The elimination of formal wh-features and a theory of free wh-movement*

Radek Šimík
simik@uni-potsdam.de
University of Potsdam

Second draft, January 2012

1 Introduction

It is commonly assumed that formal features on syntactic categories are essentially descriptive devices—remnants of construction-based approaches to grammar. They are often introduced into the grammatical model in order to bridge the gap between the empirical facts we face and the assumptions which we believe to follow from independently motivated principles. In that respect, the postulated inventory and properties of formal features provide a useful overview of what we do not understand and carve the ways in which our understanding could be attained.

In this paper, I provide a novel argument in favor of the elimination of one such descriptive device: the wh-feature as a formal property of the complementizer (C) syntactic category. The argument rests on facts from Slavic modal existential wh-constructions (see e.g. Grosu 2004), which defy the apparently omni-present condition that wh-features are hosted by the C-head and that whenever wh-movement occurs, a CP must therefore be present. In particular, wh-movement in Slavic modal existential wh-construction can target phrases of various categories: CPs, vPs, NPs, APs, and AdvPs. A logically possible but theoretically and empirically unattractive solution to this problem is to postulate functional heads with wh-features at the edge of each of

*This work has started while I was writing my dissertation at the University of Groningen. I'd like to thank to the people there, esp. my advisors Jan Koster and Mark de Vries. For comments, data, and useful discussions, I'd like to thank to Eefje Boef, Gisbert Fanselow, Marko Hladnik, Thomas Leu, Anikó Lipták, Maša Močnik, Dennis Ott, Michal Starke, Craig Thiersch, Luis Vicente, Marta Wierzba. Parts of this work in various stages of development have been presented at the EGG summer school in České Budějovice (August 2011) and in the Syntax Lab at the University of Cambridge (March 2012). Thanks to the audiences. Needless to say, the many problems and mistakes remaining are mine only.

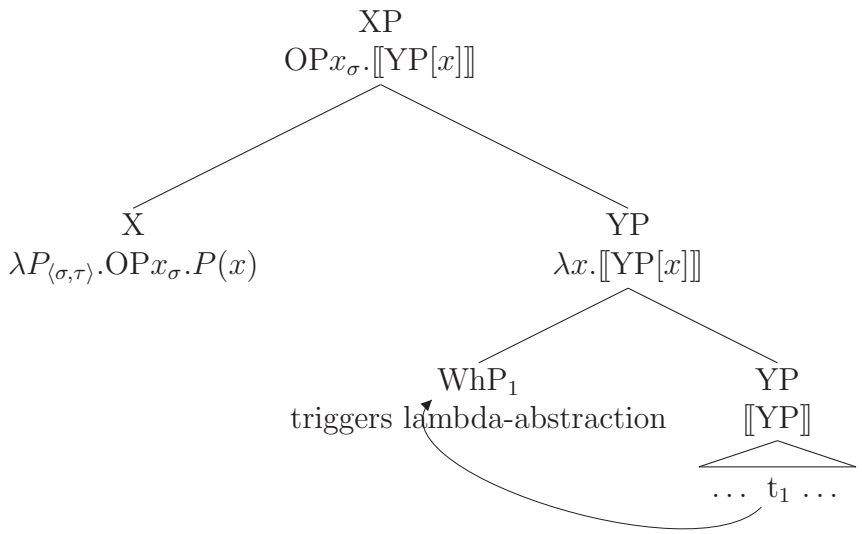
these phrases. A more interesting possibility, one that I will pursue, is to give up the assumption that wh-movement is wh-feature-driven and, more strongly, that formal wh-features exist at all.

In a model without formal wh-features, criterial wh-movement reduces to a non-feature-driven syntactic operation and it follows that if there is a specific landing site for wh-movement (the CP domain for most languages and most constructions), it must be derived from independent considerations. In line with the Chomskyan minimalist program (esp. Chomsky 2001 and subsequent work), I will argue that the specific landing site is derivable from C-I interface conditions. For example, wh-questions involve wh-movement to the CP domain not because there is a formal wh-feature to be "checked" but because the variable bound by the moved wh-phrase must be accessible to a question operator, which in turn must apply at the propositional (CP) level. In other words, while I argue against the existence of formal wh-features, I believe it to be beneficial or even necessary that interpretable features such as the Q(uestion)-feature exist and possibly are syntactically active.

The theory of syntactically free wh-movement proposed here is sketched by the tree in (1), where the first lines of the labels represent the object language (LF) and the second lines its metalinguistic (semantic) translation.[1] Suppose that X is a (functional or lexical) head which maps to an operator OP (e.g. the question operator) which requires a direct access to a variable (deeply) embedded within the YP. If this access is not granted, the operator cannot be applied to the denotation of YP and the whole structure is uninterpretable at the LF-semantics interface. The movement of the wh-phrase to the edge of YP is interpreted at the LF-semantics mapping as lambda-abstraction over the variable which corresponds to the lower copy of this movement chain (t), as assumed e.g. in Heim and Kratzer (1998). Since the variable required by X is now lambda-bound in the denotation of YP (for clarity marked as $[x]$), the operator X can successfully apply. Notice that the wh-movement is purely interface-driven—from a narrow syntactic viewpoint it is an instance of plain (re)merge with no feature checking involved.

[1] I ignore the problem of projection, i.e. how or whether at all phrases project in a non-feature-driven movement. I take it to be a problem which is independent of my goals in this paper. See Chomsky (forthcoming) for a recent general discussion.

(1)



Before I turn to the arguments against the standard view and in favor of the free wh-movement, I would like to spell out three general premises without which it might be difficult to interpret the conclusions reached in this paper. The first premise concerns the notion of wh-movement. Whenever I speak of wh-movement, I mean such movement of a wh-phrase which targets the final landing site of that wh-phrase and which is directly related to the semantics specific for the wh-clause created by that movement: wh-movement in questions is related to question semantics, wh-movement in relative clauses is related to a semantic intersection with the relative clause head, etc. I adopt Rizzi's attribute *criterial* for this type of wh-movement and I will sometimes remind the reader of this by using the term *criterial wh-movement.* What I do *not* have in mind is any intermediate movement step of the wh-phrase, be it A-movement for Case- and ϕ-feature licensing, A/A-bar scrambling, or an intermediate movement step to the edge of a phase, so called escape hatch. From this it should follow that I also do not wish to reduce wh-movement to any of these above-mentioned types of movement—I do not think that criterial wh-movement should be replaced by something like focus movement, nor do I think that criterial wh-movement is simply movement to the generic phase edge. I do believe that genuine criterial landing sites for wh-movement exist. Yet, the sites are in no way conventionally associated with wh-feature-checking and are fully determined by the head/operator which selects the wh-clause.

The second premise concerns cases in which the targeted semantics (e.g. question semantics) is reached in the absence of criterial wh-movement. These cases include wh-in-situ (a total absence of movement), focus movement of wh-phrases, or partial wh-movement (presumably movement to the edge of a phase). Even though I am not concerned with wh-in-situ or non-criterial movement in this paper, I feel I need to take a position for the sake of clarity. I assume that in these cases, the variable bound by the wh-phrase is not directly accessed by the "criterial operator" (e.g. the question operator). This entails that I-language must provide at least two different semantic

mechanisms for operators to access variables: "direct access", achieved by criterial wh-movement, as illustrated in (1), and "indirect access", used in all other cases. The literature (including the literature on wh-matters) is rich in proposals of such "indirect access"—they include special LF mechanisms such as in-situ (un)selective binding (Pesetsky 1987; Reinhart 1998; Beck 2006; among others) or a special kind of rule of composition—called Hamblin/pointwise/flexible functional application (Ramchand 1996; Hagstrom 1998; Kratzer and Shimoyama 2002). I have nothing to say about how particular languages or particular operators choose to access their variables—whether directly or indirectly. It has long been believed that this is a matter of irreducible parametric variation—essentially a lexical idiosyncracy.[2]

The third premise concerns the limits on the hierarchical organization of syntactic categories and possibly features associated with them. I adopt the conservative assumption that syntactic categories are organized in a universal functional sequence, the most uncontroversial of which is the C-T-v sequence. For the purpose of this paper, I remain agnostic with respect to how detailed the functional sequence and/or syntactic categories should be. As far as I can see, the thesis defended in this paper is compatible with a whole range of approaches to the functional sequence—from nanosyntactic and cartographic approaches to the more conservative minimalist approaches. It is also relatively inconsequential for the present paper whether the functional sequence is a syntactic primitive or whether it is derivable from some independent, possibly extra-grammatical mental properties.

The somewhat controversial assumption entailed by this paper is that not all categories operated on in syntax need to be ordered in the functional sequence. In particular, wh-morphemes do not correspond to any formal syntactic feature or category and hence are not directly constrained in terms of their placement in the syntactic tree. This manifests itself not only "horizontally" (wh-morphemes participate in the creation of wh-words and phrases of most if not all syntactic categories: NPs, APs, AdvPs, VPs, etc.), but also "vertically"—wh-phrases can be (re)merged anywhere in the tree.[3] Even though wh-morphemes are syntactically impoverished in this way, the operators which select wh-clauses (clauses with wh-phrases in their left periphery), e.g. the question operator, are typically syntactically specified and have their strict position in the functional sequence. Thus, this paper should definitely not be read as a general attack on the cartographic program. It merely argues that not all grammatical operations are constrained by syntax in all its force. In this last respect, the present paper is closely related to the recent efforts to dispose with some left-peripheral syntactic features and/or heads related to the notions of focus and topic

[2]See Richards (2010) for a competing view under which direct and indirect access (of question operators) reduces to general properties the syntax-phonology interface. If Richards' account proves to be correct, it is possible that all (question) operators access variables in a unified fashion (presumably directly), while the access is governed and restricted by a conjunction of syntactic, phonological, and possibly semantic conditions.

[3]Thanks to Michal Starke for suggesting the illustrative geometric terminology to me.

(see e.g. Neeleman and van de Koot 2008; López 2009; Horváth 2010; Fanselow and Lenertová 2011).

The rest of the paper is organized as follows. Section 2 formulates what I think is a generally accepted belief, the wh-CP conjecture, which states that there is a grammatical association between wh-movement and the CP area of the clause. Section 3 is a careful falsification of the wh-CP conjecture, which proceeds in two parts: in subsection 3.1 I aim to convince the reader that wh-movement in modal existential wh-constructions does not always target the CP area and in subsection 3.2 I argue that even in cases of "low" wh-phrase placement, the placement results from a genuine wh-operator-movement. Section 4 discusses the major wh-constructions (questions, relatives, modal existential wh-constructions) from the perspective of the free wh-movement theory advocated here. Section 5 concludes the paper.

2 The wh-CP conjecture and some initial evidence against it

Just like other descriptive devices, formal wh-features were introduced in order to account for an apparently mysterious empirical fact of obligatory wh-movement in some languages. The concept of wh-features was never really abandoned, even after the discovery of languages (e.g. Chinese), constructions (e.g. echo-questions), and lexical items (e.g. wh-based indefinites) in which wh-words need not be affected by any empirically discernible movement operation. Quite to the contrary, the existence of wh-movement and its insistence to target a specific syntactic domain led to an induction of a grammatical principle that (moved) wh-phrases must stand in a relation with some particular syntactic category which in turn hosts a formal wh-feature. Let us capture this wide-spread theoretical conviction in terms of the following general conjecture:

(2) *The wh-CP conjecture*
If an XP dominates a wh-moved wh-phrase, then the XP also (reflexively) dominates a CP.

The conjecture has been formulated in various forms in the literature, most of which will be very familiar to any reader of this paper. The most widely used formulation of the conjecture involves a formal (possibly uninterpretable) wh-feature on a C-head, which leads to the requirement that the C-head enter into a particular configuration—the so called Spec-Head configuration—with a phrase which also bears a formal (possibly interpretable) wh-feature—the so called wh-phrase. Technically, the Spec-Head requirement is modeled either in terms of wh-feature strength (where strong features trigger movement) or in terms of the association of the wh-marked C-head with the so called EPP property. In another formulation of the wh-CP conjecture, the formal wh-feature is promoted to a functional syntactic category—the wh-head (e.g. Rizzi

2001). In such a case, it is the very wh-head which requires a Spec-Head configuration with a wh-phrase.

The claim of this paper is that the wh-CP conjecture is false. For a start, consider the Czech minimal pair in (3): (3a) is a run-of-the-mill infinitival question (IQ) embedded under the verb *nevím* 'neg.know.1sg'; (3b) is a formally identical modal existential wh-construction (MEC), embedded under the verb *nemám* 'neg.have.1sg'.

(3) a. Nevím [$_{\text{IQ}}$ komu zavolat].
neg.know.1sg who call.inf
'I don't know who to call.'
b. Nemám [$_{\text{MEC}}$ komu zavolat].
neg.have.1sg who call.inf
'There's nobody who I could call.'

The striking superficial affinity between MECs and IQs has led to numerous attempts to reduce the slightly obscure MEC to the more familiar IQ. As a result, MECs have often been analyzed as CPs involving run-of-the-mill wh-movement, perfectly in line with the wh-CP conjecture (Garde 1976; Pesetsky 1982; Grosu 1987; Izvorski 1998; Caponigro 2003; among others). Yet, despite a number of important semantic and distributional differences which need not concern us here, an IQ-like structural analysis is not always appropriate. This is evident from the contrast in (4) (observed for the first time by Zubatý 1922), which shows that only MECs are transparent for clitic climbing. In both (4a) and (4b), the clitic originates as the direct object of the embedded infinitive *dát* 'give'. In (4a), the clitic must stay within the embedded clause, but in (4b), the clitic has the option to either stay or climb up into the matrix (the latter being the default option, in fact).[4]

(4) a. Bohužel jsem {* **ji**$_1$} nevěděl [$_{\text{IQ}}$ komu { **ji**$_1$} dát t$_1$].
unfortunately aux.pst.1sg her neg.knew who her give.inf
'Unfortunately I didn't know who I should give her to.'
b. Bohužel jsem { **ji**$_1$} neměl [$_{\text{MEC}}$ komu { **ji**$_1$} dát t$_1$].
unfortunately aux.pst.1sg her neg.had who her give.inf
'Unfortunately I didn't know who I should give her to.'

Clitic climbing, just like other phenomena which are conditioned by so called restructuring, is a process which cannot cross a CP boundary.[5] As for Czech clitics, in

[4]Boldface in examples has no linguistic relevance; it is used to attract reader's attention.

[5]Restructuring is a traditional term (introduced, to my knowledge, by Rizzi 1978) used to refer to a situation where two verbal predicates appear to share a single functional structure (T, C, etc.). This structure c-commands both of the predicates and consequently appears to belong to the higher one—often called a restructuring verb. As a result, some licensing requirements of the embedded predicate or its arguments can be satisfied in a relation with the matrix predicate, giving rise to so called *restructuring phenomena*—an embedded argument can agree with the matrix verb (long distance agreement), clitics can attach to the matrix predicate (clitic climbing), etc. In this paper, I assume that restructuring refers to a situation in which the embedded predicate is structurally

particular, it has been independently argued that their movement targets the closest c-commanding low CP area, arguably Rizzi's (1997) FinP (Toman 1999; Lenertová 2004; Dotlačil 2004). If this is the case in general, and I see no reason to think otherwise, then (4a) shows that IQs must be at least FinPs, since the clitic must stay within the IQ, while (4b) shows that MECs can be smaller than FinPs, say TPs, since the clitic need not stay within the MEC. The latter fact follows from (5)—a generalization which I aim to defend in this paper.

(5) a. Some MECs do not (reflexively) dominate a CP.
b. All MECs are XPs which dominate a wh-moved wh-phrase.

The reader is invited to check that the conjunction of (5) and the wh-CP conjecture in (2) cannot be true. If the evidence in favor of (5) provided in this paper is convincing, as I believe it is, then it follows that the wh-CP conjecture must be false. The evidence supporting both parts of the generalization (5) is discussed in detail in section 3.

3 A falsification of the wh-CP conjecture

3.1 The variable size of Slavic MECs

Our initial example (4b) shows that wh-movement in MECs can target a projection lower than CP. The consequence of this is that MECs, as opposed to IQs, can be transparent for clitic climbing. Let us first convince ourselves that (4b) is not just a quirk of Czech. (6) provides comparable examples from (a) Slovenian, (b) Croatian, and (c) Polish.[6,7]

(6) a. Včeraj **ga**$_1$ nisem imel [$_{\text{MEC}}$ kdaj obiskati t_1].
yesterday him neg.aux.pst.1sg had when visit.inf
'Yesterday there was no time when I could visit him.'
b. Nemam **ga**$_1$ [$_{\text{MEC}}$ kome dati t_1].
neg.have.1sg it whom give.inf
'There's nobody I could give it to.'
c. Nie mam **go**$_1$ [$_{\text{MEC}}$ komu dać t_1].
neg have.1sg it who give.inf
'There's nobody I could give it to.'

The claim that MECs in some Slavic languages may be smaller than CPs is supported by (7). These examples involve impersonal predicates within the MEC: *(být) smutno*

impoverished—it is not a full CP, but rather a TP, vP, or the like (see Wurmbrand 2001 for a general discussion).

[6]None of these languages allows for clitic climbing out of infinitival questions.

[7]Clitic climbing out of MECs is briefly discussed or at least noticed by Izvorski (1998) and Ceplová (2007).

'(be) sad.imprs' and *deževati* 'rain', respectively. Impersonal predicates are commonly assumed to have non-thematic subjects, i.e. expletives, which are responsible for the formal licensing of ϕ-features on T. In the case at hand, it is the matrix T that gets licensed by the expletive, as witnessed by the third person singular neuter marking on the matrix verbs.

(7) a. *Czech*
Nemělo ti [$_{\text{MEC}}$ kvůli čemu být smutno].
neg.had.**3sg.nt** you.dat because.of what be.inf sad.imprs
'There's nothing for which you could feel sad.'

b. *Slovenian*
Ni imelo [$_{\text{MEC}}$ kdaj deževati].
neg had.**3sg.nt** when rain.inf
'There was no time when it could rain.'

What the evidence above shows is that verbs selecting MECs can be raising verbs in Slavic: the empty matrix subjects in (7) must receive no theta-role as they are merely expletives. It has been independently argued that raising cannot cross a CP boundary (except for hyperraising, which, to my knowledge, is not attested in either Czech or Slovenian); in other words, complements to raising verbs are not bigger than TPs and might, presumably, be even smaller.

Consider now another example which further reinforces the present hypothesis. The subject of the Czech MEC in (8), *kdo* 'who' has the following properties: (i) it is nominative-marked, (ii) it agrees in ϕ-features with the finite matrix verb, and, by definition, (iii) it is a part of the embedded clause (the MEC). This example again shows, perhaps even more clearly so, that the embedded subject can enter into an Agreement relationship with the matrix verb.

(8) Neměl mi v tom [$_{\text{MEC}}$ kdo zabránit].
neg.had.**sg.ms** me in that who.**nom.sg.ms** prevent.inf
'There was nobody who could prevent me from doing that.'

In sum, these facts strongly suggest that the embedded subject is accessible to the matrix T for purposes of Case- and ϕ-feature licensing. According to standard assumptions, this should not be possible if the embedded clause dominates TP, as the T-head would function as a defective intervener for the cross-clausal Agree relationship (see Wurmbrand 2001; Dotlačil 2004 for dicussion). Thus, MECs in some Slavic languages can be smaller than TPs, arguably at most AspP or some comparable projection dominating vP.

Finally, there are cases which suggest that the landing site of the wh-movement in Slavic MECs need not even reach the vP level. These involve copular predicates of various categories. (9a) is a Czech example involving a nominal predicate *učitelem* 'teacher', (9b) is also from Czech and involves an adjectival predicate *pyšný* 'proud', and finally, the Slovenian example in (9c) involves an adverbial (impersonal) predicate

žal 'sorry'. The examples also show that movement to the edge of the copular VP is not excluded.

(9) a. Bohužel mi nemá [$_{\text{MEC}}$ { kdo} být { kdo}
unfortunately me.dat neg.has who.nom be.inf who.nom
učitelem].
teacher.instr
'Unfortunately, there is nobody who could teach me.'

b. Karel nemá [$_{\text{MEC}}$ { na co} být { na co} pyšný].
Karel neg.has on what be.inf on what proud
'There is nothing that Karel could be proud of.'

c. Nima ti [$_{\text{MEC}}$ { česa} biti { česa} žal].
neg.have you.dat what be.inf what sorry
'There's nothing you can feel sorry about.'

Before witnessing (9), some readers may have intended to save a weaker form of the wh-CP conjecture, something that could be called, somewhat clumsily, a "wh-extended-VP conjecture". Even though such a version of the conjecture would already be quite a serious weakening of the original position, the facts in (9) seem to suggest that even this weaker position cannot be upheld.

Before I turn to the next section, it should be made clear that wh-movement in the relevant Slavic languages can also target the CP area. As a result, the grammar provides up to three positions for the wh-phrase to move to: all the three Czech examples in (10) are perfectly grammatical and have identical truth-conditions.[8] (10a) and (10b) replicate the pattern from (9) and (10c) is a case of movement to CP. The crucial diagnostics for distinguishing vP-level MECs from CP-level ones is the position of pronominal clitics. Given our assumption that the position of clitics in the Czech clause is fixed roughly to the FinP domain, it follows that the wh-phrase in (10c)—being above the clitic *mu* 'him'—is located in the CP area.

(10) a. Karel mu nemá být **za co** [$_{\text{AdjP}}$ tak vděčný].
Karel him.cl neg.has be.inf for what so grateful

b. Karel mu nemá **za co** [$_{\text{VP}}$ být tak vděčný].
Karel him.cl neg.has for what be.inf so grateful

c. Karel nemá **za co** [$_{\text{FinP}}$ mu být tak vděčný].
Karel neg.has for what him.cl be.inf so grateful
'There is nothing for which Karel could be so grateful to him.'

[8] In languages like Czech and Slovenian, vP-level MECs are much more frequent than CP-level MECs. I do not think that an intra-grammatical explanation should be sought for. It might well be a reflection of a general tendency to express meaning using as little syntactic material as the grammar allows.

In summary, I provided evidence showing that in wh-movement languages such as Czech and Slovenian a moved wh-phrase in an MEC need not be dominated by a CP, that is, wh-movement is not inherently tied to the CP category. Moreover, wh-phrases in MECs have the option to move to at least three distinct positions with no differential effect on the truth- or felicity-conditions: to the edge of predicates of various categories, to the edge of verb phrases or to the edge of a clause. In the next section, I aim to convince the reader that in all these cases the wh-phrase has genuinely wh-moved.

3.2 The criterial nature of the wh-movement

So far, a proponent of some version of the wh-CP conjecture might hope that the wh-phrases in the above examples, or even in MECs in general are not genuine wh-operators. Perhaps they are simply bare wh-indefinites of the Chinese or German type? Perhaps their movement to positions lower than CP is not wh-movement at all (perhaps it is focus movement or scrambling)? This section addresses precisely this sort of objection to my criticism of the wh-CP conjecture. I will show that wh-phrases in MECs are not bare wh-indefinites and that their movement, no matter to which position, always qualifies as wh-movement, and hence, that the first clause of (5) holds: MECs are XPs which dominate a wh-moved wh-phrase.

The idea that wh-phrases in MECs are bare wh-indefinites rather than wh-moving operators is not without substance.[9] As discussed by a number of authors (e.g. Citko 1998; Progovac 2005; Kučerová 2007; Bošković 2008), indefinite pronouns in the Slavic languages under discussion tend to appear in apparently derived (fronted) positions. This is illustrated in (11) for Czech and Serbian, respectively.

(11) a. Chtěl jsem se { někomu} omluvit {# někomu}.
wanted aux.pst.1sg refl somebody apologize somebody
'I wanted to apologize to somebody.'

b. Da li je on { ikoga} uvredio {? ikoga}?
that Q aux.pst.3 he anyone insulted anyone
'Did he offend anybody?' *(Progovac 2005:36)*

The judgements in (11) make it clear that indefinite pronoun-fronting is not enforced by grammar, it is only the pragmatically default option. In this respect, indefinite pronouns stand in stark contrast with wh-phrases in MECs, which move obligatorily. The relevant contrast is given below for Czech. While the indefinite phrase *po nikom z rodiny* 'from anybody in the family' in (12) can appear both pre- and post-verbally, the corresponding wh-phrase *po kom z rodiny* 'from who in the family' in the MEC in (13) must appear in the fronted position; hence, only (13a) but not (13b) is grammatical.

[9]The idea was defended by Šimík (2009).

(12) a. Nemůže **po nikom z rodiny** zdědit husté vlasy.
neg.can.3 after anybody.nci from family inherit.inf thick hair
b. Nemůže zdědit husté vlasy **po nikom z rodiny**.
neg.can.3 inherit.inf thick hair after anybody.nci from family
'He can't inherit thick hair from anybody in the family.'

(13) a. Nemá [$_{\text{MEC}}$ **po kom z rodiny** zdědit husté vlasy].
neg.has after whom from family inherit.inf thick hair
b. *Nemá [$_{\text{MEC}}$ zdědit husté vlasy **po kom z rodiny**].
neg.has inherit.inf thick hair after whom from family
'There's nobody in the family from whom he could inherit thick hair.'

The same holds for the movement to the edge of other categories, such as AdjP or AdvP. This is shown for Czech in (14).

(14) a. Nemá { **po kom**} být { **po kom**} vysoký {* **po kom**}.
neg.has after whom be.inf after whom tall after whom
'There's nobody he could be tall after.'
b. Nemá ti { **proč**} být { **proč**} smutno {* **proč**}.
neg.has you.dat why be.inf why sad.adv why
'There's no reason for you to be sad.'

In fact, the condition on wh-movement is even stricter than in wh-questions, since multiple-wh MECs are only allowed with multiple wh-movement, while multiple wh-questions are fine with single wh-movement. Thus, both wh-phrases *koho* 'who' and *na co* 'about what' must move in MECs, cf. (15a), while in IQs, (15b), it is sufficient for one of the wh-phrases to move. Again, the examples come from Czech.[10]

(15) a. Nemám [$_{\text{MEC}}$ **koho** se { **na co**} zeptat {* **na co**}].
neg.have.1sg who refl about what ask.inf about what
'There's nobody I could ask something.' (approximate translation)
b. Nevím [$_{\text{IQ}}$ **koho** se { **na co**} zeptat { **na co**}].
neg.know.1sg who refl about what ask.inf about what
'I don't know who to ask about what.'

Another argument against the bare wh-indefinite treatment of wh-phrases in MECs is their sortal freedom. As noticed by many authors (see Gärtner 2009 for a large sample of languages and relevant references), adjunct wh-words such as 'when', 'how', or 'why' rarely (if ever) function as bare wh-indefinites, meaning 'at some time', 'in some way', and 'for some reason', respectively. Yet, these wh-words are quite natural in MECs, as already witnessed in a number of examples above and as illustrated by the Czech example in (16a) and the Slovenian one in (16b) for the wh-words 'when',

[10] Šimík (2011) observes that the following biconditional holds: A language has multiple wh-MECs iff the language has multiple wh-movement.

'how', and 'why'. In that respect, the wh-words in MECs pattern with questions and relative clauses, but by no means with bare wh-indefinites. Thanks to the matrix position of the clitic *ho* 'him' (the object of *navštívit* 'visit'), (16a) clearly shows that these adjunct wh-phrases can also be used if they are at the edge of verb phrases.

(16) a. Karel ho nemá [$_{\text{MEC}}$ { **kdy** / **jak** / **proč**} navštívit].
Karel him neg.has when / how / why visit.inf
'There's no time / way / reason for Karel to visit him.'
b. Nimam [$_{\text{MEC}}$ { **kdaj** / **kako** / **za kaj**} priti v Amsterdam].
neg.have.1sg when / how / for what go.inf to Amsterdam
'There's no time / way / reason for me to go to Amsterdam.'

Let us now turn to evidence from sluicing.[11] As witnessed by the examples in (17) (from Czech and Slovenian respectively), MECs do allow for sluicing.

(17) a. Chtěl bych psát, ale nemám [$_{\text{MEC}}$ **o** **čem**].
want subj.1sg write.inf but neg.have.1sg about what
'I'd like to write but I don't have anything to write about.'
b. Rad bi šel tja, ampak nimam [$_{\text{MEC}}$ **kdaj**].
glad subj go there but neg.have.1sg when
'I'd like to go there but there's no time to go there.'

Sluicing of comparable bare wh-indefinites is completely impossible. This is shown by the Slovenian minimal pair (18).[12]

(18) a. Nekoga moram vprašati in na srečo imam [$_{\text{MEC}}$ **koga**
somebody.acc have.to.1sg ask.inf and on luck have.1sg who.acc
(vprašati)].
ask.inf
'I'd like to ask somebody and luckily there's somebody I could ask.'
b. Nekoga moram vprašati in na srečo lahko **koga** *(
somebody.acc have.to.1sg ask.inf and on luck possible who.acc
vprašam).
ask.1sg
'I'd have to ask somebody and luckily I can ask somebody.'

Once again, wh-phrases in MECs pattern with wh-operators (in wh-questions, in this case) rather than with bare wh-indefinites. It remains to be shown that it is not only wh-phrases in the CP area which support sluicing, but also wh-phrases fronted to lower positions. So far, we have relied on the clitic-based diagnostics in determining the landing site of the wh-phrase: the wh-phrase in the Czech example (19) is in

[11] See Merchant (2001) for a thorough discussion of sluicing.

[12] Compared to Czech bare wh-indefinites, Slovenian ones have a relatively wide distribution. See Hladnik and van Urk (2009) for a discussion of Slovenian bare wh-indefinites.

the CP (above-FinP) area if it precedes the clitic *ji* 'her' and in the VP/TP area (below-FinP) if it follows the clitic.

(19) Karel { ji} neměl čím { ji} potěšit.
Karel her neg.had what.instr her please
'There was nothing that Karel could please her with.'

Unfortunately, this diagnostics will be of no help in this particular case, since clitic climbing gets bled by ellipsis in Czech (and, to my knowledge, in other Slavic languages, too).[13] This is clear from (20a), where the clitic *ji* 'her' cannot escape the ellipsis site, even though clitic climbing is obligatory in a non-ellipsis context, as shown in (20b).

(20) a. Bylo potřeba potěšit Marii, ale Karel (* ji) nechtěl
was needed please.inf Marie.acc but Karel her neg.wanted
~~[potěšit ji]~~.

'Marie needed to be pleased, but Karel didn't want (to please her).'

b. Karel { ji} nechtěl {* ji} potěšit.
Karel her neg.wanted her please.inf
'Karel didn't want to please her.'

Thus, the fact that (21a) is the only grammatical outcome of sluicing applied to (19) cannot be attributed to the idea that sluicing in MECs only happens at the CP level: it is very well possible that the wh-word *čím* 'what.instr' is at the edge of a VP and the clitic cannot precede it because it got obligatorily elided.

(21) Bylo potřeba potěšit Marii, ale

a. Karel neměl $[_{\text{MEC}}$ čím ~~[**ji** potěšit]~~$]$.
Karel neg.had what.instr

b. *Karel **ji**$_1$ neměl $[_{\text{MEC}}$ čím ~~[potěšit t_1]~~$]$.
Karel her neg.had what.instr
'Marie needed to be pleased but there was nothing that Karel could please her with.'

However, there are at least three pieces of evidence that show clearly enough that sluicing at levels lower than CP is supported in MECs. The first two pieces of evidence are related to the grammaticality of the Czech examples in (22). In section 3.1, I argued that the possibility of establishing an Agree relation between the matrix T and the embedded subject strongly suggests that there is no intervening T within the MEC, i.e. that MECs can be smaller than TPs. What both examples in (22) show is that this option is preserved even under sluicing: the expletive subject of the elided

[13] See Lasnik (1999) for an early discussion of bleeding in sluicing.

verb *pršet* 'rain' in (22a) can value the features of the matrix *nemělo* 'neg.had.3sg.nt', and the wh-subject *kdo* 'who' in (22b) can value the features on the matrix *neměl* 'neg.had.3sg.ms'. If MECs involving sluicing had to be CPs, both examples in (22) would have to be ungrammatical.

(22) a. Myslel jsem, že je tu mokro, protože pršelo, ale pak
thought aux.pst.1sg that is here wet because rained but then
jsem si uvědomil, že nemělo [$_{\text{MEC}}$ kdy].
aux.pst.1sg refl realized that neg.had.3sg.nt when
'I thought that it was wet here because it had rained but then I realized that there was no time when it could rain.'

b. Mysleli jsme, že někdo upeče dort, ale nakonec
thought aux.pst.1pl that somebody bake cake but in.the.end
neměl [$_{\text{MEC}}$ kdo].
neg.had.3sg.ms who
'We thought that somebody would bake a cake but in the end there was nobody who could do that.'

The third piece of evidence relates to MECs discussed at the end of section 3.1—MECs with wh-phrases at the edge of sub-copular predicative expressions. If wh-phrases are operators even in these positions, we predict sluicing to be possible. The grammaticality of the Czech examples in (23) shows that the prediction is borne out.

(23) Karel je hrozně pyšný, ale podle mě nemá [$_{\text{MEC}}$ být na co].
Karel is terribly proud but according me neg.has be.inf of what
'Karel is terribly proud but, in my opinion, there's nothing that he could be proud of.'

Let us take stock. We have seen three types of evidence supporting the conclusion that wh-phrases in MECs are operators rather than indefinites: they must move, they have a wide sortal distribution, and they support sluicing. The evidence can be reliably replicated for each of the particular syntactic sites where the wh-phrases can land (the edge of clauses/verb phrases/predicates). All this lends strong support to the present thesis: There are cases of wh-movement which need not rely on CP, or, in fact, any other specific functional projection beyond the generic "edge". In fact, moving to the "edge" might very well be the only clear and inherent syntactic characteristics of wh-movement, where "edge" must crucially be defined with reference to the material which selects the resulting wh-clause (or, to be more vague, "wh-structure"). I will return to this issue in the next section.

I now turn to another potential objection, namely that wh-movement in MECs is an instance of focus fronting. That some instances of apparent wh-movement should be reanalyzed in terms of focus fronting has been independently argued for wh-questions in some Slavic languages, e.g. by Stepanov (1998) and Bošković (2002).

A focus fronting analysis of the above facts also seems to fit the recent findings of van Craenenbroeck and Lipták (2006, 2009), who argue that in some languages (including some Slavic), sluicing is fed by focus movement rather than wh-movement. I am skeptical about a reanalysis in terms of focus. One reason is that there is clearly no necessary association between focus (in any reasonable sense of the word known to me) and the wh-phrase in MECs. The Czech example in (24) shows that prosodic and semantic focus (in the sense of contrast) can be placed on any constituent within the MEC.

(24) a. MARIE se neměla s kým bavit na té včerejší party.
Marie refl neg.had with who speak at that yesterday's party
'There was nobody who Mary could speak with at yesterday's party.'
b. Marie se NEměla s kým bavit na té včerejší party.
c. Marie se neměla s KÝM bavit na té včerejší party.
d. Marie se neměla s kým BAVIT na té včerejší party.
e. Marie se neměla s kým bavit na té VČEREJŠÍ party.

A further and particularly compelling argument that wh-movement in MECs is not obligatorily associated with focus comes from Hungarian. It is well-known that Hungarian interrogative wh-fronting formally patterns with focus fronting (Horváth 1986; Bródy 1995; Lipták 2001; among many others). The most reliable diagnostics to identify focus fronting in Hungarian is the preverb-verb inversion (the preverb is boldfaced for clarity). Thus, the subject in (25a) is not focused because no preverb-verb inversion took place. In (25b), on the other hand, the subject is focused because the verb is realized before the preverb.

(25) a. A fiúk **meg**hívták Marit.
the boys pv.invited.def.3pl Mari.acc
'The boys invited Mari.'
b. A FIÚK hívták **meg** Marit.
the boys invited.def.3pl pv Mari.acc
'The BOYS invited Mari.'

A comparable contrast exists in the wh-operator fronting domain. While relative wh-operators (identified by the prefix *a-* on the wh-word) trigger no preverb-verb inversion, (26a), interrogative wh-fronting obligatorily triggers inversion, (26b). This has led to the wide-spread conviction that wh-fronting in Hungarian interrogatives is in fact focus fronting.

(26) a. Akik **meg**hívták Marit, azok küldtek neki egy e-mailt.
rel.who pv.invited.def.3pl Mari.acc those sent.indef.3pl dat.3sg an e-mail.acc
'Those who invited Mari, sent her an e-mail.'

b. Nem tudom, kik hívták **meg** Marit.
not know.1sg who invited.def.3pl pv Mari.acc
'I don't know who invited Mari.'

Let us now move to MECs. Hungarian MECs can be formed with the use of both relative-like wh-operators and interrogative-like wh-operators. In relative-like MECs, operator fronting does not trigger preverb-verb inversion, (27a). This is not so surprising, given the morphosyntactic affinity to the relative operator movement, which also triggers no inversion. The interesting piece of data is in (27b)—a representative of interrogative-like MECs. It turns out that preverb-verb inversion is not obligatory in this case.

(27) a. Van akinek { **el**adjam /* adjam **el**} a kocsimat.
is rel.who.dat pv.sell.sbj.1sg / sell.sbj.1sg pv the car.poss.1sg.acc
'There is somebody to whom I can sell the car.'
b. Van kinek { **el**adjam / adjam **el**} a kocsimat.
is who.dat pv.sell.sbj.1sg / sell.sbj.1sg pv the car.poss.1sg.acc
'There is somebody to whom I can sell the car.' *(Lipták 2003:6/7)*

The same observation is reported on in Grosu (2004:422), who gives a minimal pair contrasting the behavior of MECs, (28a), and interrogatives, (28b). Only in the latter is the preverb-verb inversion obligatory.

(28) a. Nincs kit **össze**-párosítsak Marival
is.neg who.acc pv-match.sbj.1sg Mary.with
'There is no one I can match with Mary.'
b. Tudom kit {* **össze**-párosítsak / párosítsak **össze**}
know.1sg who.acc pv-match.sbj.1sg / match.sbj.1sg pv
Marival.
Mary.with
'I know who to match up with Mary.'

In summary, while it is not impossible for wh-operators in Hungarian MECs to be focused (just like in Czech, see (24c)), this is certainly not necessary, which clearly disqualifies an analysis of wh-fronting in Hungarian MECs in terms of focus fronting.[14]

The last argument for the assumed "pure" nature of the wh-movement in MECs, as opposed to the more specific focus-based one comes from some striking parallels be-

[14]Surányi (2005) claims that preverb-verb inversion is ungrammatical in infinitival MECs:

(29) Van mit { **meg**osztani /* osztani **meg**}
is what.acc pv.share.inf / share.inf pv
'I have something to share.'

Even though I am not sure why this should hold for some speakers, the intuition further reinforces the position that wh-movement in MECs is no focus fronting.

tween MECs and English purpose clauses (PC) in the narrow sense—purpose clauses which involve empty operator movement (see Faraci 1974; Jones 1991 for a general discussion). A minimal pair is provided in (30).[15]

(30) a. Je $\emptyset_i$ [$_{\text{MEC}}$ co$_{1/i}$ číst t$_1$].
is what read.inf
'There is something that one can read.'
b. It$_i$ is available [$_{\text{PC}}$ OP$_{1/i}$ to read t$_1$].

Both types of constructions have the following properties in common. First, they require some non-indicative mood (typically infinitive). Second, they express plainly circumstantial possibility modality. Third, they have a nearly identical distribution, being embedded under verbs of existence/availability, or verbs expressing processes leading to the state of existence/availability ('appear', 'find', 'buy', 'bring', etc.).[16] Fourth, they involve operator movement (wh-operator in MECs, empty operator in PCs), where the operator is responsible for the mediation of the reference between a matrix argument (empty in MECs, any sort of DP in PCs). All in all, if the similarity between MECs and PCs is not accidental, then the wh-movement in MECs corresponds to the empty operator movement in PCs, whose main and perhaps sole purpose is to mediate reference. It seems to me that the (in any case somewhat arbitrary) attribution of focus movement properties to the wh-movement in MECs is a step away from understanding the MEC-PC affinity, not just because the wh-phrase in MECs corresponds to the empty operator in PCs, and it seems hopeless to argue that an empty operator moves for focus-related reasons.

If we zoom in onto the particularities of the operator movement in MECs and PCs, we find two more striking similarities. The first one is the unwillingness of the operator to undergo successive cyclic movement. For MECs, this was first observed by Šimík (2009), who used it as an argument against the operator-nature of the wh-phrase. For PCs, this was observed by Jones (1991). The relevant examples are given in (31).[17]

(31) a. *Nemám [$_{\text{MEC}}$ co$_1$ říct tvým rodičům [$_{\text{CP}}$ t$'_1$ že jsem
neg.have.1sg what tell.inf your parents that aux.pst.1sg
četl t$_1$]].
read
'There's nothing I could tell your parents that I read.'

[15]Numerical indices track movement chains and letter indices track reference chains.

[16]The distribution of PCs was first systematically characterized by Faraci (1974) and the distribution of MECs by Grosu (2004). Interestingly, Grosu was not aware of the affinity of MECs to PCs and still, his characterization of the distribution of MECs almost perfectly matches Faraci's characterization of PCs.

[17]In light of the overall evidence provided in this paper, I maintain that the apparent absence of successive cyclicity is not due to the absence of operator movement, but rather due to some independent conditions which are yet to be discovered.

b. *I bought it$_i$ [$_{\text{PC}}$ OP$_{1/i}$ to tell my parents [$_{\text{CP}}$ t$'_1$ that I'm reading t$_1$]].

The second similarity is the incapability of MECs and PCs to figure in syntactic operator-variable relationships. This phenomenon (for PCs observed already by Faraci 1974) is illustrated in (32) and (33). In both cases, both the MEC and the PC fail to serve as syntactic antecedents for variables—whether these are traces after topicalization (32), or other operator-variable chains in pseudoclefts (33).

(32) a. *[$_{\text{MEC}}$ Čím potěšit Marii]$_1$ bohužel nemám t$_1$.
what.instr please.inf Marie.acc unfortunately neg.have.1sg
'As for something to please Mary with, I have nothing, unfortunately.' (intended)
b. *[$_{\text{PC}}$ OP$_{1/i}$ To enjoy t$_1$ with dinner]$_2$ I brought this wine$_i$ t$_2$.

(33) a. *[$_{\text{MEC}}$ Čím potěšit Marii] je co jsem neměl.
what.instr please.inf Marie.acc is what aux.pst.1sg neg.had
'Something to please Mary with is what I didn't have.' (intended)
b. *[$_{\text{PC}}$ OP$_i$ To play with e$_i$] is why Mary bought it.

Even though this restriction is poorly understood, there is independent evidence suggesting that it has to do with the nature of the fronted operator. Consider the contrasts between (34a) and (34b), observed by Hantson (1984) and Clark (1985), cited here from Safir (1991). Despite the semantic similarity of the two examples, only (34b) is grammatical. What the examples in (34) have in common is that they both contain an empty category coreferent with a matrix argument, specifically the subject of the embedding verb. However, only in (34a) does the coreference relationship crucially involve A-bar fronting of an operator in the embedded clause.

(34) a. *?[OP$_{1/i}$ Working on e$_1$] is exactly what these proposals$_i$ merit.
b. [Some careful PRO$_i$ working through e$_i$] is what this idea$_i$ could use.

Whatever the ultimate explanation of the contrast in (34) is, the fact that both MECs and PCs pattern with (34a) suggests that they involve the same kind of reference-mediating mechanism, particularly an A-bar-operator-variable chain. This set of facts is welcome for the thesis of this paper for two reasons. First, it provides another argument in favor of an operator status of the wh-phrase in MECs. Second, it reinforces the relation between the operator-hood in MECs and PCs, supporting the idea that wh-phrases in MECs are simply wh-operators and not inherently focused phrases.

In summary, this section provided a variety of arguments in favor of two related claims: that wh-phrases in MECs are operators rather than indefinites and that the movement that they undergo is a "ordinary" wh-operator-movement rather than some other sort of movement, say focus movement.[18] Jointly, these two claims verify the

[18] An attentive reader may be wondering why some other standard diagnostics for wh-operator movement have not been included—weak cross-over effects (WCO), licensing of parasitic gaps (PGs),

second proposition of (5), namely that all MECs are XPs which dominate a wh-moved wh-phrase.

I now take the wh-CP conjecture, repeated below, to be falsified: There is no grammatical connection between wh-movement and the CP domain.

(35) *The wh-CP conjecture*
If an XP dominates a wh-moved wh-phrase, then the XP also (reflexively) dominates a CP.

In the next section, I will show how specific landing sites for wh-movement, including the traditional CP-site, can be derived in a system where wh-movement is not feature-driven.

4 Deriving the landing site of wh-movement

Let us go back to the initial observation in (4) for a while, repeated in (36). I have argued extensively that wh-movement need not target the CP, thanks to which the MEC in (36b) can be small enough to be transparent for the climbing of the clitic *ji* 'her' into the matrix clause.

(36) a. Bohužel jsem {* ji$_1$} nevěděl [$_{\text{IQ}}$ komu { ji$_1$} dát t$_1$].
unfortunately aux.pst.1sg her neg.knew who her give.inf
'Unfortunately I didn't know who I should give her to.'

b. Bohužel jsem { ji$_1$} neměl [$_{\text{MEC}}$ komu { ji$_1$} dát t$_1$].
unfortunately aux.pst.1sg her neg.had who her give.inf
'Unfortunately I didn't know who I should give her to.'

The question we face now is what forces the wh-phrase to move to CP in (36a) if movement to a lower projection is in principle allowed. The theory advocated in this paper, in which the culprit cannot be a formal wh-feature, is compatible with at least two hypotheses: (i) the CP requirement is imposed by the selecting verb, *nevěděl* 'neg.knew' in this case, or (ii) the CP requirement is imposed by some interface property. I will show that both (i) and (ii) can be true, depending on the type of construction and the verb it gets selected by.

The variability of the syntactic size of MECs falls out neatly if the MEC-selecting verbs which we discussed so far (basically the verb 'have', but the same holds for its impersonal version 'be') belong to the class of *optionally restructuring* verbs. According to recent work on restructuring (Wurmbrand 2001; Cardinaletti and Shlonsky 2004; Cinque 2006) such verbs can either be inserted under a lexical category, in which

or superiority effects. The answer is that none of these diagnostics can reasonably be applied in Slavic languages. WCO and superiority effects are generally absent or very weak in Slavic. PGs are only attested in Polish (cf. Bondaruk 1996, 2003; Dornisch 1998), however, my survey among Polish speakers revealed no telling pattern in the licensing of PGs in Polish MECs.

case they select for a syntactically full-blown argument—a CP in this case. Another option is for them to be inserted under a functional head within the extended projection of some lexical head, in which case they select for a syntactically truncated argument—e.g. a vP. An example of such a verb is the control predicate *zkusit* 'try' in Czech. It can either select for a full CP—capturing clitics within its embedded clause, as in (37a), or for a smaller syntactic structure—one which is transparent for clitic movement (say a TP), as in (37b).

(37) a. Karel zkusil [$_{\text{CP}}$ porazit **ho** v šachu].
Karel tried beat.inf him in chess
b. Karel **ho**$_1$ zkusil [$_{\text{TP}}$ porazit t_1 v šachu].
Karel him tried beat.inf in chess
'Karel tried to beat him in chess.'

Slavic languages are quite rich in optionally restructuring phenomena and it is therefore no big surprise that the MEC-selecting predicate under discussion—'have'—also falls into this class. Like many (optionally) restructuring verbs it has impoverished lexical traits, modal properties, it selects for infinitivals, and exhibits raising behavior. Combined with the non-feature-driven wh-movement, it follows that its wh-complements, i.e. MECs, can be of variable syntactic size, as shown clearly in section 3.1. It is also not surprising that MEC-selecting predicates which are more loaded with lexical semantics cannot behave as restructuring predicates (i.e. as functional heads, given the approach taken here). This is, for instance, the case of the Czech verb *hledat* 'look for'. The example in (38) illustrates that MECs selected by this predicate are not transparent for clitic climbing. This is expected: *hledat* is not a restructuring verb, therefore it must select for a full-blown CP, which clitics cannot escape.

(38) Karel {* **ji**} hledá [$_{\text{CP}}$ čím { **ji**} otevřít].
Karel it looks.for what.instr it open
'Karel is looking for something that he could open it with.'

In summary, the choice between vP- and CP-level MECs is governed by a factor completely independent of wh-movement, namely the (non-)restructuring nature of the selecting predicate.

I will now discuss the major wh-constructions one by one and provide an account of the type of wh-movement found in them. I first discuss wh-questions (section 4.1), then modal existential wh-constructions (section 4.2), and finally free and headed relative clauses (section 4.3). I close the section with a discussion of a notoriously problematic type of embedded wh-construction in Italian which strongly resembles embedded wh-questions, but at the same time is transparent for clitic climbing (section 4.4).

4.1 The target of wh-movement in questions

Let us now turn to infinitival wh-questions. Is clitic climbing out of the IQ in (36a) prohibited because the verb 'know' in Czech cannot be restructuring (just like *hledat* 'look for'), as a consequence of which it must select for full-blown CPs, or does an independent factor play a role? In order to find out, we need verbs which are (optionally) restructuring and at the same time capable of embedding infinitival wh-questions. If clitics can climb out of infinitival wh-questions embedded under such verbs, then we know that there is nothing that forces wh-movement to CP even in wh-questions. If, on the other hand, such wh-questions are not transparent for clitic climbing, then there must be an independent factor forcing infinitival wh-questions to be CPs.

The two hypotheses are put to test by the data in (39) through (41). The verbs used in these examples—*rozhodnout se* 'decide', *navrhnout* 'propose', and *doporučit* 'recommend', respectively—are optionally restructuring, as witnessed by the optionality of clitic climbing in the (a)-sentences. The crucial (b)-examples show in turn that when these verbs select for infinitival wh-questions, then these must be full CPs, as witnessed by the ungrammaticality of clitic climbing.

(39) a. Včera se { **ho**} rozhodl odkázat { **ho**} synovi.
yesterday refl it decided bequeath.inf it son.dat
'Yesterday he decided to bequeath it to his son.'

b. Včera se {* **ho**} rozhodl [$_{IQ}$ komu { **ho**} odkázat].
yesterday refl it decided who.dat it bequeath.inf
'Yesterday he decided to whom to bequeath it.'

(40) a. Marie { **ho**} navrhla představit { **ho**} nejdřív řediteli.
Marie him.acc proposed introduce.inf him.acc first director.dat
'Mary proposed to introduce him to the director first.'

b. Marie {* **ho**} navrhla [$_{IQ}$ komu { **ho**} představit nejdřív].
Marie him.acc proposed who.dat him.acc introduce.inf first
'Mary proposed to whom one should introduce him first.'

(41) a. Karel nám { **ho**} doporučil představit { **ho**} nejdřív řediteli.
Karel us.dat him.acc recommended introduce.inf him.acc first director.dat
'Karel gave us a recommendation to introduce him to the director first.'

b. Karel nám {* **ho**} doporučil [$_{IQ}$ komu { **ho**} představit nejdřív].
Karel us.dat him.acc recommended who.dat him.acc introduce.inf first
'Karel gave us a recommendation to whom we should introduce him first.'

Before we draw conclusions, we should reassure ourselves that there is no independent reason for the differential behavior of the predicates in the (a) and (b) cases. What the valid syllogism in (42) (adapted from Groenendijk and Stokhof's 1984 discussion of the predicate *know*) shows is that the semantics of the predicate 'decide' does not change depending on whether it selects a wh-question or not. The same holds for 'propose' and 'recommend'.

(42) a. He decided who to invite.
b. He will invite John (and nobody else).

---

c. He decided to invite John.

In sum, we have observed that wh-movement in infinitival questions embedded under optionally restructuring verbs must target the CP. This can be seen as a particularly strong confirmation of the traditional position according to which wh-phrases in questions must target the CP area. Now, we know that the size of the wh-question cannot be due to the obligatorily non-restructuring nature of the embedding predicate—the predicates above *are* (optionally) restructuring. Under the present theory, we cannot blame formal wh-features in the C-head, either, simply because there is no such thing as a formal wh-feature. So, what is it that forces wh-movement to target the CP area in wh-questions, be it in Czech or any other language?

The answer that I am going to offer is grounded in standard assumptions about the syntax and semantics of wh-questions. It is generally accepted that the meaning of a question corresponds to the set of propositions which are its possible or true answers (Hamblin 1973; Karttunen 1977, respectively), or to the unique proposition which corresponds to its exhaustive answer (Groenendijk and Stokhof 1984). The details need not concern us here, what is important is that question-semantics crucially relies on propositional semantics. And, as standardly assumed, semantic propositions correspond to syntactic CPs. This is the first step towards understanding why questions must be CPs.

Now we need to understand how the wh-phrase relates to question semantics. It turns out that the wh-phrase, or more precisely the variable it binds plays a crucial role in determining the denotation of the question in which it appears. Let us now assume that the denotation is a set of propositions—the set of answers. In order for this set not to be trivial (a set of identical propositions), each proposition in the set must be minimally different from any other proposition in the set. For instance, the question *Who came?* will only denote a non-trivial question if the set it denotes contains at least two non-identical propositions, e.g. *John came* and *Mary came.* This condition is only satisfied if the value of the variable bound by the wh-phrase (*who*) is set differently for each of the propositions in the set. The way this can be achieved is by letting the wh-phrase scope above the propositional variable. This derives the observed structural dependency between propositions and wh-phrases.

Now, all the pieces come together. The question operator must have direct access

to two things at the same time:[19] (i) a proposition (a CP at LF) and (ii) the variable along whose values the question-denotation is created. Both of these requirements can only be fulfilled if the wh-phrase moves and attaches to the proposition-denoting CP. Let us look at an example. (43) provides the LF of the question *Who did John see?*

(43) $[_{\text{QP}}$ Q $[_{\text{CP}}$ who$_1$ did $[_{\text{TP}}$ John $[_{\text{VP}}$ see t$_1$]]]]

This LF maps to the semantics in (44). For concreteness, I adopt the simple assumption that questions denote a set of *possible* answers (Hamblin 1973). The question operator, (44b), is defined in such a way that it takes the wh-clause ((44a), semantically a property) as its argument and returns the required set of propositions, (44c), where for each of the propositions in the set it holds that there is some human individual who John saw. Notice that the property in (44a) is derived by wh-movement (*who* corresponds to the syncategorematic λx). Since the property functions as the argument of Q and since Q applies at the propositional/CP level, it follows that wh-movement must also target the propositional/CP level.

(44) a. $[\![[_{\text{CP}}$ who$_1$ $[_{\text{TP}}$ John $[_{\text{VP}}$ see t$_1$]]]]$]\!] = \lambda x[\text{see}'(\text{john}, x) \wedge \text{human}'(x)]$

b. $[\![\text{Q}]\!] = \lambda P \lambda p \exists x[p = P(x)]$

c. $[\![[_{\text{QP}}$ Q $[_{\text{CP}}$ who$_1$ did $[_{\text{TP}}$ John $[_{\text{VP}}$ see t$_1$]]]]$]\!] = \lambda p \exists x[p = \text{see}'(\text{john}, x) \wedge \text{human}'(x)]$

In summary, we have derived the grammatical association between wh-movement in wh-questions and the syntactic CP area. This association does not follow from formal wh-features on the C head, but from the semantic theory of questions.

4.2 The target of wh-movement in MECs

Recall that MECs in some Slavic languages can but need not be CPs. As predicted by the present theory, the size of the MEC is derived from the nature of the embedding predicate: if the embedding predicate is restructuring, the MEC is a vP and wh-movement is "low"; if the embedding predicate is not restructuring, the MEC is a CP and wh-movement is "high". Let us now concentrate on the extra-ordinary case of vP-level MECs. What kind of semantic structure does a vP-level MEC correspond to? Does it make sense for the MEC-embedding predicate to select a semantic expression which corresponds to a vP rather than the whole CP? There are good reasons to believe that the answer to the latter question is in the affirmative. It seems natural to assume that the vP-complement of the MEC-embedding predicate characterizes a

[19] I would like to remind the reader that the present account can only be immediately applied to wh-movement languages. In wh-in-situ languages, there is either no direct access of the question operator to wh-phrases (in which case some other mechanism must be at play) or such access makes reference to intonation, as recently proposed by Richards (2010). See the introduction to this paper for discussion.

set of events—it is an event predicate. The evidence comes from the type of modality which MECs express, namely the circumstantial (root) kind of modality (as opposed to epistemic modality). It has been independently argued by Hacquard (2006, 2010) that root modality corresponds to quantification over events rather than worlds.[20] If the MEC-embedding verb is capable of spelling out the modal quantifier (and there is little reason to believe that it is not), then it makes sense for it to be generated at a level at which the event-variable contributed by the verbal predicate is still accessible—the vP level.

The embedding verb, however, expresses more than just a modal quantifier. It also expresses the existence/availability of some object and that object happens to correspond to the value assigned to the variable bound by the wh-phrase. Consider the simple example in (45). According to the assumptions just outlined, the MEC before the wh-movement takes place characterizes a set of reading-events, (46a). After the wh-movement—again corresponding simply to lambda-abstraction, this property of events is turned into a relation between individuals and events, in this particular case the relation between reading-events and the things being read in those events. The application of the matrix predicate *je* 'is' results in the statement that there is some object and there is some circumstantially accessible (i.e. possible) event such that it is a reading event and the existing object is the thing being read, see (46c).

(45) $[_{\text{VP1}}$ Je $[_{\text{VP2}}$ co$_1$ $[_{\text{VP3}}$ číst t$_1$]]].
is what read.inf
'Something is available to read.'

(46) a. $[\![[_{\text{VP3}}$ číst t$_1$]$]\!] = \lambda e[\text{read}'(e)(x)]$
b. $[\![[_{\text{VP2}}$ co $[_{\text{VP3}}$ číst t$_1$]]$]\!] = \lambda x \lambda e[\text{read}'(e)(x) \wedge \text{thing}'(x)]$
c. $[\![[_{\text{VP1}}$ je $[_{\text{VP2}}$ co $[_{\text{VP3}}$ číst t$_1$]]]$]\!] = \exists x \exists e[C(e) \wedge \text{read}'(e)(x) \wedge \text{thing}'(x)]$

How exactly the identical semantics is preserved if the MEC is built at the CP level is not a trivial issue. However, the issue does not only concern MECs: it is a general problem of all cases of optional restructuring, where the semantics remains constant despite the variable syntax (for example, the modal verb 'want' is always interpreted as a root modal, irrespective of whether its complement—the quantificational nucleus—is a CP or a vP). For now, I have to set this issue aside.

4.3 The target of wh-movement in relatives

Let us first discuss free relative clauses. It is well-known that free relatives are based on full CPs.[21] As in the case of wh-questions, the present theory does not allow

[20] The two types of quantification can still be brought under a single umbrella if one adopts situation semantics (e.g. Kratzer 1989), in which worlds correspond to maximal situations and events to minimal situations (see also Kratzer 2008 for discussion).

[21] In fact, the requirement is even stronger—free relatives must always be *finite*. There is no clear solution to this problem, though see Šimík (2010) for a recent view.

any reference to formal wh-features in the C-domain. Instead, it is the wh-clause-selecting material which is to be held responsible for the size of the wh-clause. The standard theory of the syntax-semantics interface of free relatives has it that they are CPs selected by a definite D-head (see Caponigro 2003 for discussion and references). The prediction of the present approach is that this D-head has its fixed place in the functional hierarchy of the clause and this place happens to be above the CP. In other words, just like in the case of wh-questions, free relatives must apparently be built upon propositions, or, more precisely properties derived from propositions by wh-movement. An analysis along these lines is given in (47) and (48).

(47) I ate $[_{\text{DP}}$ D $[_{\text{CP}}$ what $[_{\text{TP}}$ Mary cooked]]].

(48) a. $[\![[_{\text{CP}}$ what $[_{\text{TP}}$ Mary cooked]]]$\!] = \lambda x[\text{cooked}'(\text{m}, x)]$
b. $[\![[_{\text{DP}}$ D $[_{\text{CP}}$ what $[_{\text{TP}}$ Mary cooked]]]]$\!] = \iota x[\text{cooked}'(\text{m}, x)]$
c. $[\![\text{I ate } [_{\text{DP}}$ D $[_{\text{CP}}$ what $[_{\text{TP}}$ Mary cooked]]]]$\!] = \text{ate}'(\text{I}, \iota x[\text{cooked}'(\text{m}, x)])$

While I see how the required property is compatible with the semantics of the definite D-head, I do not quite see why it should be enforced by the grammar. Nevertheless, what seems to me to favor the present approach over the traditional one (the one based on wh-features) is that being structurally "large" appears to be a common trait of all definite DPs, irrespective of whether they contain a wh-operator-variable relationship or not. Hence, the CP-hood of free relatives is just an epiphenomenon derived from the relatively high position of the definite D-head within the functional sequence.

The issue of headed relative clauses is the most murky one.[22] All I have to offer for now is a number of speculations and predictions. Forming headed relatives by means of wh-movement is typologically relatively rare (see de Vries 2002, 2005 for an overview). Yet, in those languages where this strategy is used, headed relatives appear to be full CPs.[23] The standard syntax-semantics of headed relatives (going back to Partee 1973; Bach and Cooper 1978) postulates that headed relatives are operator-introduced clauses which combine directly with the head NP by the rule of predicate modification (to use the terminology of Heim and Kratzer 1998). The prediction of the present approach is that the material which selects the relative must somehow be blamed for the wh-clause's CP-hood. This seems highly unlikely under the standard analysis: I do not see a reason why an NP category should be assigned some particular position in the functional sequence of clauses. On the face of it, the predictions of the present theory of wh-movement clearly favor the so-called D-complement analysis of relative clauses (e.g. Carlson 1977; Kayne 1994), in which the relative clause is directly selected by some functional head—presumably some sort of a D-head, rather than being adjoined to an NP. It would, then, be this functional

[22] I would like to thank Eefje Boef for a helpful discussion on this matter.

[23] See Chung and McCloskey (1983) for evidence which could be interpreted in such a way that CP-hood of headed relatives is not always required in English.

head which places the requirement on the size of the relative CP. Under such an analysis, the relative NP head is either base-generated within the relative clause (so called raising analysis; cf. Vergnaud 1974; Kayne 1994; Bianchi 1999) or as a specifier of a separate functional projection in the left periphery of the relative clause. If the latter is true, the putative functional selector of headed relatives, call it X, can be construed as function from a pair of properties to their intersection, where the first property is provided by the relative CP (X's syntactic complement) and the second one by the head NP (X's specifier). An analysis along these lines is provided in (49) and (50).

(49) $[_{\text{XP}}$ man X $[_{\text{CP}}$ who Mary saw]]

(50) a. $[\![[_{\text{CP}}$ who Mary saw]$]\!] = \lambda x[\text{saw}'(\text{mary}, x)]$
b. $[\![\text{X}]\!] = \lambda P \lambda Q \lambda x[P(x) \wedge Q(x)]$
c. $[\![[_{\text{XP}}$ man X $[_{\text{CP}}$ who Mary saw]]$]\!] = \lambda x[\text{saw}'(\text{mary}, x) \wedge \text{man}'(x)]$

In summary, I hope to have shown that also relative clauses can be accommodated to the present theory, under which the target of wh-movement cannot be determined directly by formal features. In the case of free relatives, the account may turn out to be less stipulative than the traditional one (definite D-heads are structurally high irrespective of there being wh-movement in their complement). In the case of headed relatives, the analysis sheds some fresh light on a traditional issue in the syntax of headed relatives (the NP-CP vs. D-CP debate).

4.4 Apparent embedded infinitival wh-questions in Italian

Italian exhibits a phenomenon that presents an apparent problem for the present approach but which on a closer inspection provides evidence in its favor. Radford (1976) and Rizzi (1978) observed that under certain conditions Italian clitics can optionally climb out of embedded questions. An example of this is in (51): the clitic *ti* 'you', thematically an argument of the embedded predicate *dire* 'tell', can either cliticize on the embedded verb, giving rise to the form *dirti* 'tell you', as in (51a), or it can climb and cliticize on the matrix predicate, yielding *ti saprei,* as in (51b).

(51) a. Su questo punto, non saprei che dir**ti**.
on this point neg know.sbj what tell.inf.you.cl
b. Su questo punto, non **ti** saprei che dire.
on this point neg you.cl know.sbj what tell.inf
'On this point, I wouldn't know what to tell you.' *(adapted from Rizzi 1982:36)*

If we are to remain consistent with our premises about restructuring, the observation in (51b) forces us to make the following assumptions: (i) wh-movement in Italian need not target a CP, (ii) question-embedding predicates in Italian can be restructuring

predicates, and (iii) embedded questions in Italian need not be CPs. I will discuss these assumptions one by one and will conclude that (iii) must be abandoned, in line with what I have argued so far.

Unlike in most previous approaches, the first assumption is perfectly coherent under the present theory of wh-movement: Wh-movement is free, not feature driven, and hence can target any syntactic projection. (51b) therefore does not force me to say that restructuring can "cross" a CP boundary—an idea defended (also because of (51b)) e.g. by Kayne (1989) and Roberts (1997).

The second assumption is also not problematic—there is nothing in the theory which would prohibit the combination of the two properties—restructuring and question embedding—to occur within a single predicate. In fact, in section 4.1 I showed that Czech possesses some such predicates, e.g. *rozhodnout* 'decide'.

It is the third assumption that leads to problems. So far, I have assumed that questions are universally based upon propositions, which in turn correspond to fully blown sentential structures (CPs). This is modeled by postulating a functional Q-head which has its fixed position in the CP domain of clauses and which maps to a question meaning-producing operator in semantics. If the Q-head can attach at a level lower than CP—which the Italian data seem to force us to say—it is a significant weakening of the present position. Suddenly, it becomes a mystery why restructuring question-embedding verbs in Czech (see section 4.1) cannot embed vP-level questions.

Let us take a step back, dismiss the assumption (iii), and consider what the present approach predicts when it comes to data like (51b). The prediction is that (51b) is not an embedded question at all: the clitic climbs out, hence the structure must be smaller than a CP, hence the structure cannot be selected by the Q-head, hence the structure cannot be assigned question semantics. Cinque (2006) argues that the prediction is in fact correct. He claims that the truth conditions of (51b) are identical to the truth-conditions of (52a) rather than (52b).

(52) a. Non ti saprei dire niente.
neg you.cl know.sbj tell.inf anything.nci
'I wouldn't be able to tell you anything.'

b. 'Assuming that there is something that I should tell you, it's not true that me having to tell you that would be entailed by what I know.'

In (52a), the predicate *saprei* 'would know' (literally) is not construed as a predicate of epistemic necessity but rather as a predicate which characterizes a "mental ability" (Cinque *ibid*) of the predicate's subject to perform the event expressed by the predicate's complement. Thus, just like MEC-embedding predicates, also this mutation of the predicate 'know' embeds event descriptions rather than propositions and that in turn translates to the possibility to express the event description by a structure which is smaller than CP.[24]

[24]Notice that nothing says that it is *necessary* that the structure be smaller than CP. As pointed out at the end of section 4.2, event descriptions are more flexible in terms of their syntactic expression

The question remains why in some cases narrow scope existential quantifiers (such as *niente* 'anything.nci' in (52a)) embedded under the mental ability predicate 'know' can take the form of a fronted wh-phrase. The prediction is that in these cases the predicate 'know' requires direct access to the variable bound by the wh-phrase. At this point, I do not have enough information to evaluate the correctness of the prediction. The Italian interrogative-like construction in question has unfortunately never become the center of researchers' attention. The reader is invited to consult Cinque (2006) and the references cited therein.

Before concluding this section, let me point out that the general prediction of the present theory of free wh-movement is that more instances of wh-movement to projections other than CP should be attested. The recent work of Pancheva (2010) and Pancheva and Tomaszewicz (2011) on Slavic comparatives might well be a case in point: the authors argue that some Slavic comparative clauses must be formed by (wh) operator movement to the vP level rather than to the CP level. I leave an assessment of their findings to another occasion.

5 Conclusion

I argued for the elimination of formal wh-features from the grammatical system. I take such an elimination to be desirable, given the general tenets of the minimalist program, as the existence of wh-features (or corresponding wh-projections) has always been motivated solely by descriptive adequacy. In a system without formal wh-features, criterial wh-movement is syntactically untriggered—it is a free operation. The ultimate motivation for wh-movement is semantic: the movement of wh-phrases corresponds to extracting the information about the wh-bound variable to a higher structural level. The main predictions of the theory are that wh-movement can target a much broader range of syntactic projections than typically assumed and that the landing site is fully derivable from the properties of the head or predicate which selects the wh-clause. Evidence supporting the former claim comes from the empirical domain of modal existential wh-constructions. The latter claim is supported by all the major types of wh-constructions—wh-questions, modal existential wh-constructions, and to some extent relative clauses.

References

Bach, Emmon, and Robin Cooper. 1978. The NP-S analysis of relative clauses and compositional semantics. *Linguistics and Philosophy* 2:145–150.

than propositions. This is why the truth-conditions do not necessarily change when no clitic climbing occurs.

Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14:1–56.

Bianchi, Valentina. 1999. *Consequences of antisymmetry: Headed relative clauses*. New York: Mouton de Gruyter.

Bondaruk, Anna. 1996. On parasitic gaps in Polish. *Papers and studies in contrastive linguistics* 31:111–125.

Bondaruk, Anna. 2003. Parasitic gaps and ATB in Polish. *Journal of Slavic Linguistics* 11:221–249.

Bošković, Željko. 2002. On multiple wh-fronting. *Linguistic Inquiry* 34:351–383.

Bošković, Željko. 2008. On two types of negative constituents and negative concord. In *Studies in formal Slavic linguistics: Contributions from Formal Description of Slavic Languages (FDSL) 6.5*, ed. Franc Marušič and Rok Žaucer, 9–35. Frankfurt am Main: Peter Lang.

Bródy, Michael. 1995. Focus and checking theory. In *Approaches to Hungarian 5: Levels and structures*, ed. István Kenesei, 31–43. Szeged: JATEPress.

Caponigro, Ivano. 2003. Free not to ask: On the semantics of free relatives and wh-words cross-linguistically. Doctoral Dissertation, University of California, Los Angeles.

Cardinaletti, Anna, and Ur Shlonsky. 2004. Clitic positions and restructuring in Italian. *Linguistic Inquiry* 35:519–557.

Carlson, Greg N. 1977. Amount relatives. *Language* 53:520–542.

Ceplová, Markéta. 2007. Infinitives under 'have'/'be' in Czech. In *Czech in generative grammar*, ed. Mojmír Dočekal, Petr Karlík, and Jana Zmrzlíková, 31–45. München: LINCOM.

Chomsky, Noam. 2001. *Beyond explanatory adequacy [MIT Occasional Papers in Linguistics 20]*. Cambridge, MA: MITWPL.

Chomsky, Noam. forthcoming. Problems of projection. *Lingua* .

Chung, Sandra, and James McCloskey. 1983. On the interpretation of certain island facts in GPSG. *Linguistic Inquiry* 14:704–713.

Cinque, Guglielmo. 2006. "Restructuring" and functional structures. In *Restructuring and functional heads: The cartography of syntactic structures, Volume 4*, 11–63. Oxford: Oxford University Press.

Citko, Barbara. 1998. On multiple wh-movement in Slavic. In *Formal Approaches to Slavic Linguistics 6: The Connecticut Meeting 1997*, ed. Željko Bošković, Steven Franks, and William Snyder, 97–114. Ann Arbor, MI: Michigan Slavic Publications.

Clark, Robin. 1985. Boundaries and the treatment of control. Doctoral Dissertation, University of California, Los Angeles.

van Craenenbroeck, Jeroen, and Anikó Lipták. 2006. The crosslinguistic syntax of sluicing: Evidence from Hungarian relatives. *Syntax* 9:248–274.

van Craenenbroeck, Jeroen, and Anikó Lipták. 2009. What sluicing can do, what it can't and in which language: On the cross-linguistic syntax of ellipsis. Manuscript, Catholic University Brussels and University of Leiden.

Dornisch, Ewa. 1998. Multiple wh-questions in Polish: The interactions between wh-phrases and clitics. Doctoral Dissertation, Cornell University, Ithaca, NY.

Dotlačil, Jakub. 2004. The syntax of infinitives in Czech. Master's thesis, University of Tromsø.

Fanselow, Gisbert, and Denisa Lenertová. 2011. Left peripheral focus: Mismatches between syntax and information structure. *Natural Language & Linguistic Theory* 29:169–209.

Faraci, Robert A. 1974. Aspects of the grammar of infinitives and *for*-phrases. Doctoral Dissertation, MIT, Cambridge, MA.

Garde, Paul. 1976. Analyse de la tournure russe *mne nečego delat'*. *International Journal of Slavic Linguistics and Poetics* 22:43–60.

Gärtner, Hans-Martin. 2009. More on the indefinite-interrogative affinity: The view from embedded non-finite interrogatives. *Linguistic Typology* 13:1–37.

Groenendijk, Jeroen, and Martin Stokhof. 1984. Studies on the semantics of questions and the pragmatics of answers. Doctoral Dissertation, University of Amsterdam.

Grosu, Alexander. 1987. Pied-piping and the matching parameter. *The Linguistic Review* 6:41–58.

Grosu, Alexander. 2004. The syntax-semantics of modal existential wh constructions. In *Balkan syntax and semantics*, ed. Olga Mišeska Tomić, 405–438. Amsterdam: John Benjamins.

Hacquard, Valentine. 2006. Aspects of modality. Doctoral Dissertation, MIT, Cambridge, MA.

Hacquard, Valentine. 2010. On the event relativity of modal auxiliaries. *Natural Language Semantics* 18:79–114.

Hagstrom, Paul. 1998. Decomposing questions. Doctoral Dissertation, MIT, Cambridge, MA.

Hamblin, Charles L. 1973. Questions in Montague English. *Foundations of Language* 10:41–53.

Hantson, André. 1984. Towards an analysis of retroactive gerunds. In *Sentential complementation*, ed. Wim de Geest and Yvan Putseys, 95–103. Dordrecht: Foris.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.

Hladnik, Marko, and Coppe van Urk. 2009. Wh-indefinites and indefinite series across languages. Course paper, Utrecht University.

Horváth, Júlia. 1986. *Focus in the theory of grammar and the syntax of Hungarian*. Dordrecht: Foris.

Horváth, Júlia. 2010. Discourse features, syntactic displacement, and the status of contrast. *Lingua* 120:1346–1369.

Izvorski, Roumyana. 1998. Non-indicative wh-complements of possessive and existential predicates. In *NELS 28: Proceedings of the 28th Annual Meeting of the North East Linguistic Society*, ed. Pius N. Tamanji and Kiyomi Kusumoto, 159–173.

Jones, Charles. 1991. *Purpose clauses: Syntax, thematics, and semantics of English purpose constructions*. Dordrecht: Kluwer.

Karttunen, Lauri. 1977. The syntax and semantics of questions. *Linguistics and Philosophy* 1:3–44.

Kayne, Richard S. 1989. Null subjects and clitic climbing. In *The null subject parameter*, ed. Osvaldo Jaeggli and Ken Safir, 239–261. Dordrecht: Kluwer.

Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.

Kratzer, Angelika. 1989. An investigation of the lumps of thought. *Linguistics and Philosophy* 12:607–653.

Kratzer, Angelika. 2008. Situations in natural language semantics. In *The Stanford encyclopedia of philosophy*, ed. Edward N. Zalta. URL `http://plato.stanford.edu/`.

Kratzer, Angelika, and Junko Shimoyama. 2002. Indeterminate pronouns: The view from Japanese. In *Proceedings of the Third Tokyo Conference on Psycholinguistics*, ed. Yukio Otsu, 1–25. Tokyo: Hituzi Syobo.

Kučerová, Ivona. 2007. The syntax of givenness. Doctoral Dissertation, MIT, Cambridge, MA.

Lasnik, Howard. 1999. On feature strength: Three minimalist approaches to overt movement. *Linguistic Inquiry* 30:197–217.

Lenertová, Denisa. 2004. Czech pronominal clitics. *Journal of Slavic Linguistics* 12:135–171.

Lipták, Anikó. 2001. On the syntax of wh-items in Hungarian. Doctoral Dissertation, University of Leiden.

Lipták, Anikó. 2003. Hungarian modal existential wh-constructions. Manuscript, University of Leiden.

López, Luis. 2009. *A derivational syntax for information structures*. Oxford: Oxford University Press.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Neeleman, Ad, and Hans van de Koot. 2008. Dutch scrambling and the nature of discourse templates. *The Journal of Comparative Germanic Linguistics* 11:137–189.

Pancheva, Roumyana. 2010. More students attended FASL than ConSOLE. In *Formal Approaches to Slavic Linguistics 18: The Cornell Meeting 2009*, ed. Wayles Browne, Adam Cooper, Alison Fisher, Esra Kesici, Nikola Predolac, and Draga Zec, 382–399. Ann Arbor, MI: Michigan Slavic Publications.

Pancheva, Roumyana, and Barbara Tomaszewicz. 2011. Experimental evidence for the syntax of phrasal comparatives in Polish. In *University of Pennsylvania Working Papers in Linguistics 17: Selected papers from PLC 34*, ed. Lauren Friedman. Philadelphia, PA: Penn Linguistics Club. URL `http://repository.upenn.edu/pwpl/vol17/iss1/21`.

Partee, Barbara. 1973. Some transformational extensions of Montague grammar. *Journal of Philosophical Logic* 2:509–534.

Pesetsky, David. 1982. Paths and categories. Doctoral Dissertation, MIT, Cambridge, MA.

Pesetsky, David. 1987. Wh-in-situ: Movement and unselective binding. In *The representation of (in)definiteness*, ed. Eric Reuland and Alice ter Meulen, 98–129. Cambridge, MA: MIT Press.

Progovac, Ljiljana. 2005. *A syntax of Serbian: Clausal architecture*. Bloomington, IN: Slavica Publishers.

Radford, Andrew. 1976. Constraints on clitic promotion in Italian. Manuscript, Oxford University.

Ramchand, Gillian. 1996. Questions, polarity, and alternative semantics. Manuscript, Oxford University.

Reinhart, Tanya. 1998. Wh-in-situ in the framework of the minimalist program. *Natural Language Semantics* 6:29–56.

Richards, Norvin. 2010. *Uttering trees*. Cambridge, MA: MIT Press.

Rizzi, Luigi. 1978. A restructuring rule in Italian syntax. In *Recent transformational studies in European languages*, ed. Samuel J. Keyser, 113–158. Cambridge, MA: MIT Press.

Rizzi, Luigi. 1982. *Issues in Italian syntax*. Dordrecht: Foris.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar: A handbook of generative syntax*, ed. Liliane Haegeman, 281–337. Dordrecht: Kluwer.

Rizzi, Luigi. 2001. On the position of "int(errogative)" in the left periphery of the clause. In *Current studies in Italian syntax: Essays offered to Lorenzo Renzi*, ed. Guglielmo Cinque and Giampaolo Salvi, 267–296. Oxford: Elsevier North-Holland.

Roberts, Ian. 1997. Restructuring, head movement, and locality. *Linguistic Inquiry* 28:423–460.

Safir, Ken. 1991. Evaluative predicates and the representation of implicit arguments. In *Principles and parameters in comparative grammar*, ed. Robert Freidin, 99–131. Cambridge, MA: MIT Press.

Šimík, Radek. 2009. Hamblin pronouns in modal existential wh-constructions. In *Formal Approaches to Slavic Linguistics 17: The Yale Meeting 2008*, ed. Maria Babyonyshev, Daria Kavitskaya, and Jodi Reich, 187–202. Ann Arbor, MI: Michigan Slavic Publications.

Šimík, Radek. 2010. Free relatives at the interface. In *Structure preserved: Studies in syntax for Jan Koster*, ed. Jan-Wouter Zwart and Mark de Vries, 321–328. Amsterdam: John Benjamins.

Šimík, Radek. 2011. Modal existential wh-constructions. Doctoral Dissertation, University of Groningen [Published in LOT dissertation series]. URL `http://www.lotpublications.nl/index3.html`.

Stepanov, Arthur. 1998. On wh-fronting in Russian. In *NELS 28: Proceedings of the 28th Annual Meeting of the North East Linguistic Society*, ed. Pius Tamayi and Kiyomi Kusumoto, 453–467. Amherst, MA: GLSA Publications.

Surányi, Balázs. 2005. Indefinite wh-pronouns and the modal existential wh-constructions in Hungarian. Abstract from the 7th International Conference on the Structure of Hungarian (ICSH7), Veszprém, Hungary, May 2005.

Toman, Jindřich. 1999. On clitic displacement. In *Topics in South Slavic syntax and semantics*, ed. Mila Dimitrova-Vulchanova and Lars Hellan, 205–228. Amsterdam: John Benjamins.

Vergnaud, Jean-Roger. 1974. *French relative clauses*. Cambridge, MA: MIT Press.

de Vries, Mark. 2002. The syntax of relativization. Doctoral Dissertation, University of Amsterdam [Published in LOT dissertation series]. URL `http://www.lotpublications.nl/index3.html`.

de Vries, Mark. 2005. The fall and rise of universals on relativization. *Journal of Universal Language* 6:1–33.

Wurmbrand, Susi. 2001. *Infinitives: Restructuring and clause structure*. Berlin: Mouton de Gruyter.

Zubatý, Josef. 1922. Mám co dělati. *Naše řeč* 6:65–71.