structure as in (28). This representation, I argue, underlies the derivation of the Bulgarian interrogatives in (13b) and (14b), in which the Q-particle follows the fronted DP. As expected, the latter moves to the CP level as a result of being contained inside QP. For reader's convenience, the relevant Bulgarian derivations are repeated in (29):

(28) *Q-particle follows the whole DP (Bulgarian)*



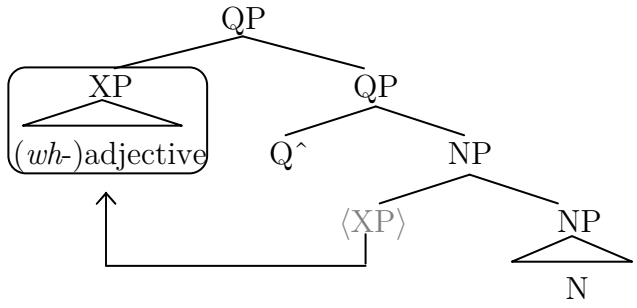
(29) a. $[_{QP}$ $[_{DP}$ *Čija* kola$]_i$ li $t_i]_k$ xaresva Petko t_k? (*Bulgarian*)
whose car Q likes Petko
'Whose car does Petko like?'

b. $[_{QP}$ $[_{DP}$ *Kakva* kola$]_i$ li $t_i]_k$ prodade Petko t_k?
what.kind car Q sold Petko
'What kind of a car did Petko sell?'

c. $[_{QP}$ $[_{DP}$ Novata kola$]_i$ li $t_i]_k$ prodade t_k?
new car Q sold
'Was it the new car that he/she/you sold?'

Turning back to Serbo-Croatian and Russian, recall that I assume that these languages have their NP-structure as in (18a), where XP is adjunct to NP. As a result, NP does not properly contain XP. Suppose that Q selects as a sister the whole NP projection. Since NP does not properly contain the (*wh-*)adjunct, Q^ cannot attract the whole NP to its specifier, but rather triggers movement of the (*wh-*)adjunct alone. This is represented in (30) below:

(30) *Q-particle follows the first NP-constituent (Serbo-Croatian, Russian)*



However, since QP projection dominates NP, we expect that QP-movement will pied-pipe the whole NP, but *li*/Ø will follow the leftmost constituent of the fronted phrase. Therefore, the structure in (30) correctly predicts that questions like (15b) and (16b), in which *li* follows the whole fronted phrase, are disallowed in Serbo-Croatian and Russian. Only questions like (15a) and (16a), in which *li* is a second-position clitic, are allowed. The resulting well-formed questions are represented below:

(31) a. $[_{QP}$ *Čiju*$_i$ li $[_{NP}$ t_i ženu$]]_k$ (Petar) voli t_k? (*Serbo-Croatian*)
whose Q wife Peter loves
'Whose wife does Peter love?'

b. $[_{QP}$ Skupe$_i$ li $[_{NP}$ t_i knjige$]]_k$ (Ana) cita t_k?
expensive Q books Ana reads
'Does Ana read expensive books?'

(32) a. $[_{QP}$ *Čju*$_i$ Ø $[_{NP}$ t_i knigu$]]_k$ ty čital t_k? (*Russian*)
whose Q book you read
'Whose book did you read?'

b. $[_{QP}$ Interesnuju$_i$ li $[_{NP}$ t_i knigu$]]_k$ ty čital t_k?
interesting Q book you read
'Did you read an interesting book?'

Notice that the attested parametric variation in the placement of the clitic *li* challenges, for instance, Bošković's (2001a,b, 2002a) analysis (see also section 2.1). As already discussed, the author argues that the second position of the interrogative clitic *li* (an overt realization of an interrogative complementizer) is achieved at the syntax-phonology interface. Namely, the clitic and its host placement are derived through syntactic movement, but the second-position effect on *li* is the result of application of a particular rule at PF, which requires *li* to be second in a clause. The general idea behind this view is that lexical items, when they move in the syntactic component, leave copies behind them (see also Chomsky 1993; Nunes 1995, 1998, 1999; Bošković & Nunes 2007). Once the derivation is transferred, PF can act as a filter on the output of the syntactic component and decide which copy to pronounce. Particularly, according to Bošković, the second-position requirement on *li* forces the lower copies of the fronted elements to be pronounced. To illustrate this point, consider again the Serbo-Croatian example in (31a), where *li* follows the first constituent of the fronted NP. On Bošković's (2001a) proposal, the second position of *li* in (31a) is derived in two steps, sketched in (33):

(33) a. Syntax: *[$_{CP}$ *Čiju* ženu [$_{C}$ li [~~čiju ženu~~ (Petar) voli [~~čiju ženu~~]]]?
whose wife Q Peter loves
'Whose wife does Peter love?'

b. Phonology: [*Čiju* ~~ženu~~ li [~~čiju~~ ženu (Petar) voli [~~čiju ženu~~]]]
[adopted from Bošković 2001a:27]

In (33a), which corresponds to the syntactic level, the NP *čiju ženu* 'whose wife.ACC' fronts to Spec,CP, leaving two copies behind it: one at the argument position and another one somewhere below CP. However, since (33a) leads to a phonological conflict, violating the PF constraint on *li*, the derivation is rescued by PF deletion of N and pronunciation of a lower copy, (33b).

However, as noticed by Bošković (2001a) himself, the analysis in (33) fails to capture the whole set of Bulgarian data. Namely, under (33) the well-formedness of the Bulgarian questions in (29), where *li* follows the entire DP, is unexpected, because it violates the PF requirement.[8]

Let me conclude this section by claiming that our Q-based account uniformly predicts the attested parametric differences concerning the placement of the Q-particle in Slavic languages. Furthermore, it allows us to connect these

[8] Alternatively to the PF approach, Bošković (2001a) suggests that *li* can be considered as a focus particle added to the focused elements, which, in turn, move into CP for focus-checking reasons. For details of this alternative analysis, I refer the reader to Bošković (2001a).

data with an apparently unrelated phenomenon such as LBE. Moreover, I provided certain empirical evidence for existence of Q-particles in the Slavic languages under consideration, arguing that Q can be phonetically null or realized as *li*. With this conclusion in mind, let us turn back now to multiple *wh*-questions.

3. On different types of the interrogative C head in multiple *wh*-questions

As previously discussed, the Russian pattern of MWF does not easily follow from Cable's (2007, 2010) Q-theory in its original formulation. The fact that Russian lacks Superiority effects, but exhibits MWF results particularly challenging. Therefore, some modifications are needed in order to enable the theory to capture uniformly the MWF phenomenon.

With Cable (2007, 2010), I assume that the only properly *interrogative* movement allowed in a language is *Q-movement*. However I depart from Cable suggesting that *all* interrogative elements in a multiple *wh*-question must be related to C. What kind of relation is that?

As discussed, the interrogative C head is endowed with a Q-feature, which forces movement of a Q-particle (and of a QP, when projected). If there are multiple QPs, a particular C head is merged into the derivation (labeled by Cable as C_{Q2}). C_{Q2} contributes multiple existential quantifiers into the meaning of the question, so both QPs are visible to the corresponding syntax through Q-agreement (see chapter 3 for discussion). This is illustrated in (34):

(34) *Multiple wh-question with multiple QPs: Superiority effects*

a. Q-particles are distributed; one Q is merged with every *wh*-word:
[$_{v\text{P}}$ [$_{\text{QP}}$ Q *wh*$_1$] *v* [$_{\text{QP}}$ Q *wh*$_2$]]

b. QPs undergo multiple internal Merge to Spec,CP:
[$_{\text{CP}}$ [$_{\text{QP}}$ Q *wh*$_1$]$_{[\text{uQ}]}$ [$_{\text{QP}}$ Q *wh*$_2$]$_{[\text{uQ}]}$ C$_{[\text{iQ}]}$ … [$_{v\text{P}}$ t$_1$ t$_2$ *v* …]]]

c. C and QPs undergo multiple Q-agreement:
[$_{\text{CP}}$ [$_{\text{QP}}$ Q *wh*$_1$]$_{\sout{[\text{uQ}]}}$ [$_{\text{QP}}$ Q *wh*$_2$]$_{\sout{[\text{uQ}]}}$ C$_{[\text{iQ}]}$ … [$_{v\text{P}}$ t$_1$ *v* t$_2$]]]

However, if a single Q has been merged with only one *wh*-containing XP in a multiple question, a particular type of the interrogative C head is projected (which Cable labels as C_{Q+}). However, unlike C_{Q2}, C_{Q+} can bind only one Q-particle and, hence, establishes a Q-feature-checking relation with only one QP. Consequently, an XP which has not been merged with any Q remains in-situ.

Notice, however, that, although there is no syntactic relation between C and a *wh*-containing XP within Cable's system, the latter is still visible to the corresponding semantics. How is that possible?

As argued in Cable (2010:129), C_{Q+} shares with C_{Q2} "the property of introducing multiple existential quantifiers into the meaning of the *wh*-question". However, unlike C_{Q2}, the meaning of C_{Q+} "already contains the choice function variable bound by one of those quantifiers" (Cable *ibid.*). From a syntactic point of view, I reinterpret this semantic suggestion as that one Q-particle is merged together with a single *wh*-containing XP in its argument position, but there is a second Q-particle, which is merged directly with C_{Q+}. This is represented below:

(35) *Multiple wh-question with a single QP: no Superiority effects*

a. Q-particles are distributed; Q_1 is merged with XP, Q_2 is merged with $C_{(+Q)}$:
$[_{CP}\ Q_2{+}C_{[iQ]}\ [_{vP}\ [_{QP}\ Q_1\ wh_1]\ [_{XP}\ wh_2]_{[iwh]}]$

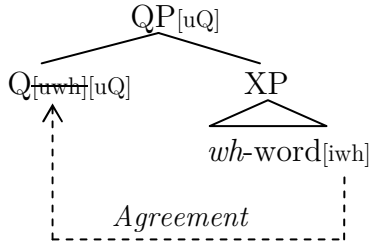
b. QP undergoes internal Merge to Spec,CP:
$[_{CP}\ [_{QP}\ Q_1\ wh_1]\ Q_2{+}C_{[iQ]}\ \ldots\ [_{vP}\ t_1\ [_{XP}\ wh_2]_{[iwh]}]$

c. C and QP agree:
$[_{CP}\ [_{QP}\ Q\ wh_1]_{\sout{[uQ]}}\ Q_2{+}C_{[iQ]}\ \ldots\ [_{vP}\ t_1\ [_{XP}\ wh_2]_{[iwh]}]$

The derivation in (35) maintains the important prediction of Cable's theory regarding multiple *wh*-questions with a single QP: such questions do not exhibit Superiority effects. Only the *wh*-word contained within a single QP (either wh_1 or wh_2) will appear at the left edge of a multiple *wh*-question, while the *wh*-phrase not dominated by this single QP will remain in-situ. But what consequences does the distribution of multiple Q-particles, (35), have for Russian?

Recall from chapter 2 the assumption that in *wh*-fronting languages a Q-particle, in addition to the Q-feature, is also endowed with an uninterpretable instance of the *wh*-feature. A Q-particle, which is merged with a *wh*-word, can check its *wh*-feature through local agreement, as shown in (11) (repeated below for convenience):

(11)



On the other hand, I argue that the second Q-particle, which is merged directly with C_{Q+}, contributes its [uwh] feature to the hosting head. As a result, the interrogative C_{Q+} is finally specified with a set of features: [iQ] and [uwh]. In other words, I propose that in Russian multiple questions, the interrogative head acts both as a *Q*-probe and a *wh*-probe. This idea is represented below:

(36) *Multiple wh-question with a single QP* (*Russian*)
$[_{CP}\ Q_2{+}C_{[iQ][uwh]}\ [_{vP}\ v\ [_{QP}\ Q_1\ wh_1]_{[uQ]}\ [_{XP}\ wh_2]_{[iwh]}\ ]$

Thus, I depart from Cable (2007, 2010) by assuming that *every wh*-constituent in the derivation of a multiple *wh*-question must be bound by C. The uninterpretable *wh*-feature allows the interrogative head to establish a syntactic relation with all elements bearing the matching interpretable *wh*-feature.

In fact, the additional *wh*-probe on C is not novel in the literature: already in Chomsky's (2000) standard probe-goal system, C is claimed to have a set of two features, [Q] and [wh].[9] Essentially, the *wh*-probe on C supplies a significant missing piece in Cable's Q-based theory. The *wh*-probe on C allows for all interrogative phrases in a question to undergo syntactic agreement and, hence, trigger interrogative semantics.

As discussed in chapter 2, I assume that the interpretable Q-feature on C is responsible for the interrogative clause-typing and acts as an operator assigning scope to the variable, Q (or QP). I maintain that interrogative movement to the left periphery of a question is always a result of Q-feature checking operations in the CP domain. Unlike the Q-feature, the *wh*-feature on C cannot trigger interrogative movement into CP.

In turn, I assume that [uwh] on C is valued via *wh*-agreement against the matching goal, *wh*-word, in a unidirectional upward manner. In multiple *wh*-questions with a single QP, the interpretable *wh*-feature on a *wh*-phrase contained within this single QP is deeply embedded (*cf.* (11)). Hence, it is not visible to the *wh*-probe on C. However, there will always be a visible instance of the matching *wh*-feature on the unbound XP phrase. This is illustrated below:

(37) $[_{CP}\ Q_1{+}C_{[iQ][uwh]}$ … $[_{vP}\ [_{QP}\ Q_2\ [_{XP}\ wh_1]]_{[uQ]}\ [_{XP}\ wh_2]_{[iwh]}\ ]$
Wh-agreement

[9] See also Kotek (2014a), who argues in favour of a two-probe system, although on independent grounds. Namely, the author observes that Cable's (2007, 2010) single-probe proposal cannot capture the pattern of multiple *wh*-questions in Hebrew.

I assume that *wh*-agreement is subject to locality, which means that the *wh*-words must be visible to C, a point to which I will come back in the next section.

To summarize, it is worth noting that, despite this minimal modification —a *wh*-probe on C in some types of multiple *wh*-questions—, I maintain Cable's original idea that the only properly interrogative movement allowed in a language is Q-movement. This modification perfectly fits into the unidirectional upward agreement system adopted in this work (Bošković 2007a, 2011). Neither [iQ] nor [uwh] features on C can trigger interrogative movement. Rather, the interrogative Q-movement is initiated by the moving-element itself. In the case of QPs, it is its own formal imperfection, [uQ]. But why the unbound XP still has to undergo movement in Russian? I address this question in the next section.

4. AspP as an escape hatch for Q/*wh*-movement

In this section I develop a mechanism on how a *wh*-word which is not dominated by any QP undergoes Agree with the *wh*-probe on C in Slavic. Moreover, I consider whether in Slavic languages *wh*-items move to the left edge of a clause directly from *v*P or whether such movement passes through some intermediate positions.

As discussed earlier, interrogative *wh*-movement is a movement of a QP phrase dominating a *wh*-word, which is driven by the Q-feature. The fact that Russian multiple *wh*-questions are insensitive to Superiority effects suggests that the corresponding derivation contains a single QP. However, in this language even the *wh*-items non-dominated by any QP seem to undergo partial *wh*-fronting from their argument position to a higher position, sandwiched between *v*P and CP. Therefore, our analysis must identify the landing site of such *wh*-fronting, as well as its driving force. We should also ask whether *all* types of *wh*-containing phrases, XPs and QPs, pass through this intermediate projection in Slavic.

To advance the final outcome of this section, I argue that in Russian *wh*-movement proceeds successive cyclically, through the edges of three phases: *v*P, AspP and CP. Therefore, the main aim of this section is to argue for a phasal status of AspP in Slavic. To illustrate my point, here I will mainly focus on Russian data, but the final conclusion can be also extended to Bulgarian (and, potentially, to other Slavic languages).

The fact that in Russian multiple questions all *wh*-items must appear at the left periphery, independently of whether they are dominated by a QP or not, suggests that these elements are forced to abandon the edge of *v*P for some

reason.[10] Moreover, the data indicate that in Russian multiple questions (as opposed to Bulgarian ones) the first *wh*-phrase and the rest of *wh*-elements occupy different syntactic positions: the former is in CP, while the rest does not move so high. In other words, something prevents a *wh*-word, which is not contained within any QP, from entering a long-distance *wh*-agreement with C from the edge of *v*P (*cf.* (37)). Consequently, the *wh*-words non-dominated by the single QP are forced to move to a higher position (below CP).

4.1. Phase extension: from *v*P to AspP

The aforementioned scenario leads to the following question: what does exactly force the *wh*-phrases to move from the edge of *v*P to some position below CP? I propose to solve this problem by building on a familiar idea that in Slavic languages the verb obligatorily moves from *v* to Asp (see Svenonius 2004a,c,d; Ramchand 2004; Dyakonova 2009; Bošković 2014, among others). Namely, I adopt the idea that *v*-movement results in the extension of "checking domains" (see Chomsky 1986, 1993, 1995a, 2014; Svenonius 2000; den Dikken 2007; Gallego 2007, 2010; Pesetsky 2007). Adopting Dyakonova's (2009) original suggestion, I argue that in the particular case of Russian, *v*-to-Asp verb movement can lead to the so-called *Phase Extension* (den Dikken 2007) or *Phase-Sliding* (Gallego 2007, 2010) from *v*P into AspP.

Under the standard view (since Chomsky 2000), the complement domains of the phase heads, *v* and C, become opaque for further operations as a result of being transferred to the external systems (PIC). Nevertheless, the aforementioned recent studies on phases (particularly, den Dikken 2007 and Gallego 2007, 2010) have argued that points of Spell-out are subject to parameterization: languages can differ with respect to what portion of the structure becomes a phase domain. The extension of *v*P's phasehood in a particular language is parasitic on head movement of *v* to a higher functional projection. Standardly, such movement is considered to take place from *v* to T (but see discussion below concerning Slavic languages).

The main idea is that when a phase head H moves and adjoins to a higher head Z (creating a complex head), it brings together with it its phasal properties. The exact consequence depends on the approach. Under den Dikken's (2007) view, the phase HP extends to ZP, since H keeps exhibiting its phasal characteristics in its derived position (see also Pesetsky 2007). Under Gallego's (2007, 2010) view, movement of H to Z leads to an additional application of Transfer: transfer of the

[10] I standardly assume that *wh*-phrases first are fronted to the edge of *v*P, in order to escape the domain of the phase and to be visible to the interrogative C.

complement of HP is followed by transfer of the complement of ZP. The two approaches are schematically represented below, in (38) and (39) respectively:

(38) *Phase Extension: phase Φ extends from HP to ZP (den Dikken 2007)*

a. $[_{ZP}\ Z\ [_{HP}\ H\ ]]$
Φ

b. $[_{ZP}\ [Z{+}H_i]\ [_{HP}\ t_i\ ]]$
Φ ← Φ

(39) *Phase Sliding: additional application of Transfer of HP's complement (Gallego 2007, 2010)*

a. $[_{ZP}\ Z\ [_{HP}\ H\ \boxed{[_{YP}\ ...]}]]$
Transfer

b. $[_{ZP}\ H_i/Z\ \boxed{[_{HP}\ t_i\ ]}]$
Transfer

Leaving aside some technical details, the reader may notice that both (38) and (39) lead to same result: the phase HP extends its phasal status to ZP. Subsequently, what used to be the edge of HP turns to the domain of the new extended phase ZP. This consequence will play an important role in the proposal I put forward, so keep it in mind.

Regarding the driving force of *v*-movement, here I adopt the general insight of Gallego's (2007, 2010) proposal for Romance NSLs and extend it to Slavic. As the author extensively argues (see also Gallego 2006), in Romance languages phase-head movement takes place from *v* to T and, as a consequence, TP becomes a phase. Gallego recasts previous Lasnik's (1999, 2003) hypothesis on two different types of T ("featural" (French) *vs.* "affixal" (English)), (40), and connects it with Solà's (1996) proposal of possible scenarios with respect to *v*-to-T movement across languages, (41):

(40) *Featural vs. Affixal T*

a. T is freely an affix or a set of abstract features.
b. Finite featural T is strong in both French and English.
c. Affixal T must merge with V, a PF process (distinct from head movement) demanding adjacency.

[from Lasnik 1999:105, Lasnik 2003:13, cited from Gallego 2007:103]

(41) *Possible scenarios for v-to-T movement*

a. V is inflected for tense, and there is overt movement (a copy of the verb is inserted in both T and V).

b. V is not inflected for tense because the tense morpheme is a free particle; there will be no movement of the verb to T; the free particle itself will be inserted under T.

c. There is no tense morpheme in the language, and there will be no movement either (possibly a null tense morpheme will be inserted in T). [from Solà 1996:229; cited from Gallego 2007:105]

As argued in Gallego, *v* is inflected for Tense in Romance. The author proposes that in Romance NSLs the functional heads C, T and *v* share the so-called *Tense feature* ([TNS]), which is distinct, for instance, from Pesetsky & Torrego's (2001, 2004, 2007) T-feature (see Gallego 2007:106 for discussion). On Gallego's view, C is endowed with a Tense-probe, which simultaneously matches T and *v* (via Multiple Agree of Hiraiwa's 2001, 2005 style; see chapter 3), as represented in (42a,b), raising the latter to the former, (42c):[11]

(42) *v-to-T Movement in Romance NSLs*

a. $[_{CP}\ C_{[TNS]} \quad [_{TP}\ T_{[TNSPresent]} \quad [_{vP}\ v_{[TNS]}]\ ]\ ]$

b. $[_{CP}\ C_{[TNSPresent]}\ [_{TP}\ T_{[TNSPresent]} \quad [_{vP}\ v_{[TNSPresent]}]\ ]\ ]$

c. $[_{CP}\ C_{[TNSPresent]}\ [_{v/TP}\ v/T_{[TNSPresent]} \quad [_{vP}\ v_{[TNSPresent]}]\ ]\ ]$

[adopted from Gallego 2007:108,115]

Recall from (42c) that *v*-to-T head movement creates a hybrid label, *v*/T, in accord with the labeling algorithm, argued for in Chomsky (2008a) (see also Donati 2006):[12]

[11] The analysis in (42) captures a well-known descriptive difference between the so-called "morphologically rich" languages (e.g. Romance, Slavic) and "morphologically poor" ones (e.g. English).

[12] Importantly, the assumption that head movement yields a hybrid label permits to avoid, in a certain sense, anti-locality worries: prior to *v*-to-T movement, the hybrid head *v*/T did not exist, so this operation cannot be accused of being vacuous. For discussion, see Gallego (2007).

(43) *Labelling algorithm*
   a. In {H, α}, H an LI, H is the label.
   b. If α is internally merged to β, forming {α, β}, then the label of β is the label of {α, β}. [from Chomsky 2008a:145]

Notice that, assuming the logic in (42), *v*-to-T head movement can be extended further to a more complex *v*-to-T-to-C movement, under appropriate circumstances (e.g. derivation of an interrogative clause; for discussion, see den Dikken 2007; Gallego 2007, 2010). I will come back to this point later in this chapter.

With this background in mind, let us go back to the main issue of this section, the phase-head verb movement in Russian (and Slavic in general). As in Chernova (2013d,e), here I want to extend Gallego's (2007, 2010) logic, arguing that in these languages *v* is not inflected for Tense, but rather for Aspect. Consequently, I propose that in Slavic languages, as opposed to Romance, the verb undergoes movement from *v* to Asp, rather than to T (see Svenonius 2004a,c,d; Ramchand 2004; Dyakonova 2009, among others). In fact, such view recasts a well-known fact about the richness of aspectual morphology in Slavic, as opposed to languages like English or Spanish, as I will discuss in the next section. It also allows us to account for the attested crosslinguistic variation by pursuing a radical version of the so-called *Borer-Chomsky conjecture* (see Baker 2008), under which phase heads are considered the locus of all parameters of variation (see Gallego 2007 for discussion).

If we assume that *v*-to-Asp phase head movement takes place in Slavic creating a hybrid label *v*/Asp, then extension of *v*P into *v*/AspP naturally follows. Before I start discussing my proposal on the phase extension in Slavic in more detail, let me first consider the key properties of Slavic aspect, which support our claim on *v*-to-Asp head movement in Slavic.

4.2. Syntax of Slavic aspect

Our proposal on the extension of *v*P into AspP reformulates in terms of phasehood a number of previous discussions about the properties of Slavic aspect (see Babko-Malaya 1999, 2003; Borik 2002, 2006, 2008; Borik & Reinhart 2004; Svenonius 2004a,c,d; Ramchand 2004 and many others). As is well-known, in Slavic languages, aspectual differences are encoded in verbal morphology, particularly, in a large number of aspectual prefixes.

For instance, Russian has a fairly simple system of tense and a quite complex system of aspect, in the sense that interpretation of the former is mostly determined by the latter. Consider the following examples:

(44) a. Ivan *čitaet* knigu. Present (*Russian*)
Ivan read.PRES.3SG book
'Ivan reads/is reading a book'

b. Ivan *čital* knigu. Past (imperfective)
Ivan read.PAST.3SG.MASC book
'Ivan read/was reading a book'

c. Ivan *pro-čital* knigu. Past (perfective)
Ivan PF.read.PAST.3SG.MASC book
'Ivan has read a book'

d. Ivan *pro-čitaet* knigu. Future (perfective, synthetic)
Ivan PF.read.PRES.3SG book
'Ivan will read a book'

e. Ivan *budet čitat'* knigu. Future (imperfective, analytic)
Ivan FUT.3SG read.INF book
'Ivan will read a book'

As the reader may observe, on the one hand, both tense and aspect systems in Russian are instantiated by a binary opposition: past *vs.* non-past opposition in the temporal domain ((44b,c) *vs.* (44a,d,e)) and perfective *vs.* imperfective opposition in the aspectual domain ((44c,d) *vs.* (44a,b,e)). Importantly, however, the whole tense system in Russian is aspectually constrained, in the sense that the aspectual prefixation affects the mechanisms of temporal interpretation (for discussion, see Borik 2002, 2008; Borik & Reinhart 2004). This point is illustrated in the table below:

(45) *Temporal/aspectual system in Russian*

Tense/Aspect	*Imperfective*	*Perfective*
past	čita-*l* read-SG.MASC	pro-čita-*l* PF-read-SG.MASC
non-past	čita-*et* read-3SG bud-*et* čitat' be-3SG read.INF	pro-čita-*et* PF-read-3SG

[from Borik & Reinhart 2004:14]

As illustrated in (45), Russian verbal morphology exhibits only one opposition in the temporal domain: past tense *vs.* non-past (unlike, for instance, in Romance languages, where past, present and future tenses are clearly distinguished from

each other through inflection). Interestingly, imperfective aspect allows for two non-past tense forms, a simple (*čitaet*) and a periphrastic (*budet čitat'*), while in the perfective aspect only one non-past tense form (*pročitaet*) can be derived.

Moreover, aspect not only determines the tense forms, but also restricts their interpretation. Namely, non-past imperfective forms allow for both present and future interpretations (*čitaet* and *budet čitat'* respectively), whereas non-past perfective forms (*pročitaet*) obligatorily trigger future interpretation. This is illustrated in (46): only the imperfective aspectual form can be used as a response to 'What are you doing now?' in (46a). This question requires an interpretation in present tense. So only (46b), with the imperfective verb form, is felicitous, whereas the perfective form results unacceptable in this context, as in (46c):

(46) a. Čto ty sejčas delaeš'? (*Russian*)
what.ACC you.NOM now do.IMP.PRES.3SG
'What are you doing now?'
b. Čitaju knigu.
read.IMP.PRES.1SG book
'I am reading a book'
c. *Pročitaju knigu.
PF-read.PRES.1SG book
'I will read a book' [from Borik & Reinhart 2004:14]

We can capture the "poorness" of Russian tense and "richness" of the aspectual morphology, in syntactic terms, as well as the fact that aspect constraints temporal interpretations. Namely, I propose that, unlike in Romance, Russian verb is inflected for Aspect and undergo *v*-to-Asp movement. Interestingly, Svenonius (2004c:6) reaches a similar conclusion, although on independent grounds, suggesting that the verb "remains relatively low" and "cannot move as high as T in Russian, nor in Slavic in general".

Svenonius (2004a,c) presents a different kind of evidence in favor of *v*-to-Asp movement in Slavic, focusing on the structural location of aspectual prefixes. As is well-known, aspectual prefixes in Slavic do not form a homogeneous class and are traditionally divided into two types: lexical (LP) and superlexical (SLP) (see Babko-Malaya 1999, 2003; Romanova 2004; Ramchand 2004, Svenonius 2004a,c). Both types of prefixes confer perfective aspect on imperfective verbs to which they attach. However, LPs and SLPs behave differently in several respects (here I restrict my attention to four of them).

First, LPs contribute spatial or idiosyncratic lexical meanings to the resulting verb, (47), whereas SLPs change the meaning of the resulting predicate

in a predictable way, similarly to quantizing adverbs (e.g. *one by one*, *for a while*, *a lot*, etc.) or aspectual verbs (e.g. *start, finish*, etc.), (48):

(47) a. *iz*-gnat'
LP-chase
'drive away'
b. *iz*-ložit'
LP-put
'put into words'
c. *iz*-dat'
LP-give
'publish' [adopted from Svenonius 2004a:232]

(48) a. *pere*-kidat'
SLP_{DSTR}-throw
'throw one by one'
b. *pere*-kusat'
SLP_{DSTR}-bite
'bite one by one'
c. *pere*-bit'
SLP_{DSTR}-beat
'beat one by one' [adopted from Svenonius 2004a:232]

Second, LPs can change the argument structure of a verb they attach to, as shown in (49). The LP prefix *pro-* 'about', when attached to the intransitive verb *ležat'* 'lay', forces it to take a direct object. In contrast, SLPs leave the argument structure unchanged, as shown in (50):

(49) a. Sobaka ležala (*odejalo).
dog lay blanket
'The dog lay (*the blanket)'
b. Sobaka *pro*-ležala *(odejalo).
dog LP-lay blanket
'The dog lay out the blanket' [adopted from Svenonius 2004a:216]

(50) a. Ivan čital (knigu).
Ivan read book
'Ivan read (a book)'
b. Ivan *po*-čital (knigu).
Ivan SLP$_{\text{DELIM}}$-read book
'Ivan read (a book) for a while'

Third, only LPs allow for formation of secondary imperfectives by attaching an imperfective suffix *-a-/-yva-* to a perfective form and turning it into imperfective, (51), whereas verbs modified with SLPs cannot form secondary imperfectives, (52):

(51) a. *iz*-brat' / *iz*-bir-*a*-t'
LP-take
'elect' (perfective/imperfective)
b. *za*-verit' / *za*-verj-*a*-t'
LP-trust
'confirm' (perfective/imperfective) [adopted from Svenonius 2004c:3]

(52) a. *za*-igrat' /**za*-igr-*yva*-t'
SLP$_{\text{INCEP}}$-play
'start to play' (perfective)
b. *po*-guljat' / **po*-gul-*iva*-t'
SLP$_{\text{DELIM}}$-walk
'walk for a while' (perfective) [adopted from Svenonius 2004c:3]

Finally, SLPs can co-occur with LPs, in which case the former must precede the later:

(53) a. *po-vy*-brasyvat' / **vy-po*-brasyvat'
SLP$_{\text{DSTR}}$-LP-throw
'throw out one by one' [adopted from Svenonius 2004a:207]
b. *na-vy*-dumyvat' / **vy-na*-dumyvat'
SLP$_{\text{CUM}}$-LP-think
'invent a lot'

These and other syntactic and semantic differences between the two classes of aspectual prefixes are captured by postulating that each type of prefixes is introduced in different levels of syntactic structure. It is widely-assumed in the literature that LPs originate VP-internally and are structurally lower than SLPs,

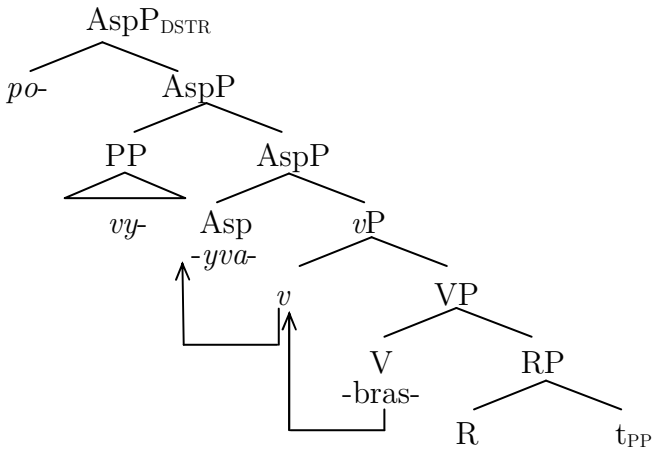
which attach to the verb at higher positions, i.e., outside VP (see Babko-Malaya 1999; Ramchand 2004; Svenonius 2004a,c; among others). The hypothesis of the VP-internal merge of LPs explains why such prefixes contribute idiosyncratic meanings, given the assumption that the VP domain is proper for idiom assignment (since Marantz 1984). The analysis also predicts the ability of LPs to change the argument structure of the verb. On the other hand, SLPs are taken to originate outside VP, within a domain relevant for quantification over the event, which explains their systematic adverb-like behavior.

Here I follow Svenonius' (2004a,c) analysis of Slavic prefixation, under which the locus of perfectivity is AspP, in the sense that Slavic prefixes add telicity and perfectivity to the constructions by being located within the AspP domain, either via internal or external Merge. According to Svenonius, LPs originate VP-internally and then undergo internal Merge to the left of the verb, namely to Spec,AspP. From that position LPs can take scope over the verb and contribute perfective meaning. In contrast, SLPs are generated outside VP, namely, at the outer Spec,AspP. This view captures the fact that SLPs always precede LPs when the two types of prefixes co-occur, as seen in (53).

Formation of secondary imperfective forms is an additional piece of evidence of hierarchical order between the aspectual prefixes. According to Svenonius, the head Asp can be optionally realized by the secondary imperfective suffix. However, the secondary imperfective cannot combine with imperfective stems (e.g. *čitat'* 'read.IMP' > **čit-yva-t'*). Since LPs originate below the secondary imperfective head Asp (i.e., inside VP), the suffix can attach to a perfective stem without running into conflict, (51). In contrast, combination of SLPs and the secondary imperfective is disallowed, (52), because the former prefixes are generated too high as to prevent the combination of the secondary imperfective with an imperfective stem.

A sample derivation for the verb *povybrasyvat'* 'throw out one by one', with one SLP (*po-*) and one LP (*vy-*), plus the secondary imperfective suffix *-yva-*, is represented in (54):

(54)



In (54), RP (Result Phrase) introduces resultative meaning (*cf.* Ramchand 2004). First, the LP *vy-* 'out' is merged VP-internally (namely, it is a PP complement to R). This prefix, apart from adding perfectivity to the imperfective stem *-bras-*, changes the meaning of the verb from 'throw' to 'throw out'. Next, the Asp head containing the secondary imperfective suffix *-yva-* is introduced into the derivation. The aspectual head selects the perfective stem and turns it into imperfective (*vybrasyvat'*). Then the prefixal LP undergoes phrasal movement to Spec,AspP, after which the SLP *po-* is merged at the outer Spec,AspP. The latter turns the imperfective form into perfective (*povybrasyvat'*) and adds cumulative adverb-like meaning to the resulting verb.

The derivation in (54) correctly predicts the scopal relations between the affixes (SLP > secondary imperfective > LP) and accounts for the semantics of the resulting verb. The structure also captures the final linear order of the affixes (SLP > LP > secondary imperfective).

Although Svenonius (2004a) does not explicitly argue that Slavic verb undergoes V-to-*v*-to-Asp head movement, such scenario is implied by the logic of the analysis in (54). On the one hand, the verb has to get into the domain of the aspectual operators and, on the other, it needs to form a morphological word with the affixes. The resulting V-to-*v*-to-Asp movement is indicated by arrows in (54).

Interestingly for our purposes, Svenonius (2004c:7) considers the following scenario: "the verb moves as high as Asp, where it is preceded by the superlexical prefix. Then T attaches to the verb by the postlexical lowering operation, morphological merger" (for discussion of the latter mechanism, see Halle & Marantz 1993; Embick & Noyer 2001). It brings us again to the idea that the Slavic verb does not move to T, unlike in Romance, but rather stays lower, in Asp, a view that captures the observation that tense is aspectually constrained in Slavic.

Before we turn to the next section, a word is in order concerning a correlation between adverb placement and verb movement in Russian. As shown in Sliossar (2007), manner adverbs such as *xorošo* 'well', *medlenno* 'slowly' and *polnost'ju* 'completely' always precede the verb in neutral contexts:

(55) a. On *bystro* pročital (??*bystro*) knigu. (*Russian*)
he quickly read book
'He quickly read the book'
b. Maša *gromko* pojot (??*gromko*) pesni.
Masha loudly sings songs
'Masha loudly sings the songs'

In principle, assuming Cinque's (1999) *Universal Adverb Hierarchy*, sketched in (56), and Pollock's (1989) *Split IP-Hypothesis*, this fact could be taken as evidence that Russian lacks verb movement (see Bailyn 1995b; Erechko 2002; Kallestinova 2007; Slioussar 2007), similarly to languages like English and unlike Romance.

(56) Speech act > Evaluative > Evidential > Modal > Time > Aspectual > Voice-related > Manner > Aspectual (event-internal) adverbs
[adopted from Cinque 1999:106]

However, in this thesis I follow Svenonius (2002a) and Dyakonova (2009) and assume that adverbs are merged into the structure on semantic grounds (see also Ernst 2002). On this view, the adverb cannot be merged lower than the domain that it has to scope over. In principle, the adverb can attach higher, as far as its meaning does not conflict with the semantics of the node. Interestingly, even verbs modified with LPs and SLPs cannot be followed by adverbs:

(57) On *bystro* na-vy-dum-yva-l (??/**bystro*) vsjakix nebylic. (*Russian*)
he quickly SLP$_{CUM}$-LP-thought-2IMPF.MASC various tales
'He quickly thought out (a lot of) various tales' [from Dyakonova 2009:32]

Given the 'adverb > verb' order in (57), there seems to be a conflict between the assumption that manner adverbs are universally generated inside *v*P and the logic of Svenonius' (2004a,c) analysis of Russian aspectual prefixes outlined above. However, adopting Dyakonova's (2009) argumentation, I assume that the fact that in Russian adverbs precede verbs does not mean that there is no *v*-to-Asp

movement. Rather, it suggests that manner adverbs are generated high in Russian, namely on top of AspP.

In effect, if we assume that manner adverbs take events as their arguments (see Parsons 1990; Katz 2003, among others) and that events are generated in AspP (by adding perfective aspectual prefixes), then the 'adverb > verb' order in Russian is not a surprise anymore. For instance, observe from (58) that manner adverbs cannot combine with stative verbs, but such combination becomes legitimate once the verb is turned into an eventive predicate, by adding an LP:

(58) a. Saša **vnezapno/*bystro* ljubit Veru. (*Russian*)
Sasha suddenly quickly loves Vera
'Sasha loves Vera *loudly/*suddenly/*quickly.'
b. Saša *vnezapno/bystro* po-ljubil Veru.
Sasha suddenly quickly LP-loved Vera
'Sasha suddenly/quickly fell in love with Vera'
[from Dyakonova 2009:33,35]

To conclude, the assumption about a high merge of manner adverbs in Russian captures the fixed 'adverb > verb' word order. Such view does not contradict the claim of *v*-to-Asp verb movement in Slavic.

4.3. Phase extension and Q/*wh*-movement

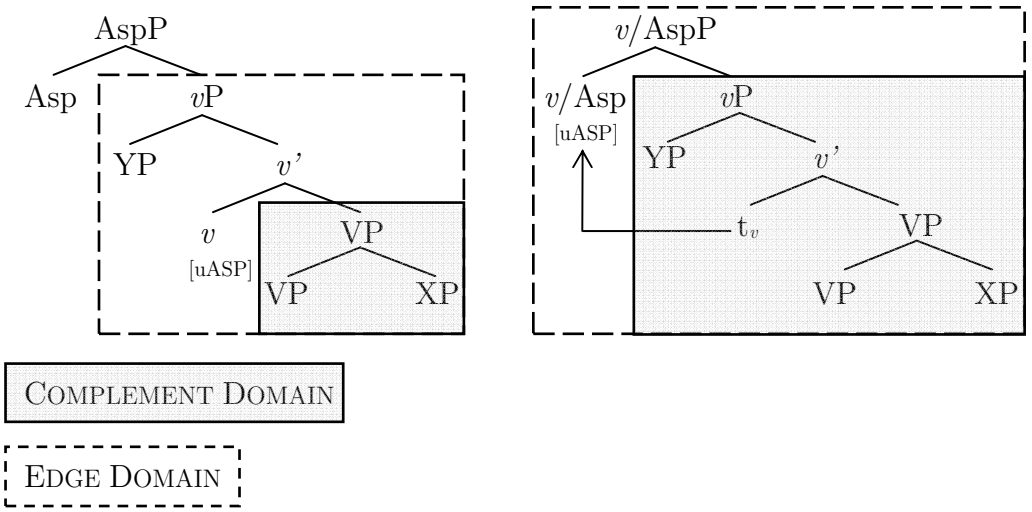
So far, the data seem to indicate that in Russian (and in Slavic in general) the phase head undergoes *v*-to-Asp movement. Assuming Phase Extension hypothesis (den Dikken 2007; Gallego 2007, 2010, among others), such movement results in creation of a hybrid head *v*/Asp and extension of the *v*P phase to *v*/AspP, as originally suggested by Dyakonova (2009) for Russian.[13]

Here I want to extend the logic of Gallego's (2007, 2010) analysis to Slavic by proposing that in these languages *v* bears an unvalued instance of Aspect feature ([uASP]), which is checked through *v*-to-Asp movement. Moreover, assuming Svenonius' (2004b) idea that a phase can be spelled out only when all uninterpretable features on its head are checked and deleted, we predict that the *v*P phase cannot be transferred until [uASP] is removed from *v*. In other words, Transfer of *v* is delayed until *v*-to-Asp head movement takes place, assigning the phasal status to the AspP projection.

[13] See Bošković (2014), who also argues for the phasal status of AspP in the extended VP domain. Although such status is reached for reasons independent from Phase Extension process, this analysis supports our intuition.

Applying the phase extension mechanism to Slavic, I argue that head movement of *v* gives rise to a parameterized phase extension of *v*P into *v*/AspP, as represented below:

(59)



As discussed in den Dikken (2007) and Gallego (2007, 2010), a natural effect of the phase extension is the consequent extension of the phase complement domain, a point which is going to be crucial for our purposes. Recall that in accordance with PIC, only the head H and the edge of a phase HP are visible for further operations, while the complement of H becomes opaque, by being transferred. However, if the phase HP extends to ZP, what used to be the edge of HP turns into the domain of the newly constructed phase ZP. As a result, all syntactic objects with unvalued feature(s) are forced to escape the domain of ZP, otherwise the derivation will crash. In other words, such elements move to the edge of ZP.

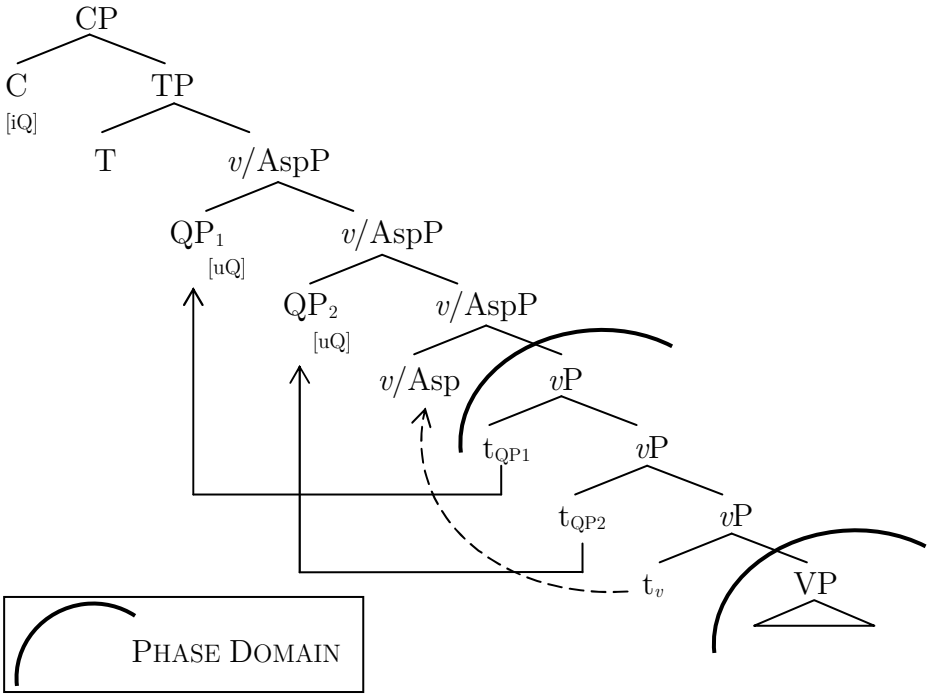
Applying this logic to Slavic, I suggest that after phase extension the edge of *v*P turns into the domain of AspP, as illustrated in (59). Subsequently, all potential goals or elements with a formal imperfection must be removed from the edge of *v*P to the edge of the newly constructed phase, AspP, in order to be visible for further syntactic operations. Within our proposal, this is exactly what forces movement of all *wh*-items in a multiple question to the preverbal area.

Consider first the predictions of our analysis for Bulgarian multiple *wh*-questions, as in (60):

(60) a. [QP *Koj*$_1$] [QP *kogo*$_2$] e celunal? (*Bulgarian*)
who.NOM who.ACC kissed
'Who kissed whom?'
b. * [QP *Kogo*$_2$] [QP *kto*$_1$] e celunal?
who.ACC who.NOM kissed

As previously argued, the derivation of such questions contains multiple QPs, which predicts Superiority effects. Consider a stage of derivation, when *v*-to-Asp verb movement extends the phasal properties of *v*P to AspP, illustrated in (61):

(61)



In (61), before the edge of *v*P becomes opaque by turning into the domain of AspP, all QPs raise to the edge of the higher phase, otherwise their uninterpretable Q-feature will never get checked and the derivation will crash. Recall that under the unidirectional feature-checking mechanism, adopted in this dissertation, it is the feature [uQ] on QPs what forces these elements to move out of *v*P to the next phase edge, given that their formal imperfection cannot be valued within *vP*. It follows then that in Slavic the edge of *v*/AspP acts as an escape hatch for QPs from the phase domain, along their successive cyclic movement to CP. Finally, once QPs reach the edge of *v*/Asp head, *v*P is transferred. The reader is invited to observe that the derivation in (61) predicts the obligatory movement of QPs to the preverbal position without lookahead: movement of QPs into the edge of AspP is triggered by their own requirement and not by C.[14]

[14] On the other hand, as pointed out by Ángel Gallego through personal communication, the lookahead problem is no longer relevant at the point when movement to AspP takes place: under current Chomsky's (2007, 2008a) phase-head-driven version of Phase Theory, C and T (and hence Asp, as a part of the extended T) are introduced at the same time.

Let us now consider Russian multiple *wh*-questions, which, as I argue, contain a single QP:

(62) a. [QP *Kto*$_1$] [XP *kogo*$_2$] uvidel? (*Russian*)
who.NOM who.ACC saw
'Who saw whom?'
b. [QP *Kogo*$_2$] [XP *kto*$_1$] uvidel?
who.ACC who.NOM saw

Recall our suggestion that in such questions one Q (Q_1) is merged with a *wh*-containing XP in its argument position, projecting a QP, while another Q (Q_2) is merged with the interrogative C. As expected, such C head becomes specified with two features, [iQ] and [uwh], the latter being contributed by Q_2 (see section 3 for discussion). Our phase-based theory makes clear predictions regarding partial *wh*-fronting of the XP which is not dominated by any QP. Consider (63), representing the derivation at the stage when *v*-to-Asp head movement extends the *v*P phase domain to AspP:

(63) *v-to-Asp movement extends phasehood of vP to AspP* (*Russian*)
[CP Q_2+C[iQ][uWH] [TP T [*v*/AspP *v*/Asp [*v*P QP[uQ] XP[iWH] *v* [VP …]]]]]]
Transfer

As a consequence of phase extension and PIC, the edge of *v*P becomes opaque to further operations. Therefore, the single QP is forced to move to the edge of AspP, in order to be able to check its [uQ] at some higher position. However, the XP, which is not dominated by any QP, does not bear any uninterpretable feature. So what does force movement of XP to the edge of AspP? I suggest that XP escapes the domain of the extended phase, before it becomes opaque, in order to be visible to C and to check its uninterpretable instance of the *wh*-feature in an upward manner. This is represented in (64a). If XP remains in-situ, the derivation will crash, being *wh*-agreement sensitive to locality, (64b):

(64) *All potential goals (QP & XP) escape the domain of AspP* (*Russian*)
a. [CP Q_2+C[iQ]~~[uWH]~~ [TP T [*v*/AspP QP_1[uQ] XP_2[iWH] *v*/Asp [*v*P t_1 t_2 *v* [VP]]]]]]
Transfer
b. *[CP Q_2+C[iQ][uWH] [TP T [*v*/AspP QP_1[uQ] *v*/Asp [*v*P t_1 XP[iWH] *v* [VP]]]]]]
Transfer
X

Under the analysis in (64a), the fronting of the second *wh*-phrase in a multiple question in Russian follows straightforwardly. Moreover, the view also accounts for an interesting piece of data regarding Russian single *wh*-questions, discussed in the previous chapter. Recall that in Russian single *wh*-questions the *wh*-phrase is not required to move necessarily to the leftmost position in the clause. Rather, sometimes the fronted *wh*-phrase can follow the subject (presumably, hosted at Spec,TP), (65a), or appear between the auxiliary verb (in T) and the infinitive (in *v*), (65b):

(65) a. Petya *komu*$_i$ pozvonil t$_i$? (*Russian*)
Peter.NOM who.DAT phoned
b. Maša budet *komu*$_i$ znovit' t$_i$?
Masha will who.DAT phone.INF
'Whom will Masha phone?'

Single questions as in (65) are quite productive in Russian. However, they can be hardly captured by any theory which assumes obligatory *wh*-movement to CP. However, if we assume that the *wh*-phrases in (65) are contained within an XP and the Q-particle is merged directly at C, the corresponding derivation proceeds straightforwardly:

(66) *Derivation of single questions with partial wh-fronting* (*Russian*)
[CP Q+C$_{[iQ][\text{~~uWH~~}]}$ [TP T [v/AspP XP$_{i[iWH]}$ v/Asp [vP t$_i$ v [VP]]]]]]
↑ *Transfer*

The Q-particle, being merged with C, contributes the uninterpretable *wh*-feature to the interrogative head in Russian. This feature can be checked through the upward *wh*-agreement in the local domain between C and the matching goal, the *wh*-containing XP. In order for this agreement to take place, the XP must raise to the edge of the phase AspP, from where it is visible to the *wh*-probe on C. Moreover, since the uninterpretable instance of the Q-feature on the interrogative head is checked by the Q-particle itself, no *wh*-movement to CP is required and the *wh*-word remains low.

Another piece of evidence in favor of partial *wh*-fronting to AspP, an operation which is forced by PIC, comes from behavior of *wh*-phrases in Russian *yes/no* questions. For instance, observe from the following examples that the *wh*-phrases *kogo* 'who.ACC' in (67) can be interpreted as a non-interrogative existential quantifier, similar to *kogo-nibud'* 'someone.ACC' in (68):

(67) a. Ty *kogo* videl? (*Russian*)
you who.ACC saw
'Did you see anybody?'
b. Ty videl *kogo*?
you saw who.ACC
c. *#Kogo* ty videl?[15]
who.ACC you saw

(68) a. Ty *kogo-nibud'* videl? (*Russian*)
you someone.ACC saw
'Did you see anybody?'
b. Ty videl *kogo-nibud'*?
you saw someone.aCC
c. **Kogo-nibud'* ty videl?
someone.ACC you saw

Observe that the *wh*-phrase in (67) is interpreted not as an interrogative *wh*-pronoun, but rather as a *wh*-indefinite (*cf.* (68)) (for discussion, see section 3.2 of chapter 2). The (a) and (b) sentences in (67) and (68) are interpreted as *yes/no* questions ('*Did you see anybody?*'), rather than *wh*-questions ('*Who did you see?*'). They are characterized by a representative raising intonation, the interrogative stress on the verb (the *wh*-constituent being stressless).

I propose that the (a) sentences in (67) and (68), yielding to a SOV order, are derived along similar lines, such as sketched in (66), as shown below:

(69) *Derivation of yes/no questions with partial wh-fronting* (*Russian*)
$[_{CP}$ Q+C$_{[iQ]}$~~[uWH]~~ $[_{TP}$ T $[_{v/AspP}$ XP$_{i[iWH]}$ v/Asp $[_{vP}$ t$_i$ v $[_{VP}$]]]]]]
↑ ⋮
Transfer

Namely, the Q-particle is merged high, within CP. The *wh*-containing XP escapes the phase domain by raising to Spec,AspP and becomes visible to C, which checks its formal imperfection. However, by not being dominated by any QP, the *wh*-element does not have reasons to keep moving into CP. In fact, the ungrammaticality of the (c) sentences in (67) and (68) confirms this observation.

I tentatively suggest that the *wh*-in-situ option, as in the sentences (b) in (67) and (68), is legitimized in *yes/no* questions, because the Q-particle merged

[15] Observe that the question in (67c) cannot be interpreted as a *yes/no* question, as opposed to (67a,b). With the *wh*-phrase at the leftmost position of the sentence, the only available interpretation is that of a *wh*-question.

within CP does not always bear the *wh*-feature. Thus, C is not endowed with any formal imperfection and does not require local *wh*-agreement with any goal. Consequently, the *wh*-item can remain in-situ. This alternative derivation is represented below:

(70) *Derivation of yes/no questions with wh-in-situ* (*Russian*)
[CP Q+C[iQ] [TP T [*v*/AspP *v*/Asp [*v*P XP[iWH] *v* [VP]]]]]]
Transfer

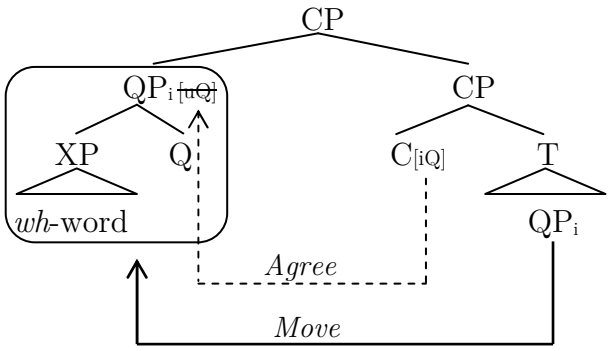
Moreover, the structures in (66) and (69) are consistent with an existent observation in the literature that there is a strong correlation between verb movement and the possibility of moving out other *v*P-internal material. For instance, the well-known phenomenon of the so-called *Object Shift* —leftward movement of a definite object across adverbials— is considered to be parasitic on verb movement (see Holmberg 1986, 1999, 2000, 2005; Bobaljik & Jonas 1996; Chomsky 1993, 2001; Svenonius 2000; Fox & Pesetsky 2005; den Dikken 2007; Gallego 2007, 2010, and many others).

To sum up this section, I proposed that Q/*wh*-movement in MWF languages proceeds through the edge of *v*/AspP, a projection which has a phasal status in Russian. Since this position is housed inside the local domain of the interrogative C, the latter can enter into *wh*-agreement with a *wh*-phrase, which is previously fronted to the edge of the extended phase. This view naturally captures the striking fact that in Russian multiple questions with a single QP, all *wh*-items must undergo fronting above the verb. Under this view, both QP and XP undergo movement to the multiple specifiers of AspP. The latter stays at the edge of the new phase, but the former must undergo further movement in order to check its formal imperfection, [uQ]. I address this last step in the next section.

5. Q-movement

Recall that within our Q-based theory, the fronting of a *wh*-phrase into the CP domain is ultimately movement of the QP projection containing the *wh*-phrase. I argued that such movement is triggered by the need of a QP to check its uninterpretable instance of the Q-feature via agreement with the matching interpretable Q-feature on C. Assuming that Agree occurs in an upward direction, the QP first must move to a position from where it c-commands C. Namely, it fronts to Spec,CP. The mechanism of interrogative Q-movement is represented in (71):

(71)



With these assumptions in mind, let us consider the last step in the derivation of multiple *wh*-questions in MWF languages, namely Q-movement into CP.

Our account predicts that if a derivation contains multiple QPs, one dominating every *wh*-word, then every QP will move into the CP domain, obeying tucking-in and, hence, giving rise to a Superiority-obeying structure. So the derivation of Bulgarian multiple *wh*-questions with multiple QPs, (72), follows straightforwardly.

(72) a. [QP *Koj*$_1$] [QP *kogo*$_2$] e celunal? (*Bulgarian*)
who.NOM who.ACC kissed
'Who kissed whom?'
b. * [QP *Kogo*$_2$] [QP *kto*$_1$] e celunal?
who.ACC who.NOM kissed

Within our Q-approach, the derivation of multiple Superiority-obeying *wh*-questions in (72a) corresponds to (73):

(73) *Wh-questions with multiple QPs*

a. [CP [QP wh$_1$ Q]$_1$[uQ] [QP wh$_2$ Q]$_2$[uQ] C[iQ] [TP T [AspP t$_1$ t$_2$ *v*/Asp [$_v$P t$_1$ t$_2$ t$_v$]]]]
Transfer
Multiple Move

b. [CP [QP wh$_1$ Q]$_1$[~~uQ~~] [QP wh$_2$ Q]$_2$[~~uQ~~] C[iQ] [TP T [AspP t$_1$ t$_2$ *v*/Asp [$_v$P t$_1$ t$_2$ t$_v$]]]]
Transfer
Multiple Agree

As shown in (73a), first, multiple *wh*-containing QPs undergo multiple internal Merge into CP: this operation, I assume, takes place derivationally simultaneously, in the spirit of Hiraiwa (2001, 2005). In (73b), since the QPs end up c-commanding the interrogative C, they can check their uninterpretable Q-feature via multiple upward Agree with C (this operation, again, occurs derivationally

simultaneously). As a result, we predict that derivations with multiple QPs always obey Superiority.[16]

Let us now turn to Russian multiple *wh*-questions, which typically allow both orders:

(74) a. [QP *Kto*$_1$] [XP *kogo*$_2$] poceloval? (*Russian*)
who.NOM who.ACC kissed
'Who kissed whom?'
b. [QP *Kogo*$_2$] [XP *kto*$_1$] poceloval?
who.ACC who.NOM kissed
'Who kissed whom?'

I suggested that this type of multiple *wh*-questions contains a single QP, which is free to dominate any *wh*-element in the derivation. Therefore, a single QP can contain either the structurally highest *wh*-word, as in (74a), or the lower one, as in (74b). Clearly, if QP contains the structurally highest *wh*-word, then this element is fronted to Spec,CP, giving rise to a Superiority-obeying order.

[16] Recall from Appendix A (chapter 3) my intuition that some Russian multiple questions — namely, those triggering unspecific reading (i.e., unknown for both speaker and hearer) of all *wh*-items— generally require a Superiority-obeying order:

(i) (Context: I know that yesterday some boys invited some girls to a party, but I don't know who invited whom.)
a. *Kto*$_1$ (včera) *kogo*$_2$ priglasil? (*Russian*)
who.NOM yesterday who.ACC invited
'Who invited whom?'
b. ?*Kogo*$_2$ (včera) *kto*$_1$ priglasil?
who.ACC yesterday who.NOM invited

Observe that Russian questions with obligatory Superiority-obeying *wh*-ordering can be captured by the derivation in (73), under the assumption that in (i) every *wh*-word is dominated by a QP. Moreover, multiple QPs would predict the unspecific reading of every *wh*-word (see also fn. 17). However, recall that Russian questions differ from their Bulgarian counterparts in that only the former allow for interpolation of certain material between the fronted *wh*-words, (ia) (for discussion of what predictions makes our analysis concerning this issue, see section 7.1). Thus, it indicates that in Russian the fronted QPs occupy different positions. I suggest that the difference between Bulgarian and Russian questions with multiple QPs might be due to a PF rule parameterized for Russian, (ii) (*cf.* Pesetsky 2000):

(ii) *Pronunciation Rule* (*for Russian*)
Pronounce the highest QP in CP in its high position, all other QPs in their closest trace positions (the edge of AspP).

Therefore, after application of the PF rule, the derivation in (73) yields in Russian the PF structure as in (iii) (notice that in Bulgarian the two QPs are pronounced at the CP-level):

(iii) *PF structure of wh-questions with multiple QPs in Russian*
[CP [QP *kto* Q]$_1$ ~~QP~~$_2$ [TP T [AspP t$_1$ [QP *kogo* Q]$_2$ priglasil]]]?

Nevertheless, if QP dominates the lower *wh*-phrase, than the sentence exhibits a Superiority-violating order of the multiple *wh*-constituents. On the other hand, in both cases the *wh*-word, which is not contained within the single QP, remains below CP, namely, at the edge of AspP. As a result, the two *wh*-phrases appear preverbally, but in fact they occupy two different syntactic positions. The two possible derivations concerning Q-movement into the CP level are represented in (75) and (76) respectively:[17]

(75) *Wh-questions with a single QP (highest wh-word dominated by QP)*

a. $[_{CP}\,[_{QP}\,wh_1]_{i[uQ]}\ C_{[iQ]}\ [_{TP}\,T\,[_{AspP}\,t_i\,[_{XP}\,wh_2]\ Asp_v\,\boxed{[_{vP}\,t_1\ t_2\ t_v]]]]}$

Move (↑ from t_i to wh_1) — *Transfer*

b. $[_{CP}\,[_{QP}\,wh_1]_{1[\cancel{uQ}]}\ C_{[iQ]}\ [_{TP}\,T\,[_{AspP}\,t_1\,[_{XP}\,wh_2]\ Asp_v\,\boxed{[_{vP}\,t_1\ t_2\ t_v]]]]}$

Agree (↑ from $C_{[iQ]}$ to wh_1) — *Transfer*

[17] As discussed in Appendix A (chapter 3), Superiority-violating orders typically require a particular licensing context, under which the wh_2 designates some unknown set of entities, as opposed to the wh_1, whose value is familiar to both speaker and hearer:

(i) (Context: I know that each of my students, Ivan and Boris, kissed some girls, but I don't know who exactly kissed whom.)

a. *Kto*$_1$ *kogo*$_2$ poceloval? (*Russian*)
who.NOM who.ACC will.go
'Who kissed whom?'

b. *Kogo*$_2$ *kto*$_1$ poceloval?
who.ACC who.NOM will.go

In principle, our Q-based approach can formally capture the observed semantic differences between the Russian *wh*-questions triggering unspecific reading of both *wh*-items (see fn. 16) and those triggering a specific reading of one of the *wh*-constituent, (i). Given that there is only one QP and multiple *wh*-words, the unspecific interpretation of all *wh*-words is unexpected in Superiority-violating orders, (ib). That is, if only the wh_2 has been merged with a Q-particle (and, thus, fronted into CP), the wh_1 cannot receive the unspecific reading (*cf.* (76)). However, it remains to be understood how in Superiority-obeying questions as (ia) only the wh_2, which is not dominated by any QP, gets the unspecific reading (*cf.* (75)). As mentioned, the observation that Russian *wh*-ordering is constrained by certain discourse rules related to specificity of the *wh*-items requires a more detailed study, which I leave for future research.

(76) *Wh-questions with a single QP (lower wh-word dominated by QP)*

a. $[_{CP}\ [_{QP}\ wh_2]_{i[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{AspP}\ [_{XP}\ wh_1]\ t_i\ Asp_v\ \boxed{[_{vP}\ t_1\ t_2\ t_v]}]]]$

Move ↑ *Transfer*

b. $[_{CP}\ [_{QP}\ wh_2]_{i\,\sout{[uQ]}}\ C_{[iQ]}\ [_{TP}\ T\ [_{AspP}\ [_{XP}\ wh_1]\ t_i\ Asp_v\ \boxed{[_{vP}\ t_1\ t_2\ t_v]}]]]$

Agree ↑ *Transfer*

6. Derivations

Now, in order to conclude what we discussed so far regarding the formation of multiple questions in MWF languages, let us see how these constructions are derived under our Q-based approach.

First, let us consider a step-by-step derivation of multiple questions which require Superiority-obeying ordering of the *wh*-words:

(77) *Derivation of Superiority-obeying questions with multiple QPs*

Step 1: Q-particles are distributed; one is merged with every *wh*-word:
$[_{vP}\ [_{QP}\ wh_1\ Q]_{[uQ]}\ [_{QP}\ wh_2\ Q]_{[uQ]}]$

Step 2: *Wh*-phrases move to AspP:

(i) *v*-to-Asp verb movement:
$[_{CP}\ C\ [_{TP}\ [_{AspP}\ v/Asp\ [_{vP}\ [_{QP}\ wh_1]_{[uQ]}\ [_{QP}\ wh_2]_{[uQ]}\ t_v]]]]$

(ii) *v*P extends to AspP; QPs escape the phase domain; *v*P is transferred:
$[_{CP}\ C\ [_{TP}\ T\ [_{AspP}\ [_{QP}\ wh_1]_{[uQ]}\ [_{QP}\ wh_2]_{[uQ]}\ Asp_v\ \boxed{[_{vP}\ t_1\ t_2\ t_v]}]]]$

Step 3: Q-movement to CP:

(i) QPs move to Spec,CP:
$[_{CP}\ [_{QP}\ wh_1]_{[uQ]}\ [_{QP}\ wh_2]_{[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{AspP}\ t_1\ t_2\ Asp_v\ \ldots]]]$

(ii) QPs agree with C, TP is transferred:
$[_{CP}\ [_{QP}\ wh_1]_{\sout{[uQ]}}\ [_{QP}\ wh_2]_{\sout{[uQ]}}\ C_{[iQ]}\ \boxed{[_{TP}\ T\ [_{AspP}\ t_1\ t_2\ Asp_v\ \ldots]]}]$

Result: Superiority-obeying structure:
$[_{CP}\ [QP]_1\ [QP]_2\ C\ [_{TP}\ T\ [_{AspP}\ t_1\ t_2\ Asp_v\ \ldots]]]$

Expect: Intervening material is NOT allowed between the *wh*-words.

As shown in (77), in Bulgarian Superiority-obeying questions with a base-generated '[QPwh_1] > [QPwh_2]' configuration, both *wh*-phrases are attracted to Spec,CP. We begin this derivation by merging both *wh*-phrases with Q-particles at their base position. Then both QPs undergo tuck-in into the edge of the extended phase AspP, in order to be able to check their formal imperfection [uQ]

during further operations. Next, they move into the specifiers of CP (again, in a tucking-in manner), from where they c-command their formal checker [iQ] on C and, finally, can delete their unvalued instance of the Q-feature before being transferred. Thus, we predict that under the initial configuration '[QP*wh*$_1$] > [QP*wh*$_2$]' the Superiority-violating order is ill-formed.

The picture changes when we turn to Russian questions, which allow for both orders. In a configuration '[QP*wh*$_1$] > [XP*wh*$_2$]', we also expect a Superiority-obeying order; however, the two fronted *wh*-phrases occupy two structurally different positions, as opposed to the derivation in (77):

(78) *Derivation of Superiority-obeying questions with one QP*

Step 1: Q_1 is merged with the highest *wh*-word; Q_2 is merged with C:
[CP Q_2+C[uWH][iQ] [*v*P [QP wh_1 Q_1][uQ] [XP wh_2][iWH] *v*]]

Step 2: *Wh*-phrases move to AspP:

(i) *v*-to-Asp verb movement:
[CP C[uWH] [TP T [AspP Asp$_v$ [*v*P [QP wh_1][uQ] [XP wh_2][iWH] t_v]]]]

(ii) *v*P phase extends to AspP; QP & XP escape the phase domain:
[CP C[uWH] [TP T [AspP [QP wh_1][uQ] [XP wh_2][iWH] Asp$_v$ [*v*P t_1 t_2 t_v]]]]

(iii) XP agrees with C; *v*P is transferred:
[CP C~~[uWH]~~ [TP T [AspP [QP wh_1][uQ] [XP wh_2][iWH] Asp$_v$ [*v*P t_1 t_2 t_v]]]]

Step 3: Q-movement to CP:

(i) QP moves to Spec,CP:
[CP [QP wh_1][uQ] C[iQ] [TP T [AspP t_1 [XP wh_2][iWH] Asp$_v$ …]]]

(ii) QP agrees with C; TP is transferred:
[CP [QP wh_1]~~[uQ]~~ C[iQ] [TP T [AspP t_1 [XP wh_2][iWH] Asp$_v$ …]]]

Result: Superiority-obeying structure:
[CP [QP]$_1$ C [TP T [AspP t_1 [XP]$_2$ Asp$_v$ ...]]]

Expect: Intervening material is allowed between the *wh*-words.

I argue that in Russian questions only one Q-particle (Q_1) is merged with a *wh*-word (while the second one (Q_2) is merged with C). If Q_1 is merged with a structurally higher *wh*-word, then we obtain a base-generated '[QP*wh*$_1$] > [XP*wh*$_2$]' configuration and, consequently, a Superiority-obeying order, (78). If Q_1 is merged with a structurally lower *wh*-word, then the question has the structure '[XP*wh*$_1$] > [QP*wh*$_2$]' and, as expected, will exhibit a Superiority-violating order of the fronted *wh*-phrases:

(79) *Derivation of Superiority-violating questions with one QP*

Step 1: Q_1 is merged with the lower *wh*-word; Q_2 is merged with C:
$[_{CP}\ Q_2{+}C_{[uWH][iQ]}\ [_{vP}\ [_{XP}\ wh_1]_{[iWH]}\ [_{QP}\ wh_2\ Q_1]_{[uQ]}\ v]]$

Step 2: *Wh*-phrases move to AspP:

(i) *v*-to-Asp verb movement:
$[_{CP}\ C_{[uWH]}\ [_{TP}\ T\ [_{AspP}\ Asp_v\ [_{vP}\ [_{XP}\ wh_1]_{[iWH]}\ [_{QP}\ wh_2]_{[uQ]}\ t_v]]]]$

(ii) *v*P phase extends to AspP; *wh*-items escape the phase domain:
$[_{CP}\ C_{[uWH]}\ [_{TP}\ T\ [_{AspP}\ [_{XP}\ wh_1]_{[iWH]}\ [_{QP}\ wh_2]_{[uQ]}\ Asp_v\ [_{vP}\ t_1\ t_2\ t_v]]]]$

(iii) XP agress with C; *v*P is transferred:
$[_{CP}\ C_{\sout{[uWH]}}\ [_{TP}\ T\ [_{AspP}\ [_{QP}\ wh_2]_{[uQ]}\ [_{XP}\ wh_1]_{[iWH]}\ Asp_v\ \boxed{[_{vP}\ t_1\ t_2\ t_v]}]]]$

Step 3: Q-movement to CP:

(i) QP moves to Spec,CP:
$[_{CP}\ [_{QP}\ wh_2]_{[uQ]}\ C_{[iQ]}\ [_{TP}\ T\ [_{AspP}\ [_{XP}\ wh_1]_{[iWH]}\ t_2\ Asp_v\ \ldots]]]]$

(ii) QP agrees with C, TP is transferred
$[_{CP}\ [_{QP}\ wh_2]_{\sout{[uQ]}}\ C_{[iQ]}\ \boxed{[_{TP}\ T\ [_{AspP}\ [_{XP}\ wh_1]_{[iWH]}\ t_2\ Asp_v\ \ldots]]]}$

Result: Superiority-violating structure:
$[_{CP}\ [QP]_2\ C\ [_{TP}\ T\ [_{AspP}\ [XP]_1\ t_2\ Asp_v\ ...]]]$

Expect: Intervening material is allowed between the *wh*-words.

As shown in (78) and (79), multiple *wh*-questions have multiple Q-particles (*cf.* Cable 2007, 2010), which regulate their semantics. However, the second Q-particle is merged high, with the interrogative head C, thus contributing to it an uninterpretable instance of the *wh*-feature. Significantly, the two derivations share the tucking-in movement of the *wh*-phrases to the edge of AspP (see Step 2) and differ in which *wh*-phrase ([XP*wh*$_1$] or [XP*wh*$_2$]) values C's [uwh] via Agree. Finally, as expected, only a single QP ([QP*wh*$_1$] or [QP*wh*$_2$]) undergoes movement into Spec,CP, giving rise to one or another *wh*-ordering.

I argued that the existence of two hierarchically distinct positions for Ā-movement in Slavic —the edge of CP and the edge of *v*/AspP— allows our Q-based analysis to capture the MWF phenomenon uniformly. MWF languages differ from languages like English in that the former count on an additional application of Transfer as a result of phase extension, which is parasitic on *v*-to-Asp verb movement. Consequently, the edge of *v*P turns into the domain of the extended phase, AspP, and MWF languages therefore count with an additional landing site for the fronted *wh*-words, as opposed to other, non-MWF languages.

In turn, when we compare our analyses of the two typologically related languages, Bulgarian and Russian, we see that the core difference between these languages lies in their usage of the edge of AspP. Bulgarian uses it as an escape hatch for its multiple QPs from the domain of the extended phase, which finally are moved and pronounced in CP. In contrast, in Russian, one of the multiple *wh*-phrases remains at the edge of AspP, while another one, dominated by a single QP, moves into the CP-level. As a result, the linear order of the multiple *wh*-words reflects two hierarchically different projections in Russian, whereas in Bulgarian the fronted *wh*-items are inside the same, highest projection. In the next section, I address some interesting predictions made by this proposal.

7. Predictions

Before I turn to discussion of how empirical facts fit into the proposed analysis, first I would like to compare briefly my Q-based, phase-related account to a more general idea existent in the literature on MWF languages. Namely, since Rudin (1988), there has been an intuition that different MWF languages realize their fronted *wh*-phrases in different positions.

As discussed in chapter 3, a number of researchers (e.g. Stepanov 1998; Strahov 2001; Bošković 2002a, among some others) proposed to capture this intuition in terms of different types of movement operations available in a particular language: true *wh*-driven movement *vs.* focus-fronting. Thus, Russian has been considered a *wh*-in-situ language, where movement of *wh*-words is always *focus*-driven. However, I claimed that the force driving *wh*-fronting in Russian is essentially the same as in other (even typologically different) languages. With Cable (2007, 2010), I assume that in no language there is a direct scope relation between the interrogative C and the *wh*-word itself: interrogative *wh*-movement to CP is in fact a secondary effect of Q-movement. Moreover, I showed that there is no need in proposing an additional dedicated projection below CP (such as FocusP or similar), in order to capture the attested parametric differences.

Put differently, the intuition behind my analysis is that in some languages a certain familiar functional projection below CP can exhibit both A- and Ā-properties. This intuition is not novel in the literature; for example, it is behind Rudin's (1988) and Richards' (1997, 2001) well-known distinction between CP- *vs.* IP-absorption languages (for discussion, see chapter 3). The core common idea between these proposals and my analysis is that in some (CP-absorption) languages all *wh*-phrases are in CP, whereas in others (IP-absorption) only one *wh*-phrase is in Spec,CP, the rest being located lower, in Spec,IP.

However, my phase-oriented Q-based approach has several important advantages over the original distinction between CP- and IP-fronting. First, I identify the exact landing site within the extended IP domain as the edge of AspP, which can be assigned phasal status in languages with *v*-to-Asp verb movement. Second, Richards explicitly avoids speculating on the force driving partial *wh*-fronting to IP, while the analysis I develop accounts for this operation in terms of the standard displacement of a goal from the domain of a phase to the edge of an extended phase, in order to be visible for a higher probe. Furthermore, Superiority-violating orders were problematic for Richards's analysis, under which they have the structure as in (80b), as opposed to Superiority-obeying questions in (80a):

(80) a. $[_{CP}\ [_{SpecCP}\ wh_1]\ [_{IP}\ t_1\ \ wh_2\ ]\ [t_1\ t_2]]]]$

b. $[_{CP}\ [_{SpecCP}\ wh_2]\ [_{IP}\ t_2\ \ wh_1\ ]\ [t_1\ t_2]]]]$

Observe that in (80b) movement of the structurally lower *wh*-phrase to the outer Spec,IP violates both Attract Closest and Shortest Move principles, playing an important role in Richards' theory. The author is forced to postulate that *wh*-fronting to IP is not really the instance of internal Merge to multiple specifiers, but rather Adjunction to multiple IP-level projections (assuming that this operation can presumably occur in any order). However, this distinction remains stipulative. Under my proposal, neither Attract Closest nor Shortest Move is violated, since the *wh*-phrases always undergo multiple internal Merge, resulting in 'tucking-in'. Moreover, under Richards' account, A- and Ā-properties of the IP projection were an interesting, but, unfortunately, stipulative idea. It was not clear what exactly enables this A-projection to exhibit Ā-features in some languages, but not in others. However, the mixed status of the *v*/AspP projection naturally follows from my phase-based approach, under the assumption that discourse-oriented, Ā-effects arise at phase edges (see Chomsky 2001). In what follows of this section, I briefly address some implementations and predictions of our phase-based Q-theory.

7.1. *Wh*-cluster and adverbs

First, let us address the issue of a parameterized acceptance of certain intervening material (e.g. clitics, parentheticals, adverbs, etc.) inside the *wh*-cluster in MWF languages. Recall from chapter 3 that such intervention is allowed in Russian, but not in Bulgarian, as illustrated by the examples below:

(81) a. **Koj*$_1$ spored tebe *kakvo*$_2$ e kazal? (*Bulgarian*)
who.NOM according.to.you what.ACC has said
'Who, in your opinion, said what?' [from Rudin 1988:468]
b. *Kto*$_1$ po-tvoemu *čto*$_2$ skazal? (*Russian*)
who.NOM according.to.you what.ACC said
'Who, in your opinion, said what?'

As I previously suggested, in Russian, unlike in Bulgarian, only the leftmost *wh*-phrase is pronounced in the CP domain, while the rest appear lower. So, we correctly predict that the interveners will be able to appear between the fronted *wh*-phrases only in Russian. I assume that, in order to be able to intervene between the *wh*-items in the final linear word order, such elements first must be attached above the *wh*-words, at the stage prior to Q-movement into CP (*cf.* Chomsky's 1993 Extension Condition).

Suppose that the intervener is an adverb, which can be attached to AspP or TP depending on their semantics (see below). First, let us consider our prediction for Russian multiple *wh*-questions, where a single QP is projected. So, once all *wh*-items are fronted to the edge of AspP, the adverb is attached (e.g. to TP). Next, the single QP undergoes further movement into CP, while XP remains in-situ. As a result, the adverb is linearized between the fronted QP and the in-situ *wh*-phrase. Notice that it does not matter whether the highest or the lower *wh*-word is dominated by the single Q-particle; the adverb must appear between the *wh*-elements. This is illustrated below:

(82) a. [CP C [TP adverb [AspP [QP*wh*] [XP*wh*]...]]] (*Russian*)
b. [CP [QP*wh*]$_i$ C [TP adverb [AspP t$_i$ [XP*wh*]...]]]

In contrast, we predict that in Bulgarian adverbs cannot appear between the fronted *wh*-elements. In Bulgarian multiple questions, multiple QPs are projected and all *wh*-phrases are fronted into CP. Thus, it is expected that adverbs must follow the fronted *wh*-items in Bulgarian:[18]

(83) a. [CP C [TP adverb [AspP [QP*wh*] [QP*wh*]...]]] (*Russian*)
b. [CP [QP*wh*]$_1$ [QP*wh*]$_2$ C [TP adverb [AspP t$_1$ t$_2$...]]]

[18] Recall my assumption that multiple internal Merge occurs derivationally simultaneously: the adverb cannot be merged between the fronted QPs without violating cyclicity.

Moreover, if on track, the analysis predicts that only certain type of adverbs is able to interrupt the *wh*-cluster in Russian multiple questions. Particularly, Cinque's (1999) *Adverb Hierarchy*, represented in (84), can be used as a tool to determine the position of the lower *wh*-word:

(84) *Cinque's Adverb Hierarchy*
[*frankly* $\text{Mood}_{\text{speech act}}$ [*fortunately* $\text{Mood}_{\text{evaluative}}$ [*allegedly* $\text{Mood}_{\text{evidential}}$ [*probably* $\text{Mod}_{\text{epistemic}}$ [*once* $\text{T}_{\text{(Past)}}$ [*then* $\text{T}_{\text{(Future)}}$ [*perhaps* $\text{Mood}_{\text{irrealis}}$ [*necessarily* $\text{Mod}_{\text{necessity}}$ [*possibly* $\text{Mod}_{\text{possibility}}$ [*usually* $\text{Asp}_{\text{habitual}}$ [*again* $\text{Asp}_{\text{repetitive(I)}}$ [*often* $\text{Asp}_{\text{frequentative(I)}}$[*intentionally* $\text{Mod}_{\text{volitional}}$ [*quickly* $\text{Asp}_{\text{celerative(I)}}$ [*already* $\text{T}_{\text{(Anterior)}}$ [*no longer* $\text{Asp}_{\text{terminative}}$ [*still* $\text{Asp}_{\text{continuative}}$ [*always* $\text{Asp}_{\text{perfect(?)}}$ [*just* $\text{Asp}_{\text{retrospective}}$ [*soon* $\text{Asp}_{\text{proximative}}$ [*briefly* $\text{Asp}_{\text{durative}}$ [*characteristically(?)* $\text{Asp}_{\text{generic/progressive}}$ [*almost* $\text{Asp}_{\text{prospective}}$ [*completely* $\text{Asp}_{\text{SgCompletive(I)}}$ [*tutto* $\text{Asp}_{\text{PlCompletive}}$ [*well* Voice [*fast/early* $\text{Asp}_{\text{celerative(II)}}$ [*again* $\text{Asp}_{\text{repetative(II)}}$ [*often* $\text{Asp}_{\text{frequentative(II)}}$ [*completely* $\text{Asp}_{\text{SgCompletive(II)}}$ [from Cinque 1999:106]

Under the hierarchy in (84), we expect middle, IP-level adverbs to be able to appear between the fronted *wh*-items, as opposed to high, speaker oriented ones. As illustrated below, this prediction is borne out:

(85) *Speaker oriented adverbs* (*Russian*)
[CP Otkrovenno govorya [CP *kto*$_1$ [(*otkrovenno govorya) [AspP *kogo*$_2$
frankly who.NOM who.ACC
[(*otkrovenno govorya) poceloval]]]]]?
kissed.
'Frankly, who kissed whom?'

(86) *Temporal and aspectual adverbs with Superiority-obeying orders* (*Russian*)
a. [CP (??Odnaždy) [*kto*$_1$ [TP (odnaždy) [AspP *kogo*$_2$ [(odnaždy) poceloval]]]]]
once who.NOM who.ACC kissed
'Who did once kiss who?'
b. [CP (*Togda) [*kto*$_1$ [TP (togda) [AspP *komu*$_2$ [(togda) pozvonit]]]]]?
then who.NOM who.DAT will.call
'Who will then call who?'
c. [CP (*Obyčno) [*kto*$_1$ [AspP (obyčno) [*kogo*$_2$ [(obyčno) pozdravljaet]]]]]?
usually who.NOM who.ACC congratulates
'Who does usually congratulate who?'

d. [CP (*Opyat') [*kto*$_1$ [AspP (opyat') [*s* *kem*$_2$ [(opyat') podralsja]]]]]?
again who.NOM with who.INST fought
'Who did again fight with whom?'

e. [CP (*Často) [*kto*$_1$ [AspP (často) [*komu*$_2$ [(často) zvonit]]]]]?
often who.NOM who.DAT phone
'Who does often call who?'

f. [CP *Kto*$_1$ [AspP (umyšlenno) [*kogo*$_2$ [(umyšlenno) obmanul]]]]?
who.NOM intentionally who.ACC cheated
'Who did intentionally cheat at whom?'

g. [CP *Kto*$_1$ [AspP (uže) [*komu*$_2$ [(uže) pozvonil]]]]?
who.NOM already who.DAT phoned
'Who did already call who?'

h. [CP *Kto*$_1$ [AspP (vsegda) [*u* *kogo*$_2$ [(vsegda) spisyvaet]]]]?
who.NOM always from who.GEN copies
'Who does always copy from whom?'

i. [CP *Kto*$_1$ [AspP (skoro) [*kuda*$_2$ [(skoro) poedet]]]]?
who.NOM soon where will.go
'Who will soon go where?'

j. [CP *Kto*$_1$ [AspP (?počti) [*čto*$_2$ [(počti) zakončil]]]]?
who.NOM almost what.ACC finished
'Who did almost finish what?'

k. [CP *Kto*$_1$ [AspP (?sovsem) [*s* *kem*$_2$ [(sovsem) rassorilsja]]]]?
who.NOM completely with who.INST fall out
'Who did completely fall out with whom?'

As shown in (85), high, speaker oriented adverbs can only precede the *wh*-cluster. In contrast, as in (86), temporal and aspectual adverbs are allowed to appear between the fronted *wh*-words, as well as after the *wh*-cluster. As expected, such adverbs cannot precede the leftmost *wh*-word, given their relatively low attachment site within Cinque's functional hierarchy.[19] Significantly, these two

[19] Given the uniformly low acceptance of the temporal/aspectual adverbs above the leftmost *wh*-word, I omit this position in (86f-k). With respect to placement of this type of adverbs between the fronted *wh*-phrases, it is worth noting that not all informants accept this option equally well. While most of my informants accept this position, some others judge this option as marginal, though acceptable, and only few of them reject it. I signal the lowest aspectual adverbs *počti* 'almost', (86j), and *sovsem* 'completely', (86k), with a question mark, because the level of acceptance of these two adverbs is lower than for the rest. Perhaps, this signals that these two adverbs, lowest in Cinque's (1999) hierarchy, are required to be attached as close to the verb (in Asp) as possible, and, as a result, they tend to follow the *wh*-cluster. I leave this issue for future research.

available positions for the aspectual adverbs —after the fronted *wh*-words and in between— are also attested in questions with Superiority-violating orders:[20]

(87) *Temporal and aspectual adverbs with Superiority-violating orders* (*Russian*)

a. [CP *Kogo*$_2$ [AspP (?obyčno) [*kto*$_1$ [(obyčno) celuet]]]]?
who.ACC usually who.NOM kisses
'Who does usually kiss who?'

b. [CP *S* *kem*$_2$ [AspP (?opyat') [*kto*$_1$ [(opyat') podralsja]]]]?
with who.INST again who.NOM fought
'Who does usually fight with whom?'

c. [CP *Komu*$_2$ [AspP (?často) [*kto*$_1$ [(často) zvonit]]]]?
who.DAT often who.NOM phone
'Who does often call whom?'

d. [CP *U* *kogo*$_2$ [AspP (?vsegda) [*kto*$_1$ [(vsegda) spisyvaet]]]]?
from who.GEN always who.NOM copies
'Who does always copies from whom?'

e. [CP *Čto*$_2$ [AspP (?/??počti) [*kto*$_1$ [(počti) zakončil]]]]?
what.ACC almost who.NOM finished
'Who did almost finished what?'

f. [CP *S* *kem*$_2$ [AspP (?/??sovsem) [*kto*$_1$ [(sovsem) rassorilsja]]]]?
with who.INST completely who.NOM fall out
'Who did completely fall out with whom?'

In sum, the fact that temporal and aspectual adverbs, unlike speaker oriented ones, can intervene between the fronted *wh*-items in Russian corroborates our claim about the relatively low position of the *wh*$_2$ in multiple questions in this language. On the other hand, the analysis predicts that such intervention is prohibited in Bulgarian, as its *wh*-items are located (and pronounced) in CP. Again, this prediction is borne out: only speaker oriented adverbs can precede the *wh*-cluster, while the IP-level ones must follow it:

[20] It must also be noticed that the rate of acceptance of intervening adverbs in Superiority-violating orders tends to be lower than in the case of Superiority-obeying ones. Most speakers find the former worse than the latter. This contrast can be related to the fact that the computational complexity of Superiority-violating orders is generally higher, comparing to Superiority-obeying ones; such difficulty increases even more with an adverb intervening between the *wh*-words. However, at present, I do not know how to account for this contrast.

(88) *Adverbs in Bulgarian multiple wh-questions*

a. [CP (Otkroveno) [*koj*1 [(*otkroveno) [*kogo*2 [TP (*otkroveno) e celunal]]]]]?
frankly who.NOM who.ACC kissed
'Frankly, who kissed who?'

b. [CP (*Togava) [*koj*1 [(??togava) [*kogo*2 [TP (togava) e celuna]]]]]?
then who.NOM who.ACC will kiss
'Who will then kiss who?'

c. [CP (*Može bi) [*koj*1 [(??može bi) [*kogo*2 [TP (može bi) e celuna]]]]]?
perhaps who.NOM who.ACC will kiss
'Who will perhaps kiss who?'

d. [CP (*Obiknoveno) [*koj*1 [(??obiknoveno) [*kogo*2 [TP (obiknoveno) celuva]]]]]?
usually who.NOM who.ACC kisses
'Who does usually kiss who?'

Finally, the analysis I put forward correctly predicts that in ternary questions IP-level adverbs can intervene only between the first and the second *wh*-words, but not between the second and the rest. On the other hand, we expect that such adverbs will be allowed to follow the *wh*-cluster:

(83) *Adverbs in Russian ternary wh-questions*

a. [CP Kto1 [IP (veroyatno) [AspP čto2 [(*veroyatno) [komu3 [(veroyatno)
who.NOM probably what.ACC who.DAT
podarit]]]]]]?
will.give
'Who will probably give what to whom?'

b. [CP *Kto*1 [IP (odnaždy) [AspP *čto*2 [(*odnaždy) [*komu*3 [(odnaždy)
who.NOM once what.ACC who.DAT
podarit]]]]]]?
will.give
'Who will once give what to whom?'

c. [CP *Kto*1 [AspP (obyčno) [*čto*2 [(*obyčno) [*komu*3 [(obyčno) govorit]]]]]]?
who.NOM usually what.ACC who.DAT says
'Who does usually say what to whom?'

To conclude, I showed that placement of adverbs (particularly, of the IP-level ones) with respect to the fronted *wh*-words suggests that the analysis of multiple *wh*-questions in Russian and Bulgarian I developed is on right track.

7.2. Lack of T-to-C movement in Russian *wh*-questions

I argued that in Russian (and in Slavic languages in general) the lexical verb undergoes *v*-to-Asp movement, but it does not raise as high as T (see also Svenonius 2004c).[21] If this claim is correct, then the further prediction is that Russian lacks T-to-C movement, a part of a complex *v*-to-T-to-C movement. That is, we predict that the verb remains in Asp even in interrogative sentences.

Let us examine this prediction on a basis of a simple test of adverb placement. As discussed in section 4.2, in Russian declarative sentences adverbs always precede verbs. This is illustrated in (89a). If we assume that the verb undergoes movement to C in interrogative clauses, we would expect a 'verb > adverb' word order. However, as illustrated in (89b), this prediction is not borne out in Russian:

(89) a. Ivan$_S$ vnezapno za-pel (*vnezapno) pesnju. (Russian)
Ivan.NOM suddenly LP-sang song.ACC
'Ivan suddenly started to sing a song'

b. *Čto*$_i$ vnezapno za-pel (*vnezapno) Ivan t$_i$?
what.ACC suddenly LP-sang Ivan.NOM
'What did Ivan suddenly start to sing?'

Recall from the translations in (89) that in the English declarative sentence the verb *started to sing* is also preceded by the adverb *suddenly*, but in the *wh*-question the adverb is preceded by the auxiliar *did*. In fact, the 'auxiliar > adverb > verb' word order follows from the standard assumption that in English interrogative sentences the lexical verb remains inside *v*P and the auxiliar undergoes T-to-C movement (e.g. see Pesetsky & Torrego 2001, 2004 for discussion). However, in Russian the 'adverb > verb' order is maintained both in declaratives and interrogatives. Thus, I conclude that the Russian verb does not raise to C, because it never reaches T.

Interestingly, a similar conclusion, although on different grounds, is reached by Izvorski (1995), who argues for the lack of T-to-C movement in Bulgarian questions. First, comparing the word order in declaratives, (90a), to the word order in *wh*-questions, (90b), the author observes that in the latter the subject has

[21] Perhaps, in the periphrastic imperfective verb forms, such as *budet čitat'* 'will.3SG read.INF', formed by a finite auxiliar and infinitive, the auxiliar is located in T, while the lexical verb remains in Asp. As far as I can see, the arguments presented in this chapter remain unchanged under such assumption. I leave the discussion of multiple questions with complex tense verb forms for future research.

to follow the adverb. However, if there were T-to-C verb movement, we would expect 'verb > subject > adverb' order, similarly to English:

(90) a. Ivan podade <u>bărzo</u> pismoto na Maria. (Bulgarian)
Ivan.NOM gave quickly letter.ACC to Maria
'Ivan gave the letter to Maria quickly'
b. *Kakvo*$_{i}$ podade (*Ivan) <u>bărzo</u> (Ivan) t$_{i}$ na Maria?
what.ACC gave Ivan.NOM quickly to Maria
'What did Ivan quickly give to Maria?'
[adopted from Izvorski 1995:56-57]

Moreover, Izvorski notices that if Bulgarian questions were to have T-to-C movement, the sentence in (91) would be acceptable, just as its English counterpart '*What had Maria forgotten about?*' (for further evidence and discussion, see Izvorski 1995):

(91) * *Za kakvo*$_{i}$ beže Maria zabravila t$_{i}$? (*Bulgarian*)
about what.ACC was Maria.NOM forgotten
'What had Maria forgotten about?' [from Izvorski 1995:58]

I conclude that the lack of T-to-C movement in Russian and Bulgarian interrogatives corroborates our claim about *v*-to-Asp verb movement argued for in section 4. On the other hand, this data pose a question how the subject-verb inversion is obtained in these languages. I will address this issue regarding Russian in the next section, although I believe that the same logic can be applied to Bulgarian (for a different proposal, see Izvorski 1995).

7.3. Subject positions in multiple *wh*-questions

Observe that in Russian multiple questions non-*wh*-subjects can appear both preverbally (namely, at two different positions) and postverbally:

(92) [$_{CP}$ *Čto*$_{i}$ [$_{TP}$ (?<u>Maša</u>) [$_{AspP}$ *komu*$_{j}$ [(?<u>Maša</u>) podarila$_{v}$ [$_{vP}$ (<u>Maša</u>) t$_{v}$ t$_{i}$ t$_{j}$]]]]?
what.ACC Masha.NOM who.DAT gave (*Russian*)
'What did Masha give to whom?'

The postverbal position is the preferred option for non-*wh*-subjects in unmarked interrogatives (as generally in NSLs), whereas the two preverbal landing sites contribute topic or focus interpretation. The Ā-properties of preverbal subjects in *pro*-drop languages —and Russian, as is well-known, is a partial NSL

(see McShane 2009; Holmberg 2010)— have often been pointed out in the literature (e.g., see Cardinaletti 1997 for overview).

We should be precise, however, that these three positions are available only for NP-subjects. Pronominal subjects, in contrast, cannot remain postverbally; in fact, the most neutral position for a nominative pronoun is between the two fronted *wh*-words (I assume, in Spec,TP):

(93) [CP *Čto*$_{i}$ [TP (ty) [AspP *komu*$_{j}$ [(?ty) podaril$_{v}$ [$_{v}$P (*ty) t$_{v}$ t$_{i}$ t$_{j}$]]]]? (*Russian*)
what.ACC you.NOM who.DAT gave
'What did you give to whom?'

Following Boeckx (2008), I take A-movement of subjects as an instance of internal Merge for reasons of φ-feature-checking, rather than Case assignment. I assume that in NSLs nominative Case is assigned in Spec,*v*P (see Belletti 2004; Gallego 2007, 2010, among others). If a nominative element moves to a preverbal position, it is for φ-feature-checking reasons; more precisely, such movement involves [person]-agreement. With Boeckx, I suggest that the [person] feature on T cannot be checked via long-distance agreement.

Following Belletti (2004) (see also Chomsky 2001), I argue that in the case of postverbal NP-subjects the [person] feature on T is checked by movement of a null (referential) *pro*, base generated together with the postverbal NP-subject ([NP NP [*pro*]]), as indicated in (94) (see Bošković 2005a,b for discussion of NP *vs.* DP projections in Slavic). The scenario in (94) also explains why pronominal subjects, which lack the NP constituent, cannot appear postverbally and must undergo overt movement:

(94) *Postverbal subject (Spec,vP)* (*Russian*)
[CP *Čto*$_{1}$ C [TP *pro*$_{j}$ T [AspP t$_{1}$ *komu*$_{2}$ t$_{j}$ Asp podarila$_{v}$ [vP t$_{1}$ t$_{2}$ [NP Maša t$_{j}$] t$_{v}$]]]]?

On the other hand, regarding preverbal subjects, I assume that the whole NP moves to Spec,TP (through the edge of AspP phase, under our account), as sketched in (95):

(95) *Preverbal subject (Spec,TP)* (*Russian*)
[CP *Čto*$_{1}$ C [TP [NP Maša *pro*]$_{j}$ T [AspP t$_{1}$ *komu*$_{2}$ t$_{j}$ Asp podarila$_{v}$ [vP t$_{1}$ t$_{2}$ t$_{j}$ t$_{v}$]]]]?

Regarding prenominal subjects in Spec,AspP, I argue that this position is parameterized to Russian (and, perhaps, to other Slavic languages), since its availability is parasitic on *v*-to-Asp verb movement and phase extension. In the

case of prenominal NP-subjects following the fronted *wh*-phrases, I suggest that first the entire big-NP phrase, together with *pro*, moves to the edge of AspP, and then the pronominal part is fronted to Spec,TP:[22]

(96) *Preverbal subject (Spec,AspP)* (*Russian*)
[CP *Čto*$_1$ C [TP *pro*$_k$ T [AspP t$_1$ *komu*$_2$ [NP Maša t$_k$]$_j$ Asp podarila$_v$ [vP t$_1$ t$_2$ t$_j$ t$_v$]]]]?

The fact that in Russian questions the preverbal subject can intervene between the fronted *wh*-words corroborates our hypothesis that the two *wh*-elements occupy different syntactic positions (namely, the specifiers of CP and AspP respectively). The additional preverbal position for subjects (the edge of AspP) is also expected under our analysis. Finally, the postverbal position for NP-subjects (Spec,*v*P) is a common option in *pro*-drop languages.

7.4. Intervention effects

Recall from the discussion in chapter 3 that, according to Cable's (2007, 2010) Q-based theory, a single QP in multiple *wh*-question accounts for the lack of Superiority violations, on the one hand, and, on the other, predicts Intervention effects. Namely, the latter arise when a *wh*-word is not dominated by a QP and the first focus-sensitive operator c-commanding the *wh*-word is not a Q-particle. This offending configuration is repeated in (97):

(97) *Configuration resulting in an Intervention effect*
*[C [... *intervener* ... $\underbrace{[\ldots\ [wh\text{-word}]\ \ldots\ ]]}_{\text{no Q-particle}}$ [from Cable 2010:127]

Therefore, we predict that in Russian multiple questions, where a single QP is projected, the lower *wh*-phrase, which is not dominated by any QP, cannot appear within the scope of negation. On the other hand, we expect that negation

[22] The reader may wonder why pronominal subjects can also appear following the fronted *wh*-elements (presumably, at Spec,AspP), (93), assuming that they lack the nominal part. I tentatively suggest two possible solutions to this problem. One is that after overt movement from Spec,*v*P to Spec,AspP the pronoun moves covertly to Spec,TP for [person]-checking reasons. Another possibility is that movement into the TP domain is overt, but then the lower copy in AspP is pronounced for some PF reasons. I leave this issue for future investigation, since it is beyond the scope of this thesis.

should be allowed to follow the fronted *wh*-elements. This is illustrated below for Superiority-obeying and Superiority-violating questions respectively:[23]

(98) a. [$_{CP}$ [$_{QP}$ *Kto*$_1$]$_i$ [(*<u>nikogda</u>) [t$_i$ [$_{XP}$ *komu*$_2$] [(<u>nikogda</u>) ne zvonil]]]]?(*Russian*)
who.NOM never who.DAT NEG phoned
'Who never phoned whom?
b. [$_{CP}$ [$_{QP}$ *Komu*$_2$]$_i$ [(*<u>nikogda</u>) [[$_{XP}$ *kto*$_1$] t$_i$ (<u>nikogda</u>) ne zvonil]]]]?
who.DAT never who.NOM NEG phoned

In summary, the Intervention data in (98) confirm our suggestion that Russian multiple *wh*-questions with Superiority-violating orders involve only one QP. Moreover, Intervention effect and lack of Superiority violations are derived from a single core property of the language.

7.5. (Multiple) *wh*-extraction out of embedded clauses

Moreover, our analysis of multiple questions makes clear predictions about the availability of multiple and single *wh*-extraction out of embedded clauses in a MWF language. As noticed by Rudin (1988), languages with Superiority effects (e.g. Bulgarian) permit only multiple *wh*-extraction, as in (99). Meanwhile, languages without sensitivity to Superiority violations (e.g. Russian) allow for both multiple and single extraction from embedded clauses, as in (100). In what follows, I show that this contrast is expected under our Q-based approach.

(99) a. *Koj*$_1$ *kŭde*$_2$ misliš' [*če* e otišŭl]? (*Bulgarian*)
who.NOM where think.2SG that is gone
'Who do you think has gone where?'

[23] Interestingly, there is certain speaker-variation regarding judgments of the Superiority-obeying questions like (98a). Most speakers judge sentences with the intervening negation as ill-formed, but few others report that in Superiority-violating questions, (98b), such intervention sounds even worse than in Superiority-obeying ones. It is difficult to test whether so subtle difference really exists, providing a particular licensing context. However, if true, this could follow under assumption that in Russian the unspecific, Superiority-obeying questions resort to multiple QPs (one for each *wh*-word), the second one being pronounced at the lower position (see fn. 16). Significantly, all speakers unanimously reject the intervening negation in Superiority-violating orders; this fact is expected under our assumption that such questions unambiguously possess only one QP, for the *wh*$_2$. Regarding Bulgarian, we predict that negation can only follow the fronted *wh*-words, which (derivationally simultaneously) move high, into CP.

b. **Koj*$_1$ misliš' [*kŭde*$_2$ *če* e otišŭl]?
who.NOM think.2SG where that is gone
'Who do you think has gone where?' [from Rudin 1988:450-451]

(100) a. *Kto*$_1$ *komu*$_2$ ty xočeš' [*čtoby* pozvonil]? (*Russian*)
who.NOM who.DAT you want that.SUBJ phoned
'Who do you want to phone whom?'
b. *Komu*$_2$ *kto*$_1$ ty xočeš' [*čtoby* pozvonil]?
who.DAT who.NOM you want that.SUBJ phoned
'Who do you want to phone whom?'
c. *Kto*$_1$ ty xočeš' [*čtoby* *komu*$_2$ pozvonil]?
who.NOM you want that.SUBJ who.DAT phoned
'Who do you want to phone whom?'
d. *Komu*$_2$ ty xočeš' [*čtoby* *kto*$_1$ pozvonil]?
who.DAT you want that.SUBJ who.NOM phoned
'Who do you want to phone whom?'

Consider first how the Russian questions in (100) are derived under our analysis. Given that both Superiority-obeying and Superiority-violating orders are allowed, I assume that these multiple questions involve only one QP. Regarding multiple *wh*-extraction, as in (100a,b), the underlying derivation might be as follows:

(101) *Multiple wh-extraction in Russian*

a. $[_{CP}\ C_{1[iQ][\sout{uWH}]}\ [_{AspP}\ [_{QP}\ wh_1]_{[uQ]}\ [_{XP}\ wh_2]_{[iWH]}\ v/\text{Asp}\ \boxed{[_{CP}\ t_1\ t_2\ C_2\ \textit{čtoby}\ \ldots]]]}$
Wh-Agree
Transfer

b. $[_{CP}\ [_{QP}\ wh_1]_{\sout{[uQ]}}\ C_{1[iQ]}\ [_{AspP}\ t_1\ [_{XP}\ wh_2]_{[iWH]}\ v/\text{Asp}\ [_{CP}\ \ldots]]]$
Move and Q-Agree

In (101), the embedded non-interrogative C_2, realized as *čtoby* 'that.SUBJ', is neither endowed with the *wh*-feature nor with the Q-feature. Consequently, the *wh*-words keep moving to the main clause (through the edges of CP_2 and AspP successively) in order to escape phase domains.[24] Namely, they get closer to the matrix C_1. Movement of the *wh*-phrase not dominated by any QP renders it visible for C (through *wh*-agreement), (101a), and, hence, insures a correct

[24] For simplicity's sake, I ignore the *v*P level of the matrix clause and most of projections inside the embedded clause.

semantics for the multiple question. Then, the *wh*-word dominated by QP moves to the edge of the root clause (CP_1) in order to check its uninterpretable Q-feature. As a result, the two *wh*-words appear inside the main clause, as illustrated in (101b).

I suggest that movement to the matrix clause of the wh_2 is only required if an additional Q-particle has been merged with C and, as a result, such C is endowed with the uninterpretable *wh*-feature. This option is represented in (101). Since both *wh*-containing items, QP and XP, finally establish a syntactic relation with C (through agreement), both receive wide scope.

However, why can the XP remain inside the embedded clause in Russian, as in (100c) and (100d)? Recall that in these questions the unbound *wh*-word receives narrow scope, unlike in questions with multiple *wh*-extraction.[25] I suggest that this is because the corresponding derivation contains a single Q-particle, which is merged with a *wh*-word in its base position. No Q-particle is merged with C; hence, there is no *wh*-probe in the matrix CP requiring agreement with the XP within some local domain. Thus, the derivation of the sentences in (100c,d) might be as in (102):

(102) *Single wh-extraction in Russian*

a. [CP $C_{1[iQ]}$ [AspP [QP wh_1]$_{[uQ]}$ Asp_v [CP t_1 C_2 *čtoby* … [XP wh_2]$_{[iWH]}$]]]]
Transfer

b. [CP [QP wh_1]$_{1[uQ]}$ $C_{1[iQ]}$ [AspP t_1 Asp_v [CP …]]]
Move and Q-Agree

In (102), QP has to move through the phase edges in order to be able to check its formal imperfection, [uQ]. Meanwhile, the *wh*-word not contained within the QP remains inside the embedded clause. Importantly, there is no reason for this *wh*-word to move to the edge of the embedded CP_2, so we correctly rule out sentences like (103) below. The single QP moves into CP successive cyclically, through the edge of AspP. Once it reaches Spec,CP, QP can delete its uninterpretable Q-feature through upward agreement with C. As a result, we

[25] In fact, as first reported by Baker (1970), the *loss-of-scope* effect typically arise in the English embedded *wh*-questions like (ia), where the *wh*-phrase *what*, left inside the embedded clause, can receive either narrow scope (i.e., it does not require an answer), (ib), or wide scope, (ic) (see also Chomsky 1977a; Pesetsky 1987, among others):

(i) a. *Who* knows where Mary bought *what*?
b. John does.
c. John knows where she bought milk, Bill knows where she bought bread…

obtain a sentence, in which only one *wh*-word has been extracted out of the embedded clause.

(103) * *Kto*$_1$ ty xočeš' [*komu*$_2$ *čtoby* pozvonil]? (*Russian*)
who.NOM you want who.DAT that.SUBJ phoned
'Who do you want to phone whom?'

Given these assumptions, the Bulgarian pattern of multiple *wh*-extraction follows in a straightforward manner. As proposed, Bulgarian multiple questions have multiple QPs, one for each *wh*-item, so we predict that all *wh*-words will move to the edge of the root CP_1.[26] Therefore, our account correctly rules out the Bulgarian sentences with single *wh*-extraction, as in (99b). The derivation of the Bulgarian sentence with multiple *wh*-extraction, as in (99a), proceeds as follows:

(104) *Multiple wh-extraction in Bulgarian*

a. $[_{CP}\ C_{1[iQ]}\ [_{AspP}\ [QP\,wh_1]_{[uQ]}\ [QP\,wh_2]_{[uQ]}\ Asp_v\ \boxed{[_{CP}\ t_1\ t_2\ C_2\ \check{c}e\ ...]]]}$
Transfer

b. $[_{CP}\ [QP\,wh_1]_{\sout{[uQ]}}\ [QP\,wh_2]_{[uQ]}\ C_{1[iQ]}\ [_{AspP}\ t_1\ t_2\ Asp_v\ [_{CP}\ ...]]]$

Multiple Move and Multiple Q-Agree

To conclude, our phase-related Q-based approach is able to capture uniformly the striking contrast between the two MWF languages regarding the possibility of single and multiple *wh*-extractions from an embedded clause.

8. Typology of *wh*-movement

Let me conclude this chapter by considering the question of typology of *wh*-movement across languages, given our assumptions concerning the MWF phenomenon.

As argued in Cable (2007, 2010), in no language a *wh*-word establishes a direct syntactic relationship with the interrogative C. Rather, in all languages this relation is set up through the help of a Q-particle merged with the *wh*-word. Overt *wh*-movement to the left edge of a clause is merely a secondary effect of

[26] Russian questions with multiple *wh*-extraction and Superiority-obeying order, (100a), might have same, multiple-QP derivation as its Bulgarian counterpart, (104). I leave for future research a question on what readings emerge in a question with multiple *wh*-extraction depending on a number of QP projections. I also leave for future investigation of the interaction between multiple *wh*-extraction and Intervention effects.

movement of QP. Given this scenario, Cable suggests two main parameters that determine properties of the *wh*-syntax across languages: (i) *whether movement of Q-particle is overt*; (ii) *whether Q takes its sister as complement*. Independently, the author proposes a third parameter which affects the surface appearance of a *wh*-structure: (iii) *whether Q has any phonological content*.

Under this view, a language with *wh*-fronting is simply a language with overt Q-movement and QP-projection (i.e., Q takes its sister as complement and projects a QP). According to Cable, such languages are Tlingit, (105a), and English, (105b). These two languages only differ with respect to the third parameter: Tlingit Q-particles have phonological content, while their English counterparts are null.

(105) *Languages with overt Q-movement and QP-projection*

a. *Overt Q-particle*
Daa <u>sá</u> i éesh al'óon? (*Tlingit*)
what Q your father he.hunts.it
'What is your father hunting?' [from Cable 2010:7]

b. *Null Q-particle*
What did you buy? (*English*)

On the other hand, there are QP-projecting languages resorting to covert Q-movement. Such is the case of Sinhala, (106), which differs from Tlingit only in that the Q-particles of the former move covertly.

(106) *Language with covert Q-movement and QP-projection* (*Sinhala*)
Chitra *monawa* <u>da</u> gatte?
Chitra what Q buy
'What did Chitra buy?'[from Kishimoto 2005:3–4; cited from Cable 2010:31]

Finally, there are languages with overt Q-movement, in which Q-particles adjoin to their sisters and, hence, do not project QPs. This is the case of Japanese:

(107) *Language with overt Q-movement and QP-adjunction* (*Japanese*)
John-ga nani-o kaimasita <u>ka</u>?
John-NOM what-ACC bought.polite Q
'What did John buy?'

Concerning multiple *wh*-questions, Cable suggests that there is an additional particular parameter responsible for variation across languages concerning the

syntax of multiple questions: (iv) *whether a language permits multiple wh-questions to contain multiple Qs*. As reported in Cable (2010), the prediction that there are languages with multiple QPs is supported by Tlingit multiple *wh*-questions in (108), exhibiting two overt instances of a Q-particle *sá*, one for each fronted *wh*-word:

(108) *Multiple Q-particles in Tlingit multiple wh-questions*

a. *Aa* sá *daa* sá aawaxáa?
who Q what Q they.ate.it
'Who ate what?'

b. *Aa* sá *goodéi* sá woogoot?
who Q where.to Q they.went
'Who went where?' [from Cable 2010:128]

On the other hand, some languages do not allow multiple Q-particles in multiple *wh*-questions, as evidenced by the examples in (109) from Navajo, in which there is only one instance of the Q-particle *lá*, but two *wh*-words:

(109) *Single Q-particle in Navajo multiple wh-questions*

a. *Háí*-lá *ha'át'íí* nayiisnii'?
who-Q what he.bought.it
'Who bought what?'

b. * *Háí*-lá *ha'át'íí*-lá nayiisnii'?
who-Q what-Q he.bought.it
[from Barss *et al.* 1991; cited from Cable 2010:128]

According to Cable, this parameter is what crucially differentiates multiple *wh*-questions in English and German. In the former, multiple questions exhibit Superiority effects, but are immune to Intervention effect, whereas in the latter, there is no sensitivity to Superiority violations, but Intervention effects do show up:

(110) *Language with multiple QPs*

a. *Who*$_1$ bought *what*$_2$? (*English*)

b. * *What*$_2$ did *who*$_1$ buy?

c. *Who*$_1$ didn't buy *what*$_2$?

(111) *Language with single QP*

a. *Wer*$_1$ hat *was*$_2$ gekauft? (*German*)
who has what bought
'Who bought what?'

b. *Was*$_2$ hat *wer*$_1$ gekauft?
what has who bought

c. ?? *Wer*$_1$ hat niemanden *wo*$_2$ angetroffen?
who has nobody where met
'Who met nobody where?' [from Cable 2010:123]

However, I proposed that some additional parameters should be added to Cable's theory, in order to distinguish between different patterns of movement in multiple *wh*-questions. First, I suggested that the difference between English and Bulgarian, whose multiple *wh*-questions are sensitive to Superiority violations, is due to a particular PF rule parameterized for English (i.e., absent from Bulgarian). I suggested that this is an additional PF-related parameter: (v) *whether all fronted QPs are pronounced in their new positions*. On the other hand, what distinguishes Russian from English is the place in which the lower copy of the second QP is located (and, consequently, pronounced): in the former language this position is within AspP, while in the latter it is at the base position.

And, crucially, I proposed that languages with overt MWF like Russian and Bulgarian are distinguished from languages like English by an additional syntactic parameter; (vi) *whether vP phase extends, being parasitic on verb movement to a higher functional head.*[27] If this parameter is correct, then we predict that languages resorting to phase extension will exhibit instances of multiple *wh*-fronting. I address this issue in the following subsection by considering multiple *wh*-questions in Spanish. As our discussion proceeds, one additional parameter will be added to the picture: (vii) *whether the verb undergoes v-to-T-to-C movement*.

[27] Lisa Cheng, through personal communication, raises a challenging question why Bantu languages, which exhibit verb movement, lack multiple *wh*-fronting. I suggest that the parameter (vi) might be the answer to this question: verb movement does not necessarily result in phase extension, the latter being a parameterized option, parasitic on verb movement (e.g. see also Gallego 2007, 2010 on parametric variation in Romance). Therefore, we could divide this parameter into two components: (vi') whether the verb moves to a higher functional projection, and (vi'') whether verb movement triggers phase extension. I leave this issue for future research.

8.1. Multiple *wh*-questions in Spanish

In this subsection I will suggest a tentative solution to a striking property of Spanish multiple *wh*-questions: on the one hand, they can violate Superiority effects, but, on the other, the in-situ *wh*-word is not subject to Intervention effects. This is illustrated in (112):

(112) *No Superiority effects; no Intervention effects* (*Spanish*)
a. ¿*Quién*$_1$ *no* invitó *a quién*$_2$?
who NEG invited to who
'Who did not invite whom?'
b. ? ¿*A quién*$_2$ *no* invitó *quién*$_1$?
to who NEG invited who

The reader may notice that the pattern exhibited by the Spanish examples in (112) seem to contradict Cable's generalization in (113):

(113) *The Complementarity of Superiority Effects and Intervention Effects*
In any language L, the in-situ *wh*-words of a multiple *wh*-question of L are subject to Intervention effects *if and only if* the multiple *wh*-questions of L are *not* subject to Superiority effects. [from Cable 2010:132]

That is, Spanish is neither subject to Superiority effects nor to Intervention effects. In the remainder of this subsection I will (lightly) suggest an answer to this problem, which is in line with Cable's Q-based theory. Unfortunately, the solution that I put forth is going to be vague and speculative, but it may indicate the way to a fuller treatment of these facts.

As the basis for an explanation of this puzzle, I will assume Gallego's (2007, 2010) proposal that in Spanish the *v*P phase extends to TP after *v*-to-T-verb movement (for details, the reader is referred to Gallego's works and section 4 of this chapter). I address the puzzle in (113) in terms of successive cyclic *wh*-movement and an additional escape hatch created by phase extension.

Within the Q-based theory, the fact that Spanish multiple *wh*-questions can violate Superiority suggests that the correspondent derivations contain only one QP. This QP phrase is projected by a Q-particle, merged with one of the *wh*-words. Consequently, only one *wh*-word —either the highest or the lower one— will be pied-piped to the edge of CP. Concerning the *wh*-word which is not dominated by any QP, I suggest that in Spanish it does not remain in-situ, within *v*P, despite the appearance. Similarly to what I proposed for Russian multiple

wh-questions with a single QP, I suggest that in Spanish an additional Q-particle is merged with C, and the latter, in turn, inherits the uninterpretable instance of the *wh*-feature. That is, XP undergoes movement to the edge of TP, in order to escape the domain of the extended phase and to be visible to C; otherwise, the derivation crashes. Thus, the derivation of the Spanish questions in (112) might proceed as follows:

(114) *Derivation of multiple wh-questions in Spanish*

a. $[_{CP}\ C_{[iQ]}$ no invitó $[_{TP}\ [_{XP}\ \textit{quién}_1]_{1[iWH]}\ [_{QP}\ \textit{a quién}_2\ Q]_{2[uQ}\ t_v\ [_{vP}\ t_1\ t_2\ t_v\ ]]]$

Transfer

verb movement

b. $[_{CP}\ C_{[iQ]\text{~~[uWH]~~}}\ [_{TP}\ [_{XP}\ \textit{quién}_1]_{1[iWH]}\ [_{QP}\ \textit{a quién}_2\ Q]_{2[uQ]}\ T$ no invitó$_v$ $[_{vP}\ t_1\ t_2\ t_v\ ]]]$

Multiple Move and Wh-Agree

c. $[_{CP}\ [_{QP}\ \textit{a quién}_2\ Q]_{2\text{~~[uQ]~~}}\ C_{[iQ]}\ [_{TP}\ [_{XP}\ \textit{quién}_1]_{1[iWH]}\ t_2\ T$ no invitó$_v$ ...$]]]$

Move and Q-Agree

In Spanish the verb is inflected for tense and bears an uninterpretable instance of the [Tense] feature, which is checked in T (see Solà 1992; Gallego 2007, 2010 and references therein). After *v*-to-T movement, the phase extends and all *wh*-words undergo movement to the edge of TP, otherwise they will be trapped inside the domain of the extended phase, *v*P. Afterwards, multiple existential quantifiers are incorporated into the semantics of the question via *wh*-feature-agreement between C and the *wh*-elements it c-commands. These two steps are represented in (114a). Next, the verb raises from T to C, carrying out the last stretch of the complex *v*-to-T-to-C movement.[28] I suggest that this step, represented in (114b), is what mainly distinguishes Spanish multiple *wh*-questions from their Russian counterparts. Finally, the *wh*-word dominated by QP is fronted to Spec,CP as a result of Q-feature-checking, as in (114c).

The derivation in (114) invites the following solution regarding the puzzling lack of Intervention effects for the *wh*-word non-dominated by any QP. Overt

[28] In assuming T to C movement in Spanish, I agree with Gallego (2007, 2010), but I depart from a number of previous works that claim that the Spanish verb never raises to C (see Bonet 1989; Solà 1992; Suñer 1994; Barbosa 1997, 2001; Ordóñez 1997, 1998; Cardinaletti 2004, 2007, among others). For discussion, the reader is referred to Gallego (2007, 2010).

movement of the *wh*-word from its base position and the consequent movement of negation (together with the verb) from T to C bring down the offending force of the negative operator and its effect on the *wh*-word within its scope. The offending effect is reduced, but not annulated. In fact, Spanish Superiority-violating questions with negation, as in (112b), although acceptable, generally receive one question mark when judged by native speakers. Although the details of this solution remain vague, an analysis of this sort can capture the exceptional properties of Spanish multiple *wh*-questions in (112) with respect to Superiority violations and Intervention effects.

Moreover, some pieces of empirical evidence seem to support the claim that the inner *wh*-phase does not appear at its base position in Spanish, but somewhere higher in the tree. First, observe that our analysis correctly predicts that in Spanish multiple *wh*-questions the subject is able to appear at two different *postverbal* positions:

(115) *Subject positions in Spanish multiple wh-questions*
[$_{CP}$ *Qué*$_1$ (*<u>María</u>$_S$) C regaló$_v$ [$_{TP}$ (<u>María</u>$_S$) *a quién*$_2$ t$_v$ [$_{vP}$ (<u>María</u>$_S$) t$_1$ t$_2$ t$_v$]]]?
what Maria gave to whom
'What did Maria give to whom?'

Under our analysis, the preverbal option is not available, since the verb is in C (as opposed to Russian; see section 7.3). On the other hand, the two postverbal positions fall into place straightforwardly under the analysis in (114): the lower position corresponds to Spec,*v*P, while the higher one corresponds to Spec,TP.

Another piece of evidence comes from adverb placement. As expected, low adverbs like *ayer* 'yesterday' sound better when following the *wh*$_2$, while the IP-level adverb *siempre* 'always' is preferred when preceding the *wh*$_2$:

(116) *Adverbs in Spanish multiple wh-questions*
a. [$_{CP}$ *Quién*$_1$ C invitó$_v$ [$_{TP}$ ($^{??}$<u>ayer</u>) t$_1$ *a quién*$_2$ t$_v$ [$_{vP}$ (<u>ayer</u>) t$_1$ t$_2$ t$_v$]]]?
who invited yesterday to whom
'Who invited whom yesterday?'
b. [$_{CP}$ *Quién*$_1$ C invita$_v$ [$_{TP}$ (<u>*siempre*</u>) t$_1$ *a quién*$_2$ t$_v$ [$_{vP}$ ($^{??}$<u>*siempre*</u>) t$_1$ t$_2$ t$_v$]]]?
who invites always to whom
'Who always invites whom?'

Finally, as reported in Gallego (2012, 2014), Spanish multiple *wh*-questions can occasionally exhibit instances of MWF, although such sentences are not accepted

by all speakers equally well. This is shown in (117) (for more empirical facts, see Gallego 2014):

(117) a. ? No sé *quién*$_1$ *a quién*$_2$ ha enviado un carta. (*Spanish*)
NEG know who to whom has sent a letter
'I don't know who sent the latter to whom'
[from Uriagereka 2005:2; cited from Gallego 2012:2]

b. ? *Qué*$_1$ *a quién*$_2$ dices [que le ha regalado Juan t_1 t_2]?
what to whom say.2SG that CL has gave Juan
'What do you say that Juan gave to whom?'
[Etxepare & Uribe-Etxebarria 2005:13-14; cited from Gallego 2012:2]

(118) (*Context: The owner of a factory visits to check how everything is going, thinking that the environment is ideal, every employee getting along with her/his workmates…*) (*Spanish*)
a. Factory manager: Últimamente unos cuantos se han quejado de otros.
b. Factory owner: A ver, *¿quién de quién* se ha quejado?
[from Gallego 2012:5-6]

As far as I can see, the proposal in (114) suggests a relatively simple solution to this puzzle, while it is hardly explained under standard assumptions (i.e., that only one *wh*-phrase undergoes overt movement in Spanish). What we have to assume is that in the multiple questions in (117) and (118), unlike in the standard ones in (112), the verb has not been raised to C for some reason, on which I will not speculate here (for discussion, see Gallego 2007). As a result, the two *wh*-phrases finally appear clause-initially, but in fact they occupy different syntactic positions. Under this view, the MWF in Spanish questions as well as their marginal status are at least expected.[29]

[29] Gallego (2014), who observes the occasional MWF behaviour of Spanish multiple *wh*-questions, proposes an interesting solution to the puzzle, based on Richards's (2010) distinctiveness, defined as in (i):

(i) If a linearization statement <α, α> is generated, the derivation crashes.
[from Richards 2010:5]

The author also observes that the stress on one of the *wh*-words improves cases of MWF in Spanish, as in (ii):

(ii) Cómo? Quién QUÉ ha dicho?
how who WHAT has said
'What? Who said what?' [from Gallego 2014:48]

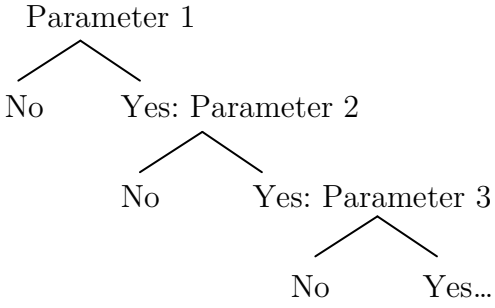
Gallego proposes that, according to the rule in (i), distinctness can license cases where the label of the *wh*-elements is different (^{OK}[XP YP] *vs.* *[XP XP]), resulting in acceptance of the

To sum up, I showed that certain Spanish data challenge the standard assumption that multiple questions in this language exhibit single *wh*-fronting. I conclude that an additional parameter should be introduced to the general picture previously outlined: (vii) *whether the verb undergoes v-to-T-to-C movement*. This parameter defines the emergent variation between languages like Spanish and Russian, which exhibit phase extension parasitic on verb movement. Of course, a deeper investigation of the Spanish facts is needed, which I leave for future work.

8.2. Towards a parameter hierarchy for *wh*-movement

In this subsection, I propose a tentative parameter hierarchy for *wh*-movement, adopting the idea that parameters of variation are dependent (see Roberts & Holmerg 2010; Roberts 2012; Sheehan 2012; Ledgeway in press, among others) and can be organized into a hierarchy, as in the figure below:

(119) *Parameter hierarchy*



Under this view, the first parameter, at the highest position within the hierarchy, outlines a major typological distinction (macroparameter), whereas the lower positions successively determine more particular properties (microparameters). Every lower parameter is more complex —more 'micro'— than its antecedent, which is located higher in the tree. The parameter hierarchy defines the learning path for language acquisition, as a child always starts from the highest position

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sentences like (118b) and (ii), with their configurations corresponding to (iiia) and (iiib) respectively:

(iii) a. [DP *quién*] [PP *de quién*]…

b. [DP *quién*] [ForcusP QUÉ]…

Gallego (2014:60) suggests that the landing site of the lower *wh*-item "could be the position occupied by clitic right dislocation", namely, somewhere between v and C. He also mentions that MWF in Spanish can be partially derived due to the lack of T-to-C verb movement. As the reader may notice, Gallego's proposal goes quite in hand with my intuition on that the lower *wh*-item is housed lower than CP (perhaps, at Spec,TP). I leave the issue of Spanish MWF for future research.

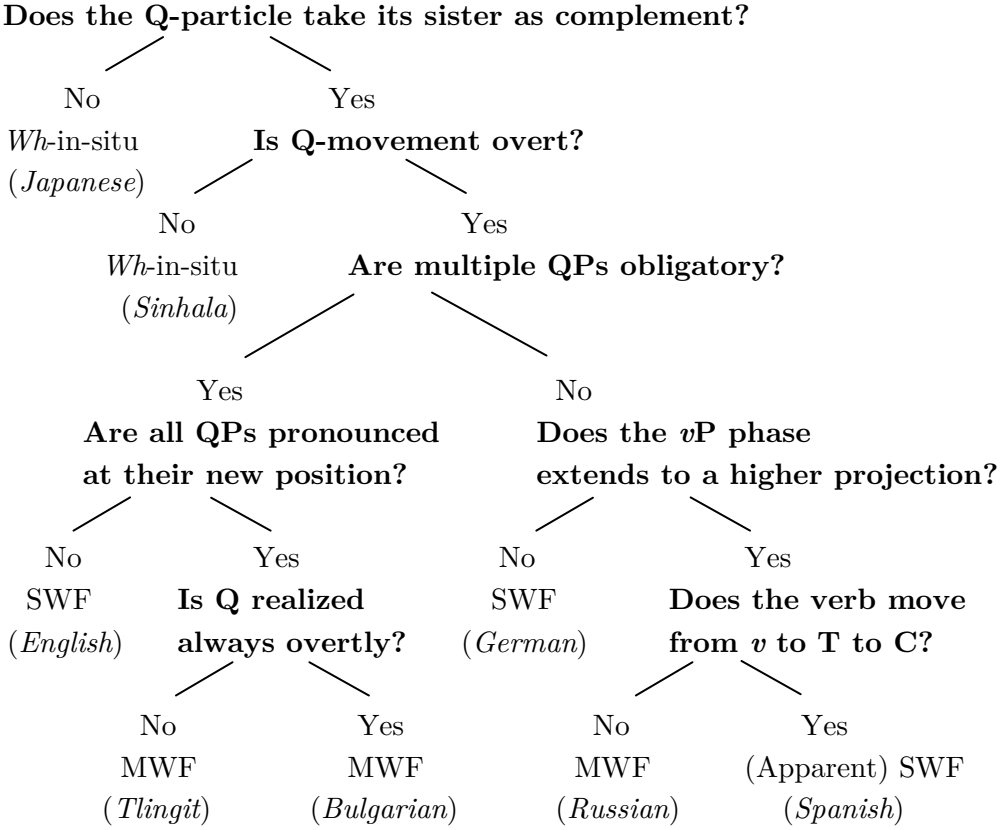
(which determines the simplest choice) and then moves successively down the tree, forced by primarily linguistic data. For a detailed discussion of how parametric hierarchies work, the reader is referred to Roberts (2012).

So far, at the beginning of this section, we established seven parameters of variation in the emerging typology of *wh*-questions across languages. In (120) below, I propose a parameter hierarchy for the *wh*-typology, comprising seven parameters arranged into binary dependencies.[30]

Languages get progressively more complex with respect to *wh*-interrogative syntax as we move down the hierarchy. As shown in (120), the first macroparameter divides *wh*-in-situ languages of the Japanese-type, in which Q adjoins to its sister, from the rest of languages resorting to Q-projection. The second macroparameter concerns overt/covert movement of QPs. It distinguishes between languages like Sinhala, with covert QP-movement, and all other languages, in which movement of QPs is overt. The third macroparameter defines whether in a given language multiple *wh*-questions resort to projection of multiple QPs or not. The hierarchy breaks down into microparameters at this point.

[30] Notice that the activation of a particular parameter can be determined by either a positive or negative setting of the higher parameter. Observe also that a given positive or negative dependency can give rise to a further binary branching. In the hierarchy, 'SWF' states for 'single *wh*-fronting', as opposed to MWF.

(120)



If a language obligatorily resorts to multiple QPs, it will exhibit sensitivity to Superiority violations and insensitivity to Intervention effects. Here, the next microparameter distinguishes languages in which all QPs are pronounced at the left edge of a question (e.g. Tlingit and Bulgarian) from languages in which only one *wh*-phrase is pronounced at the leftmost position (e.g. English). Furthermore, Tlingit is distinguished from Bulgarian by the specific parameter regarding the pronunciation of Q-particles. In the former language, Qs are always phonetically realized (as *sá*), while in the latter Qs can either be overtly realized (as *li*) or be phonetically null.

Let us turn back to the last macroparameter concerning the number of QPs. If a language resorts to projection of a single QP, it will not show sensitivity to Superiority effects. However, the next microparameter arising at this point distinguishes between different types of languages that are not subject to Superiority. This parameter defines whether in a given language the *wh*-words non-dominated by any QP will appear in-situ or undergo movement to a preverbal position. I argued that movement of non-QPs is parasitic on phase extension of the *v*P phase, which, in turn, can (in some languages) arise as a result of verb movement to a higher functional projection. If a language does not resort to phase extension, only one *wh*-phrase, the one dominated by a single QP, will appear at the left edge of a clause. Assuming Cable's (2007, 2010) conclusion,

German might be of such type of languages. However, if a language does resort to phase extension, there is an additional specific microparameter defining the final surface position of the *wh*-items. If a language resorts to *v*-to-T-to-C movement, only one *wh*-word will appear preverbally, while the rest will appear (apparently) in-situ. I argued that this can be the case of Spanish. On the other hand, if the verb never moves as high as T in a language, all its *wh*-words will appear preverbally, although occupying structurally different positions. As a result, such language will exhibit a different type of MWF, which is not subject to strict ordering. As I argued in this chapter, Russian represents this type of languages, as opposed to Bulgarian.[31]

I am aware that the parameters hierarchy proposed in (120) is quite tentative and incomplete, being drawn on data from very few languages. A much deeper and more extensive crosslinguistic comparative research is needed, in order to derive a more general picture. Even the languages picked up into the hierarchy require a more detailed study, e.g., through the prism of formation of multiple *wh*-questions. The further investigation will show whether additional parameters should be brought into the picture and whether the established ones need a reformulation. However, I believe that the figure in (120), although tentative, points towards a possible hierarchy of parameters of variation in the crosslinguistic typology of *wh*-questions.

9. Summary and conclusions

In this chapter, I considered the derivation of questions with MWF in two Slavic languages, which are standardly opposed to each other: Russian and Bulgarian (although I focused on the former). I put forward a Q-based analysis of MWF questions in these two languages, in the spirit of Cable's (2007, 2010) Q-theory. However, I proposed some additions to Cable's original formulation of the Q-theory in order to enable it to capture the MWF phenomenon, on the one hand, and to distinguish between the two different MWF languages, on the other.

I argued that in Russian, unlike in Bulgarian, the fronted *wh*-items occupy structurally different positions. I claimed that AspP projection is endowed with phase properties in Slavic languages, as a result of *v*-to-Asp verb movement and a consequent (parameterized) phase extension (in the spirit of Gallego 2007, 2010; den Dikken 2007, among others). As a consequence, all *wh*-items —independently

[31] Perhaps, the possibility of a single QP is also marginally available in Bulgarian. It has been reported in the literature that some Bulgarian speakers do allow Superiority violations or interpolation of some material between the *wh*-words (e.g. see Lambova 2001, 2004; Dukova-Zheleva 2010). I leave this matter for future research.

from whether they have been merged with a Q-particle or not— undergo Superiority-obeying multiple internal Merge to the edge of AspP, in order to escape the domain of the extended phase. Such movement renders them visible for further syntactic operations and allows incorporating multiple existential quantifiers into the meaning of the question. Secondly, it makes possible further internal Merge of QP(s) into CP for Q-feature-checking reasons.

I showed that this analysis offers a uniform explanation to a number of puzzling properties of multiple *wh*-questions in Russian. I also extended this view to Spanish multiple *wh*-questions and suggested that they may exhibit a hidden MWF phenomenon, due to the phasal status of another functional projection, TP. Finally, I offered a tentative parameter hierarchy for the emerging crosslinguistic variation regarding *wh*-movement.

CHAPTER 5

A derivational approach to the "echo challenge"

1. Introduction: what are echo *wh*-questions?

The previous two chapters dealt with properties of *wh*-movement in true multiple *wh*-questions. This chapter is devoted to shed some light on the syntactic behavior of echo *wh*-questions (henceforth *wh*-EQs). In this chapter I mainly restrict my attention to *wh*-EQs containing multiple *wh*-items and examine their properties across different *wh*-fronting languages. Namely, I compare properties of *wh*-EQs in Russian, a language with MWF in which all *wh*-words appear preverbally, and *wh*-EQs in languages like English and Spanish, in which only one *wh*-word is pronounced at the left edge of a clause, while the rest appear postverbally.

Wh-EQs are generally used in immediate response to an utterance to request for repetition or to express speaker's surprise or amazement at some aspect of the utterance's content. In the literature on interrogative syntax, the general tendency is to leave *wh*-EQs aside, since these interrogatives behave in a quite unusual way. For instance, it has been claimed that it is "unprofitable to attempt to integrate them into the analysis of the more usual types of questions" (Culicover 1976:73) or that "the grammatical rules of the language should not generate them. The situation with these questions is, I think, quite similar to something that arises with stress in phonology" (Cooper 1983:149).

However, I side with Sobin (2010:131), who states that EQs "are of great interest and relevance to analyses of question formation since they are clearly in the realm of 'automatic' and 'untutored' knowledge, just the sort of linguistic knowledge that generative grammar has had the aim of explaining since its inception".

Wh-EQs are traditionally considered as a counterpoint to standard assumptions about interrogative syntax and they are rarely discussed in the current minimalist literature. The few existent syntactic and pragmatic studies on such constructions have argued that they do not exhibit overt *wh*-movement (see Noh 1998; Iwata 2003; den Dikken 2003; Fiengo 2007; Sobin 2010, among others). In effect, EQs seem immune to the obligatory *wh*-movement and the consequent T-to-C verb raising, as illustrated by the English example (1a).

Wh-EQs can also apparently violate Superiority effects when containing more than one *wh*-word, as shown in (1b) (hereafter the echo-introduced *wh*-phrases appear underlined and with a subscript *E*):

(1) a. Mary had tea with $\underline{\text{who}}_{\text{E}}$? (*English*)
b. *What* did $\underline{\text{who}}_{\text{E}}$ drink at Mary's party? [from Sobin 2010:132]

This chapter, apart from describing the general properties of *wh*-EQs, is mainly concerned with *unheard*, or *request-for-repetition wh*-EQs that contain multiple *wh*-items, as (1b). This type of questions is normally generated in response to a previous *wh*-interrogative, like the one in (2), in which the questioner of (1b) cannot hear the name of the person who supposedly drank something at Mary's party (in what follows, I use *U*(tterance) to signal the echoed sentence):

(2) U: *What* did (mumble) drink at Mary's party? (*English*)

By uttering a *wh*-EQ as in (1b) the speaker asks the hearer to repeat what she has just said. As expected, a *wh*-EQ that echoes a non-echo *wh*-question exhibits at least two *wh*-constituents: one *wh*-word is echo-introduced and emphatically stressed, while the rest of the *wh*-words are copied from the immediately previous utterance in the dialogue. To illustrate this point, the whole discourse scenario is represented below in (3). In this example, the echo-introduced *wh*-word is underlined and marked with a subscript *E*, while the *wh*-word echoed from the echoed sentence appears in italics and with a subscript *U*:

(3) a. U: $\textit{What}_{\text{U}}$ did (mumble) drink at Mary's party? (*English*)
b. EQ: $\textit{What}_{\text{U}}$ did $\underline{\text{who}}_{\text{E}}$ drink at Mary's party?

The chapter is organized as follows. In section 2, I discuss crucial distinctions between different types of non-canonical questions in general and EQs in particular. In section 3, I describe the syntactic behavior of *request-for-repetition*, or *unheard wh*-EQs across *wh*-fronting languages, which makes this type of interrogatives clearly different from other *wh*-questions. In section 4, I address recent formal proposals regarding the particular syntactic structure of *wh*-EQs (namely, Escandell 2002 and Sobin 2010) and discuss why I adopt the latter, although with some modifications. In section 5, I establish general lines of the syntactic analysis of *wh*-EQs, in the spirit of Cable's (2007, 2010) Q-based theory. Then this analysis is applied to particular instances of such questions. Thus, in section 6, I propose how some particular cases of *wh*-EQs, in which overt echo

wh-movement is blocked, must be formally treated. In section 7, I examine in detail the general claim of my proposal, which postulates that movement of the echo *wh*-phrase proceeds successive cyclically. I show how this property is related to the fact that only languages with MWF like Russian, as opposed to English, allow overt movement of the echo *wh*-item in EQs repeating a previous *wh*-question. Section 8 concludes this chapter.

2. Different types of *wh*-in-situ questions

In this section, I survey the main object of this study, i.e., the type of *wh*-EQs which I am going to deal with throughout this chapter. As the discussion proceeds, some general pragmatic and semantic properties of *wh*-EQs will be established.

2.1. Contrastive *wh*-questions *vs.* *wh*-EQs

First, as already mentioned, in this dissertation I restrict my attention to *wh*-EQ (i.e., questions that reproduce a sentence previously pronounced by a different speaker) and leave aside other types of non-canonical questions with *wh*-in-situ. As is well known, *wh*-in-situ structures are allowed in many languages with overt *wh*-fronting; such questions require a particular discourse-pragmatic context and trigger a particular reading, with a strong presupposition (e.g. for English, see Bolinger 1978; Pires & Taylor 2007; for French, see Cheng 1997; Cheng & Rooryck 2000; Bošković 1998a, 2000; Mathieu 2004; for Spanish, see Jiménez 1997; Uribe-Etxebarria 2002; Etxepare & Uribe-Etxebarria 2005, 2012; Reglero 2007; for Italian dialects, see Munaro 1997; Poletto & Polock 2004; Manzini & Savoia 2011b; for Greek, see Grohmann & Papadopoulou 2011; Vlachos 2012). Such non-echo *wh*-in-situ questions are exemplified below for English and Spanish:

(4) a. And you did it *why*? (*English*)
b. And it happened as a *result of what*? [from Bolinger 1978:135]

(5) a. Y tu padre compró *¿qué*? (*Spanish*)
and your father bough what
'And your father bought what?'
a. Y tú has venido *¿por qué*?
and you have.2SG come why
'And you have come why?'
[from Etxeparre & Uribe-Etxebarria 2005:10,18]

Observe that the questions in (4) and (5) do not get the echo interpretation, for a simple reason that they do not reproduce any previous sentence. As argued in Jiménez (1997) and Uribe-Etxebarria (2002) (see also Etxepare & Uribe-Etxebarria 2005, 2012), such questions are necessarily linked to the previous context, but, unlike EQs, they do not ask about what has been said. Rather, they ask about a strong presupposition following from the context. As reported in Jiménez (1997), the *wh*-in-situ question in (5a) first requires a context such as (6). Only then the speaker can utter (5a), under the assumption that the father bought something from the pre-established set (eggs, milk and coffee).

(6) *Context for the wh-in-situ question in (5a)*:
My father, my mother and I went to the store to buy eggs, milk and coffee.
My mother bought the eggs. [from Jiménez 1997:42]

Therefore, such *wh*-in-situ questions quantify about a heavily restricted domain, established through the context. Moreover, observe that such questions tend to begin with a copulative conjunction *and*, which contributes to the distribution of the events between different agents. As argued in Uribe-Etxebarria (2002), in Spanish *wh*-in-situ qustions the elements preceding the *wh*-word are generally interpreted as a contrastive topic, while the *wh*-item denotes a pre-established set of items. Obviously, such questions trigger very different semantics (and syntax) from EQs, so their analysis falls aside from the scope of this dissertation.[1]

2.2. Unheard *vs.* amazement *wh*-EQs

As already stated, *wh*-EQs are pronounced in immediate response to an utterance to request for repetition or to express surprise. Following Bartels (1997), I call the former type *unheard* EQs and the latter *amazement* EQs. In this dissertation I restrict my attention to the former type of EQs, which request for repetition of the unheard part of the echoed utterance.

The main reason for such restriction is quite simple. I assume that only unheard, or *request-for-repetition* EQs are interrogative constructions, as opposed to amazement EQs, whose meaning is rather reminiscent of an exclamative. Unheard *wh*-EQs seek to reduce speaker's ignorance, as opposed to amazement EQs. Following Fiengo (2007), I assume that questions arise from ignorance: when a speaker asks a question she presents herself as being ignorant in certain aspect and seeks to complete the lack of information. For instance, when asking a

[1] For different analyses of *wh*-in-situ non-echo questions in Spanish, the reader is referred to Uribe-Etxebarria (2002), Etxepare & Uribe-Etxebarria (2005, 2009) and Reglero (2007).

canonical *yes/no*-question, the speaker signals that she does not know whether the assertion on which the question is based is true or false. When asking a *wh*-question, the speaker presents herself as being unable to complete the proposition in a satisfactory way, since she lacks some portion of information, corresponding to the *wh*-phrase.

In particular, when asking a *wh*-EQ, the speaker seeks to complete her knowledge about what has been said. As pointed out by Fiengo (2007:76), by using as a question an 'undeformed' utterance (i.e., a question with *wh*-in-situ), the speaker presents herself "as being unable to complete the utterance in a satisfactory way" and asks the addressee to repeat a missing bit of language. *Wh*-EQs are strongly related to the previous context, in the sense that their semantics is partially determined by the immediately prior utterance; i.e., they are *D-linked* in certain sense (see Pesetsky 1987, 2000). As stated in Carnie (2006:340), "echo questions are not requests for new information; instead they are requests for confirmation of something someone has heard". For this reason, *wh*-EQs sometimes are referred to as *backward citations* (Escandell 1999) or *reprise questions* (Ginsburg & Sag 2000), since these interrogatives repeat or 'quote' a sentence originally pronounced by a different speaker. Escandell (2002:873) argues that, from a pragmatic point of view, EQs are "specialised as *interpretations of attributed representations*: they are interrogative interpretations of interpretations of somebody's thoughts, or, put in other words, they are *metarepresentations*".[2]

In this dissertation I restrict my attention to *wh*-EQs and leave *total*, or *yes/no* EQs aside. Generally, the latter constitute a type of amazement EQs which do not contain any *wh*-word. They just repeat the previous utterance as a whole, in order to express the speaker's attitude such as surprise, disbelief, astonishment, etc.:

(7) *Amazement yes/no EQ* (*English*)
   a. U: I am going to Pakistan for vacation.
   b. EQ: You are going to Pakistan for vacation?! (I can't believe it!)[3]

[2] For a detailed characterization of EQs as a metalinguistic phenomenon see also Noh (1998), Iwata (2003) and references therein.

[3] In Spanish, there is a particular type of amazement *wh*-EQs, the so-called *cuasi-echo questions* (Dumitrescu 1992c). Such EQs are introduced by a *wh*-word *cómo* 'how' followed by a complementizer *que* 'that', as exemplified in (i). Here I leave this type of EQs for future research.

As the reader may notice, by uttering the EQ in (7b), the speaker does not present herself as being unable to complete the proposition, since she has perfectly heard and understood the previous utterance. Rather, the questioneer of (7b) indicates that she does not accept the interlocutor's or her own grounds for what has been said. In other words, there is no real speaker's ignorance behind the question in (7b).[4] (For more information on this type of EQs, the reader is referred to Escandell 2002, Fiengo 2007 and references therein).

Turning to *wh*-constructions, consider the pairs of examples in (8) and (9), corresponding to amazement and unheard *wh*-EQs respectively:

(8) *Amazement wh-EQ* (*English*)
   a. U: Mary read *War and Peace*.
   b. EQ: Mary read WHAT$_{E}$?

(9) *Unheard wh-EQ* (*English*)
   a. U: Mary read (mumble).
   b. EQ: Mary read what$_{E}$?

Consider first the amazement *wh*-EQ in (8b). Suppose that the speaker thinks that Mary only reads feminine journals like *Cosmopolitan* or similar. So, by uttering (8b), the speaker expresses her disbelief or surprise when hearing the assertion in (8a), that Mary read Tolstoj's *War and Peace*. The part of the utterance which generates speaker's surprise is replaced by an exclamative *wh*-word *what*. Since such *wh*-words are generally pronounced with a particular strong stress, I mark them with capital letters in the corresponding examples. In contrast, in the case of the unheard *wh*-EQ in (9b), the speaker does not quite hear a part of the utterance in (9a) and echoes it just as it is, except for the unheard part, which is replaced by an echo-introduced, interrogative *wh*-word, *what*.

(i) a. ¿Cuándo volverá Juan? (*Spanish*)
   when will.come.back.3SG Juan
   'When will come back Juan?'
   b. ¿*Cómo que* cuándo volverá Juan?
   how that when will.come.back.3SG Juan
   'What do you mean by "when will come back Juan?"?'

[4] Another speaker's intention behind the total EQ in (4b) consists in that she tries to confirm that the previous utterance has been heard or understood correctly. In this case the speaker does not express any amazement, but rather an ignorance whether what she has heard is true. Observe that the EQ in (7b) is an echo *yes/no* question.

I assume that unheard *wh*-EQs are interrogative constructions from a semantic point of view. Similarly to ordinary *wh*-questions, such *wh*-EQs denote a set of possible propositions (see Comorowski 1989; Ginsburg & Sag 2000; Arnstein 2002; Šimík 2009). More precisely, *wh*-EQs denote a property of properties of propositions, in the sense that they denote a set of possible utterances produced by the addressee. This type of EQs seeks to reduce the speaker's ignorance regarding the missed item, under which the proposition contained within the utterance is true. This is illustrated in (10a), which represents the meaning of the unheard *wh*-EQ in (9b). In contrast, amazement *wh*-EQs denote a singleton set (i.e., a single proposition), since the speaker knows exactly what has been said. This is shown in (10b), corresponding to the semantics of the amazement EQ in (8b):

(10) a. *Meaning of the unheard wh-EQ (9b)*
⟦Mary read what?⟧ = {(you said) Mary read *War and Peace*, (you said) Mary read *Ulissess...*}

b. *Meaning of the amazement wh-EQ (8b)*
⟦Mary read WHAT?⟧ = {(you said) Mary read *War and Peace*}

Semantically, by uttering an unheard *wh*-EQ, the speaker seeks to reduce her ignorance about the properties of the ongoing discourse (see Fiengo 2007; Šimík 2009). That is, the question in (9b) does not exactly ask the addressee what is the title of the book that Mary read, but rather it asks to repeat the unheard portion of the stimulus. Notice that echo *wh*-words are referential, in the sense that they always refer back to a referent which has been already mentioned in the immediately previous discourse. In other words, the speaker of the unheard *wh*-EQ in (9b) requests the addressee to complete the unheard utterance in (9a) and to assign a value to the echo *wh*-word. Therefore, the answer *War and Peace* would be a felicitous response if the echoed utterance indeed has been the one in (9a), *Mary read War and Peace*. However, the same answer would be unfelicitous if the addressee of the EQ has said *Mary read Ulissess* or *Mary read Cosmopolitan*, etc.

In contrast, amazement *wh*-EQs must not be genuinly answered, since they activate scalar inferences and the speaker's subjective believes. In (8b), the exclamative echo *wh*-phrase substitutes a component of the utterance which is the least expected one on the scale of possible items that Mary could read. To make this point clearer, consider the following dialogue between two speakers, A and B:

(11) a. A: We're going to Pakistan on vacation. (*English*)
b. B: You're going WHERE$_{E}$ on vacation?!
c. A: Well, the nature is beautiful there. [from Šimík 2009:5]

Pakistan is the least expected place to go on vacation for the speaker B, so that it is substituted with the echo *wh*-word in the amazement *wh*-EQ (11b). However, observe that the speaker B does not ask to assign a value for the *wh*-word, because it is already known (Pakistan). Rather, she seeeks for an explanation or some additional information, like (11c). Notice that the response in (11c) would be unfelicitous under request-for-repetition reading of the EQ in (11b). Suppose that the speaker did not hear quite well the utternace in (11a) and asks the question in (12a) below, which induces a weaker stress on the echo *wh*-word than under the amazement reading. This question denotes a set of possible propositions, in which the felicitous response is the one that enables the speaker to complete the previous assertion in a satisfactory way. That is, the only felicitous answer to the unheard EQ in (12a) is the one in (12b) (in the following examples, *R* states for 'response'):

(12) a. EQ: You're going <u>where</u>$_{E}$ on vacation?! (*English*)
b. R: (We are going) to Pakistan.
c. R: *Well, the nature is beautiful there.

To sum up, I assume that only unheard, request-for-repetition EQs are interrogatives, while amazement EQs are semantically (and, perhaps, syntactically) closer to exclamatives. Consequently, here I restrict my attention to the interrogative type of *wh*-EQs (henceforth, simply *wh*-EQs). By doing so, I limit the scope of the formal analysis I am going to argue for to a definable class of constructions which share certain crucial (syntactic and semantic) properties with true *wh*-questions. I leave open the question on whether the analysis I develop in this chapter can be extended to amazement EQs.

3. Key syntactic properties of *wh*-EQs

In this section I address the key syntactic properties of *wh*-EQs. Many of the striking aspects of EQs have been previously reported in the literature (see Pope 1976; Sobin 1978, 1990, 2009, 2010; Parker & Pickeral 1985; Comorowski 1989; Dumitrescu 1992a,b; Noh 1995, 1998; Ginsburg & Sag 2000; Bošković 2002a; Escandell 1999, 2002; Iwata 2003; Fiengo 2007; Sudo 2007; Vlachos 2012, among others). Generally, echo-properties constitute a challenge to ordinary theories of

wh-syntax, as, for example, the fact that languages with overt *wh*-movement (e.g. English) resort to *wh*-in-situ in EQs (e.g. *You saw <u>who</u>?*). However, in this chapter I present some novel data regarding the possibility of *wh*-movement in EQs in Russian, a MWF language (see also Chernova 2013a,b). I show that Russian *wh*-EQs exhibit evidence of overt *wh*-movement: at least two landing-sites for the echo *wh*-word are available in this language, apart from the standard *wh*-in-situ option. Interestingly, such movement-based options are not acceptable in languages that do not allow MWF in ordinary questions, such as English. I pay particular attention to Russian *wh*-EQs that repeat a previous (single or multiple) *wh*-question (e.g. *What did <u>who</u> buy?*), in order to establish patterns of interaction between non-echo *wh*-words, inherited from an echoed utterance, and the echo-introduced *wh*-constituent.

3.1. *Wh*-in-situ *vs. wh*-movement: crosslinguistic variation

Perhaps, the most well-known challenging property of *wh*-EQs is that they generally exhibit *wh*-in-situ, even in languages with overt movement. The *wh*-in-situ option is exemplified by (13b) for English and (14b) for Spanish. However, the 'ex-situ' option seems also available in these EQs, as illustrated by the sentences (c) in the following examples:

(13) a. U: Mary had tea with (mumble). (*English*)
b. EQ: Mary had tea with <u>who</u>$_E$?
c. EQ: <u>Who</u>$_E$ did Mary had tea with t_E? [adopted from Sobin 2010:132]

(14) a. U: María lee (mumble) en casa. (*Spanish*)
Maria reads (mumble) at home
'Maria reads (mumble) at home'
b. EQ: ¿(Que) María lee <u>qué</u>$_E$ en casa?
that Maria reads what at home
'Maria reads WHAT at home?'
c. EQ: ¿(Que) <u>qué</u>$_E$ lee María t_E en casa?
that what reads Maria at home
'WHAT does Maria read at home?'

As shown in the examples above, the echo *wh*-word corresponding to the unheard part (*mumble*) may appear either in-situ, as in the (b) sentences, or 'ex-situ', as in the (c) sentences.

Generally, in the literature on EQs the term 'echo' refers to questions with *wh*-in-situ, under the standard assumption that canonical, non-echo *wh*-questions

require obligatory *wh*-movement. For instance, Sobin (2010) argues that only *wh*-in-situ EQs, such as (13b), are true, 'syntactic' EQs, which means that they have a particular syntactic representation, different from the representation of canonical *wh*-questions. On the other hand, *wh*-EQs with overt movement, as in (13c), are 'pseudo' EQs, according to the author: they are ordinary *wh*-questions formed along general rules, but pronounced with a strong fail-raising (echo) intonation. That is, as follows from Sobin's argumentation, a *wh*-phrase must be left in-situ in order to get the echo interpretation.

In this thesis, I depart from the standard view that EQs necessarily trigger the in-situ position for the *wh*-word. Rather, I suggest that EQs do allow both options —in-situ and ex-situ—, but the availability of the latter is constrained by the clause-type of the echoed utterance (*cf.* Vlachos 2012). Interestingly, there is a crucial observation in Sobin (2010), which I would like to take as a departure point for my argumentation. As noticed by the author, in English the 'pseudo' EQs are only appropriate when echoing a declarative. In effect, recall that the EQs in (13b,c) reproduce the declarative utterance in (13a). With this observation in mind, consider the following English examples:[5]

(15) a. U: Did Mary have tea with (mumble)? (*English*)
b. EQ: Did Mary have tea with who$_{E}$?
c. EQ: *Who$_{E}$ did Mary have tea with t$_{E}$? [adopted from Sobin 2010:132]

(16) a. U: *What* did (mumble) drink at Mary's party? (*English*)
b. EQ: *What* did who$_{E}$ drink at Mary's party?
c. EQ: *Who$_{E}$ t$_{E}$ drank *what* at Mary's party?
[adopted from Sobin 2010:132]

Notice that the utterance in (15a) is a *yes/no* question, while (16a) is a *wh*-question. Crucially, such clause-types only allow *wh*-EQs that preserve the interrogative character of the stimulus. Namely, the EQ in (15b), which

[5] As Michal Starke observes through personal communication, (13b) has two readings, while (15b) has only one. By using the EQ in (15b), the speaker asks the addressee to repeat exactly what she has said (the so-called *repeat* reading, using Fiengo's (2007) terminology). Meanwhile, by using (13b), the intentions of the speaker could be either to ask a 'repeat' EQ, as in (15b), or to ask the addressee to assign a value to the echo *wh*-word, which replaces the unheard portion of the utterance (with Fiengo, I refer to the second reading as *open*). Recall that (13b) has two available options for the echo-inserted *wh*-word: ex-situ and in-situ, while (15b) allows only the latter. Crucially, observe that in (15b) there is an additional non-echo *wh*-word preceding the echo *wh*-item. I claim that this intervening non-echo *wh*-word is what blocks the 'open' echo-reading in (15b). I will come back to this issue later in this chapter.

maintains the *yes/no* clause-type of the echoed utterance (15a), is well-formed, while the EQ in (15c) is odd: overt *wh*-movement is not compatible with *yes/no* syntax. Similar restrictions hold in (16). The *wh*-EQ in (16b) preserves the *wh*-interrogative character of the echoed utterance (16a), including the leftmost position of the fronted *wh*-phrase *what* and the raised auxiliary verb *did*. Observe that only (16b) is a legitimate echo-response to (16a), although it apparently violates Superiority. In contrast, the Superiority-obeying *wh*-EQ in (16c) is infelicitous.

Similar restrictions hold for Spanish *wh*-EQs: the option of *wh*-movement is allowed in EQs repeating a previous declarative utterance, as in (14), but it is restricted in EQs reproducing a previous *yes/no* or *wh*-question. This is evidenced by the examples in (17) and (18) respectively:[6]

(17) a. U: ¿Ha leído María (mumble)? (*Spanish*)
has read Maria (mumble)
'Has Maria read (mumble)?'

b. EQ: ¿(Que) *(si) ha leído María qué$_E$?
that whether has read Maria what
'Has Maria read WHAT?'

c. EQ: ? ¿(Que) *(si) (qué$_E$) ha leído (qué$_E$) María t_E?[7]
that whether what has read Maria

d. EQ: *¿(Que) qué$_E$ *(si) ha leído María t_E?
that what whether has read Maria

[6] Observe that in Spanish, when an EQ repeats a *yes/no* question, it obligatorily exhibits the questions particle *si* 'whether', (17). I will come back to this particular property of Spanish EQs later in this chapter, as well to the complementizer *que* 'that'.

[7] Interestingly, some speakers of Spanish report that the echo *wh*-phrase can be fronted to the internal (either postverbal or preverbal) position in EQs (see also (18c)). This fact, I think, aligns with my suggestion that Spanish may exhibit a certain kind of MWF, which is a result of phase extension to TP, a fact that enables it to host Ā-elements (see section 8.1 of chapter 4). Crucially, however, overt movement of the echo *wh*-word to a position above *si* 'whether' (when repeating a *yes/no* question) or above the *wh*-word (when repeating a previous *wh*-question) is blocked, as shown in (17d) and (18d) respectively. I will come back to these data later in this chapter.

(18) a. U: ¿*Qué* ha leído (mumble)? (*Spanish*)
what has read (mumble)
'What has (mumble) read?'

b. EQ: ¿(Que) *qué* ha leído quién$_E$?
that what has read who
'What has WHO read?'

c. EQ: ? ¿(Que) *qué* quién$_E$ ha leído t$_E$?
that who what has read

d. EQ: *¿(Que) quién$_E$ *qué* ha leído t$_E$?
that who what has read

e. EQ: *¿(Que) quién$_E$ ha leído t$_E$ *qué*?
that who has read what

Interestingly, observe that neither in (17) nor in (18), which echo a previous question, the echo-introduced *wh*-word is allowed to undergo overt movement to the left periphery of the EQ (see fn. 7), as opposed to the question in (13c), which echoes a declarative utterance. Notice also that in EQs that repeat a previous *wh*-question, the echo *wh*-word cannot appear above the *wh*-word repeated from the previous utterance in English and Spanish, as illustrated by (16c) and (18d,e) respectively. It is worth mentioning that precisely this 'immobility' of the echo *wh*-phrase in English EQs like (16) forces Sobin (2010) to distinguish between 'syntactic' and 'pseudo' echoes.

Now consider now the following Russian examples of *wh*-EQs based on a previous declarative, a *yes/no* question and a *wh*-question respectively:[8]

[8] It is worth noting that some Russian speakers report a preference for movement of the echo-inserted *wh*-word over the *wh*-in-situ option. Similar preference is also reported in Stepanov (1998) and Bošković (2002a). Certain speaker variation is attested in this domain: while for some of my informants the in-situ option is simply dispreferred, although legitimate, other informants reject it; and, finally, few of them judge this option as completely natural. In any case, the attested preference for movement in Russian EQs suggests that *wh*-movement in EQs is not an exception, but rather a licit option (*contra* Sobin 2010).

(19) a. U: Maša udarila (mumble). (*Russian*)
Masha.NOM hit (mumble)
'Masha hit (mumble)'
b. EQ: Maša udarila kogo$_E$?
Masha.NOM hit who.ACC
'Masha hit WHO?'
c. EQ: Maša kogo$_E$ udarila t$_E$?
Masha.NOM who.ACC hit
'Who did Masha hit?'
d. EQ: Kogo$_E$ (Maša) udarila (Maša) t$_E$?
who.ACC Masha.NOM hit

(20) a. U: Prinesjot li Maša (mumble)? (*Russian*)
will.bring Q Masha.NOM (mumble)
'Will Masha bring (mumble)?'
b. EQ: Prinesjot li Maša čto$_E$?
will.bring Q Masha.NOM what.ACC
'Will Masha bring WHAT?'
c. EQ: Prinesjot li čto$_E$ Maša t$_E$?
will.bring Q what.ACC Masha.NOM
d. EQ: ? Čto$_E$ prinesjot li Maša t$_E$?
what.ACC will.bring Q Masha.NOM

(21) a. U: *Kogo* udaril (mumble)? (*Russian*)
who.ACC hit mumble
'Who did (mumble) hit?'
b. EQ: *Kogo* udaril kto$_E$?
who.ACC hit who.NOM
'Who did hit WHO?'
c. EQ: *Kogo* kto$_E$ udaril t$_E$?
who.ACC who.NOM hit
d. EQ: ? Kto$_E$ *kogo* udaril t$_E$?
who.NOM who.ACC hit

As shown in the above examples, in Russian, in addition to the *wh*-in-situ option, the echo *wh*-phrase can appear at two movement-based positions, independently of the clause-type of the echoed utterance. These options are available not only in EQs based on a declarative, as in (19), but also in EQs repeating a *yes/no* question, (20), and a *wh*-question, (21). When fronted, the echo-introduced

wh-phrase can appear at the immediately preverbal position (for similar data from Spanish, see (17) and fn. 7) or clause-initially, as illustrated by the sentences (c) and (d) respectively.[9] Interestingly, other languages with MWF also allow for overt movement of the echo *wh*-constituent in EQs based on a previous *wh*-question. This is evidenced by the following Polish and Bulgarian examples:

(22) a. U: *Kto* podoba sie (mumble)? (*Polish*)
who.NOM likes REFL (mumble)
'Who likes (mumble)?'
b. EQ: *Kto* podoba sie komu$_E$?
who.NOM likes REFL who.DAT
'Who likes WHO?'
c. EQ: *Kto* komu$_E$ sie podoba?
who.NOM who.DAT REFL likes
d. EQ: ? Komu$_E$ *kto* sie podoba?
who.DAT who.NOM REFL likes

(23) a. U: *Kakvo* e kupil (mumble)? (*Bulgarian*)
what bought (mumble)
'What did (mumble) buy?'
b. EQ: *Kakvo* e kupil koj$_E$?
what bought who.NOM
'What did WHO buy?'
c. EQ: ?? *Kakvo* koj$_E$ e kupil?
what who.NOM bought
d. EQ: ? Koj$_E$ *kakvo* e kupil?
who.NOM what bought

As already mentioned, in this dissertation I am particularly interested in establishing patterns of interaction between echo and non-echo *wh*-words within an EQ. I mainly restrict my attention to *wh*-EQs built on a previous *wh*-question in *wh*-fronting languages like English, (16), Spanish, (18), and Russian, (21). As

[9] Observe that in MWF languages the leftmost position of the echo-introduced *wh*-phrase in EQs repeating a previous interrogative is subject to speaker-variation. Not all informants accept the sentences like (20d) and (21d) equally well: many judge them as marginal, although possible, others consider them perfectly acceptable and few reject this option (see also fn. 6). Most speakers (also in Polish and Bulgarian) report that the *wh*-ex-situ option, in which the echo *wh*-word moves across the non-echo *wh*-item, (20d), results more difficult to process than, for example, when the echo *wh*-word follows the *wh*-item repeated from the stimulus, (20c). I will offer a possible solution to these puzzles later in this chapter.

expected, such EQs exhibit two types of *wh*-constituents: (i) an echo-introduced *wh*-word and (ii) a *wh*-word 'inherited' from an echoed canonical *wh*-question. So far, we saw that in such EQs overt *wh*-movement is banned in English and Spanish, but available in Russian. In (21), the resulting EQs repeat a previous *single wh*-question. In addition, let us consider whether anything changes if a *wh*-EQ echoes a *multiple wh*-question:[10]

(24) a. U: *Čto* *komu* podaril (mumble)? (*Russian*)
what.ACC who.DAT gave (mumble)
'What did (mumble) give to whom?'

b. EQ: *Čto* *komu* podaril kto$_E$?
what.ACC who.DAT gave who.NOM
'What did WHO give to whom?'

c. EQ: *Čto* *komu* kto$_E$ podaril?
what.ACC who.DAT who.NOM gave

d. EQ: **Čto* kto$_E$ *komu* podaril?
what.ACC who.NOM who.DAT gave

e. EQ: ? Kto$_E$ *čto* *komu* podaril?
who.NOM what.ACC who.DAT gave

As the reader may notice, in Russian *wh*-EQ, the attested movement-based options for the echo-introduced *wh*-word are the same, independently of number of *wh*-elements copied from the echoed *wh*-question. The echo *wh*-item can either appear in-situ, front to the immediately preverbal position or move to the leftmost position of the clause, preceding the set of the non-echo *wh*-words. Strikingly, however, the echo *wh*-item cannot intervene between the two non-echo *wh*-words repeated from the stimulus, as shown in (24d).[11]

Thus, the Russian data seem to contradict Sobin's generalization on that echo *wh*-items must remain in-situ in order to get the echo interpretation.[12]

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[10] Here I omit English and Spanish data, given that overt echo *wh*-movement is not allowed in these languages. As expected, there is no difference between EQs reproducing a single or a multiple *wh*-question: the echo *wh*-word must remain in-situ:

(i) a. U: *What* did (mumble) give to *whom*? (*English*)
b. EQ: *What* did who$_E$ give to *whom*?
c. EQ:*Who$_E$ gave *what* to *whom*?

[11] This is so for most of my informants (including myself), although few of them allow the echo *wh*-word to appear between the *wh*-elements copied from the utterance. Same tendency is observed in Polish and Bulgarian.

[12] See also Vlachos (2012), who analyzes single *wh*-questions in Modern Greek and argues against Sobin's (2010) distinction between 'syntactic' *vs.* 'pseudo' EQs, on the basis that both

Curiously enough, Sobin's claim that only *wh*-in-situ EQs are true 'echoes' goes in parallel with the observation made by Fiengo (2007) regarding possible readings of *wh*-EQs (see fn. 5).

Fiengo suggests that unheard EQs can be produced by the speaker with slightly different purposes. These pragmatic factors, in turn, affect the legitimacy of *wh*-movement in an EQ. So, by using an unheard EQ, the speaker generally presents herself as being unable to complete the previous utterance in a satisfactory way and asks to repeat the unheard part of the sentence. However, the resulting *wh*-EQ can have two slightly different interpretations. Consider again the *wh*-EQs in (13b), repeated below for the reader's convenience:

(13) a. U: Mary had tea with (mumble). (*English*)
b. EQ: Mary had tea with $\underline{\text{who}}_{\text{E}}$? [adopted from Sobin 2010:132]

According to Fiengo, one possible interpretation of (13b) is what he calls a *repeat* question: the speaker does not wonder who is a person with whom Mary had tea, but rather asks the addressee to repeat the missed bit of language denoted by the echo-introduced *who*. Another possible reading of (13b) is the so-called *open* question, in which "the questioner's interest resides not so much in the unheard bit of language but in the item it denotes" (Fiengo 2007:76). The two possible interpretations of a *wh*-EQ are represented below:

(25) *Semantics for the wh-EQ (13b)*
a. *Repeat* reading:
Which expression X is such that you said that Mary had tea with X?
b. *Open* reading:
Which X is such that you said that Mary had tea with X?

To illustrate these subtle semantic differences, consider the examples in (26):

(26) a. U: I was just reading Tully. (*English*)
b. EQ_1: You were just reading *who*?
c. EQ_2: *Who* were you just reading?
d. R_1: (I was just reading) Tully.
e. R_2: (I was just reading) Cicero. [from Fiengo 2007:76]

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ordinary and echo *wh*-questions allow for ex-situ and in-situ structures. I will come back to this proposal later in this chapter.

In (26), suppose the speaker did not hear quite well the last part of the utterance (26a). In order to complete her ignorance, the questioner can ask either (26b), an EQ with *wh*-in-situ, or (26c), an EQ with *wh*-ex-situ. Suppose that the speaker's interest resides in the missed bit of language, i.e., in what exactly has been said. The only felicitous response to such question would be (26d), which repeats exactly what has been said. However, if the speaker is more interested in knowing which author her addressee refers to (rather than in what exactly she has said), both responses, (26d) and (26e), would be felicitous.

According to Fiengo, the 'repeat' reading is available only in EQs with *wh*-in-situ, while the 'open' reading can arise both with *wh*-in-situ and *wh*-ex-situ. Put differently, Fiengo suggests that EQs with overt *wh*-movement do not allow the 'repeat' reading. Nevertheless, these judgments are quite fragile and very hard to test. According to most of my informants, both EQs, (26b) and (26c), are interpreted as request-for-repetition questions and both can have one or another additional flavor ('repeat' *vs.* 'open'). What is important for the discussion in hand is that the addressee is always required to repeat the missed portion of what she has said. Sometimes the missed constituent can be expressed exactly by the same word as in the first speech turn or substituted by a synonym. Observe, however, that both responses in (26) supply the same information: the addressee has been reading a book by Tully, known also as Cicero.

According to Fiengo, purely pragmatic factors such as speakers' intentions restrict the possibility of overt *wh*-movement in EQs.[13] I do not follow this view here. Rather, I argue that whether an echo *wh*-item appears in-situ or overtly fronted does not crucially change the semantics of the corresponding EQ: the latter is always interpreted as a clarification question. I propose that echo *wh*-movement is a licit option in EQs and that, similarly to other types of syntactic movement, it proceeds successive cyclically. Then, as natural, its legitimacy depends on purely syntactic —not pragmatic— factors as, for example, availability of an escape hatch for the fronted object.

In order to show that this line of reasoning is on track, recall again the already noticed contrast between two English EQs with *wh*-in-situ: (13b) and (16b), which are repeated below as (27a) and (27b) respectively:

(27) a. EQ: Mary had tea with $\underline{\text{who}}_{\text{E}}$? (*English*)
b. EQ: *What* did $\underline{\text{who}}_{\text{E}}$ drink at Mary's party?

[13] Recall that Fiengo's intuition has certain parallelism with Sobin's (2010) claim that only EQs with *wh*-in-situ are true 'echoes'.

Both *wh*-EQs have the 'repeat' echo-interpretation. But, interestingly enough, the 'open' reading is accessible only in the *wh*-EQ in (27a) and is blocked in (27b). Why is that so? Observe that, importantly, only the latter EQ exhibits multiple *wh*-elements: the highest one, *what*, is inherited from the utterance and the lower one, *who*, is echo-introduced. I suggest that the 'open' reading of the echo *wh*-word is blocked precisely by the intervening non-echo *wh*-element, placed between the echo *wh*-item and the corresponding C head. In other words, the non-availability of the 'open' reading is not restricted by the speaker's intentions, but rather is due to the intervention effect created by the utterance's *wh*-word. Keep this idea in mind, as I will come back to it later, when I propose a formal syntactic account of *wh*-EQs.

Notice that there is a crucial distinction between the view I put forward here and standard approaches. Under the latter view, EQs with a fronted *wh*-phrase are 'pseudo' echoes, in the sense that they are ordinary questions asking about the previous utterance. In contrast, I propose that languages possess two different strategies for formation of *wh*-EQs: (i) EQs with *wh*-in-situ and (ii) EQs with overt echo *wh*-movement. Observe that only such view can (potentially) capture the attested parametric variation in the availability of overt echo *wh*-movement depending on the clause-type of the echoed sentence.

To advance the final outcome of this chapter, I argue that all types of *wh*-EQs —ex-situ and in-situ— share the same syntactic structure, which is different from the structure of non-echo *wh*-questions. The difference between the two strategies regarding echo *wh*-movement lies in the way in which the echo Q-particle is merged into the derivation and how it projects.

To sum up this section, the facts in (19-24) suggest that echo *wh*-fronting is not an exception, but a result of application of a standard syntactic operation Move (*contra* Fiengo 2007 and Sobin 2010). The availability of overt echo *wh*-movement in non-canonical questions seems to be subject to parametric variation and crucially depends on what kind of utterance (declarative, interrogative, etc.) is echoed. But, in addition to this crosslinguistic distinction, *wh*-EQs exhibit a number of other properties common across languages, which are addressed in the following subsections.

3.2. Mood clashes

As noticed in the previous section, a *wh*-EQ must keep unchanged the clause-type of the sentence it echoes. In fact, this striking property of EQs is one of the most widely-attested in the literature (see Sobin 1978, 1990, 2009, 2010; Noh 1998; Escandell 2002, among others). In addition to the English *wh*-EQs in (13-16),

which repeat a declarative, a *yes/no* question and a *wh*-question respectively, consider the following examples:

(28) a. U: *What* a great pleasure this is! (*English*)
b. EQ: *What* a great what$_{E}$ this is? [from Noh 1998:108]

(29) a. U: Go to see the archaeologist. (*English*)
b. EQ: Go to see what$_{E}$/who$_{E}$? [from Noh 1998:108]

The *wh*-EQ in (28) repeats a previous *wh*-exclamative, while the one in (29) echoes an imperative. The strategy is always the same: a *wh*-EQ repeats the stimulus and replaces the unheard portion by a *wh*-word. Observe that the interrogative clause-typing of the EQ itself co-occurs with the clause-typing of the echoed sentence (e.g. declarative, interrogative, exclamative, imperative).

In Escandell (2002), this echo-property is referred to as *mood clashes*, while in Sobin (2010) it is called *Comp freezing*. In both cases, the terminology seeks to capture the fact that EQs are formed in part by repeating the modality markers of the echoed utterance. To illustrate this point, consider the following Spanish examples:

(30) a. U: ¡Qué rico (que) estaba (mumble)! (*Spanish*)
what delicious that was (mumble)
'How delicious was (mumble)!'
b. EQ: ¿(Que) qué rico (que) estaba qué$_{E}$?
that what delicious that was what
'How delicious was WHAT?'

(31) a. U: ¡Ojalá venga (mumble)! (*Spanish*)
PART come.SUBJ.3SG (mumble)
'I wish (mumble) would come!'
b. EQ: ¿(Que) ojalá venga quién$_{E}$?
that PART come.SUBJ.3SG who
'Hopefully WHO will come?'

Observe that the echo-response in (30b) to the exclamative utterance in (30a) maintains its *wh*-exclamative syntax: namely, it conserves the fronted constituent formed by the degree *wh*-word *qué* 'what' plus the gradable adjective, as well as the optional particle *que* 'that' following the fronted constituent (see Zanuttini & Portner 2003; Castroviejo 2006, among others). However, in addition to the

exclamative features, the EQ in (30b) exhibits the echo-introduced, interrogative *wh*-word *qué* 'what' requesting for the unheard portion of the stimulus. The whole sentence is pronounced with interrogative intonation, with a particular stress on the echo *wh*-word. Likewise, in the *wh*-EQ in (31b), the desiderative particle *ojalá* and the verb in subjunctive form, both inherited from the echoed utterance, co-occur with the echo *wh*-word *quién* 'who' and the interrogative prosodic contour.

Naturally, EQs combining interrogative and exclamative syntax result more striking than EQs repeating a previous declarative utterance, as in (13), repeated below for the reader's convenience:

(13) a. U: Mary had tea with (mumble). (*English*)
b. EQ: Mary had tea with $\underline{\text{who}}_{\text{E}}$? [adopted from Sobin 2010:132]

Observe, however, that just as in other cases the sentence in (13b) combines the utterance's declarative clause-type and the interrogative features of the EQ. Something quite similar occurs in *wh*-EQs built on a previous *wh*-interrogative, as in (16), repeated below:

(16) a. U: *What* did (mumble) drink at Mary's party? (*English*)
b. EQ: *What* did $\underline{\text{who}}_{\text{E}}$ drink at Mary's party?
c. EQ: *$\underline{\text{Who}}_{\text{E}}$ t_{E} drank *what* at Mary's party?
[adopted from Sobin 2010:132]

Recall that the *wh*-EQ in (16b) has to preserve the *wh*-interrogative character of the echoed utterance in (16a), including the fronted *wh*-word *what* and the raised auxiliary *did*. As obvious, these two phenomena (*wh*-fronting and T-to-C verb movement) are triggered by the interrogative syntax of the antecedent utterance and, as such, should be housed at the utterance's CP domain. Namely, *did* has been raised to C and *what* to Spec,CP. Therefore, the structure of the CP of the previous utterance in (16a) (labelled below as CP_{U}) might be as in (32):

(32) $[_{\text{CP U}}$ $what_j$ C_{U} did_i $[_{\text{TP}}$ XP T_i $[_{v\text{P}}$ v drink t_j ...]]]

Nevertheless, within the *wh*-EQ in (16b), the CP-features of the copied *wh*-interrogative clause appear within the echo-interrogative environment. Thus, in addition to the *wh*-word repeated from the stimulus, there is an extra, echo-introduced *wh*-item *who*. Moreover, EQs generally require a prototypical rising or rise-falling intonation, which is different from the prosodic contour of non-echo questions (see Bartels 1999; Escandell 2002). To sum up, in (16b), the echo-

features co-occur with the *wh*-interrogative characteristics, clearly 'inherited' from the previous utterance.

As in Chernova (2010, 2013a,c), I suggest that an interesting piece of evidence for the idea that EQs preserve the clause-typing features of the echoed utterance comes from Spanish *wh*-EQs reproducing a previous *yes/no* question. Consider again (17), repeated below:

(17) a. U: ¿Ha leído María (mumble)? (*Spanish*)
has read Maria (mumble)
'Has Maria read (mumble)?'

b. EQ: ¿(*Que*) *(*si*) ha leído María qué$_E$?
that whether has read Maria what
'Has Maria read WHAT?'

Observe that the EQ in (17b) exhibits two additional elements (apart from the echo *wh*-word), which are absent from the utterance in (17a). I refer to the particles *que* 'that' and *si* 'whether' (see also section 3.2 of this chapter).

Let us first consider the particle *si*, whose use is quite restricted in Spanish *wh*-EQs. Recall that *si* obligatorily precedes EQs reproducing a previous *yes/no* interrogative utterance. This is the case of the EQ in (17b). If *si* is absent from (17b), the result would be ungrammatical. Where does this particle come from? Like in Chernova (2010, 2013a,c), I suggest that in EQs *si* reflects the CP layer of the echoed *yes/no* interrogative clause.

As is standardly assumed (since Katz & Postal 1964; Baker 1970), a *yes/no* question projects an interrogative operator Q within the CP layer (namely, at Spec,CP), in order to get the interrogative interpretation. Q can be phonetically realized or null, [Ø]. Following Baker (1972), I assume that Q is null in English and Spanish root polar questions, but it is phonetically realized in embedded contexts: as *if/whether* in English, *se* in Italian (see Rizzi 2001b) and *si* in Spanish (see also Rigau 1984; Suñer 1991; Hernanz 2012). Therefore, I suggest that in (17a) the specifier of the utterance's CP is occupied by a null interrogative Q, as represented below in (33a).[14] However, when the utterance is

[14] For a different view see Rizzi (2001b), who proposes that the Italian interrogative operator *se* 'whether' is housed at Int(errogative)P, a projection that expresses the interrogative force and forms part of a complex CP layer. Rizzi (1997 *et seq.*) put forward a cartographic approach to the left periphery of a clause, according to which the CP level is decomposed into several projections hosting different Ā-items. In Rizzi (1997), the two basic projections, (Illocutionary) ForceP and Fin(itness)P, delimit the C system upward and downward. And there are two additional optional projections, TopicP and FocusP, which can be sandwiched in between, (i). As subsequently refined in Rizzi (2001b, 2004), the left peripheral template may also include

reproduced in an EQ and its CP domain is somehow 'embedded' within the echo-interrogative clause-typing, *si* shows up. This is illustrated in (33b):

(33) a. U: [$_{CP_U}$ Ø C_U ...]
b. EQ: [... [$_{CP_U}$ *si* C_U ...]]

The contrast in (33) suggests that in the syntactic structure of EQs something reminiscent of 'subordination' is going on (I will come back to this idea later). The intuition that *si* belongs to the CP level of the utterance is suggested by the fact that in Spanish *si* introduces only those EQs that reproduce a previous *yes/no* question. *Si* is not allowed in EQs built on a previous declarative or a *wh*-question. This is illustrated by (34) and (35) respectively:

(34) a. U: María lee (mumble). (*Spanish*)
Maria reads (mumble)
'Maria reads (mumble)'
b. EQ: ¿(Que) (**si*) María lee qué$_E$?
that whether Maria reads what
'Maria reads WHAT?'

(35) a. U: ¿*Qué* compró (mumble) ayer? (*Spanish*)
what bought (mumble) yesterday
'What did buy (mumble) yesterday?'
b. EQ: ¿(Que) (**si*) *qué* compró quién$_E$ ayer?
that whether what bought who yesterday
'What did buy WHO yesterday?'

The absence of *si* in the Spanish EQs in (34) and (35) is not a surprise under the assumption that *si* is a phonetically realized interrogative operator Q. Since this

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additional projections, including, for example, IntP. For instance, for Italian, within this system, the complementizer *che* 'that', which typically introduces embedded declaratives, occupies ForceP, while *wh*-phrases and the interrogative operator *se* occupy FocusP and IntP respectively. The hierarchy is roughly represented below:

(i) [ForceP *che* [(TopP) [IntP *se* [(TopP) [FocusP *wh*-items [(TopP) [FinP [IP…]]]]]]]]

In this dissertation, I have chosen to adopt the minimalist, unsplit CP layer. Although I do not follow here the cartographic framework, I believe that the arguments presented in this dissertation would remain unchanged if we adopt the analysis of split CP. I believe that the echo properties can be straightforwardly captured by the 'classic', unsplit CP analysis. For a detailed discussion of why Rizzi's approach of split CP is non-optimal for analyzing EQs, the reader is referred to Sobin (2009).

operator is absent from the CP level of declaratives and *wh*-questions, it cannot appear in EQs.[15] Thus, we can conclude that the particle *si* present in the EQ in (17b) has interrogative nature; it is the overtly pronounced interrogative Q-operator.

Consider now the introductory particle *que* 'that'. Observe from the previous examples that *que* can optionally appear in all Spanish *wh*-EQs, independently of the clause-type of the echoed utterance. Following Escandell (1999), I assume that *que* is a quotative marker. When used in EQs, it marks that the speaker (partially) reproduces the words pronounced by a different speaker in the previous speech turn. As in Chernova (2010, 2013a,c), I suggest that *que* is an echo-introduced marker, rather than an item inherited from the original utterance. This intuition is also confirmed by the distribution of the particles *que* and *si* in EQs repeating a *yes/no* question: *que* must always precede *si*:

(36) a. EQ: *¿Que si* ha leído María qué$_E$? (*Spanish*)
that whether has read Maria what
'Has Maria read WHAT?'

b. EQ: **¿Si que* ha leído María qué$_E$?
whether that has read Maria what

Interestingly, as reported in Escandell (1999), the particles *que* and *si* are not restricted only to the cases of repetition of what has been explicitly pronounced in the previous turn of a speech act by a different speaker. That is, usage of these particles is not restricted to EQs. The author suggests that, from a pragmatic point of view, such particles act as special markers that signal that the sentence

[15] Of course, the reader may object this observation by referring to the main idea of Q-theory that *wh*-interrogative syntax is based on movement of a Q-particle into CP level, triggering overt *wh*-movement as a side effect. However, notice that the Q-particle triggering *wh*-movement into CP might be of a different kind from Q present in polar questions. In the latter, Q seems to be directly generated in CP and does not merge with any syntactic object in its argument position. Therefore, there is no surprise that while the polar Q becomes overt in embedded contexts, the *wh*-Q does not. This idea is supported by the following contrast between embedded polar and *wh*-questions from English and Spanish respectively:

(i) a. I wonder [*whether*$_Q$ Mary had tea with John]. (*English*)
b. I wonder [*who*-Ø$_i$ had tea with John t$_i$].

(ii) a. Me pregunto [*si*$_Q$ María viene a la fiesta]. (*Spanish*)
CL.1SG.DAT ask whether Maria comes to the party
'I wonder whether Maria is coming to the party'
b. Me pregunto [*quién*-Ø$_i$ t$_i$ viene a la fiesta].
CL.1SG.DAT ask who-Q comes to the party
'I wonder who is coming to the party'

may be attributed to a different speaker. This is illustrated by the examples below, in which *que* and *si* precede the representational thoughts, attributes by the speaker to the addressee:

(37) a. *¿Que* han hecho un lago donde había un valle? (*Spanish*)
that have.3PL done a lake where was a valley
Pse. Me es igual.
INTERJ CL.1SG.DAT is equal
'They have made a valley where there was a valley? I don't care'

b. La verdad es que es un proyecto fascinante. *¿Si* podré
the truth is that is a project fascinating. Whether will.can.1SG
terminarlo a tiempo? Bueno, espero que sí.
finish-CL.3SG.ACC on time well hope.1SG that yes
'The truth is that it is a fascinating project. Will I be able to finish it on time? Well, I hope that I will.' [from Escandell 1999:3966,3968]

Curiously, the speaker simply *attributes* the assertions in (37) to her interlocutor, but they have not been necessarily pronounced in the previous turn of the dialogue. By uttering the sentences in (37), the speaker advances what would be a possible question of the interlocutor, in her opinion. I suggest that the particles *que* and *si* do not cause themselves the effect of attribution of the sentence to the addressee. Rather, I take them as a manifestation of a particular syntactic structure of EQs. Once sent to the interfaces, this structure is what triggers the echo reading of the sentence and its interpretation as a 'quote'.

To sum up, we saw that in *wh*-EQs the interrogative echo-modality co-occurs with the features determined by the clause-type of the reproduced utterance. I assume that this property is the key for a better understanding of the semantic and syntactic nature of EQs. I will come back to this challenging echo-feature and the way it could be formally captured later in this chapter.

3.3. Partial *wh*-echoing

By uttering a *wh*-EQ, the speaker often signals that she has understood everything else in the stimulus, except one single item, which is replaced by an echo *wh*-word (e.g. *You saw* $\underline{what}_{E}$?). However, sometimes the speaker can be even more precise, when signalling which portion of the stimulus is missed exactly. Consider, for example, (38):

(38) a. U: [$_{DP}$ The [$_{NP}$ (mumble)]] asked for more spaghetti. (*English*)
b. EQ: [$_{DP}$ The [$_{NP}$ <u>who$_{E}$</u>]] asked for more spaghetti?
[adopted from Sobin 2010:134]

By uttering the *wh*-EQ in (38b), the speaker signals that she has missed only one constituent, NP, and the echo *wh*-word replaces the complement of DP, while the rest of the constituents remain unchanged in the corresponding EQ. For instance, in (38b), the specifier of DP, *the,* is not subsumed by the echo *wh*-phrase. I will refer to such cases as *partial wh-echoing*. Consider another example of this echo-phenomenon:[16]

(39) a. U: I just have rafted down [$_{DP}$ the [$_{NP}$ Mononga-(mumble)]].(*English*)
b. EQ: You just have rafted down [$_{DP}$ the [$_{NP}$ Mononga-<u>what$_{E}$</u>]]?
c. EQ: *<u>What$_{E}$</u> did you just raft down [$_{DP}$ the [$_{NP}$ Mononga-t$_{E}$]]?
[from Fiengo 2007:76]

In (39b) the speaker asks for repetition of the missing two syllables of the name of the Monongahela River. The unheard portion does not constitute a syntactic object or even a morpheme; moreover, *hela* itself does not correspond to anything that exists in this world.[17] Therefore, the speaker simply asks to repeat the missed bit of language, signalling that everything else has been correctly understood. An interesting observation comes from (39c): partial *wh*-echoing does not admit overt movement of the echo *wh*-word. So, the only available option is *wh*-in-situ, despite the fact that the echoed utterance is declarative (see section 3.1).

Partial *wh*-echoing seems to be a common echo-feature across languages. For instance, consider the Spanish example below:

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[16] Observe that an EQ like (39b) is also possible under amazement reading, when the speaker knows the value of the exclamative *wh*-word, but just expresses her reaction. This is possible, for example, if the speaker of the utterance has pronounced the name of the river in a strange or incorrect way:

(i) a. U: I just have rafted down the Mononga[gwela].
b. EQ: You just have rafted down the Mononga-WHAT$_{E}$?

[17] As noticed by Fiengo (2007), the question in (39b) has only the 'repeat' reading, while the 'open' interpretation is blocked. For the author, this constitutes the evidence that 'repeat' EQs cannot exhibit overt *wh*-movement (see discussion in section 3.1). However, I depart from this view and argue that 'open' reading is blocked in (39b) just because the echo *wh*-word does not denote any particular entity in the world. In other words, given that there is no such item as *hela*, the 'open' reading under which the speaker asks the addressee to assign a value to the item denoted by *what* is blocked.

(40) a. U: María compró la (mumble). (*Spanish*)
Maria bought the.FEM.SG (mumble)
'Maria bought the (mumble)'
b. EQ: ¿(Que) María compró [$_{DP}$ la qué$_{E}$]$_{i}$?
that Maria bought the.FEM.SG what
'Maria bought the WHAT?'
c. EQ: ??¿(Que) [$_{DP}$ la qué$_{E}$]$_{i}$ compró María t$_{i}$?[18]
that the.FEM.SG what bought Maria

Notice that by uttering (40b) the speaker signals that she cannot identify the item corresponding to the internal argument, DP, but that certain syntactic information still can be recovered from the context. More precisely, the singular feminine definitive article *la* 'the', preceding the unheard constituent, indicates that the latter is specified with [feminine] for gender and [singular] for number. In order to complete the gap in her knowledge, the speaker asks the *wh*-EQ in (40b), which echoes the utterance and keeps the definite article. However, again, as evidenced by (40c), questions with partial *wh*-echoing do not allow overt *wh*-movement.

Let us consider a slightly different case of partial *wh*-echoing in Russian, a language that lacks overt articles, as is well-known:

(41) a. U: Maša kupila [$_{NP}$ bol'šuju (mumble)]. (*Russian*)
Masha.NOM bought big.FEM.SG.ACC (mumble)
'Masha bought a big (mumble)'
b. EQ: Maša kupila [$_{NP}$ bol'šuju čto$_{E}$]$_{i}$?
Masha.NOM bought big.FEM.SG.ACC what.ACC
'Masha bought a big WHAT?'
c. EQ: *Maša [$_{NP}$ bol'šuju čto$_{E}$]$_{i}$ kupila t$_{i}$?
Masha.NOM big.FEM.SG.ACC what.ACC bought
d. EQ: *[$_{NP}$ Bol'šuju čto$_{E}$]$_{i}$ kupila Maša t$_{i}$?
big.FEM.SG.ACC what.ACC bought Masha.NOM
e. EQ: *Čto$_{E}$ kupila Maša [$_{NP}$ bol'šuju t$_{E}$]?
what.ACC bought Masha.NOM big.FEM.SG.ACC

[18] It is worth noting that, although most of my Spanish informants judge (40c) as ungrammatical, few of them accept the *wh*-ex-situ option as marginally possible; some of them also report that (40c) improves without the complementizer *que* 'that'. Such difference suggests that there exists certain speaker variation regarding the strategy of formation of EQs with partial *wh*-echoing (similar speaker-related variation is attested in the Russian EQs (41c-e)). I leave the question on how this speaker variation can be explained under the proposal I put forward for future work.

Suppose that the speaker hear the utterance in (41a) quite well, except from the nominal constituent of the complex accusative NP (see Bošković 2005a). The speaker shows herself as being able to identify the syntactic features of the missed constituent, [singular] and [feminine], suggested by the inflection on the preceding adjective. However, the speaker still cannot complete the utterance in a satisfactory way and asks the question in (41b), with partial *wh*-echoing. Again, observe that Russian EQs with partial *wh*-echoing do not allow overt *wh*-movement, as shown in (41c,d). Notice also that LBE is neither allowed in such cases, (41e), unlike in non-echo *wh*-questions (see chapter 4).

3.4. Echo *wh*-words inside islands

Another well-known striking property of *wh*-EQs is that they typically allow *wh*-words to appear inside islands, as opposed to non-echo questions. As illustrated by the English examples below, the in-situ echo *wh*-words are allowed both inside strong and weak islands, while the ex-situ counterpart results ungrammatical. This is illustrated for the island effects created by sentential subjects, (42), adjuncts, (43), and embedded *wh*-questions, (44):

(42) *Wh-EQs & sentential subject constraint* (*English*)
- a. U: I think [that to sell (mumble)] would be a mistake.
- b. EQ: You think [that to sell $\underline{\text{what}}_{\text{E}}$] would be a mistake?
- c. EQ: *$\underline{\text{What}}_{\text{E}}$ do you think [that to sell t_{E}] would be a mistake?

(43) *Wh-EQs & adjunct constraint* (*English*)
- a. U: Mary left [after John met (mumble)].
- b. EQ: Mary left [after John met $\underline{\text{who}}_{\text{E}}$]?
- c. EQ *$\underline{\text{Who}}_{\text{E}}$ did Mary leave [after John met t_{E}]?

(44) *Wh-EQs & embedded wh-questions* (*English*)
- a. U: I wonder [*who* could solve the problem (mumble)].
- b. EQ: You wonder [*who* could solve the problem $\underline{\text{how}}_{\text{E}}$]?
- c. EQ: *$\underline{\text{How}}_{\text{E}}$ do you wonder [*who* could solve the problem t_{E}]?

Notice that the questions (42-44) —both with *wh*-in-situ and *wh*-ex-situ— are ungrammatical under the non-echo, canonical reading. However, in *wh*-EQs the *wh*-word is allowed to remain inside an island, while overt *wh*-extraction out from the island is blocked.

Recall that, regarding islands, *echo wh*-items in *wh*-fronting languages behave similarly to non-echo *wh*-words in *wh*-in-situ languages (for discussion, see

Hagstrom 1998; Kishimoto 2005; Cable 2007, 2010 and chapter 2). As illustrated below for Japanese and Sinhala respectively, in *wh*-in-situ languages *wh*-words are allowed to appear inside islands in canonical questions:

(45) a. Mary-wa [$_{DP}$ [$_{CP}$ John-ni *nani*-o ageta] hito-ni] atta-*no*?(*Japanese*)
Mary.NOM John-DAT *what*-ACC gave man-DAT met-Q
*'What did Mary meet the man who gave _ to John?'
[from Hagstrom 2000:3]

b. Oyaa [$_{NP}$ [$_{CP}$ Chitra *kaa*-ta dunna] pota] *da* kieuwe? (*Sinhala*)
you Chitra who-DAT give book Q read
*'Who did you read the book that Chitra gave _?'
[from Kishimoto 2005:29; cited from Cable 2008a:128]

For now, keep this observation in mind. Similarly to English, echo *wh*-extraction out of strong islands is also blocked in Russian, as shown in (46c) for NP constraints. Again, *wh*-in-situ is the only allowed option, (46b):

(46) *Wh-EQs & sentential subject constraint* (*Russian*)
a. U: Ivan govorit [čto vstretit' (mumble)] bylo by udačej.
Ivan.NOM says that meet.INF mumble was COND luck.INST
'Ivan says that to meet (mumble) would be luck?'
b. EQ: Ivan govorit [čto vstretit' <u>kogo</u>$_E$] bylo by udačej?
Ivan.NOM says that meet.INF who.ACC was COND luck.INST
'Ivan says that to meet WHOM would be luck?'
c. EQ: *<u>Kogo</u>$_E$ Ivan govorit [čto vstretit' t$_E$] bylo by udačej?
who.ACC Ivan.NOM says that meet.INF was COND luck.INST

Nevertheless, Russian *wh*-EQs differ from English when it comes to extraction out of weak islands. While the *wh*-in-situ option is available in both languages, (47b), echo *wh*-extraction out of weak islands is licit only in Russian, (47d), as opposed to English, (44c). In addition, Russian allows partial *wh*-fronting of the echo-inserted *wh*-item from its base position to some higher node within the island, as shown in (47c):

(47) *Wh-EQs & embedded wh-questions* (*Russian*)

a. U: Mne interesno [*kto* pozvonil (mumble)]?
I.DAT interesting who.NOM called mumble
'I am interested who called (mumble).'

b. EQ: Tebe interesno [*kto* pozvonil kuda$_E$]?
you.DAT interesting who.NOM called where
'You are interested who called WHERE?'

c. EQ: Tebe interesno [*kto* kuda$_E$ pozvonil t_E]?
you.DAT interesting who.NOM where called

d. EQ: ? Kuda$_E$ tebe interesno [*kto* pozvonil t_E]?
where you.DAT interesting who.NOM called

Interestingly, Russian typically exhibits strong sensitivity to extraction out of weak islands under non-echo contexts (see Bailyn 2011; Khomitsevich 2007; Scott 2012 and references therein). That is, under a non-echo reading, the question in (47d) is generally judged as ill-formed by native speakers. However, it significantly improves if the extracted *wh*-word gets the echo interpretation.

On the one hand, the fact that overt echo *wh*-fronting exhibits sensitivity to island effects suggests that this type of movement is constrained by similar restrictions as ordinary, non-echo *wh*-extraction in languages with overt movement. On the other hand, it is surprising that echo *wh*-words can remain inside islands and get wide scope in *wh*-fronting languages. Moreover, we attested another piece of evidence of crosslinguistic variation, Russian *vs.* English, regarding echo *wh*-extraction out of weak islands.

3.5. Wide scope for the echo-introduced *wh*-word

This subsection briefly addresses another striking crosslinguistic property of *wh*-EQs regarding scope. It has been noticed in the literature that the echo *wh*-word always has the widest possible scope, independently of its position inside the clause (see Karttunen 1977; May 1985; Sobin 1978, 1990, 2010, among others). That is, independently of whether the echo-introduced *wh*-phrase appears in the root clause or deeply embedded, it receives wide scope and requests a value:

(48) a. U: Mary said [that Bill thinks [that John saw (mumble)]]. (*English*)
b. EQ: Mary said [that Bill thinks [that John saw who$_E$]]?

Observe that in (48b), despite the fact that the echo-introduced *wh*-word remains inside the lower embedded clause, it still requests for an answer and, hence, gets wide scope. Likewise, when the echo *wh*-word is left inside an island (see (42-47)),

it necessarily receives wide scope. For example, observe (43), which 'quotes' the utterance with an adjunct island:

(43) a. U: Mary left [after John met (mumble)]? (*English*)
b. EQ: Mary left [after John met $\underline{\text{who}}_{\text{E}}$]?

As is well-known, non-echo multiple *wh*-questions presuppose the exhaustification of every *wh*-word, giving rise either to pair-list or single-pair readings (see Higginbotham & May 1981; Hagstrom 1998; Krifka 2001, among many others). That is, an ordinary multiple question contains answers providing information about each of the members of the set denoted by every *wh*-word. However, neither pair-list nor single-pair interpretations are available in *wh*-EQs. For example, consider (49):

(49) a. U: Everyone saw (mumble). (*English*)
b. EQ: Everyone saw $\underline{\text{who}}_{\text{E}}$?
c. R: Mary.
d. R: *John saw Mary (Peter saw Bill)...

As illustrated by (49), even in the presence of a universal quantifier, the echo question only allows the individual reading (i.e., one assigning a value to a single item denoted by the echo *wh*-word).

Likewise, in *wh*-EQs reproducing a previous *wh*-question, as in (16b) (repeated below), only the echo-introduced *wh*-phrase receives scope. That is, the *wh*-word inherited from the previous utterance requires no response within an EQ. The *wh*-EQ in (16b), although it exhibits two *wh*-elements, can have neither pair-list nor single-pair readings.[19] In fact, the only appropriate answer to (16b) is (16c) (as far as the agent of the action described by the stimulus in (16a) was Dracula indeed), while (16d) and (16e) are infelicitous under the echo reading:

[19] As noted first by Baker (1970), a similar *loss-of-scope* effect arises in embedded *wh*-questions like (ia), where the embedded *wh*-phrase *what* can receive either narrow scope (i.e., it does not require an answer), (ib), or wide scope, (ic) (see also Chomsky 1977a; Pesetsky 1987; Sobin 2010, among others):

(i) a. *Who* knows where Mary bought *what*?
b. John does.
c. John knows where she bought milk, Bill knows where she bought bread…

(16) a. U: *What* did (mumble) drink at Mary's party? (*English*)
b. EQ: *What* did who$_{E}$ drink at Mary's party?
c. R: Dracula!
d. R: *Dracula drank wine (and John drank vodka).
e. R: *Wine. [adopted from Sobin 2010:132-133]

This observation is supported by the simple test in (50). The *wh*-EQ (16b) can be paraphrased as a single *wh*-question, in which the echoed *wh*-item *what* is replaced by a non-interrogative *wh*-indefinite such as *something* or *whatever*:[20]

(50) Who$_{E}$ drank *something/whatever* at Mary's party? (*English*)

3.6. Deictic accommodations

We saw that a *wh*-EQ in a certain sense 'copies' the previous utterance and, essentially, maintains its clause-typing features. However, it would be erroneous to think that EQs are literal copies of the syntactic structure of the stimulus, in which some portion of the utterance is simply replaced by a *wh*-word. Importantly, such view cannot capture the fact that EQs always accommodate the person-agreement reflected on the verb as well as the corresponding deictic elements. The content of EQs is sensitive to the participants of the speech act and, more precisely, to the changing discourse roles between the speaker and the addressee (*cf.* Jakobson 1971; see also Dalrymple & Kaplan 2000; Harley & Ritter 2002 and references therein). The discourse dependency of the 1st and 2nd person-marking is illustrated in the following English and Spanish examples (the relevant deictic markers appear in italics):

(51) a. U: (Mumble) *me* ir-*é* de *tu* casa. (*Spanish*)
(mumble) CL.1SG will.go-1.SG from your house
'(Mumble) I will leave your house'
b. EQ: ¿(Que) cuándo$_{E}$ *te* ir-*ás* de *mi* casa?
that when CL.2SG will.go-2.SG from my house
'WHEN you will leave my house?'

[20] Notice, however, that the interrogative in (50) is still interpreted as a request-for-repetition question, although it is not an *echo* response (*cf.* (16b)). The reason is that the question in (50) does not preserve the *wh*-interrogative clause-type of the antecedent in (16a), changes its linear word order and replaces the original lexical items by others, different from the stimulus. In other words, the question in (50) is not an 'echo' of the *wh*-question in (16a). We may conclude then that (50) exemplifies a non-echo *wh*-question, which is pronounced with the echo intonation (perhaps, similar to Sobin's 2010 'pseudo' echoes).

(52) a. U: ¿Cuándo vender-*ás* *tu* (mumble)? (*Spanish*)
when will.sell-2SG your (mumble)
'When will you sell your (mumble)?'
b. EQ: ¿(Que) cuándo vender-*é* *mi* qué$_{E}$?
that when will.sell-1SG my what
'When will I sell my WHAT?'

Observe that the relevant accommodation affects the valuation of the [person] feature on the verb and the personal pronouns. The accommodation reflects the two dependents of the participants of the speech act, speaker and addressee, corresponding to 1st and 2nd person respectively, 3rd person being unmarked and unaffected by the accommodation process:

(53) a. U: *He* told *me* (mumble). (*English*)
b. EQ: *He* told *you* what$_{E}$?

The attested deictic accommodation in EQs is unexpected if we assume that these questions are similar to direct quotations (e.g. *Mary said: "I am hungry"*), in which the speaker adopts the perspective of another person and reports the utterance from that shifted standpoint. Rather, in these regards EQs have more in common with indirect speech (e.g. *Mary said that she was hungry*), in which the standard φ-features-valuation takes place along a universal pattern:

> The interpretation of person features must recognize certain discourse roles as primitives: these roles are among the deictic markers of a speech-act, situating the speech-act with respect to its place, time and, in the case of person features, its participants. The primary distinction is between participants in the speech-act and non-participants... (Noyer 1992:146).

As obvious, in EQs, the speaker of the echoed utterance becomes the addressee of the EQ (and vice versa), while the reference of the speech act is fixed. Consequently, if the utterance has some elements referring to the speaker (1st person), in the EQ the referring index is switched into 2nd person, (51). Likewise, if some utterance's components refer to the hearer (2nd person), in the echo-response the index is changed into 1st person, (52). That is, what changes is the value of the [person] feature, while the rest of φ-features (gender, number) remain intact. As standardly assumed, deictic valuation takes place within the IP domain, which anchors the speech act in time and location, on the one hand, and

in source (person), on the other. Observe that, as opposed to the source, the tense reference expressed by the utterance remains unchanged when echoed:[21]

(54) a. U: Mary *is* having tea with (mumble). (*English*)
b. EQ: Mary *is* having tea with who$_{E}$?
c. EQ: *Mary *was/will be* having tea with who$_{E}$?

As expected, the deictic accommodation in EQs is common across languages and is exhibited by both unheard and amazement types of these interrogatives. This is illustrated by the following examples from English and Russian:

(55) a. U: *I am* having tea with Cleopatra. (*English*)
b. EQ: *You are* having tea with who$_{E}$? [from Sobin 2010:135]

(56) a. U: *Ty* pojd-*eš'* s *nami* v (mumble). (*Russian*)
you.NOM will.go-2SG with us.INST to (mumble).
'You will go with us to (mumble)'
b. EQ: *Ja* pojd-*u* s *vami* kuda$_{E}$?
I.NOM will.go-1SG with you.INST where?
'I will go with you WHERE?'

The data in (51-53) and (55-56) suggest that *wh*-EQs are not simple 'quotes', in which the original utterance is 'frozen' and the unheard portion is replaced by some *wh*-word. Following Sobin (2010), I take the person-agreement facts as evidence that *wh*-EQs do not simply reproduce the syntactic structure of the stimulus, but rather they "actively involve syntax" (Sobin 2010:135).

3.7. Summary of the echo-features

Before I proceed with the analysis of *wh*-EQs, let us summarize the echo-properties discussed so far. Adopting Fiengo's (2007) observation, I suggested that there are two types of unheard *wh*-EQs: (i) *repeat wh*-EQs, which ask the addressee to reproduce her words exactly, and (ii) *open wh*-EQs, which ask the

[21] Observe that in this respect EQs are different from indirect quotes, which typically obey the so-called *Sequence of Tense* rule: i.e., when the tense of the quoted (embedded) utterance accommodates to the tense of the matrix verb (see Comrie 1985, 1986; Enç 1987; Higginbotham 2002; Thompson 2005, among others):
(i) a. You said: "I *am* hungry". (*English*)
b. You said (that) you *were* hungry.

addressee to assign the value to the echo-introduced *wh*-word, corresponding to the unheard portion of the utterance.

I argued that the option of overt echo *wh*-movement crucially depends on the clause-type of the echoed sentence and is also subject to parametric variation. In particular, I showed that in English overt movement of the echo-introduced *wh*-word is restricted to EQs repeating a previous declarative, while in EQs repeating a *yes/no* question or a *wh*-question the only available option for the echo *wh*-word is to remain in-situ. Spanish EQs repeating a previous interrogative utterance differ from their English counterparts in that the former, in addition to the *wh*-in-situ option, allow partial movement of the echo *wh*-item to some intermediate position. Finally, Russian allows echo *wh*-movement independently of whether the echoed utterance is declarative or interrogative. Namely, the echo *wh*-word can remain in-situ, move to the immediately preverbal position or appear ex-situ, at the leftmost position of the clause. Strikingly, however, despite the general availability of the movement-based options in Russian *wh*-EQs, the echo-introduced *wh*-phrase cannot be inserted between multiple *wh*-constituents inherited from an echoed multiple *wh*-question.

The aforementioned sensitivity to the clause-type of the echoed utterance is closely related to another challenging property of *wh*-EQs. Namely, we observed that the CP-structure of the echoed utterance must be preserved. Moreover, clause-typing features of the stimulus co-occur with the interrogative echo-features, such as the echo-inserted *wh*-word, interrogative interpretation and a particular prosodic contour. I also argued that Spanish particles *que* 'that' and *si* 'whether' exhibit evidence for this particular scenario of co-occurrence of two different modalities.

However, the echoed sentence is not simply 'mirrored' by an EQ, as some minor differences such as person-agreement on the verb and accommodation of deictic elements necessarily take place. Furthermore, the echo-inserted *wh*-phrase always receives wide scope independently of whether it has been fronted or not. In contrast, the *wh*-words inherited from the previous utterance do not ask for a response regardless of their position: their scope appears 'subordinated' by the echo *wh*-word.

Moreover, I demonstrated that EQs, as opposed to canonical questions, allow the *wh*-word to appear inside both strong and weak islands, while *wh*-extraction out of strong islands is blocked in all three languages. In addition, Russian exhibits option of clause-internal *wh*-movement inside the island domain. In what follows of this chapter, I develop a syntactic analysis of *wh*-EQs which is able to capture formally these echo-challenges and others yet to be noted.

4. Double-CP structure of *wh*-EQs

As argued, *wh*-EQs display a number of quite puzzling echo-features. Some echo-properties, such as co-occurrence of features of two different clause-types and the widest scope for the echo-inserted *wh*-word suggest that these questions are structurally different from canonical *wh*-questions. Other properties such as possibility of overt *wh*-movement in certain contexts (and in certain languages) suggest that, on the other hand, *wh*-EQs and canonical *wh*-questions have much more in common than it could appear.

Under recent derivational analysis of *wh*-EQs, the resemblance between an EQ and an echoed utterance is captured in terms of a particular syntactic structure underlying echo constructions. One possible way to capture the echo-puzzle is to propose that "the syntax of such questions is that of ordinary declarative clauses: there is no subject-auxiliary inversion, and there is no Q operator in C", as argued by den Dikken & Giannakidou (2002:54) (see also den Dikken 2003). In fact, this view is reminiscent of the one suggested in Bošković (2002a:362,373): "echo questions are not subject to the typing requirement (note that English echo questions do not have to involve overt *wh*-movement)" and "in pure echo questions it appears that interrogative C does not have to be inserted at all. Hence, echo *wh*-phrases can be licensed in other positions".[22]

Under such view, the echoed utterance becomes 'frozen' in the EQ and the unheard portion is simply replaced by a *wh*-word. Such view apparently captures the *wh*-in-situ and the maintenance of the utterance's clause-type (although such analysis only considered EQs repeating a previous declarative). However, as the reader may notice, it fails to account for a number of other echo-properties discussed so far: interrogative interpretation of EQs, wide scope of the echo-inserted *wh*-word, possibility of overt *wh*-movement (which exists even in English, although in limited contexts) and other puzzles.

An alternative view consists in proposing that EQs possess their own, echo interrogative C, in addition to the C head involved in the derivation of the echoed utterance. It has been proposed that, contrary to non-echo interrogatives, the syntactic structure of EQs involves two different adjacent CP projections (see Escandell 2002; Sobin 2010).

[22] Bošković (2002a), in order to account for the partial *wh*-movement of echo *wh*-words in MWF languages, as in (19), suggests that they undergo focus-fronting to a dedicated position below CP. This movement "is independent of the typing requirement in the sense that *wh*-phrases are subject to it [focus-movement] in MWF languages even when the typing is not an issue" (Bošković 2002a:362). This view allows the author to account for the contrast between MWF languages and English, since focus-fronting does not apply in the latter.

The common intuition underlying such views is that the syntactic structure of *wh*-EQs encodes two levels. From a descriptive point of view, on the one hand, there is a CP_U domain, which corresponds to the clause being echoed and, on the other, a CP_{EQ} level corresponding to the EQ, which, roughly, assigns interrogative features to the resulting sentence. To simplify the idea, CP_U encodes a sentence produced by a speaker A, and CP_{EQ} encodes a question, asked by a speaker B about what has been said by the speaker A. This is represented below:

(57) a. U: $[_{CP_U}$ ... (mumble) ...$]_A$
b. EQ: $[_{CP_{EQ}}$ ... $[_{CP_U}$ ... echo *wh*-word ...$]_A$?$]_B$

Although in this thesis I adopt Sobin's (2010) formulation of the double-CP structure for EQs, let me first briefly consider Escandell's (2002) alternative analysis.

4.1. Escandell (2002)

First, it is worth noting that Escandell's approach is designed to capture polar, or *yes/no* amazement EQs in Spanish, as in (58):

(58) a. ¿Ven aquí inmediatamente?^ (*Spanish*)
come.IMPER here right-now
'Come here right now?'
b. ¿*Qué* deprisa va?^
what fast.EXCL goes
'It goes so fast?'
c. ¿Ojalá llueva?^
PART rains.SUBJ
'You wish it rained?' [from Escandell 2002:875-876]

Typically, polar EQs lack an echo-introduced *wh*-word since the previous utterance is reproduced as a whole. Such EQs are not pronounced in order to complete the speaker's lack of knowledge about what has been said, but rather seek to express speaker's attitude like astonishement or non-acceptance.

The author analyzes this type of EQs as *metarepresentations*, in the sense that they are "the interpretation of attributed representations: they are interrogative interpretations of interpretations of somebody's thoughts" (Escandell 2002:872). Escandell observes that Spanish *yes/no* EQs are clearly different from the non-echo *yes/no* questions in several regards.

First, EQs exhibit different clause-typing features: echo-interrogative and one inherited from the 'quoted' stimulus (the so-called 'mood clashes'; see section 3.2). For instance, observe that all EQs in (58) are pronounced with a particular raise-falling or *circumflex* interrogative prosodic contour (signalled with ∧), a prototypical intonation of (*wh-*)EQs (see also Bartels 1999). In addition, observe that each sentence in (58) also exhibits features from a different, non-interrogative modality, but rather one coming from the repeated original sentence: imperative, (58a), exclamative, (58b), and desiderative, (58c).

Secondly, Escandell observes that polar EQs, unlike canonical *yes/no* interrogatives, cannot license NPIs. This is shown by the contrast between (59a) and (59b):

(59) a. Non-EQ: ¿Ha movido Juan *un dedo* por ti? (*Spanish*)
has moved Juan a finger for you
'Has Juan lifted a finger for you?'

b. EQ: *¿Juan ha movido *un dedo* por ti?
Juan has moved a finger for you

[from Escandell 2002:874]

Observe also that the EQ in (59b), as opposed to the standard *yes/no* question in (59a), does not exhibit subject-verb inversion. However, the lack of T-to-C verb movement and the oddness of NPIs can be explained under assumption that *yes/no* EQs like (59b) are based on a previous declarative utterance.

Interestingly, parallel differences between standard *yes/no* questions and EQs are also attested in English. For instance, as reported in Iwata (2003), certain sentential adverbs are incompatible with canonical interrogatives, while EQs are far more permissive. This contrast is illustrated below:

(60) a. Non-EQ: *Has *surprisingly* John arrived? (*English*)

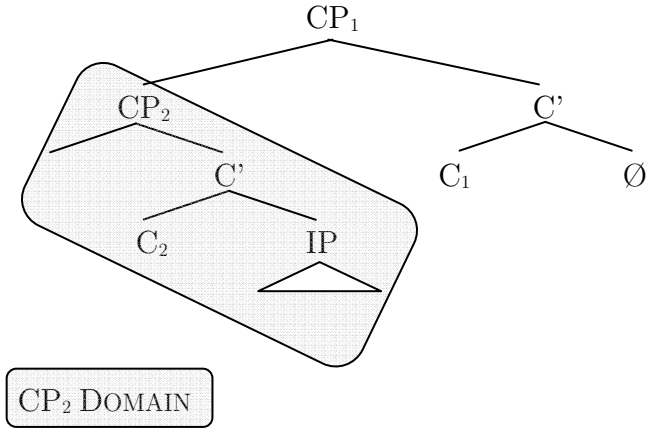
b. EQ: *Surprisingly* John has arrived? [from Iwata 2003:228,231]

As is obvious, the EQ in (60b) echoes a declarative *Surprisingly John has arrived*, which can properly license the truth-conditional sentential adverb, which is not allowed in interrogatives. As a consequence, in (60b) *surprisingly* is inherited from the previous utterance and does not conflict with the interrogative features of the EQ.

In order to capture these puzzling facts, Escandell proposes the following analysis. As standardly assumed, the functional projection CP is what determines the clause-type of the clause it contains. Consequently, the sentence exhibits

modality markers corresponding to a single clause-type. However, EQs typically present echo-interrogative markers and those of the echoed stimulus. Thus, it is logical to postulate that EQs involve two different CP projections: CP_2, the domain which corresponds to the echoed utterance, which, in turn, is embedded within a higher projection, CP_1, a domain responsible for the echo-interrogative clause-typing. The proposed derivation is represented in (61):

(61)



[from Escandell 2002:881]

Observe that in (61) the specifier of CP_1 is occupied by the CP_2 projection (the shadowed zone). Crucially, notice that only the latter selects IP, while the head C_1 has a null sister node. According to Escandell (2002:882), the structure in (61) "is intended to capture the similarities between fronted *wh*-words and the 'embedded' CP, by postulating that they occupy the same positions" (i.e., the specifier of CP). However, the author argues that while the fronted *wh*-words occupy Spec,CP by means of internal Merge, CP_2 is externally merged directly at Spec,CP_1. Observe that in (61) the head C_1 does not select any lexical or functional material, from which CP_2 could have been extracted; as a consequence, there is no trace or copy of CP_2 left behind.

The derivation in (61) is designed to capture such echo-properties as co-occurrence of markers corresponding to different modalities. Given that the features of the higher head C_1 are responsible for the phonological and semantic properties of EQs, rest of characteristics such as word order, internal structure of IP and clause-type of the echoed sentence are determined by the embedded C_2. Moreover, the analysis explains why NPIs are not allowed in EQs: according to Escandell, such elements appear inside the CP_2 domain (a declarative), where they cannot be properly licensed.

Unfortunately, this analysis does not easily capture other echo-puzzles discussed so far. At least, I argue that the derivation in (61) cannot underlie unheard *wh*-EQs. First, the possibility of insertion of an echo *wh*-word has not been contemplated by Escandell's proposal. Consequently, *wh*-EQs as in (18)

(repeated below), which reproduce a previous *wh*-question and exhibit at least two *wh*-words (each one occupying a different position), are unexpected under (61):

(18) a. U: ¿*Qué*$_{U}$ lee (mumble)? (*Spanish*)
what reads (mumble)
'What does (mumble) read?'

b. EQ: ¿(Que) *qué*$_{U}$ lee <u>quién</u>$_{E}$?
that what reads who
'What does read WHO?'

Since the structure in (61) entails that in (18) the utterance's *wh*-word *qué* 'what' occupies Spec,CP_2, then it is not clear in which position the echo-introduced *wh*-word *quién* 'who' appears. Given that the latter replaces the unheard utterance's constituents, it should be located somewhere within the domain of CP_2. However, if so, then its widest scope and the loss of scope for the utterance's *wh*-word do not follow from (61).

According to Escandell, CP_2 is a phase. That means that once CP_2 is merged at Spec,CP_1, it is no longer accessible for the further syntactic operations. That is, the whole CP_2 and its sister IP are merged into the derivation as a single atom, as a copy of what has been said. If so, then it is not clear how the echo *wh*-word is inserted into the utterance. Optional *wh*-movement of the echo *wh*-phrase (see section 3.1) is unexpected, given that Spec,CP_1 is already occupied and the structure in (61) does not envisage any additional available landing site for the fronted constituent.[23]

In conclusion, several factors preclude us from extending Escandell's (2002) proposal for amazement polar EQs to unheard *wh*-EQs. In the following subsection I consider Sobin's (2010) version of double-CP sturucture for EQs, which I adopt in this work.

[23] Furthermore, Escandell argues that CP_1 cannot determine grammatical properties of the constituents inside the embedded IP, due to the intervening CP_2: "the fact that only the lower CP dominates an IP node explains why all 'visible' syntactic properties are those of the embedded CP [...], while the phonological features and the semantic meaning correspond, as usual, to those of the root CP" (Escandell 2002:883). However, it remains unclear to me how the structure in (61) (and, in particular, the 'frozen' IP layer) accounts for deictic accommodation and switching between 1st and 2nd person attested in *wh*-EQs (see section 3.6).

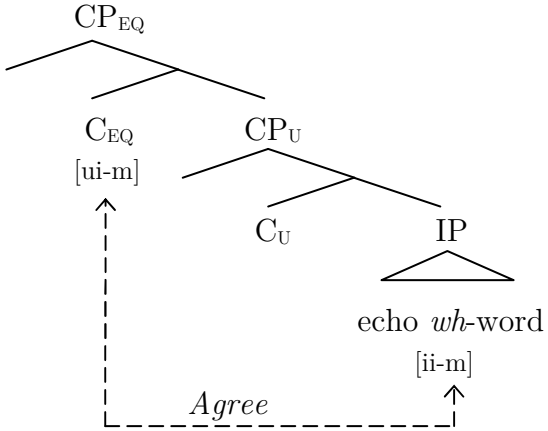
4.2. Sobin (2010)

Sobin (2010) observes that English *wh*-EQs show numerous properties that result ungrammatical in non-echo interrogatives. Namely, they typically exhibit *wh*-in-situ, (62a), which, however, can be accompanied by inversion of the subject-verb word order, (62b). Violation of Superiority effects is also allowed and even required, depending on the previous utterance, (62c). In addition, the echo-inserted *wh*-word always receives the widest scope in EQs (for discussion, see also section 3.5):

(62) a. You saw $\underline{\text{who}}_{\text{E}}$? (*English*)
b. Has Mary seen $\underline{\text{what}}_{\text{E}}$?
c. *What* did $\underline{\text{who}}_{\text{E}}$ see? [from Sobin 2010:131]

Sobin attempts to account for the differences between canonical *wh*-questions in English (with overt *wh*-movement) and *wh*-EQs (always with *wh*-in-situ, according to the author) in terms of minimalist syntax and proposes the following double-CP structure for the latter type of questions:

(63)



[adopted from Sobin 2010:145]

The echo-structure in (63) involves two different CP projections: the highest CP-level (CP_{EQ}), which asymmetrically c-commands the copy of the CP layer corresponding to the echoed utterance (CP_{U}). As the reader may notice, this structure captures the fact that EQs maintain the clause-typing features of the original sentence, which is partially repeated. Sobin (1976, 1990, 2010) argues that EQs are formed in part by ''freezing'' the CP structure of the echoed utterance, in the sense that the utterance's word order must remain unchanged in the EQ. Notice that the representation in (63) allows for certain weakening regarding the accommodation of the deictic forms and [person]-agreement on the

verb, since the IP level of the utterance is not 'frozen' (see fn. 23). (I will come back to the nature of 'freezing' of CP_U later in this chapter.)

According to Sobin (2010:131), the key syntactic properties involved in the echo-challenge can be captured "in terms of independent necessary scope assignment mechanisms and a complementizer that subordinates the utterance being echoed". Namely, in order to address the widest scope for the echo-inserted *wh*-phrase, as in (62c) —at the expense of its loss for the *wh*-words repeated from the stimulus— the author argues for unselective binding of the echo-inserted *wh*-word by the highest C_{EQ} at distance, through valuation of a particular, echo feature (which the author calls [i-m] ('interrogatively-marked')), which is absent from the embedded CP_U.[24]

According to Sobin, CP_{EQ} contains a *copy* of CP of the echoed sentence, CP_U. The author refers to this phenomenon of 'copying' as *Comp freezing*, which literally means that the resulting EQ maintains the utterance's interrogative force associated with C_U. The interrogative head C_U assigns a value to the utterance's *wh*-word *what* and triggers its movement to Spec,CP_U. In turn, C_{EQ} selects as a complement the copy of CP_U. Since the whole utterance's CP is 'frozen' in the derivation of the EQ, all its internal constituents (items and features) remain unchanged. Finally, C_{EQ} checks and deletes its uninterpretable [i-m]-feature via agreement with the interrogatively-marked, echo-inserted *wh*-word. Given that [ui-m] on C is not associated with EPP, the echo *wh*-word remains in-situ. At the same time, its clause-internal position does not prevent it from receiving the widest scope. Given that the utterance's *wh*-word is embedded inside CP_{EQ}, its scope is narrowed.

In this dissertation I adopt Sobin's (2010) structure for *wh*-EQs only partially, since I depart from his proposal in several regards. Certain details regarding my interpretation of the particular echo-structure are discussed in the next subsection.

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[24] Sobin propose that C_{EQ}, involved in the derivation of *wh*-EQs, bears a slightly different set of features from the standard, non-echo C head of canonical *wh*-questions (signaled as C_{WH} below):

(i) a. *Feature-composition of the interrogative C in non-echo wh-questions*
C_{WH} {[Int], [Q], [uwh$_{EPP}$]}
b. *Feature-composition of the interrogative C in wh-EQs*
C_{EQ} {[Int], [ui-m]} [from Sobin 2010:141-142]

For details of the whole machinery of the correspondent feature-checking, the reader is referred to Sobin (2010).

4.3. A note on the structure of *wh*-EQs

A note is in order regarding my interpretation of the double-CP structure proposed by Sobin (2010). Particularly, certain clarification is needed concerning the nature of the CP_U projection.

First, unfortunately, it is unclear to me what Sobin's 'Comp freezing' mechanism exactly means from the derivational point of view. According to the logic in (63), the utterance's CP (CP_U) is somehow 'frozen' and 'copied' from the previous speech act. As far as I understand the proposal, the copy of the already formed CP_U is inserted into the derivation of the EQ, with all relevant features checked and all positions filled. This is schematized in (64) for the question in (62c):

(64) a. U: [$_{CP_U}$ *what*$_i$ C_U did] [$_{IP}$ (mumble) see t_i]]?

b. EQ: [$_{CP_{EQ}}$ C_{EQ} [$_{IP}$ who$_{EQ}$ see]]]?

Under the logic of (64b), the speaker simply introduces the copy of CP_U into the derivation of the EQ. If CP_U is a simple 'frozen' copy, then it is not clear where this copy has been stored before being inserted into the derivation (in the speaker's lexicon or somewhere else?).

Notice that the mechanism of 'freezing' of the utterance's CP level plays an essential role in Sobin's proposal given his assumption that *wh*-EQs cannot trigger overt *wh*-movement (see section 3.1). Recall that Sobin observes that overt echo *wh*-movement is allowed only in EQs repeating declarative utterances (what gives rise to the so-called 'pseudo EQs'), as in (13) (repeated below):

(13) a. U: Mary had tea with (mumble). (*English*)
b. EQ: Mary had tea with who$_E$?
c. EQ: Who$_E$ did Mary had tea with t_E? [adopted from Sobin 2010:132]

In contrast, in all other cases "the CP structure of the EQ appears restricted to the structure evident in the U[utterance]" (Sobin 2010:143). This restriction is illustrated in (16), repeated below for the reader's convenience:

(16) a. U: *What* did (mumble) drink at Mary's party? (*English*)
b. EQ: *What* did who$_E$ drink at Mary's party?
c. EQ: *Who$_E$ t_E drank *what* at Mary's party?
[adopted from Sobin 2010:132]

However, we saw that there is a crucial difference between English and Russian *wh*-EQs with respect to whether the echo *wh*-phrase can be fronted or not. For example, recall that in Russian *wh*-EQs reproducing a previous *wh*-interrogative there are at least two available alternatives for the echo *wh*-phrase, apart from *wh*-in-situ. As shown in (21) (repeated below), the echo *wh*-word can move either to the immediately preverbal position, (21c), or to the left edge of the clause, (21d). These two options are clearly excluded from English (see section 3.1):

(21) a. U: *Kogo* udaril (mumble)? (*Russian*)
who.ACC hit mumble
'Who did (mumble) hit?'

b. EQ: *Kogo* udaril <u>kto</u>$_E$?
who.ACC hit who.NOM
'Who did hit WHO?'

c. EQ: *Kogo* <u>kto</u>$_E$ udaril t_E?
who.ACC who.NOM hit

d. EQ: ? <u>Kto</u>$_E$ *kogo* udaril t_E?
who.NOM who.ACC hit

The Russian data in (21) contradict Sobin's generalization on the obligatory *wh*-in-situ for the echo *wh*-words and, consequently, question the whole mechanism of 'Comp freezing'.

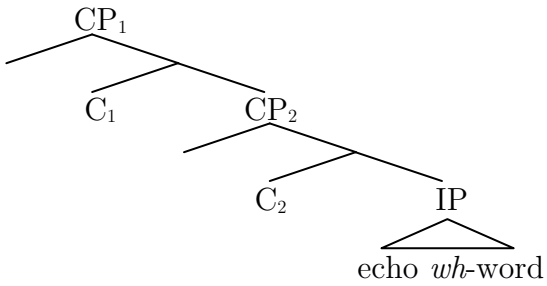
Here I reinterpret Sobin's 'Comp freezing' in the following way. I assume that the derivation of *wh*-EQs —i.e., clarification questions about certain portion of the previous utterance— contains the same type of a force-feature (interrogative, declarative, etc.) as in the sentence being echoed.[25] I standardly assume that such features are carried by the complementizer C. This does not mean that the derivation of *wh*-EQs somehow introduces a 'frozen copy' of the utterance's CP. Rather, this means that a C head of the type as the one of the stimulus is merged in the derivation of *wh*-EQs. Consequently, the same type of CP (but, importantly, not the same instance of that CP) is built in the course of the bottom-up derivation, due to the properties of such C. Moreover, I assume that the derivation of *wh*-EQs proceeds in the standard 'bottom-up' fashion. Therefore, certain changes at the IP-level such as deictic accommodation and

[25] Notice, however, that I do not suggest that an EQ encodes two different speech acts by having two different force features (or two ForcePs within Rizzi's 1997, 2001b cartographic system). I assume that, although an EQ exhibits markers of different modalities, it is interpreted as an (echo) interrogative, and not, for example, as an interrogative and a declarative (exclamative, imperative, etc.) at the same time.

insertion of an additional, echo *wh*-item (replacing the unheard portion of the utterance) are expected.

Once the CP-level corresponding to the echoed utterance is built, an additional functional head is merged into the derivation. Here I label this head as C_1. It selects its sister CP (henceforth, CP_2) as a complement and projects a discourse-bound anaphoric interrogative projection.[26] CP_1 assigns scope to the anaphoric, echo-introduced *wh*-word and assigns the request-for-repetition meaning to the resulting question. As the derivation proceeds, we obtain a double-CP structure as in (65):

(65) *Syntactic structure underlying wh-EQs*



The structure in (65) maintains all advantages of Sobin's (2010) proposal (*cf.* (63)) and formally captures the challenging echo-properties, such as maintenance of the utterance's clause-type or widest scope for the echo *wh*-word (the scope of the utterance's *wh*-words, if present, being narrowed). The double-CP structure (and the echo CP_1 layer, in particular) in (65) ensures that a *wh*-EQ will receive different LF and PF interpretations from a canonical *wh*-question (*cf.* Vlachos 2012; see below). Therefore, under this view, both echo and non-echo *wh*-questions are derived through application of standard syntactic operations Agree and Merge, contrary to the general tendency to treat *wh*-EQs as a purely pragmatic phenomenon.

Here I crucially depart from Sobin (2010) by arguing that *wh*-EQs do exhibit interrogative movement. In this respect, I agree with Vlachos (2012), who argues that *wh*-movement is not excluded from EQs and that syntax is able to generate both *wh*-in-situ and *wh*-ex-situ options. Nevertheless, in Vlachos' proposal, *wh*-EQs are not distinguished from ordinary *wh*-questions at the computational level (*contra* Sobin 2010), but only at the interfaces. More precisely, according to the author, the crucial contribution to the interpretation of

[26] As obvious, nothing would change in the argumentation if we label this interrogative head as C_{EQ} and its maximal projection as CP_{EQ}, analogously to Sobin (2010). Another way to designate this higher layer would be DiscourseP or AnaphoricP, as suggested by Michal Starke through personal communication (see also fn. 14).

wh-questions is achieved at PF, an interface level which is in constant communication with LF. Unfortunately, Vlachos' argumentation is principally based on *wh*-EQs repeating a previous declarative sentence. As discussed, in these cases overt movement of the echo *wh*-word is allowed across different *wh*-fronting languages (see section 3.1). However, I showed that in languages like English the availability of echo *wh*-movement in an EQ is restricted by the clause-type of the echoed utterance. This fact can hardly be captured under assumption that *wh*-EQs have the same syntactic structure as non-echo *wh*-questions. Other echo-particularities such as the widest scope for the echo *wh*-word or 'mood clashes', among others, are neither expected under Vlachos' proposal.

Therefore, here I put forward the idea that the interpretational and prosodic differences between ordinary *wh*-questions and *wh*-EQs are preconditioned by the computational level. Namely, a particular syntactic structure, as the one in (65), underlies the latter type of *wh*-questions.

5. Q-based analysis of *wh*-EQs: claim

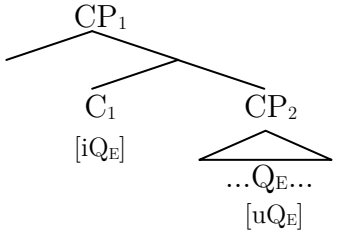
As already mentioned, I depart from the mechanism of echo-formation proposed by Sobin (2010) in several regards. Crucially for our purposes, I argue that both *wh*-in-situ and *wh*-ex-situ options are legitimized in *wh*-EQs. Here I extend Cable's (2007, 2010) Q-based approach to syntax and semantics of *wh*-EQs. I argue that the derivation of *wh*-EQs involves three crucial elements: (i) an anaphoric echo *wh*-phrase merged at the argument position, (ii) a phonetically null discourse-bound interrogative Q-particle (Q_E), merged anywhere in the tree where it c-commands the echo *wh*-word, and (iii) discourse-related interrogative head C_1.[27] Independently of the merge place of the Q_E-particle, it must move to the scope position of the question, a syntactic universal. I propose that in *wh*-EQs the scope position for the interrogative operator is in the specifier of CP_1. What forces movement of Q_E into CP_1?

I assume that the force driving every instance of interrogative movement is the same in all types of questions. As argued in chapter 2, Q-movement in interrogative structures is driven by some formal imperfection on the Q-particle

[27] In fact, it is originally suggested in Cable (2010) that different structures might involve different instances of the same category label Q. So, it is natural to assume that a Q-particle involved in the derivation of a canonical *wh*-question is different from one involved in the derivation of a *wh*-EQ. This difference consists in the anaphoric nature of the former, but not of the latter. Here I signal this property with the index *E* on the interrogative Q-particle and the corresponding Q-feature it bears. It also allows us to distinguish between elements involved in the derivation of *wh*-EQs and those found in the derivation of canonical *wh*-questions.

itself, under the assumption that Agree between Ā-items operates upward (see Bošković 2007a, 2011). That is, Q-movement is required in order for Q-agreement to take place. More precisely, regarding *wh*-EQs, I propose that Q_E enters the derivation carrying an unvalued instance of the echo Q-feature ([uQ_E]), while the interpretable instance of this feature is housed on the interrogative echo-head C_1. The initial distribution of the elements bearing some instance of the Q_E-feature is represented in (66):

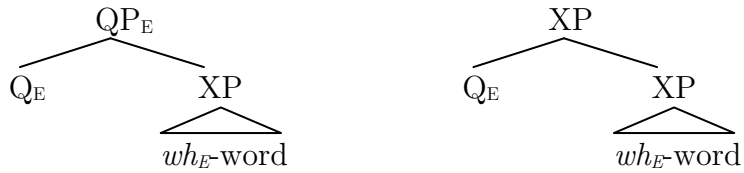
(66) *Distribution of the echo-items bearing [Q_E]*



In this system, the echo-interrogative clause-typing of the sentence is attributed to the head C_1 bearing [iQ_E], while [uQ_E] on the Q_E-particle forces it to undergo overt movement to the scope position of the question. As a result, after being transferred, the derivation in (66) can be interpreted at LF and the prototypical —rising or rise-falling— echo intonation is assigned at PF. As shown in (66), Q_E is housed somewhere within the lower CP_2, given that the operator scopes over the *wh*-word that replaces some portion of the utterance being echoed.

Within Q-theory, *wh*-movement and *wh*-in-situ are derived from different merging options of Q and its sister XP (which contains the *wh*-word). I extend this idea to *wh*-EQs and propose that the echo Q-particle can either adjoin to XP, (67b), or to select it as a complement, (67a):

(67) a. *Q_E-projection (wh-ex-situ)* b. *Q_E-adjunction* (*wh-in-situ*)



The complementation structure in (67a), with a projected Q_E, results in *wh*-ex-situ: the entire QP_E becomes target of further interrogative movement to the left edge of a question. The adjunction structure in (67b), in which Q_E does not project, gives rise to *wh*-in-situ: Q_E must move to the scope position of the question by itself. I propose that under particular discourse-linked contexts

(including *wh*-EQs), a discourse-bound Q_E-morpheme can resort to both merging options in *wh*-fronting languages (see Pesetsky 1987, 2000).

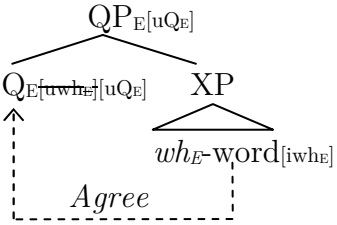
In principle, within Q-theory, the Q-particle can be merged anywhere in the tree where it c-commands the *wh*-word. Following Cable (2007, 2010), I propose that in *wh*-fronting languages the size of a constituent XP with which Q_E can be merged is restricted by a locality-sensitive Agree operation between Q_E and the echo *wh*-word contained within that XP. Put differently, in the construction of QP_E, the echo Q-morpheme must agree with the echo *wh*-word it c-commands within some local domain.

Similarly to what I argued for *wh*-/Q-agreement in canonical questions (see chapter 2 for discussion), I suggest that all echo *wh*-items enter the derivation bearing an interpretable instance of the *wh*-feature. The latter is associated with an index *E* ('echo') ([iwh$_E$]), which reflects the anaphoric/referential nature of these items, as opposed to those of ordinary question, (68a). In turn, feature-specification of Q_E-particles can vary across *wh*-fronting languages, (68b,c):

(68) a. Echo *wh*-word: {[iwh$_E$]}
b. Echo Q-particle$_1$: {[uQ$_E$]; [uwh$_E$]}
c. Echo Q-particle$_2$: {[uQ$_E$]}

Following Cable, I propose that in all *wh*-fronting languages Q_E-particle, in order to be able to project, must bear a bundle of features as in (68b): in addition to the interrogative Q_E-feature, it carries an unvalued instance of the *wh*-feature, forcing Q_E to agree with the anaphoric *wh*-phrase it c-commands. The valuation of the *wh*-feature proceeds in an upward direction, as illustrated in (69) below:

(69) *Q_E-projection* (*obligatory Q/wh-agreement*)

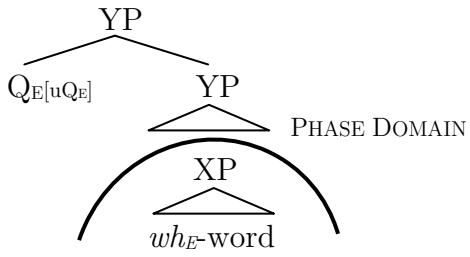


Such Q/*wh*-agreement is subject to locality conditions. In particular, as discussed in Cable (2007, 2010), agreement cannot cross into islands and into separate spell-out domains. As logical, then projection of QP_E is blocked and, as a result, the *wh*-word cannot be pied-piped together with Q_E into the scope position of the *wh*-EQ. In the next section I address several cases, in which Q_E cannot project,

due to the impossibility of agreement. I propose that *wh*-fronting languages can always resort to Q_E-adjunction, another alternative in the derivation of non-canonical *wh*-questions, which results in EQs with *wh*-in-situ.

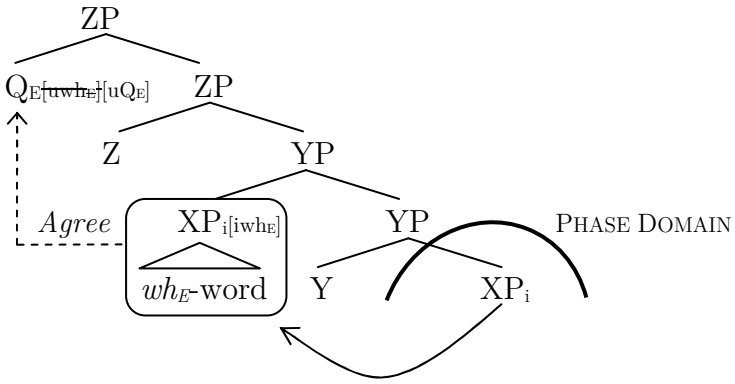
Regarding Q_E-particles that do not project, I propose that generally they do not establish any local agreement with the echo *wh*-item. Such Q_E-particles enter the derivation being specified only with [uQ_E], (68c). Q_E can be adjoined to its sister XP at the argument position, giving rise to (67b), or it can be base-generated away from XP, even within a different phase. The latter option is illustrated below:

(70) *Q_E-adjunction without Q/wh-agreement*



For instance, I show that in the Russian lexicon both types of non-projecting Q_E-particles, (68b) and (68c), are available. Put differently, in Russian the Q_E-morpheme, when it adjoins to XP, still may require agreement with the *wh*-word it c-commands. If it merges locally, no effect is seen on the final outcome: after agreement, the *wh*-phrase remains at its base position and Q_E undergoes fronting on its own. However, if such Q_E is initially merged at long distance, it forces the *wh*-containing goal XP to undergo partial *wh*-fronting from its base position to the edge of a phase, in order to become visible for the probe. This type of Q_E-adjunction, parameterized for Russian, is illustrated in (71):

(71) *Q_E-adjunction (after Q/wh-Agree)*



Assuming the double-CP structure for *wh*-EQs, (65), I propose that the edge of CP_2 is a legitimate site for the 'high' merge of the Q_E-morpheme, given that this projection can host Ā-items. This is a plausible scenario, since CP_2 corresponds to the level of the echoed utterance and Q_E regulates the semantics of the echo *wh*-word, which replaces some unheard portion of that utterance.

To summarize the discussion above, I suggest that *wh*-fronting languages can resort either to Q_E-projection or to Q_E-adjunction in the derivation of *wh*-EQs. Obviously, the less constrained scenario is adjunction of Q_E away from XP, along the lines sketched in (70). Such scenario does not imply locality-sensitive Q/*wh*-agreement and further Q_E-movement into the scope position of the question starts from outside the domain of XP. On the other hand, Q_E-adjunction requiring locality-sensitive agreement, as in (71), is subject to parameterization; its legitimacy depends on whether there is an available landing site for extraction of the *wh*-containing XP.

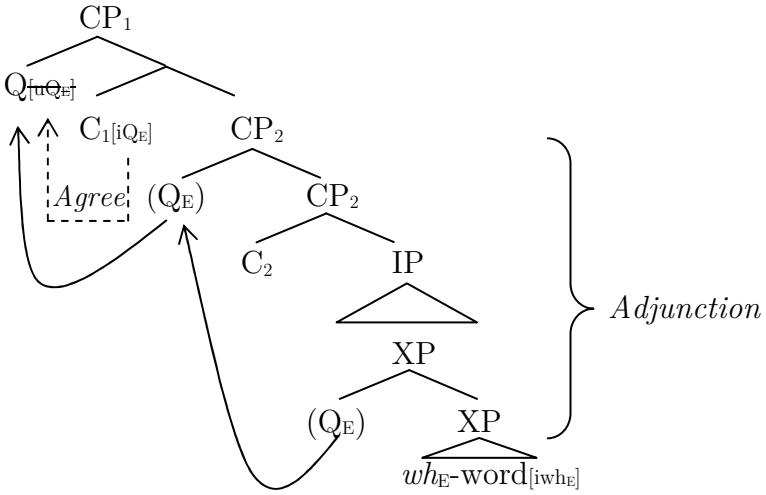
Finally, the scenario of Q_E-projection, (69), always requires agreement with the *wh*-word within some local domain. Moreover, I argue that further QP_E-movement proceeds successive cyclically. Assuming double-CP structure for EQs, (65), I propose that QP_E-movement into CP_1 passes though the edge of CP_2. I suggest that availability of Spec,CP_2 as an intermediate escape hatch is precisely what determines the legitimacy of the *wh*-ex-situ option in EQs across *wh*-fronting languages. With this background in mind, we are now in position to consider some concrete cases of derivation of *wh*-EQs.

6. When the echo-Q cannot project

Let us first address some particular cases when *wh*-in-situ is the only available option for EQs in *wh*-fronting languages. In this section I consider partial *wh*-echoing and availability of echo *wh*-words to appear inside islands (see sections 3.3 and 3.4 respectively).

I propose that in such cases QP_E-projection is blocked, in particular, by impossibility of Q/*wh*-agreement. Hence, the only available option is Q_E-adjunction, when Q_E-morpheme does not need to agree with the echo *wh*-word within some local domain. The only requirement is that Q_E c-commands the echo *wh*-word. Such Q_E can merge either at the argument position of the echo *wh*-phrase (*v*P-internally) or higher. Regarding the latter merging option, I propose that Q_E can adjoin to CP_2. The two options regarding the possible merge sites of the echo Q-particle, as well as its movement paths into CP_1 are illustrated below:

(72) *Wh-in-situ in EQs as a result of Q_E-adjunction*



Notice that the Q_E-particle in (72) does not project and, hence, moves to Spec,CP_1 by itself, the echo *wh*-word being left in-situ. I assume that the derivation in (72) underlies all types of *wh*-in-situ EQs. Let us first consider the most restrictive cases, when *wh*-in-situ is the only available option.

6.1. Partial *wh*-echoing

Here I would like to show that EQs with partial *wh*-echoing (see section 3.3 for discussion) are nicely captured by the derivation in (72). Recall that an echo *wh*-word can replace any unheard portion of the stimulus, either an independent syntactic object (e.g. a DP, as in *You saw* [*what*$_E$*?*) or a constituent of a complex object. The latter option is illustrated by the following English example:

(73) a. U: Mary saw [DP the [NP (mumble)]]. (*English*)
b. EQ: Mary saw [DP the [NP what$_E$]]?
c. EQ: *[DP The [NP what$_E$]]$_i$ did Mary see t_i?
d. EQ: *[NP What$_E$]$_i$ did Mary see [DP the t_i]?

In (73b), the echo *wh*-word only replaces the complement of DP (the NP), while the definite article is not affected by the process of *wh*-echoing. Crucially, EQs with partial *wh*-echoing do not allow overt movement of neither DP nor NP, as shown by the ungrammaticality of (73c) and (73d) respectively.

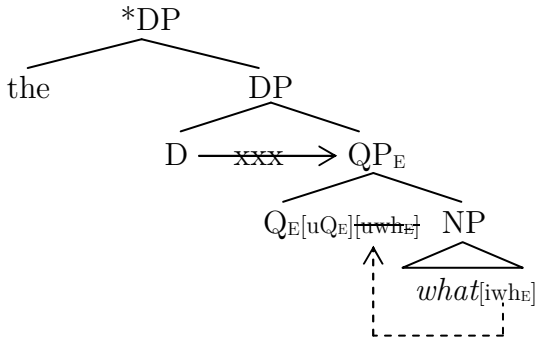
First, let us consider why overt echo *wh*-movement is blocked. Recall that within Q-theory, *wh*-ex-situ is a result of overt movement of the *wh*-containing QP into the scope position of a question. I argue that in cases with partial

wh-echoing, a QP_E dominating both Q_E and the echo *wh*-word, cannot be projected, so the latter cannot be fronted:

(74) a. *$[_{QP}\, Q_E\, [_{DP}$ the $[_{NP}$ $\underline{what_E}]]]_i$ did Mary see t_i?
b. *$[_{QP}\, Q_E\, [_{NP}$ $\underline{what_E}]]_i$ did Mary see $[_{DP}$ the $t_i]$?

First, consider (74b), which illustrates the illicit extraction of the wh_E-containing NP out from the domain of DP, which is left in-situ. In the derivation of (74b), first Q_E must be merged with the *wh*-containing NP and project. However, such QP would intervene between the functional head D and its complement NP, resulting in the ill-formed base structure in (75):

(75) *QP_E cannot satisfy c-selectional requirements of D*

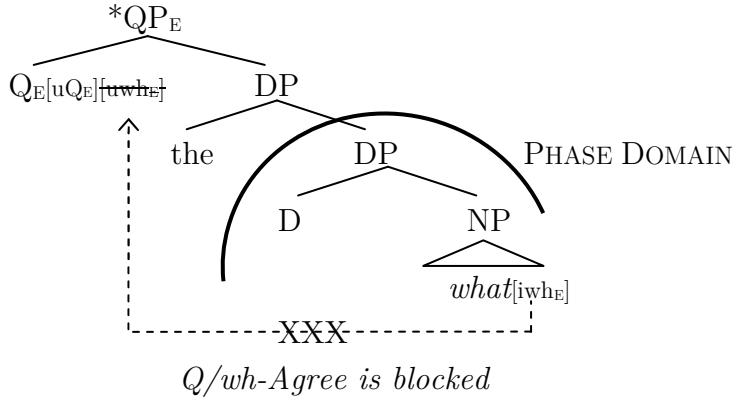


[adopted from Cable 2010:63]

Recall from chapter 4 that the configuration in (75) is blocked by Cable's (2007, 2010) QP-Intervention condition: QP_E does not allow the functional head D to satisfy its selectional requirements by intervening between D and NP.

Let us see now why (74a), in which Q_E selects the whole DP as its sister at the argument position, is neither felicitous:

(76) *Q/wh-agreement is blocked by virtue of PIC*



Q/wh-Agree is blocked

In (76), Q_E carrying [uwh$_E$] is merged with DP and c-commands the *wh*-containing NP, which is selected by D as a complement. I argue that a QP_E cannot be projected in this configuration, because Q_E cannot locally agree with the *wh*-word, which is contained within the DP. Under the standard assumption that DP acts as a phase (see Svenonius 2004; Bošković 2005a; Chomsky 2005; Roca 2012, among others), we predict that Q/*wh*-agreement cannot cross into the domain of DP by virtue of PIC. Consequently, QP_E cannot be projected, and pied-piping of the echo *wh*-word into the left periphery of the question is neither allowed. Therefore, the ungrammaticality of (74a) is predicted.[28] Thus, I argue that the general ban on movement of partially *wh*-echoed constituents is due to the configurations in (75) and (76).

Consider a slightly different case of partial *wh*-echoing, as in (77), in which the speaker does not hear quite well the few last syllables of the NP *Monongahela* and replaces them with the echo *wh*-word *what*. Notice that the bit of language denoted by the echo *wh*-word is not even an independent syntactic constituent:

(77) a. U: I just have rafted down [$_{DP}$ the [$_{NP}$ Mononga [$_{XP}$ (mumble)]]].
b. EQ: You just have rafted down [$_{DP}$ the [$_{NP}$ Mononga [$_{XP}$ <u>what$_E$</u>]]]?
c. EQ: *[$_{XP}$ <u>What$_E$</u>]$_i$ did you just raft down [$_{DP}$ the [$_{NP}$ Mononga t$_i$]]?
d. EQ: *[$_{DP}$ The [$_{NP}$ Mononga [$_{XP}$ <u>what$_E$</u>]]]$_i$ did you just fart down t$_i$?

Observe from (77b) that the echo *wh*-item *what* is contained inside the complement of NP, which, in turn, is a complement of DP. As a result, the *wh*-item is deeply embedded. Therefore, pied-piping of the echo *wh*-word to the left edge of the question is blocked and the ungrammaticality of (77c) and (77d) falls into place.

We see, then, that the only legitimate possibility for a partially *wh*-echoed constituent is to remain in-situ. Again, this pattern is fully expected under our Q_E-adjunction hypothesis. Recall from the previous discussion that there are two possible scenarios regarding the merge site of Q_E. In principle, it can be adjoined

[28] As argued in Cable (2007, 2010), in order for a Q-particle to agree with a *wh*-word contained within a phrase XP selected by the functional head F as a complement, first that *wh*-word must undergo movement to the edge of FP. Observe that in (ia) and (iia) the *wh*-word appears at the specifier positions of DP and CP respectively. However, if the *wh*-word remains inside DP and CP, the result is ill-formed, (ib,c) and (iib):

(i) a. I wonder [$_{QP}$ Q [$_{DP}$ *whose*$_i$ [$_{NP}$ pictures t$_i$]]]$_j$ john bought t$_j$? (*English*)
b. * I wonder [$_{QP}$ Q [$_{DP}$ [$_{NP}$ pictures of *whom*]]]$_j$ john bought t$_j$?
c. * I wonder [$_{QP}$ Q [$_{DP}$ [$_{AP}$ proud of *whom*]]]$_j$ John was t$_j$? [adopted from Cable 2010:151]

(ii) a. [$_{QP}$ Q [$_{CP}$ *What*$_i$ did he get t$_i$]]$_j$ does he think t$_j$? (*English*)
b. * [$_{QP}$ Q [$_{CP}$ He got *what*]]$_j$ does he think t$_j$? [adopted from Cable 2010:154]

anywhere in the tree where it c-commands the echo *wh*-item. I suggest that Q_E can be adjoined either to DP (i.e., *v*P-internally) or to CP_2 (before CP_1 is projected). The two possible ways to derive the word order in (73b) are illustrated below, in (78a) and (78b) respectively:

(78) a. [CP_1 ___ $C_{1[iQ_E]}$ [CP_2 ___ C_2 [TP [*v*P ___ *v* [DP $Q_{E[uQ_E]}$ [DP the [$\underline{what}_E$]]]]]]]?

b. [CP_1 ___ $C_{1[iQ_E]}$ [CP_2 $Q_{E[uQ_E]}$ [CP_2 C_2 [TP [*v*P ... [DP the [$\underline{what}_E$]]]]]]]?

As shown in (78), the Q_E-particle does not project and undergoes movement into the scope position of the question (CP_1) by itself; the echo *wh*-item is left in-situ. In (78a), when Q_E is merged *v*P-internally, it must undergo movement through the edges of *v*P and CP_2, until it reaches Spec,CP_1, where its informal imperfection can be valued. If Q_E is merged high, as in (78b), it undergoes local movement into the edge of CP_1. I will come back to discussion of successive cyclic movement later in this chapter.

6.2. Echo *wh*-items inside islands

Let us now consider behavior of *wh*-EQs regarding islands (see section 3.4). Recall that in *wh*-EQs the echo-introduced *wh*-word can remain inside strong islands, while its overt extraction from the island domain is not allowed. This property is illustrated below for island effects created by an adjunct:

(79) *Wh-EQs & adjunct constraint* (*English*)

a. Mary left [after John met $\underline{who}_E$]?

b. *$\underline{Who}_E$ did Mary leave [after John met t_E]?

c. *[After John met $\underline{who}_E$]$_i$ did Mary leave t_i?

First, let us address the condition against pied-piping of the echo *wh*-item past islands, as in (79c).[29] Recall our assumption that in *wh*-fronting languages overt

[29] Cable (2007, 2010) reports that Tlingit, a language with obligatory *wh*-fronting, allows pied-piping past islands, (ib), as opposed to English, (ia):

(i) a. * [QP Q [DP A fish [CP that is *how* big]] do you want? (*English*)

b. [QP [DP [CP *Wáa* kwiligeyi] $\underline{x}$áat] *sá*] i tuwáa sigóo? (*Tlingit*)
how it.is.big.REL fish Q your spirit.at it.is.glad
'How big a fish do you want?' [from Cable 2010:148]

The distinct patterns are attributed to the fact that requirement of Q/*wh*-agreement is parameterized. In Tlingit a Q-particle does not need to agree in order to be able to project and,

movement of an echo *wh*-word is a result of Q_E-projection; namely, it is a secondary effect of movement of the Q_E-particle selecting the wh_E-containing XP as a complement.

As discussed in the literature on *wh*-in-situ languages (Hagstrom 1998; Kishimoto 2005; Cable 2007, 2010), a *wh*-word may be contained inside an island if and only if it is c-commanded by a Q-particle which is base-generated outside the island. This is illustrated below for Sinhala, a *wh*-in-situ language with overt movement of a Q-particle *da*, which must be merged to the right of the head of the relative clause:

(80) a. Oyaa [$_{NP}$ [$_{CP}$ Chitra *kaa*-ta dunna] pota] *da* kieuwe? (*Sinhala*)
you Chitra who-DAT give book Q read
*'Who did you read the book that Chitra gave _?'
b. *Oyaa [$_{NP}$ [$_{CP}$ Chitra *kaa*-ta *da* dunna] pota] kieuwe?
you Chitra who-DAT Q give book read
[from Kishimoto 2005:29; cited from Cable 2008a:128]

Observe that in order to derive the EQ in (79b), in which the echo *wh*-word is extracted out from the island, the Q_E-particle first must be merged inside the island and project a QP_E dominating both Q_E and *what*. Then QP_E must undergo overt movement out from the island. However, QP_E-extraction past islands is blocked, as shown in (81a). On the other hand, in EQs *wh*-fronting languages can resort to the pattern of Q_E-adjunction. That is, Q_E can be base-generated outside the island: either at the left edge of the island itself or at the edge of CP_2, as represented in (81b). In this case, Q_E is able to undergo unobstructed interrogative movement into the scope position of the question:

(81) *Interaction between Q_E-particle and island*
a. *[$_{CP1}$ [$_{QP}$ Q_E $\underline{who_E}$]$_i$ C_1 [$_{CP2}$ t_i C_2 did [Mary leave [$_{PP}$ after [$_{TP}$ John met t_i]]]]]?
xxx
b. [$_{CP1}$ Q_{Ei} C_1 [$_{CP2}$ t_i C_2 [Mary left (t_i) [$_{PP}$ after [$_{TP}$ John met $\underline{who_E}$]]]]]

as a result, pied-piping past islands is allowed in this language. It is blocked in English, however, since this language requires Q/*wh*-agreement, which cannot apply past islands.
Notice that a similar restriction is attested in *wh*-EQs in English and other *wh*-fronting languages, in which pied-piping of an echo *wh*-word past islands is not allowed as a result of impossibility of Q/*wh*-agreement. For a detailed discussion of conditions on pied-piping, the reader is referred to Cable (2007, 2010).

The option of Q-adjunction is not available in *wh*-fronting languages under neutral contexts. As a result, canonical, non-echo *wh*-items cannot remain inside islands, as opposed to their echo counterparts.

To sum up this section, I argued that partial *wh*-echoing necessarily trigger *wh*-in-situ as a result of impossibility for Q_E to agree with the echo *wh*-word and project a QP_E. Our account also nicely predicts the ill-formedness of overt echo *wh*-extraction out of strong islands, which is blocked, as any other syntactic relation. However, a Q_E-morpheme is able to adjoin outside the island and then move to CP_1. The attested crosslinguistic variation regarding echo *wh*-extraction out of weak islands is addressed in the next section. I also argue there that phenomenon of *wh*-movement past weak islands has certain connection to *wh*-ex-situ EQs based on a previous *wh*-interrogative.

7. Moving the echo Q-particle successive cyclically

In the previous section, I showed that a Q_E-particle, when adjoined to a *wh*-containing XP at its base position, must undergo successive cyclic movement to the scope position of the question. I assume that such movement is *punctuated*, in the sense that it proceeds through the dedicated intermediate positions. In particular, I assume that in languages of the English type the edges of *v*P and CP_2 are used as escape hatches. As I argued in the previous chapters, Slavic languages can make use of an additional escape hatch, the edge of AspP. Successive cyclic movement of an echo Q-morpheme *adjoined* to XP (resulting in *wh*-in-situ) is illustrated below:

(82) *Successive cyclic movement of an adjoined Q_E (wh-in-situ)*

a. $[_{CP_1}$ ___ C_1 $[_{CP_2}$ ___ C_2 $[_{vP}$ ___ *v* ... Q_E $[_{XP}$ *wh*]...]]] (*English*)

b. $[_{CP_1}$ ___ C_1 $[_{CP_2}$ ___ C_2 $[_{AspP}$ ___ Asp_i $[_{vP}$ ___ v_i ... Q_E $[_{XP}$ *wh*]...]]] (*Russian*)

As natural, under some syntactic configurations Q_E-extraction from a low merging site can be blocked (e.g. in strong islands). However, in *wh*-EQs the Q_E-particle can adjoin high (e.g. to CP_2), in which case it undergoes local movement to the edge of CP_1. This is shown in (83a) for all *wh*-fronting languages, in which the adjoined Q_E does not need to agree with the echo *wh*-item. However, as already advanced, I suggest that in Russian the adjoined Q_E may (optionally) require agreement with the echo *wh*-phrase. In this case, the latter raises to the edge of AspP in order to be visible for the higher probe (see section 4 of chapter 4). The resulting partial *wh*-movement is illustrated in (83b) (with dashed arrows):

(83) *Short-distance movement of an adjoined Q_E (wh-in-situ)*

a. [$_{CP_1}$ ___ C_1 [$_{CP_2}$ Q_E [$_{CP_2}$ C_2 [$_{vP}$ v_i ... [$_{XP}$ *wh*]...]]] (*wh-fronting languages*)

b. [$_{CP_1}$ ___ C_1 [$_{CP_2}$ Q_E [$_{CP_2}$ C_2 [$_{AspP}$ [$_{XP}$ *wh*]$_j$ Asp_i [$_{vP}$ ___ v_i ... t_j ...]]](*Russian*)

In other words, a language can always resort to *wh*-in-situ EQs, the derivation of *wh*-ex-situ EQs being more restricted. Recall that in *wh*-fronting languages, in order to be able to project a *wh*-containing QP_E, a Q_E-morpheme must agree with the echo *wh*-word within some local domain. That is, Q_E must be merged together with a *wh*-containing XP at the base position. Then, in order to get scope, the entire QP_E undergoes movement into CP_1. Again, such movement proceeds successive cyclically, as illustrated below:

(84) *Successive cyclic movement of a projected Q_E (wh-ex-situ)*

a. [$_{CP_1}$ ___ C_1 [$_{CP_2}$ ___ C_2 [$_{vP}$ ___ v ... [$_{QP}$ Q_E *wh*]...]]] (*English*)

b. [$_{CP_1}$ ___ C_1 [$_{CP_2}$ ___ C_2 [$_{AspP}$ ___ Asp_i [$_{vP}$ ___ v_i ... [$_{QP}$ Q_E *wh*] ...]]](*Russian*)

Notice that an interesting prediction follows from the derivations in (82) and (84). In *wh*-EQs the legitimacy of interrogative Q_E-movement from *v*P into CP_1 is determined by availability of the intermediate escape hatches along the movement path. In particular, I argue that what plays a crucial role in the derivation of *wh*-EQs is whether the specifier of CP_2 is filled with some material or not. As in Chernova (2013a,b), in this dissertation I claim that availability of Spec,CP_2 as an escape hatch for the echo-movement basically depends on the clause-type of C_2. Here I test this proposal with two types of echoed utterances: declaratives and *wh*-interrogatives (although *yes/no*-questions are also briefly considered).

I show that the pattern of overt *wh*-movement in (84) straightforwardly captures the main empirical data of this chapter. Namely, recall that in certain echo contexts the *wh*-ex-situ option is blocked in English, but is allowed in languages resorting to MWF. I argue that this difference is due to parametric distinction between different types of *wh*-fronting languages. In particular, it follows from a standard assumption that MWF languages can make use of an additional specifier of CP when it comes to *wh*-extraction (see Rudin 1988; Richards 1997, 2001, among others).

7.1. When C_2 is declarative

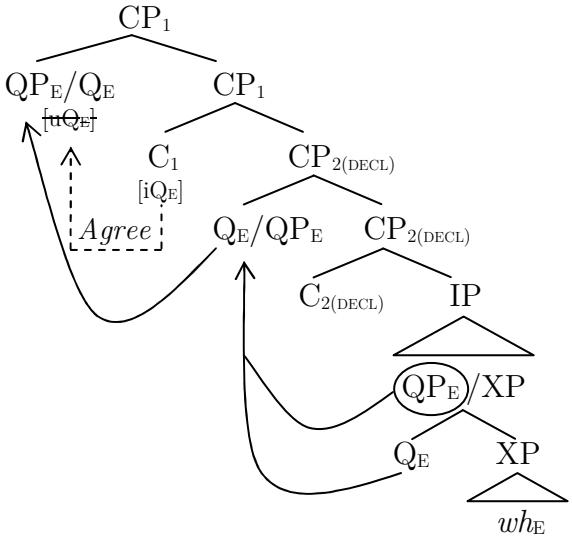
Recall that in *wh*-EQs repeating a previous declarative both *wh*-in-situ and *wh*-ex-situ options are allowed across different *wh*-fronting languages (see section 3.1). This is illustrated in (85) for English:

(85) a. U: Mary met (mumble). (*English*)
b. EQ: Mary met $\underline{\text{who}_E}$?
c. EQ: $\underline{\text{Who}_E}$ did Mary met?

I propose that when a *wh*-EQ repeats a previous declarative sentence, what is merged in the corresponding derivation is a *declarative* head C_2 (CP_2 is selected by a discourse-bound interrogative head C_1, which projects a higher CP_1).

Notice that CP_2, projected by a declarative C_2, has its specifier position unfilled. Therefore, this position can be used as an escape hatch for the anaphoric Q_E-particle (either projected or adjoined), when it moves from its merge site along the tree in search for an appropriate checking position for its $[uQ_E]$. Although Q_E's formal inadequacy cannot be checked at the edge of CP_2, the element must make a stop there in order to be visible to further syntactic operations; otherwise the derivation will not survive at LF. Finally, Q_E moves to the edge of CP_1, from where it c-commands the goal C_1 (endowed with $[iQ_E]$) and can delete its formal imperfection via upward agreement. The resulting double CP-structure is represented in (86):

(86) *Structure for wh-EQs repeating a declarative (wh-EQ$_{(DECL)}$)*



The structure in (86) predicts that in the *wh*-EQs in (85), which repeat a previous declarative utterance, (85a), both *wh*-in-situ and *wh*-ex-situ are possible. The corresponding derivations are sketched below:

(87) a. *Derivation of wh-in-situ EQ$_{(DECL)}$, (85b)* (*English*)

$[_{CP_1}\ Q_{Ei}\ [_{CP_2}\ t_i\ [_{TP}$ Mary met $[_{vP}\ t_i\ [\ldots\ t_i\ [_{XP}\ \underline{who}_E]\ldots]]]]]?$

b. *Derivation of wh-ex-situ EQ$_{(DECL)}$, (85c)*

$[_{CP_1}\ [_{QP_E}\ Q_E\ \underline{who}_E]_i\ [_{CP_2}\ t_i\ [_{TP}$ Mary met $[_{vP}\ t_i\ [\ldots\ t_i\ \ldots]]]]]?$

As shown in (87a), I propose that the *wh*-in-situ EQ in (85b) arises when Q_E does not project and moves into CP_1 by itself, leaving the echo *wh*-word *who* in-situ.[30] In contrast, in (87b), which corresponds to the *wh*-ex-situ question in (85c), Q_E projects a QP_E phrase, which necessarily dominates both Q_E and the echo *wh*-phrase. As expected, further interrogative movement into CP_1 results in the *wh*-ex-situ configuration. I argue that in (85) both *wh*-in-situ and *wh*-ex-situ EQs are allowed due to availability of the specifier of a declarative CP_2 as an intermediate escape hatch for successive cyclic interrogative movement triggered by the feature on Q_E.

Finally, notice that the *wh*-in-situ EQ in (85b) can be also derived via adjunction of Q_E directly to CP_2, where Q_E simply undergoes short-distance movement to the edge of CP_1. This is shown in (87c):

(87) c. *Derivation of wh-in-situ EQ$_{(DECL)}$, (85b)* (*English*)

$[_{CP_1}\ Q_{Ei}\ [_{CP_2}\ t_i\ [_{TP}$ Mary met $[_{vP}\ \ldots\ [_{XP}\ \underline{who}_E]\ldots]]]]?$

In principle, it is difficult to test which one of the suggested derivations for *wh*-in-situ, (87a) or (87c), takes place in English. I simply assume that both options result in the same surface word order in this language, due to the lack of agreement between the adjoined Q_E and the echo *wh*-word.

Nevertheless, there is evidence in languages like Russian (and Spanish; see fn. 35) that in *wh*-EQs built on a previous declarative, both merging options (high and low) for the Q_E-particle exist. Depending on a merge site of the non-projecting Q_E, we obtain different word orders. Recall from (88) that in Russian,

[30] Of course, Q-theory allows the adjoined Q_E to be merged anywhere in the tree from where it c-commands XP. For instance, in (87b) the interrogative morpheme can be merged not *v*P-internally, but higher, at the edge of *v*P or the edge of CP_2. For the latter option, see (87c).

in addition to the *wh*-in-situ and *wh*-ex-situ options, there also exists partial *wh*-fronting of the echo-item, (88c):

(88) a. U: Maša kupila (mumble). (*Russian*)
Masha.NOM bought mumble
'Maria bought (mumble).'
b. EQ: Maša kupila čto$_E$?
Masha.NOM bought what.ACC
'Maria bought WHAT?'
c. EQ: Maša čto$_E$ kupila t$_E$?
Masha.NOM what.ACC bought
d. EQ: Čto$_E$ Maša kupila t$_E$?
what.ACC Masha.NOM bought

I assume that the Russian EQ in (88b), with *wh*-in-situ, is derived along the same lines as those sketched in (87a). The derivation of the question in (88d), with *wh*-ex-situ, proceeds as in (87b). The correspondent derivations for Russian are illustrated below respectively:[31]

(89) a. *Derivation of wh-in-situ EQ$_{(DECL)}$, (88b)* (*Russian*)
[CP$_1$ Q$_{Ej}$ [CP$_2$ t$_j$ [TP Maša [AspP t$_j$ kupila$_i$ [*v*P t$_j$ *v*$_i$ [[XP čto$_E$]]]]]]]?
b. *Derivation of wh-ex-situ EQ$_{(DECL)}$, (88d)*
[CP$_1$ [QP$_E$ Q$_E$ čto$_E$]$_j$ [CP$_2$ t$_j$ [TP Maša [AspP t$_j$ kupila$_i$ [*v*P t$_j$ *v*$_i$]]]]]?

Finally, I propose that derivation of the Russian EQ in (88c), with partial *wh*-movement to some clause-internal position, is quite similar to the structure in (87c), where the Q$_E$-particle is adjoined high, to CP$_2$. However, in Russian, as a matter of parametric variation, the Q$_E$-particle may need to agree with the echo *wh*-word (I suggest that such Q$_E$ enters the derivation being specified with [uwh$_E$]).[32,33] Assuming that the *v*P phase extends to AspP in this language (as

[31] In (89), I omit the movement step from the argument position into the edge of *v*P, for representational simplicity.

[32] Of course, one could propose that Russian always requires Q/*wh*-agreement. Then, in order to explain questions with *wh*-in-situ, (88b), we have to assume that the particle Q$_E$, being merged together with a *wh*-word in its argument position, (e.g. (89a)), will undergo agreement, but will not project. However, the fact that in Russian the echo *wh*-words can remain inside islands (see sections 3.4 and 6.2) suggests that agreement between the adjoined Q$_E$ and the echo *wh*-word is not obligatory in this language.

argued in chapter 4), I propose that the derivation of (88c) proceeds in two steps: (i) first, the echo *wh*-item is fronted to the edge of the extended phase AspP, where it becomes visible to the probe Q_E, (90a); (ii) the Q_E-particle moves into CP_1, (90b):[34]

(90) *Derivation of EQ$_{(DECL)}$ with partial wh-fronting, (88c)* (*Russian*)

a. $[_{CP_2}\ Q_{E[\text{uWH}_E]}\ [_{CP_2}\ [_{TP}$ Maša $[_{AspP}\ [_{XP}$ čto$_E]_{[\text{iWH}_E]j}$ kupila$_i$ $[_{vP}$ t$_j$ v_i]]]]]?

b. $[_{CP_1}\ Q_{Ek}\ [_{CP_2}\ t_k\ [_{CP_2}\ [_{TP}$ Maša $[_{AspP}\ [_{XP}$ čto$_E]_j$ kupila$_i$ $[_{vP}$ t$_j$ v_i]]]]]]?

Interestingly, existence of partial echo *wh*-fronting in Russian, (88c), supports our hypothesis on the phasal status of AspP in MWF languages.[35]

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[33] Different feature-specification of Russian echo Q_E-particles allows us to account for the attested variation among informants regarding *wh*-in-situ (see fn. 8). Recall that some native speakers express a preference for partial *wh*-fronting, (88c), over *wh*-in-situ, (88b), while others allow both options (similar variation has been also attested in Polish and Bulgarian). I propose that such variation follows from the feature-specification of the Q_E-morpheme available in the individual lexicon. For instance, if a speaker allows only for a Q_E requiring Q/*wh*-agreement, the *wh*-in-situ option will be dispreferred for such speaker. On the other hand, if a speaker allows for both types of the echo Q-particles, then both options for the echo *wh*-phrase will be available.

[34] I assume that same kind of partial *wh*-fronting (to the edge of AspP) occurs in Russian *wh*-EQs echoing a previous *wh*-question, (ia), or a polar interrogative, (ib) (see section 3.1):

(i) a. *Kogo* [$_{AspP}$ kto$_{Ei}$ uvidel [t$_i$]]? b. Prinesjot li [$_{AspP}$ čto$_{Ei}$ [Maša t$_i$]]?
who.ACC who.NOM saw will.bring Q what.ACC Masha.NOM
'Whom did WHO see?' 'Will Masha bring WHAT?'

Although this type of *wh*-EQs is considered in detail in the next subsection, I will omit there discussion of the data in (i). This is because I assume that the derivation of partial *wh*-movement is essentially due to the same reasons as in (90): it is forced by the requirement on Q_E to agree locally with the echo *wh*-word.

[35] Recall now from section 3.1 (see also fn. 7) our observation that, similarly to Russian, Spanish EQs repeating a previous interrogative allow for partial movement of the echo *wh*-phase, below the interrogative operator *si* 'whether' or below the *wh*-word echoed from the previous utterance. This is shown in (i) and (ii) respectively:

(i) a. U: ¿Ha leído María (mumble)?
has read Maria (mumble)
'Has Maria read (mumble)?'

b. EQ: ? ¿(Que) *(si) (qué$_E$) ha leído (qué$_E$) María t$_E$?
that whether what has read Maria
'Has Maria read WHAT?'

To conclude this subsection, we saw that in *wh*-EQs built on a previous declarative both *wh*-in-situ and *wh*-ex-situ options are allowed. I argued that this is so due to the fact that the specifier of the embedded declarative CP_2 is unfilled and, hence, can be used as an escape hatch for overt Q_E-movement. Notice that the structure in (86) uniformly captures a number of other echo-properties, such as wide scope for the (in-situ) echo *wh*-item and mood clashes. Furthermore, given that the speaker, when uttering a *wh*-EQ, constructs the IP-level (rather than inserts a 'frozen' copy of it; *cf.* Escandell 2002), certain deictic accommodations, sensitive to the change of a discourse role, are fully expected.

(ii) a. U: ¿*Qué* ha leído (mumble)?
what has read (mumble)
'What has (mumble) read?'
b. EQ: ? ¿(Que) *qué* quién$_E$ ha leído t_E?
that who what has read
'What has WHO read?'

I suggest that this behaviour goes in hand with our previous observation that Spanish can exhibit some instances of MWF, the latter being a result of the phase extension to TP (see section 8.1 of chapter 4). Similarly to what I propose in (90) for Russian, I suggest that in the Spanish examples in (i) and (ii) the correspondent echo *wh*-phrases are fronted to the edge of TP. Although this account is quite suggestive and leaves open many questions, the data from Spanish *wh*-EQs may indicate that our tentative proposal on why this language can exhibit MWF phenomenon is on track.

Now, a note is in order concerning the quotative particle *que* 'that' introducing *wh*-EQs in Spanish. Differently from Chernova (2010, 2013c), where I analyzed this item as an overt realization of the discourse-bound complementizer C_1, here I take it as being adjoined to the discourse-bound CP_1 and reinforcing the 'quotative' interpretation of EQs. This view predicts the optional nature of *que*. Moreover, *que* (when present) is always the leftmost element in EQs, even in those in which the echo *wh*-item undergoes overt movement to Spec,CP_1, as shown in (ia). Notice that if we take *que* is being at C_1, we would incorrectly predict the grammaticality of (ib):

(i) a. [$_{CP_1}$ (*Que*) [$_{CP_1}$ qué$_E$ [$_{CP_2}$ [$_{TP}$ María compró$_i$ [$_{vP}$ v_i t_E]]]]]? (*Spanish*)
that what Maria bought
'What did buy Maria?'
b. * [$_{CP_1}$ qué$_E$ C_1 *que* [$_{CP_2}$ [$_{TP}$ María compró$_i$ [$_{vP}$ v_i t_E]]]]]?
what that Maria bought

For different views on *que* introducing an indirect quote the reader is referred to Suñer (1991, 1999), Brucart (1993), Etxepare (1998, 2002, 2008, 2013), Escandell (1999), Chernova (2010, 2013c) and references therein.

7.2. When C_2 is interrogative

7.2.1. Echoing a *wh*-question

Let us turn now to *wh*-EQs repeating a previous interrogative. First, I consider those EQs in which the stimulus is a *wh*-question. Recall from section 3.1 that in English the only available option is to leave the *wh*-word in-situ, while in Russian both *wh*-in-situ and *wh*-ex-situ are allowed (in addition to partial *wh*-fronting; see fn. 34). This contrast is illustrated by the examples below:

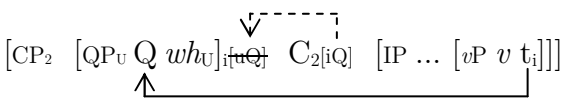
(91) a. U: *What* did (mumble) buy? (*English*)
b. EQ: *What* did $\underline{\text{who}}_{\text{E}}$ buy?
c. EQ: *$\underline{\text{Who}}_{\text{Ei}}$ bought *what* t_i?

(92) a. U: *Kogo* udaril (mumble)? (*Russian*)
who.ACC hit mumble
'Whom did hit (mumble)?'
b. EQ: *Kogo* udaril $\underline{\text{kto}}_{\text{E}}$?
who.ACC hit who.NOM
'Whom did hit WHO?'
c. EQ: *Kogo* $\underline{\text{kto}}_{\text{Ei}}$ udaril t_i?
who.ACC who.NOM hit
d. EQ: ? $\underline{\text{Kto}}_{\text{Ei}}$ *kogo* udaril t_i?
who.NOM who.ACC hit

I propose that in all *wh*-fronting languages when a *wh*-EQ echoes a previous *wh*-question, the embedded CP_2 is *interrogative;* so its specifier is occupied by the *wh*-word inherited from the utterance. As previously mentioned, this does not mean that a speaker operates with a copy of a 'frozen' CP_2 (*cf.* Sobin 2010), but rather that the non-echo *wh*-word appears at Spec,CP_2 in the course of the derivation of the EQ.

More precisely, I propose that the utterance's *wh*-word is contained within a QP phrase (for convenience, I signal it as QP_U), which is projected by a non-anaphoric Q. Such Q is specified with the feature [uQ], while the interrogative C_2 carries [iQ]. Hence, QP_U moves into Spec,CP_2, in order to check its formal inadequacy. This step is represented below:

(93) *Derivation of an interrogative CP_2*



As a result, this specifier cannot be used as an escape hatch for the interrogative movement of the echo Q_E (or its projection QP_E) on its way into CP_1. What are the consequences of unavailability of Spec,CP_2 as an intermediate escape hatch?

Regarding languages like English, we expect that overt echo *wh*-movement should be blocked in EQs built on a previous *wh*-interrogative. This follows from the standard assumption that these languages make use of a single specifier of CP, for example, when it comes to *wh*-extraction from embedded domains (see Richards 1997, 2001; Pesetsky 2000, among many others). This prediction is borne out, as shown by the ill-formed question in (91c); the echo *wh*-word *who* is only allowed to remain in-situ, (91b).

Recall that, under our Q-based approach, *wh*-ex-situ arises as a secondary effect of Q_E-projection, while *wh*-in-situ is a result of Q_E-adjunction. The former option is blocked: the QP_E dominating *who* cannot undergo successive cyclic movement, since the single specifier of CP_2 is already occupied by *what* and, hence, is unavailable as an escape hatch. As a result, the derivation crashes at LF, $[uQ_E]$ on Q_E being unchecked. This is represented in (94a):

(94) a. *Derivation of wh-ex-situ EQ$_{(INTER)}$, (91c)* (*English*)

*[CP_1 ___ [CP_2 [QP_U Q *what*]$_j$ C_2 did [TP [QP_E Q_E who$_E$]$_{[uQ_E]i}$ [*v*P t_i buy t_j]]]]?

XXX

b. *Derivation of wh-in-situ EQ$_{(INTER)}$, (91b)*

[CP_1 $Q_{E[\text{~~}uQ_E\text{~~}]k}$ $C_{1[iQ_E]}$ [CP_2 t_k [CP_2 [QP_U Q *what*]$_i$ C_2 did [TP [XP who$_E$] [*v*P t_i buy t_j]]]]]?

However, Q_E-adjunction is allowed, since Q_E can be adjoined to CP_2 and undergoes local movement into CP_1. As a result, the echo *wh*-word *who* appears in-situ.[36] Observe that the higher position of Q_E c-commanding the in-situ echo *wh*-word *who* ensures that it is this *wh*-element and not the *wh*$_U$ *what* will receive wide scope. The corresponding derivation is sketched in (94b).

Some clarifications regarding the derivation in (94b) are in order. First, observe that when Q_E (carrying $[uQ_E]$) is at the edge of CP_2, it cannot check its formal imperfection with C_2 (specified with [iQ]). Put differently, the former Q-feature is anaphoric (being a property of an anaphoric object), as opposed to the latter; as a result, these two Q-features are not matching. So, C_2 cannot be an

[36] Observe that we are forced to assume that in the derivation (94b) Q_E is merged high. If Q_E is merged low, within the CP_2 (and *v*P) domain, its successive cyclic movement would be blocked for same reasons as the movement of QP_E in (94a).

appropriate formal 'checker' for Q_E and the latter must keep moving, until it reaches the specifier of the discourse-bound CP_1 and checks its formal imperfection. Notice also that the derivation in (94b) accounts for the apparent Superiority violation in (91b). Observe that, although *what* precedes *who*, the sentence is perfectly grammatical, while the Superiority-obeying order in (91c) (*who* > *what*) is ill-formed. I propose that Superiority does not hold in (91b), because each *wh*-item —wh_U and wh_E— is associated with a different Q-particle and, hence, is bound by a different CP.[37]

But what is different about languages like Russian, which allow *wh*-ex-situ in EQs built on a previous *wh*-interrogative, (92d)? Apparently, they allow extraction of QP_E from the CP_2 domain. I propose that the attested difference between Russian and English comes from the traditional assumption that MWF languages can hold additional intermediate landing sites at the CP level for the extracted *wh*-phrases (see Rudin 1988; Richards 1997; Pesetsky 2000, among many others). As a result, QP_E can use the inner specifier of CP_2 as an escape hatch on its way to the higher CP_1. This is represented in (95) (*cf.* (94a)):

(95) *Derivation of wh-ex-situ EQ(INTER), (92d)* (*Russian*)

? $[_{CP_1}\ [_{QP_E}\ Q_E\ \underline{\text{kto}_E}]_{[\text{uQ}_E\text{:j}]}\ C_{1[\text{iQ}_E]}\ [_{CP_2}\ [_{QP_U}\ Q\ \textit{kogo}]_i\ t_j\ C_2\ [_{TP}\ [_{AspP}\ t_j\ [_{vP}\ t_i\ t_j\ ]]]]]$?

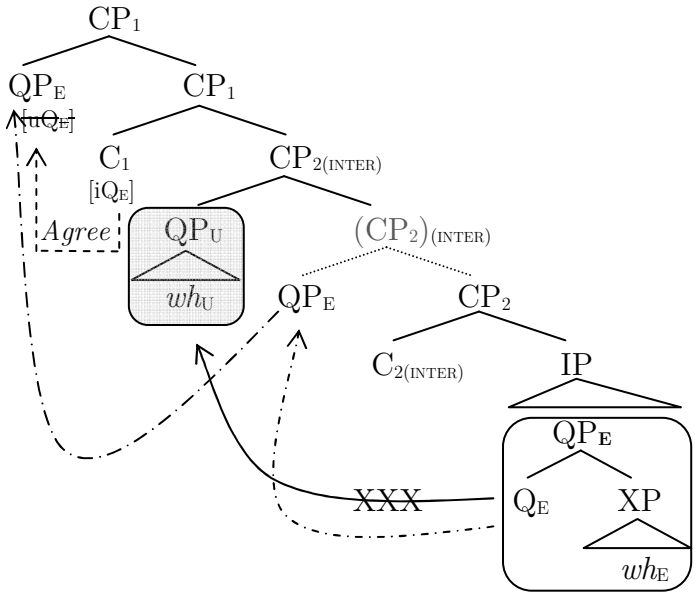
In addition, Q_E can also adjoin to CP_2 in Russian, similarly to English, an option available in all *wh*-fronting languages (see (94b)). If Q/*wh*-agreement is not required, the echo *wh*-word remains at its argument position, (92b). If Q/*wh*-agreement has to take place, a question with a partial echo *wh*-fronting arises, (92c) (for discussion, see section 7.1 and fn. 34).

Therefore, I propose that successive cyclic nature of interrogative movement is responsible for the attested distinction between English and Russian *wh*-EQs built on a previous (*wh*-)interrogative. I argue that echo *wh*-movement is not an exception and, in fact, resembles long-distance *wh*-extraction (which is going to be

[37] Notice that the intervening utterance's *wh*-phrase has certain consequences on the semantics of the resulting EQ. Recall from section 3.1 that *wh*-EQs repeating a previous *wh*-interrogative can only trigger the so-called 'repeat' reading, under which the speaker requests the exact repetition of the unheard portion of the stimulus (see Fiengo 2007). The 'open' reading, under which the speaker's interest resides at the item denoted by the echo *wh*-phrase, is blocked. This picture falls into place under the derivation in (94b) (see also (96) below). I tentatively propose that the utterance's *wh*-word (*what*) blocks the 'open' reading by intervening between Q_E (adjoined to CP_2) and the echo *wh*-item (*who*). I leave the topic of the precise mechanism of such intervention effect for future research.

discussed shortly). Availability of EQs with *wh*-ex-situ in a *wh*-fronting language depends on whether the language can make use of multiple specifiers of CP or not. This is summarized in the derivation below (QP_E-movement in English and Russian is represented by continuous and dashed arrows respectively).[38]

(96) *Structure for wh-EQs repeating a wh-question:*



7.2.2. Echoing a *yes/no* question

Likewise, *wh*-EQs repeating a previous *yes/no*-question do not allow overt echo *wh*-movement in English, (97), while such option is still allowed in Russian, although it is generally marked, (98):[39]

(97) a. U: Did Mary buy (mumble)? (*English*)
b. EQ: *$\underline{\text{What}}_{Ei}$ did Mary buy?

[38] Compare the derivation in (96) for *wh*-EQs built on a previous *wh*-question, with the derivation in (86), suggested for *wh*-EQs echoing a declarative utterance (see section 7.1). The reader is invited to confirm that availability of Spec,CP_2 as an intermediate landing site for the fronted QP_E accounts for the attested crosslinguistic differences regarding the *wh*-ex-situ option in different types of *wh*-EQs.

[39] Notice, however, that the Russian sentence in (98b) is ill-formed under a non-echo, canonical reading.

(98) a. U: Kupil li Ivan (mumble)? (*Russian*)
bought Q Ivan.NOM (mumble)
'Did Ivan buy (mumble)?'
b. EQ: ? Čto$_{Ei}$ kupil li Ivan t_i?
what.ACC bought Q Ivan.NOM
'Did Ivan buy WHAT?'

The reader may notice that the contrast between the examples above is highly reminiscent of the one between the English and Russian EQs in (91c) and (92d). A question arises on what blocks successive cyclic QP_E-movement into CP_1 in the English EQ in (97b), if there is no *wh*-item occupying Spec,CP_2.

I propose that the *wh*-EQs above resort to a derivation similar to (96), with the difference that the specifier of Spec,CP_2 is occupied by a phonetically null interrogative operator (Ø), as represented in (99a) below. This follows from a standard assumption about the syntax of *yes/no* questions (since Katz & Postal 1964; see also Baker 1970; Roberts 1993; Radford 2004; Luisini 2012, among others). One relevant piece of evidence supporting the existence of the null interrogative operator comes from English: *yes-no* questions transported into reported speech and appearing in embedded contexts are preceded by an overt interrogative particle *whether*, as in (99b):

(99) a. [CP Ø C did$_i$ [TP Mary T_i [*v*P *v* buy a book]]]? (*English*)
b. [CP_1 I wonder [CP_2 *whether* C [TP Mary T bought$_i$ [*v*P v_i a book]]]].

Likewise, Spanish embedded *yes/no* questions obligatorily exhibit an interrogative *si*, (100b), which is absent, however, from root polar questions, (100a) (for discussion, see Rigau 1984; Suñer 1991, 1999):

(100) a. [CP Ø C Leerá$_i$ [TP María T_i [*v*P v_i el libro]]]? (*Spanish*)
will.read Maria the book
'Will Maria read the book?'
b. [CP_1 Juan pregunta [CP_2 *si* C [TP María T leerá$_i$ [*v*P v_i el libro]]]].
Juan asks whether Maria will.read the book
'Juan asks whether Maria will read the book'

Importantly for our purposes, recall from section 3.2 of this chapter that Spanish EQs exhibit empirical evidence for our claim that the null interrogative operator present in *yes/no*-questions is overtly realized as *si* 'whether' in echo-contexts:

(101) a. U: ¿ Ø Leerá María (mumble)? (*Spanish*)
will.read Maria (mumble)
'Will Maria read (mumble)?'
b. EQ: ¿(Que) *(*si*) leerá María $\underline{\text{qué}}_{E}$?
that whether will.read Maria what
'Will Maria read WHAT?'

Here, as in Chernova (2010, 2013c), I take *si* as a reflection of the utterance's CP layer (CP_2) within the double-CP echo-structure.

Under this view, the observed contrast in (97-98) falls into place. In English, which makes use of a single Spec,CP_2, QP_E cannot use this position as an escape hatch. Therefore, the formal imperfection on Q_E ($[uQ_E]$) cannot be checked and the derivation crashes at LF. The derivation of the ill-formed English question in (97b) is sketched in (102a). On the other hand, Russian can make use of an additional escape hatch at the CP_2 level, thus, legitimizing successive cyclic movement of QP_E. (102b) illustrates the derivation for the Russian question in (98b):

(102) a. *Derivation of wh-ex-situ EQ$_{(INTER)}$, (97b)* (*English*)
*[$_{CP_1}$ ___ [$_{CP_2}$ Ø C_2 did [$_{TP}$ Mary [$_{vP}$ buy [$_{QP_E}$ Q_E $\underline{\text{what}}_{E}$]$_{[uQ_E]}$]]]]?
XXX
b. *Derivation of wh-ex-situ EQ$_{(INTER)}$, (98b)* (*Russian*)
[$_{CP_1}$ [$_{QP_E}$ Q_E $\underline{\text{čto}}_{E}$]$_{[\sout{uQ_E}]_i}$ C_1[iQ_E] [$_{CP_2}$ Ø t_i C_2 kupila li[$_{TP}$ Maša [$_{AspP}$ t_i [$_{vP}$ t_i]]]]?

To sum up, our account can uniformly captures similarities regarding overt echo *wh*-movement between *wh*-EQs repeating a previous *wh*-question and *wh*-EQs based on a previous *yes/no* question.

7.2.3. Echo-extraction out of *wh*-islands and Relativized Minimality

In section 6.2, I addressed the question why echo *wh*-items are allowed *inside* islands. However, recall from section 3.4 that English and Russian behave differently regarding echo *wh*-extraction from weak islands. The relevant examples illustrating this contrast are given in the paradigm below:

(103) a. *$\underline{\text{How}}_{Ei}$ do you wonder [*who* could solve the problem t_i]? (*English*)
b. ? $\underline{\text{Kuda}}_{Ei}$ tebe interesno [*kto* pozvonil t_i]? (*Russian*)
where you.DAT interesting who.NOM called
*'WHERE are you interested who called?'

Again, we observe the same puzzle: the echo *wh*-phrase cannot be extracted out of a *wh*-island in English, as opposed to Russian. I propose that a part of solution for this problem naturally follows from the representation in (96). Namely, *wh*-ex-situ is allowed when the derivation has an available escape hatch for the QP_E (dominating the echo *wh*-word). However, *wh*-ex-situ is blocked when the single intermediate specifier is already filled with another *wh*-phrase.

More precisely, in the English *wh*-EQ (103a) the extraction of the echo *wh*-word *how* is blocked when it has to escape the domain of the *wh*-island contained inside the stimulus. Put differently, in (103a), the specifier of the *wh*-island (CP_3) is filled by a [QP_U *who*] at the point when the echo [QP_E *how*] moves in order to escape the island domain. Such movement is blocked and the QP_E cannot check its formal imperfection, leading the derivation to crash at LF. This is illustrated in (104a):[40]

(104) a. *Derivation of CP_2 containing a wh-island, (103a)* (*English*)

*[CP_2 ___ ... [CP_3 [QP_U *who*] C_3 could solve the problem [QP_E how$_E$]]?

XXX

b. *Derivation of CP_2 containing a wh-island,* (103*b*) (*Russian*)

? [CP_2 [QP_E kuda$_E$]$_i$ ... [CP_3 [QP_U *kto*] t_i pozvonil [... t_i]]]?

In contrast, in Russian (see (104b)), an additional specifier at CP_3 can be used in order to escape the domain of the *wh*-island. Once the QP_E reaches the edge of the utterance's CP_2, nothing prevents it from undergoing further movement into the higher, discourse-bound CP_1, so the echo *wh*-word appears ex-situ.

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[40] Observe that the traditional assumption that *wh*-movement past a single filled Spec,CP is blocked in English nicely accounts for the standard cases of *wh*-islands violations:

(i) a. * *What*$_i$ do you wonder [CP *who* bought t_i]? (*English*)

b. *Who*$_i$ t_i wonders [CP *who* bought what]?

However, this assumption could appear problematic for explaining the well-known facts of Relativized Minimality (RM; see Rizzi 1990, 2013; Starke 2001, among many others), namely, that *wh*-arguments can be extracted over *wh*-adjuncts in English, as shown in (ii):

(ii) a. ? *What*$_i$ do you wonder [CP *how*$_j$ [CP to repair t_i t_j]]? (*English*)

b. * *How*$_j$ do you wonder [CP *what*$_i$ to repair t_i t_j]?

Why (ia) is odd, but (iia) is not? I standardly assume that in (iia) *how* does not fill the single specifier of the embedded CP, but rather *adjoins* to it. Therefore, *what* can use Spec,CP as an intermediate landing site. In (iib), however, the single Spec,CP is filled by *what*, a *wh*-argument, so successive cyclic movement of *how* is not allowed (same holds for (104a)). In addition, certain RM effects can affect the judgments in (ii), which are addressed below in this section.

Unfortunately, this cannot be the end of the story. A legitimate question that the reader may answer is why the Russian question in (103b) is well-formed only under the echo reading, but is ungrammatical under the canonical, non-echo reading, (105). If, in principle, the *wh*-word is allowed to escape the island domain by landing at the inner specifier, the derivation should give a grammatical result. However, this prediction is not borne out.[41] As it can be seen from comparison between the Russian question in (105) and its English translation, the two languages behave alike when it comes to extraction out of *wh*-islands under the non-echo contexts.

(105) *[$_{CP_1}$ *Kuda*$_2$ ty xočes' znat' [$_{CP_2}$ *kto*$_1$ pozvonil t_i]]?(*Russian*)
where you.NOM want.2SG know.INF who.NOM called
*'Where do you want to know who called?'

Observe that, in essence, the violating configuration in (105) reduces to the *Relativized Minimality* condition (RM; Rizzi 1990, 2003, 2013) (see also Chomsky's 1995a Minimal Link Condition):

(106) *Relativized Minimality*
In the configuration [...X ...Z ...Y] X and Y cannot be connected by movement (or other local relations) if Z intervenes between them and Z is of the same type as X. [adopted from Rizzi 2013:172]

I suggest that RM and, namely, its reformulation in terms of sensitivity to the feature-specification of the involved elements (Starke 2001) (see (108) below) are the key for accounting for the puzzling contrast between (103b) and (105).

First, it is worth noting that not all *wh*-items are equally impossible to extract from *wh*-islands. Importantly for the discussion in hands, it is a well-known fact that D-linked *wh*-phrases (see Pesetsky 1987, 2000) improve under the contexts of island violations. This is shown by the following contrast from English:

[41] It is worth noting that generally in Russian, under canonical readings, even *wh*-extraction of arguments over adjuncts results in a RM effect. Compare (i) with (105):
(i) * *Kto*$_1$ ty xočes' znat' [*kuda*$_2$ pozvonil t_1]? (*Russian*)
who.NOM you.NOM want.2SG know.INF where called
'Who do you want to know where called?'

(107) a. ? *Which problem*$_i$ do you wonder [*how*$_j$ to solve t_i t_j]? (*English*)
{[Q];[N]} [Q]

b. * *How*$_j$ do you wonder [*which problem*$_i$ to solve t_i t_j]?
[Q] {[Q];[N]} [adopted from Rizzi 2013:178]

Regarding (107), observe that *which problem* (a *wh*-containing DP) is more complex than *how* (a bare *wh*-word). Roughly, one could say that the former is more richly specified than the latter. Therefore, *which problem* carrying a set of features {[Q]; [N]} can be moved over *how*, which is only specified with [Q], (107a), but not vice versa, (107b).[42, 43]

Crucially, as noticed by Starke (2001:10), "elements which can successfully extract out of weak islands have 'something more' than those which cannot". It is at this point when the *feature-sensitive RM* (Starke 2001; see also Rizzi 2013) comes into play, a rule which can be formulated as below:

(108) *Feature-sensitive Relativized Minimality*
In the configuration [...X ...Z ...Y], a local relation cannot hold between X and Y if Z intervenes and Z fully matches the specification of X in the relevant morphosyntactic features. [adopted from Rizzi 2013:179]

To make things even clearer, consider the following RM configurations:

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[42] Rizzi (2001a, 2002) suggests that D-linked objects are topics and, hence, may avoid RM when binding their traces. Another possible ways to analyze this phenomenon include the semantic (e.g. Szabolcsi & Zwarts 1993; Beck 1996) and processing (e.g. Kluender 1998; Hofmeister 2011) accounts.

[43] One possible criticism to the explanation of the contrast in (107) in terms of the feature-sensitive RM is a well-known fact that in English even non D-linked arguments are easier to extract out of *wh*-islands than adjuncts, (i):

(i) a. ? *What*$_i$ do you wonder [$_{CP}$ *how*$_j$ [$_{CP}$ t_i to repair [t_i t_j]]]? (*English*)
b. * *How*$_j$ do you wonder [$_{CP}$ *what*$_i$ to repair [t_i t_j]]?

This fact may suggest that *wh*-arguments are complex morphological and syntactic objects (Cardinaletti 1994; Wiltschko 1998, 2002; Starke 2001; Di Sciullo 2003, 2005, among many others), with a complex internal structure (e.g. [$_{QP}$ Q [$_{DP}$ D [$_{PhiP}$ Phi [$_{NP}$ N]]]]), as opposed to adjuncts. Notice also that (ib) is odd for an additional reason: movement of *how* cannot pass through the specifier of the embedded CP filled by *what* (see fn. 40). The fact that Russian does not allow movement out of weak islands (see fn. 41) might be related to the lack of DP phrases in such languages (e.g. Bošković 2005a). Hence, the internal structure of Russian *wh*-arguments might be different from the one underlying their English counterparts. Nevertheless, a more detailed discussion of conditions on extraction out of weak islands falls aside from the scope of this dissertation.

(109) *Configurations for feature-sensitive Relativized Minimality:*
a. *α_i . . . α_j . . . α_i
b. $\alpha\beta$ . . . α . . . $\alpha\beta$
c. *α . . . $\alpha\beta$ . . . α [adopted from Stake 2001:8]

Observe that (108) rules out the configuration in (109a), in which the two syntactic objects, α_i and α_j, are of the same type and each one fully matches the specification of the other. In contrast, in (109b), one of the syntactic objects α has some additional property, labeled as β. As a result, $\alpha\beta$ can successfully extract over α, but not vice versa, (109c). Now, the contrast in (107) falls into place.

With this background in mind, let us turn back to the fact that in Russian echo *wh*-items are easier to extract from *wh*-islands than the non-echo, canonical *wh*-words, (103b) *vs.* (105). Put differently, in a *wh*-EQ, an echo *wh*-item can be extracted over the *wh*-item repeated from the utterance. Recall our suggestion that, differently from canonical *wh*-items, echo *wh*-words are *anaphoric*, since they denote an item or a bit of language from the immediately previous discourse. So far, I marked this additional referential property of echo *wh*-elements with an index *E* (present also on a discourse-bound Q-particle, Q_E). In order to make the claim clearer, we can replace the index *E* on echo-items by the feature [anaphoric]. Now the contrast between (103b) and (105) follows straightforwardly under the feature-sensitive RM. This is illustrated below:

(110) a. *Echo wh-extraction out of wh-islands, (103b)* (*Russian*)
? [[QP_E <u>kuda</u>$_E$]$_i$ ... [[QP_U *kto*] ... [t_i ...]]]
{[Q];[wh];[anaphoric]} {[Q];[wh]}

b. *Canonical wh-extraction out of wh-islands, (105)*
*[[QP *kuda*]$_i$ ... [[QP_U *kto*] ... [t_i ...]]]
{[Q];[wh]} {[Q];[wh]}

As represented in (110a), both the echo *wh*-adjunct [QP_E *kuda*] 'where' and the non-echo *wh*-argument [QP_U *kto*] 'who.NOM' share a property of being specified with the bundle of features {[Q]; [wh]}. In addition, the echo *wh*-phrase *kuda* is specified with the [anaphoric] feature. As a result, the QP_E, dominating the echo *wh*-word, is more richly specified than the QP_U. Consequently, *kuda*, despite of being an adjunct, can be successfully extracted out from the domain of *kto*. In contrast, in (110b), which represents a canonical *wh*-question, the QP containing *kuda* does not have any additional property with respect to the intervening *kto*. Therefore, *kto* blocks the extraction of *kuda*.

To sum up what we discussed so far, I argued that a number of specifiers of

a CP projection accounts for the attested macroparametric variation between Russian and English regarding the legitimacy of echo *wh*-extraction out of weak islands. In addition, what determines the amount of degradation within the same language is whether the extracted *wh*-word has some additional property which enables it to cross another *wh*-phrase.

Therefore, the somehow 'marginal' acceptability of EQs with an extracted echo *wh*-word is expected, as a consequence of the feature-sensitive RM effect. Interestingly, recall from our previous discussion that generally Russian *wh*-EQs built on a previous *wh*-question display a quite similar effect. Most native speakers judge such sentences as acceptable, although marginal (in particular, see fn. 9). For instance, recall that the *wh*-EQ in (92d) (repeated below as (111a)) is judged as marginal despite its Superiority-obeying order: the echo *wh*-word *kto* 'who.NOM' is extracted from the domain of the utterance's *kogo* 'who.ACC':

(111) *Derivation of wh-ex-situ EQ$_{(INTER)}$, (92d)* (*Russian*)

a. ? $\underline{\text{Kto}}_{\text{Ei}}$ *kogo* udaril t_i?
who.NOM who.ACC hit

b. ? $[_{CP_1}\ [_{QP_E}\ \underline{\text{kto}}_E]_i$ $[_{CP_2}\ [_{QP_U}\ kogo]_i\ [\ t_i]]]$
{[Q];[wh];[anaphoric]} {[Q];[wh]}

Observe that this apparently striking echo-property falls into place under our feature-sensitive RM account. The reader is invited to confirm that the derivation in (111b) is parallel to the one in (110a). Since the [QP_E *kto*], bearing the additional feature [anaphoric], is more richly specified than the [QP_U *kogo*], the former can be successfully extracted over the latter.[44]

7.2.4. *Wh*-atomicity in light of Multiple Spell-out

So far, I addressed the fact that in Russian *wh*-EQs repeating a previous interrogative utterance the echo-inserted *wh*-word has several movement-based options with respect to the possible landing sites (at least under the request-for-repetition reading). In addition to the crosslinguistically common *wh*-in-situ option, the echo *wh*-word can undergo partial *wh*-movement to the immediately preverbal position or appear at the leftmost position of the clause, above the utterance's *wh*-item. But what does happen if a stimulus has more than one *wh*-phrase? Consider again possible *wh*-EQs built on a previous *binary* *wh*-question, as in (24), repeated below for the reader's convenience:

[44] Before the informants judge *wh*-EQs with the ex-situ echo *wh*-word as acceptable (although marginal), they usually need a moment for reflection. This fact points to the computational complexity of such constructions and, perhaps, is also the reason of the attested speaker variation.

(24) a. U: *Čto* *komu* podaril (mumble)? (*Russian*)
what.ACC who.DAT gave (mumble)
'What did (mumble) give to whom?'

b. EQ: *Čto* *komu* podaril $\underline{\text{kto}}_{\text{E}}$?
what.ACC who.DAT gave who.NOM
'What did WHO give to whom?'

c. EQ: *Čto* *komu* $\underline{\text{kto}}_{\text{E}}$ podaril?
what.ACC who.DAT who.NOM gave

d. EQ: **Čto* $\underline{\text{kto}}_{\text{E}}$ *komu* podaril?
what.ACC who.NOM who.DAT gave

e. EQ: ? $\underline{\text{Kto}}_{\text{E}}$ *čto* *komu* podaril?
who.NOM what.ACC who.DAT gave

In (24), *wh*-EQs exhibit three *wh*-words: two *wh*-items, *čto* 'what.ACC' and *komu* 'who.DAT', are copied from the stimulus, while *kto* 'who.NOM' is echo-introduced. Observe that, in principle, the resulting *wh*-EQs based on a multiple *wh*-question have same movement-based options for the echo *wh*-word as the EQs based on a single *wh*-question, (92). Namely, the echo *wh*-item can either appear in-situ, front to the immediately preverbal position (below the utterance's *wh*-words) or move to the leftmost position of the clause. Strikingly, however, the echo *wh*-phrase cannot intervene between the two copied *wh*-words, as shown in (24d).[45] As in Chernova (2013b), I refer to this phenomenon as *wh-atomicity*.

In this section, I attempt to provide an explanation of why the infixation of the echo *wh*-item is not allowed in terms of derivational cyclicity. Particularly, I argue that this restriction naturally follows from Uriagereka's (1999) Multiple Spell-out (MSO) theory (see also Nunes and Uriagereka 2000; Fowlie 2013).

Assuming that in the course of derivation multiple applications of Spell-out can take place (see Bresnan 1971), Uriagereka (1999) proposes that if a given syntactic object has been previously spelled-out, it becomes inaccessible to further syntactic computation. After being sent to the interfaces (PF and LF), the object's internal structure is removed from the syntactic component and only its label and the relevant syntactic features are left behind (the label corresponds to the terminal node). Later, the label is used to determine the exact location of the spelled-out constituent in the main tree. Consider, for example, the following syntactic objects:

[45] Recall that this is so for most of my informants (and for myself), although very few of them allow the echo *wh*-word to intervene between the utterance's *wh*-cluster.

(112) *Internal structure of a complex syntactic object before and after Spell-out*
a. K = {γ {α, β}}
b. K = [$_{\gamma}$]

In (112a), α and β correspond to the internal constituents of a complex syntactic object K and γ to the label. Suppose that, once K's derivation is done, the object is transferred. After being spelled-out, K is turned back into the system as a simple copy, (112b), in which only the label is maintained.

In other words, after being transferred, the complex syntactic object behaves as a single unit, an indivisible atom, whose components are no longer accessible to syntax. Nevertheless, since the label encodes all relevant information required by syntax in order to manipulate an object, K itself is available for further movement, but its components are not. Consequently, no element can be extracted *out* of the spelled-out constituent, giving rise to the so-called *Condition on Extraction Domains* (CED) effect (see Huang 1982; Nunes & Uriagereka 2000, among others). To sum, under this view, at a given derivational stage a syntactic object becomes inaccessible to further syntactic operations if it has been previously spelled-out.

Assuming the inaccessibility of a spelled-out chunk of structure, observe that another natural consequence of the MSO approach is that no movement *into* the transferred object is allowed either. In what follows, as in Chernova (2013b), I argue that MSO is responsible for the fact that the copied *wh*-phrases resist the infixation of the echo *wh*-word in a *wh*-EQ.

Within Uriagereka's MSO model, Spell-out is triggered in order to avoid a linearization failure. Crucially, this is exactly what happens within an EQ: the speaker repeats (*echoes*) some portion of the immediately previous utterance, pronounced by a different speaker. As we saw, the strategy of 'echoing' implies that a number of the original syntactic characteristics of the repeated utterance must be preserved, including the clause-type of the stimulus' C head (C_2) and, I argue, the ordering of constituents. I suggest that *wh*-atomicity of the items copied from the stimulus is achieved by their early transfer to external systems.

In fact, the 'freezing' properties of *wh*-EQs have been attested in the literature and analyzed from different perspectives. For example, recall the 'frozen' status of the utterance's CP in Sobin's (1990, 2010) system (see section 4.2 for discussion) or the metarepresentational nature of EQs, as argued for in Noh (1998), Iwata (2003) and Escandell (2002) (see section 2.2).[46]

[46] Recall the English examples in (60), showing that certain sentential adverbs are incompatible with canonical interrogatives, (ia), while EQs are far more permissive, (ib):
(i) a. * Has *surprisingly* John arrived? (*English*)

Several pieces of evidence support our claim on atomicity of the *wh*-phrases copied from the antecedent utterance. First, as argued in chapter 4, in Russian canonical, non-echo multiple *wh*-questions the fronted *wh*-words can be freely ordered (although with some semantic differences). In contrast, in the case of *wh*-EQs, the ordering of the copied *wh*-constituents must be the same as in the stimulus; otherwise the result would be infelicitous. Consider (113):

(113) a. U_1: *Kto*$_1$ *kogo*$_2$ udaril (mumble)? (*Russian*)
who.NOM who.ACC hit mumble
'Who hit whom (mumble)?'
b. U_2: *Kogo*$_2$ *kto*$_1$ udaril (mumble)?
who.ACC who.NOM hit mumble
c. EQ: (Čem$_E$) *kogo*$_2$ *kto*$_1$ (čem$_E$) udaril (čem$_E$)?
what.INST who.ACC who.NOM hit
'Who hit whom with WHAT?'

Crucially, the *wh*-EQ in (113c), with Superiority-violating word order, can be a proper echo response only to the utterance in (113b). In opposition, the *wh*-question in (113a) requires an EQ that preserves Superiority-obeying ordering of the fronted utterance's *wh*-constituents.

Second, recall from chapter 4 that in Russian non-echo multiple *wh*-questions the fronted *wh*-items can be separated by certain intervening material such as parentheticals, adverbs, etc. Nevertheless, a *wh*-EQ built on a previous multiple *wh*-interrogative can exhibit an adverb between the fronted *wh*-constituents if and only if the utterance has had exactly the same distribution of the constituents. Consider (114):

(114) a. U_1: *Kto*$_1$ *vnezapno kogo*$_2$ udaril (mumble)? (*Russian*)
who.NOM suddenly who.ACC hit mumble
'Who suddenly hit whom (mumble)?'
b. U_2: *Kto*$_1$ *kogo*$_2$ *vnezapno* udaril (mumble)?
who.NOM who.ACC suddenly hit mumble
c. EQ: *Kto*$_1$ *vnezapno kogo*$_2$ čem$_E$ udaril?
who.NOM suddenly who.ACC what.INSTR hit
'Who suddenly hit whom with WHAT?'

---

b. *Surprisingly* John has arrived? [from Iwata 2003:228,231]
As already discussed, in (ib), the adverb is licensed within the echo-context as a part of a declarative stimulus *Surprisingly John has arrived*.

Again, similarly to (113), the *wh*-EQ in (114c) is a proper response to the utterance in (114a), while it would be infelicitous if requesting for repetition of the utterances in (114b) or (113a).

The behavior of Russian non-echo multiple *wh*-questions (see chapter 4) suggests that canonical interrogatives do not trigger early Spell-out of the fronted *wh*-words, as opposed to *wh*-EQs. This is expected, since MSO is a linearization strategy for preventing a possible linearization failure after the internal structure of the constituent is completed. As I argued in previous chapter, in Russian non-echo *wh*-questions *wh*-items do not form a cluster: in fact, they occupy different positions in the tree and do not rich their final landing site until the very end of the syntactic derivation (once the interrogative C is merged). In contrast, by uttering a *wh*-EQ, the speaker has to maintain the original word order, so that the addressee can easily identify the stimulus and understand what exactly she is asked about. Thus, I consider that application of MSO in the derivation of *wh*-EQs is a useful strategy for preserving the original ordering of the stimulus' constituents when repeating the immediately previous utterance in the dialogue.

Thus, the data suggest that in echo-contexts certain portion of the echoed antecedent (in particular, the copied *wh*-elements) is used as an unanalysed whole, a simple chunk of structure that repeats what has been previously said. Therefore, I argue that the computational system takes multiple *wh*-words of the echoed *wh*-question as a complex object and spells it out as such, turning back an indivisible atom.[47]

Let us now turn back to the *wh*-EQ in (24), namely, to the point where the *wh*-items have been merged in their argument positions. As previously argued, different *wh*-constituents enter the derivation of a *wh*-EQ bearing different features. Most importantly, the echo-inserted *wh*-constituent (contained within an echo-QP) is specified with a feature [anaphoric], which clearly distinguishes it from the *wh*-words repeated from the utterance. This point of derivation is illustrated below:

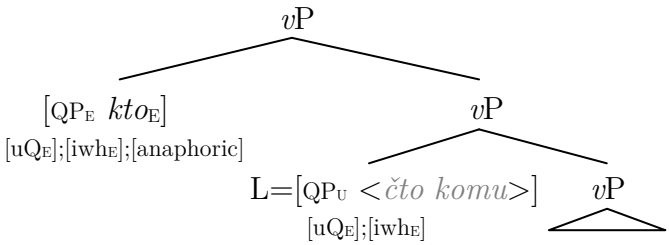
(115) $[_{VP}\,[_{QP_E}\,kto]\{[uQ_E];[iwh_E];[\underline{anaphoric}]\}\,\ldots\,[_{QP_U}\,čto]\{[uQ_E];[iwh_E]\}\,\ldots\,[_{QP_U}\,komu]\{[uQ_E];[iwh_E]\}]$

[47] Another potential view for solving the puzzle of *wh*-atomicity is to propose that the derivation of the utterance's *wh*-cluster is made on another plane, different from the main derivational spine of an EQ (e.g. see Cheng 2013, Cheng & Downing to appear for adjuncts in Zulu). Then the material from that different plane is incorporated as an indivisible atom into the main plain. Under both views we obtain the same result: a complex object is incorporated into the derivation as a simple copy, whose internal structure is inaccessible to further syntactic computation.

I propose that the computational system analyses the utterance's QPs *čto komu* as a complex (echoed) object K, (116a), makes a copy of it and spells it out as L, (116b). As a result, the *wh*-constituents are linearized at PF.[48] Next, the spelled-out copy L is merged with the main derivational spine, yielding (117):

(116) a. $K = [QP_U\ [\check{c}to\ komu]]_{\{[uQ_E];[iwh_E]\}}$
b. $L = [QP_U\ \ \ ]_{\{[uQ_E];[iwh_E]\}}$

(117)



Once the complex object K, containing the utterance's *wh*-items, is spelled-out and returned into the structure as a simple item L, (116b), the derivation proceeds in a straightforward way. Namely, the IP, CP_2 and CP_1 levels are successively projected, giving rise to the already familiar double-CP structure underlying *wh*-EQs. Thus, under the MSO approach, the *wh*-EQ based on a previous binary *wh*-interrogative, as in (24), follows the same derivational patterns as the *wh*-EQ repeating a single *wh*-question, as in (92).

Notice that the derivation in (117), in which the echo Q_E-particle takes the anaphoric *wh*-phrase as its complement, leads to *wh*-ex-situ. If the Q_E-particle does not project, *wh*-in-situ or partial echo *wh*-movement can arise. But independently of what is the merge site of the Q_E-morpheme and the way in which it projects, the utterance's *wh*-words, which are contained within a simple copy of QP_U, form an indivisible cluster. As a result, the infixation of the echo *wh*-word is blocked at any derivational level. Therefore, (24d), in which the echo *wh*-constituent intervenes between the utterance's *wh*-words, cannot be derived in a satisfactory way due to *wh*-atomicity of the copied items. This is represented in (118):

(118) *Wh-atomicity, (24d)*
* $[CP_1 \ldots [CP_2\ [QP_U < wh_U\ wh_U >]\ C_2\ [IP \ldots [vP \ldots [QP_E\ wh_E]]]]]$
XXX

[48] I speculate that the fact that the echo *wh*-item and the repeated *wh*-elements enter the derivation specified with a different bundle of features helps the computational system to identify the former as a single object, different from the echo *wh*-word. However, the exact mechanism is not very clear to me at this point and I leave it for future research.

As shown in (118), the internal structure of the spelled-out complex object [QP_U] becomes invisible for the syntactic computation, so nothing can be either inserted or extracted from it. Due to the MSO mechanism, it does not matter whether a *wh*-EQ repeats a single, a binary or a ternary *wh*-interrogative utterance. In order to preserve the original ordering and to prevent a possible linearization failure, the copied *wh*-phrases are spelled-out and then turned back into the structure as an indivisible atom. Thus Uriagereka's (1999) MSO model, when applied to EQs, nicely accounts for the apparently mysterious fact that the echo *wh*-phrase cannot intervene between the *wh*-constituents copied from the immediately prior utterance in the dialogue.

8. Conclusions

In this chapter I addressed the syntax of *wh*-EQs in typologically different *wh*-fronting languages with respect to the general pattern of *wh*-movement in multiple questions. I presented new empirical data showing that in MWF languages (e.g. Russian) the echo *wh*-element can be fronted independently of the clause-type of the echoed sentence. Meanwhile, in languages with single *wh*-fronting (e.g. English) the possibility of echo *wh*-movement to the left edge of the question is related to the type of the utterance: whether it is declarative or interrogative.

I argued that this parametric variation relies on the fact that echo *wh*-movement proceeds successive cyclically, through the double-CP structure underlying *wh*-EQs (see Sobin 2010). In other words, echo *wh*-fronting requires an escape hatch where the echo *wh*-phrase can move on its way to the left edge of the question. Being the specifier of a declarative CP available as an intermediate landing site for the fronted echo *wh*-word, we predict that *wh*-EQs repeating declaratives can uniformly exhibit overt movement across *wh*-fronting languages. However, only languages with MWF (and, hence, for multiple specifiers of CP) can allow for echo *wh*-movement in EQs repeating a previous *wh*-question.

CHAPTER 6

Summary and conclusions

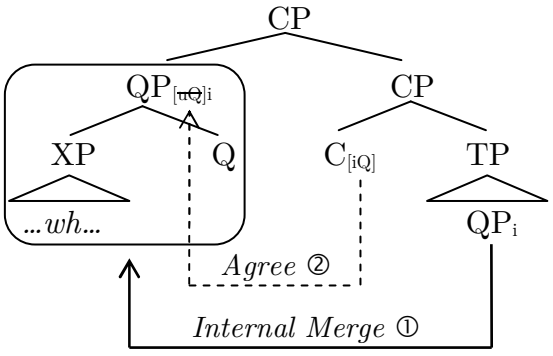
In this dissertation I explored properties of the interrogative *wh*-movement in languages exhibiting MWF (mainly, in Russian) and focused on the syntactic formation of canonical multiple *wh*-questions and non-canonical *wh*-EQs.

The main goal of this dissertation was twofold. First, it offered a syntactic Q-based analysis of formation of true multiple *wh*-questions in MWF languages and then, on the basis of that general proposal, it put forward an account for the syntax of *wh*-EQs.

Throughout the preceding chapters, I developed a refined version of Q-based theory, in order to enable it to capture a set of intricate data coming from MWF languages. Following Cable (2007, 2010), I assumed that in all languages the *wh*-words are rendered interpretable through the help of a Q-particle, which merges with the *wh*-word and moves to C in time for interpretation. In *wh*-fronting languages, in which the Q-particle agrees with the *wh*-word and projects a label, Q-movement into the left edge of a clause triggers overt *wh*-fronting, the latter being a secondary effect of the former.

Building on Bošković (2007a), I suggested that the Q-particle undergoes syntactic movement into the CP level for certain formal reasons (see chapter 2). Namely, I proposed that, before the derivation is sent to the interfaces, the Q-particle must reach its scope position in order to get the appropriate interrogative interpretation. Such position is the specifier of CP, from where the Q-feature c-commands the matching features on the interrogative C and thus can be valued though Q-agreement. This idea is summarized in (1):

(1) *Q-movement in wh-fronting languages*



Regarding the syntax of multiple *wh*-questions, I further developed Cable's observation that there is a correlation between a number of QPs in the derivation (i.e., whether every *wh*-word is dominated by a Q-particle or not) and Superiority effects (see chapter 3). I considered a well-known puzzle from Slavic languages: while Bulgarian shows sensitivity to Superiority violations and bans any intervening material from appearing between the fronted *wh*-words, Russian behaves just the other way round (*cf.* (2) & (3)). Building on Cable, I suggested that in the derivation of Bulgarian multiple *wh*-questions multiple QPs are projected (thus, predicting the appearance of Superiority effects), while in their Russian counterparts only a single QP is projected (hence, no Superiority effects are expected). However, the fact that in both Russian and Bulgarian all *wh*-words necessarily undergo interrogative movement to the left edge of a clause is surprising and unexpected within the current Q-theory framework:

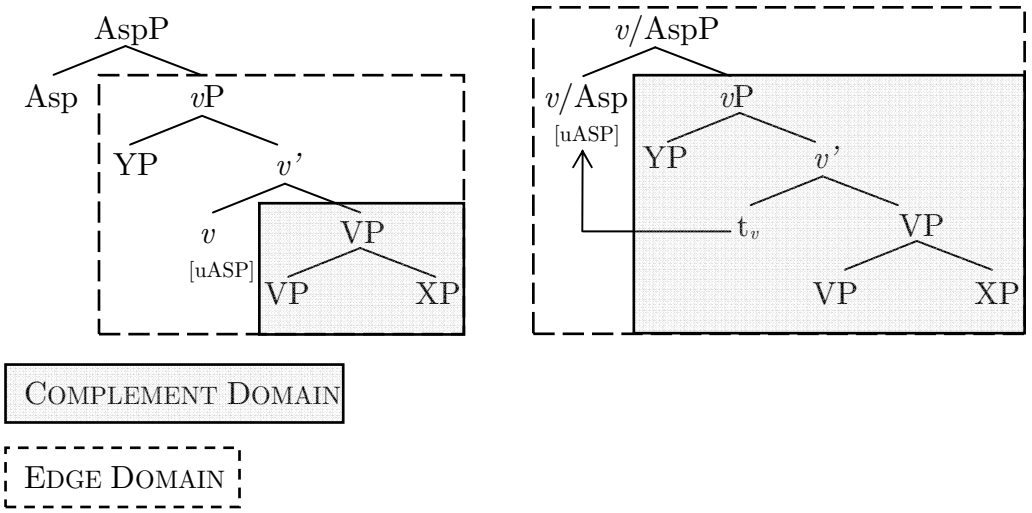
(2) a. *Koj*$_1$ (*spored tebe) *kakvo*$_2$ e kupil t_1 t_2? (*Bulgarian*)
who according.to.you what is bought
'According to you, who bought what?'
b. **Kakvo*$_2$ *koj*$_1$ e kupil t_1 t_2?
what who is bought

(3) a. *Kto*$_1$ (po-tvoemu) *čto*$_2$ kupil t_1 t_2? (*Russian*)
who.NOM according.to.you what.ACC bought
'According to you, who bought what?'
b. *Čto*$_2$ (po-tvoemu) *kto*$_1$ kupil t_1 t_2?
what.ACC according.to.you who.NOM bought

In chapter 4, I proposed to capture this striking puzzle by suggesting that in Russian multiple questions one of the multiple Q-particles can be merged high, with C. As a result, although the only interrogative movement in language is Q-movement, I suggested that in Russian multiple questions the C head is also endowed with a *wh*-probe, alongside the familiar Q-feature. While the latter only targets QPs, the *wh*-probe targets *wh*-phrases which are not dominated by any QP. Moreover, following Chomsky (2001 *et seq.*) I assumed that any kind of internal Merge proceeds successive cyclically, i.e., through the intermediate escape hatches out of phases. Building on Gallego's (2007, 2010) Phase Extension hypothesis, I argued that in Slavic languages the verb undergoes *v*-to-Asp movement (e.g. Svenonius 2004a,c), which results in extension of the phasal properties of *v*P to AspP. Simplifying, this means that *all* multiple *wh*-elements

first undergo Superiority-obeying internal Merge to the edge of AspP in both languages:

(4) *Phase Extension*



On the one hand, the internal Merge to the edge of AspP renders QPs available for the further familiar movement into CP, (5-6). On the other hand, this operation allows checking the *wh*-probe on C through *wh*-agreement (in Russian multiple questions):

(5) a. Superiority-obeying structure: (*Bulgarian*)

[CP [QP *Koj* Q]$_1$ [QP *kakvo* Q]$_2$ C [TP T [AspP t$_1$ t$_2$ Asp$_v$ [vP t$_1$ t$_2$ v]]]

b. Superiority-violating structure:

*[CP [QP *Kakvo* Q]$_2$ [QP *koj* Q]$_1$ C [TP T [AspP t$_1$ t$_2$ Asp$_v$ [vP t$_1$ t$_2$ v]]]

(6) a. Superiority-obeying structure: (*Russian*)

[CP [QP *Kto* Q]$_1$ C$_{+Q}$ [TP T [AspP t$_1$ [XP *kogo* Q]$_2$ Asp$_v$ [vP t$_1$ t$_2$ v]]]

b. Superiority-violating structure:

[CP [QP *Kogo* Q]$_2$ C$_{+Q}$ [TP T [AspP [XP *kto* Q]$_1$ t$_2$ Asp$_v$ [vP t$_1$ t$_2$ v]]]

The mechanism of MWF developed in this dissertation correctly predicts the puzzling data from Russian and Bulgarian surveyed here. I believe that the analysis put forward in this thesis can be extended to other Slavic languages, in

order to get a more detailed picture of the common properties of MWF and also certain microparametric variation. As the reader might notice, throughout this dissertation I pointed out several ways in which the analysis begun with this study could be continued further. For instance, I showed that our phase-based Q-theory can be extended to Spanish multiple *wh*-questions (see section 8.1 of chapter 4). I roughly suggested that this language may exhibit a hidden MWF phenomenon, which is a result of the phasal status of the TP projection. I also believe that the findings of this study shed some more light on the general crosslinguistic typology of *wh*-movement. I suggested that the different patterns of MWF complete the global picture of the attested parametric variation and I offered a tentative parameter hierarchy for the emerging typological variation in the appearance of *wh*-questions (see section 8.2 of chapter 4). Certainly, these issues require a more extensive research, which I leave for future works.

Finally, in chapter 5 I focused on the syntax of *wh*-EQs in some *wh*-fronting languages with different patterns of *wh*-movement in canonical multiple questions. One of the main empirical contributions of this chapter is in showing that the availability of overt *wh*-movement in EQs can vary depending on whether a language allows MWF in canonical questions or not. That is, in English-type languages the legitimacy of echo *wh*-movement crucially depends on the type of the echoed utterance: whether it is a declarative or an interrogative, (7). Meanwhile, in Russian-type languages the echo *wh*-phase can generally be fronted (either to the immediately preverbal position or to the left edge of the EQ), independently of the clause-type of the echoed sentence, (8):

(7) a. Echoing a declarative: (*English*)
U: Mary bought (mumble).
EQ: Mary bought $\underline{\text{what}}_{\text{E}}$? / $\underline{\text{What}}_{\text{E}}$ did Mary buy t_{E}?

b. Echoing a *wh*-question:
U: *What* did (mumble) buy?
EQ: *What* did $\underline{\text{who}}_{\text{E}}$ buy? / * $\underline{\text{Who}}_{\text{E}}$ bought *what*?

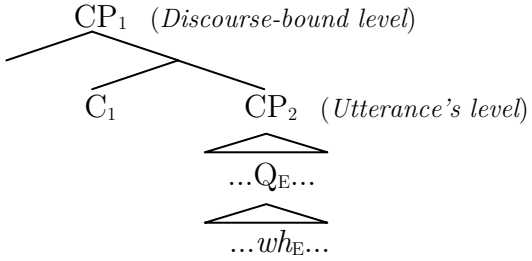
(8) a. *Echoing a declarative*: (*Russian*)
U: Maša udarila (mumble).
Masha hit (mumble)
EQ: ($\underline{\text{Kogo}}_{\text{E}}$) Maša ($\underline{\text{kogo}}_{\text{E}}$) udarila ($\underline{\text{kogo}}_{\text{E}}$)?
who.ACC Masha hit
'Masha hit WHO?'

b. Echoing a *wh*-question:
U: *Kogo* udaril (mumble)?
who.ACC hit mumble
'Who did (mumble) hit?'
EQ: (?Kto$_E$) *kogo* (kto$_E$) udaril (kto$_E$)?
who.NOM who.ACC hit
'Who did hit WHO?'

Traditionally *wh*-EQs have been considered as a purely pragmatic phenomenon and have been taken as a counterpoint to the standard assumptions about interrogative syntax in *wh*-fronting languages. However, my intuition was that the 'atypical' syntactic behaviour of *wh*-EQs is less opposed to the syntax of true *wh*-questions than it could appear and that *wh*-movement in EQs goes in parallel with the general pattern of *wh*-movement in canonical questions.

I argued that our Q-based approach can formally capture these parametric differences and account for the particular syntactic behaviour of *wh*-EQs. First, following Sobin (2010), I assumed that *wh*-EQs have a particular double-CP structure, in which a lower CP level (CP_2) corresponds to the sentence being echoed and is selected by a higher, discourse-bound interrogative CP_1. I argued that the anaphoric Q-particle, which c-commands the echo-introduced *wh*-word, must undergo movement to the specifier of CP_1 in time for interpretation:

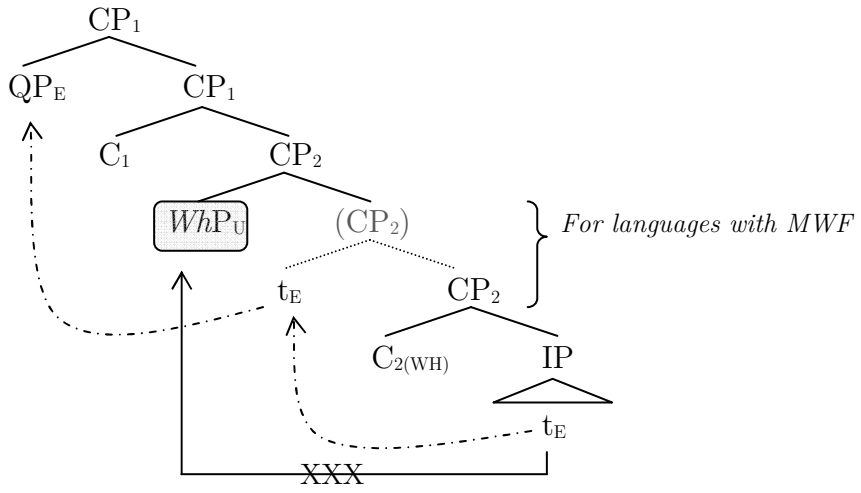
(9) *Double-CP structure of wh-EQs*



Secondly, extending Q-theory to *wh*-EQs, I proposed that echo *wh*-movement is a secondary effect of movement of the anaphoric, echo QP projection to its scope position (CP_1), which proceeds successive cyclically. Simplifying, echo movement into CP_1 must pass through the intermediate landing site, the specifier of CP_2. This view correctly predicts the intricate parametric variation regarding overt echo *wh*-movement surveyed here. If the previous utterance is declarative, we expect the specifier of CP_2 being available as an intermediate escape hatch for the echo-QP. In contrast, the specifier of an interrogative CP_2, which houses a *wh*-constituent inherited from the echoed utterance (WhP_U), cannot act as a

landing site for the extracted echo-QP (e.g. in English). Nevertheless, since languages with MWF can make use of multiple specifiers at the CP-level, we expect that they allow for echo *wh*-movement past the non-echo *wh*-phrase. This is illustrated in (10), where different patterns of echo QP-movement in English-type and Russian-type languages are represented by continuous and dashed arrows respectively:

(10) *Successive cyclic echo Q-movement out of embedded wh-question*



Assuming that such extraction proceeds through the lower Spec,CP_2, certain Relativized Minimality effects (Rizzi 1990, 2013; Starke 2001) are expected (*cf.* (8b)). The availability of echo *wh*-movement to the lower, preverbal position (AspP in Russian) also naturally follows from our phase-based account developed in the previous chapters. In chapter 5, I also observed that, despite the movement-based options available in Russian *wh*-EQs, there is an otherwise mysterious (and previously unnoticed) fact: the echo *wh*-item cannot intervene between the *wh*-words inherited from the echoed utterance (i.e., when a multiple *wh*-question has been echoed). I argued that this puzzle naturally follows from Uriagereka's (1999) MSO theory: the computational system takes the copied *wh* phrases as a complex object and spells it out, leaving behind a simple copy, which acts as an indivisible atom.

To sum up, the proposal developed in this dissertation allows for a unified derivation of interrogative syntax in general, while also capturing that the semantic interpretation of canonical *wh*-questions and *wh*-EQs is distinct.

All in all, the gist of this dissertation was to provide a way to capture the intricate properties of *wh*-movement in languages allowing for MWF, focusing on canonical and non-canonical *wh*-questions, within the formal framework of the Minimalist Program.

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