

Modal existential wh-constructions

Published by

LOT

Trans 10

3512 JK Utrecht

The Netherlands

phone: +31 30 253 6006

fax: +31 30 253 6406

e-mail: lot@uu.nl

<http://www.lotschool.nl/>

Cover illustration: *Pieta za Pieta* by Jiří Neděla

ISBN: 978-94-6093-050-8

NUR: 616

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RIJKSUNIVERSITEIT GRONINGEN

Modal existential wh-constructions

Proefschrift

ter verkrijging van het doctoraat in de
Letteren
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
donderdag 10 februari 2011
om 13.15 uur

door

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geboren 12 januari 1982
te Kyjov, Tsjechoslowakije

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To my family

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Acknowledgements

I greatly appreciate the opportunity to spend four wonderful years at the Center for Language and Cognition in Groningen and to be able to work on this thesis (besides other things) among such open-minded and creative individuals. First and foremost, I want to express acknowledgements to my “daily” supervisor and co-promotor, Mark de Vries. Mark was a source of inspiration for my own work even before I came to Groningen and he remains so to this day. He was an exemplary supervisor in that he never hesitated to read my manuscripts or listen to my fresh thoughts and give quick and useful feedback, whenever possible. His interest in fundamental questions of syntactic structure building has functioned as an anchor in my gradual drift from syntax to semantics and helped me not to forget about the significance of the former. Jan Koster, my promotor, was very helpful especially during the time of writing up. He managed to stay calm and supportive even when I decided to suddenly change the topic of the thesis, less than a year before the planned submission. I feel privileged that I could get acquainted with Jan’s recent work first-hand, and learn more about his unconventional views of syntax and philosophy of language. Jan-Wouter Zwart, though without an official label related to my PhD, completes the triangle of senior institute members that were the most important to me. Not only did he provide me with valuable feedback on various issues I was interested in and supplied me with any article or book that happened to be absent from the university library, he also taught me to look at the development and competition of linguistic (and generally scientific) theories through different, less positivist eyes. Before I start the second paragraph, I would like to express my thanks to my dissertation committee—Rajesh Bhatt, Jack Hoeksema, and Anna Szabolcsi—for reading and approving of my dissertation. To Anna, I am grateful for posing a number of important and challenging questions.

Most of my time in Groningen I shared an office with Aysa Arylova and Zhenya Markovskaya. Our friendship has gone well beyond the walls of the faculty building and words can hardly express everything that I’d like to thank

them for. Their very presence contributed to my feeling happy and content in Groningen. Our friendship grew even more after Zhenya's daughter Sasha was born. It has been a pleasure seeing her grow up! In terms of our office life, I'm really grateful for their readiness to discuss both theory and (Russian) data. Especially appreciated is Aysa's extensive help with the thesis, without which some parts would be much less adequate than they presently are. For two years, we were lucky to share the office with Jordi Fortuny, who took part in much what we did. My very first office mates were Janneke ter Beek and Liefke Reitsma. They introduced me to everyday faculty life and had the patience to cope with my first steps in the Dutch language. I was very close to Marlies van Bloois-Kluck and Herman Heringa, also students of Mark, whose PhD time in Groningen almost perfectly overlapped with mine. We shared a lot of experience, linguistic and non-linguistic, and I'm grateful for everything I learned from them.

The largely individualistic linguistic life in Groningen was spiced up by CLCG colloquia, for a while by our small syntax-semantics reading group, and especially by regular meetings of the syntax-semantics research group. Besides all the above-mentioned people, I'd like to use this opportunity to thank everybody else who was involved in these events and shared their ideas, particularly Ankelien Schippers, Jack Hoeksema, Bart Hollebrandse, Reineke Bok-Bennema, Brigitte Kampers-Manhe, Angeliek van Hout, Çağrı Çöltekin, Anja Lobanova, Petra Hendriks, Peter de Swart, Vincenzo Tabacco, and Seid Tvica. Special thanks go to Markus Egg, who helped me a good deal with formal semantics problems, and John Nerbonne, the director of CLCG, who is not only a versatile linguist, but also a great manager. In this context, I would also like to thank to Wyke van der Meer, the PhD coordinator, who made my life at CLCG so much easier by taking over the burden of the omnipresent administrative formality. There are many others, who made the CLCG a pleasant working and social environment, too many to name them without forgetting anybody.

Much of what I learned during my PhD stems from what I see as my two other, though temporary or occasional academic homes—University of Amsterdam and University of Massachusetts. I first contacted Maria Aloni from the ILLC in Amsterdam at the beginning of my third year. I was given a chance to contribute with a small bit to her project about the semantics of indefinites and received so much more in return. The time that Maria devoted to my own work gave me a real push in the understanding of formal semantics and through her I discovered the beauty and strength of the neo-Gricean logical approach to natural language. I would also like to thank to other members of Maria's project, namely Angelika Port, Katrin Schulz, Ana Aguilar-Guevara, Hedde Zeijlstra, and Machteld de Vos.

I spent the second semester of my third year at the University of Massachusetts. My biggest thanks definitely go to Rajesh Bhatt, whose initial role of a "sponsor" eventually grew into much more—a landlord, a teacher, a collaborator, and a friend. I learned a lot from Rajesh, both on a personal and

professional level. Through our little joint project, he taught me to look at one empirical issue from various theoretical perspectives and inspired me by his respect for inter-speaker variation in grammaticality judgements. A number of other UMass faculty members played a crucial role for me. Seth Cable is one of the best and efficient teachers I've had. The amount of material he managed to teach us in a single semester, while making us actively think about everything, was dazzling for me. Without him the technical parts of this thesis could hardly be written. Angelika Kratzer and Lisa Selkirk gave me the pleasure of witnessing top contemporary research in progress. I could hardly get a better introduction into the complex issues at the information structure interfaces. It is also thanks to them that I have a job now. Lyn Frazier impressed me by her quick understanding of whatever I was trying to discuss with her. In fact, she often understood it better than me and thus helped me greatly to organize my own thoughts. Many others were willing to listen to my ideas and give valuable feedback, including Kyle Johnson, Tom Roeper, Chris Potts, Gillian Ramchand (the syntax guru of that semester), Amy Rose Deal, Noah Constant, Aynat Rubinstein, and Jan Anderssen. All in all, the UMass linguistics department was an incredibly welcoming environment and besides the above-mentioned, my thanks go to everybody with whom I participated in the many academic and social events.

In the last weeks of my UMass stay, I had a chance to collaborate with Natalia Kondrashova. I met Natalia at FASL 17 at Yale, where we first had the idea to work together on modal existential wh-constructions, the topic of the present thesis. Working with Natalia was extremely valuable to me and made me believe that the most exciting findings are achieved by intensive confrontation of ideas. Our collaboration culminated in a NELS proceedings paper and, though the story has changed a lot since then, there's a sense in which it laid the foundations for this dissertation.

Very special thanks go to Alexander Grosu—the true godfather of modal existential wh-constructions. He has been interested in my work on MECs from the very start, read enthusiastically everything that I wrote about them, and never hesitated to engage in long email discussions. He's to be thanked for a number of important observations and generalizations on which this thesis is based. Besides Alex, there have been a number of people who read some of my previous papers or parts of the thesis manuscript. They are Ljudmila Geist, Boban Arsenijević, Jakub Dotlačil, and Anikó Lipták, and their feedback is greatly appreciated. Let me also thank Alexis Dimitriadis at this point, for his priceless help with L^AT_EX.

The four years of PhD studies could never be quite as much fun as they were without the many conferences, workshops, winter, and summer schools, esp. the LOT, EGG, and ESSLLI. In many respects, they made for ideal vacation times. I would like to thank the following exceptionally inspiring teachers: Klaus Abels, Hagit Borer, Gennaro Chierchia, Jeroen van Craenenbroeck, Richard Larson, Jeff Lidz, Alice ter Meulen, Orin Percus, Colin Phillips, Tobias Scheer, Michal

Starke, Edwin Williams, and Yoad Winter; linguist friends and colleagues who joined in discussions and emptying many a beer glass: Lobke Aelbrecht, Pranav Anand, Svitlana Antonyuk-Yudina, Boban Arsenijević, Gemma Barberà, Marijke de Belder, Natalie Boll-Avetisyan, Željko Bošković, Bert Le Bruyn, Adriana Cardoso, Anna Chernilovskaya, Kostadin Cholakov, Karen de Clerq, Camelia Constantinescu, Miloje Despić, Luca Ducceschi, Mitcho Erlewine, Urtzi Etxeberria, Gaetano Fiorin, Cooper Francis, Berit Gehrke, Ljudmila Geist, Anastasia Giannakidou, Bettina Gruber, Hana Gruet-Škrábalová, Sander van der Harst, Jutta Hartmann, Vera Hegedűs, Marko Hladnik, Hadil Karawani, Olaf Koeneman, Marjo van Koppen, Gideon Kotzé, Tom Lentz, Qiong-Peng Autaman Luo, Lanko Marušič, Louise McNally, Paula Menéndez-Benito, Krzysztof Migdalski, Nataša Milićević, Rick Nouwen, Marc Novel, Roumyana Pancheva, Andreas Pankau, Denis Paperno, Craig Roberts, Catherine Rudin, Kees de Schepper, Marieke Schouwstra, Rasmus Steinkrauss, Luka Szucsich, Tarald Taraldsen, Robert Truswell, Christina Unger, Jenneke van der Wal, Martin Walkow, Bartosz Wiland, Arjen Zondervan, and Rok Žaucer.

Diving deeper into “history”, I’d like to thank to everybody who helped me on the way towards my PhD. Back then in Olomouc, Lída Veselovská, Joe Emonds, Šárka Šimáčková, Petr Karlík, and Pavel Caha were the first ones to show me the beauty of formal linguistics. Especially Pavel, who by the way made me aware of the open positions in Groningen, continues to be a great source of linguistic inspiration. Then there are a number of young Czech linguist friends who I’ve known from the very beginning and who I’ve stayed in touch until now. I’m grateful for their participation in making the Czech linguistics a better scientific field to be in: Petr Biskup, Radek Čech, Mojmír Dočekal, Linda Doleží, Věra Dvořák, Jan Chromý, Eva Lehečková, Jiří Matela, Lucie Medová, Jonáš Podlipský, Káča Součková, Jana Šindlerová, and Markéta Ziková. Special thanks go to Jakub Dotlačil, who was my main Czech linguist-companion in the Netherlands and who helped me a lot with some parts of the thesis, by reading them carefully and giving me useful feedback. Besides the Czech Republic, I had the opportunity to study in Germany—a semester in Potsdam and another one in Leipzig. The teachers and colleagues there included Joanna Błaszczak, Gisbert Fanselow, Peter Kosta, Jens Frasek, Artur Stepanov, Tue Trinh, Gereon Müller, and Fabian Heck.

Making a leap into the future, I recently landed back in Germany, once again in the Potsdam-Berlin area. Though I’ve come here only recently, I already got a lot of useful feedback on the material presented in this book. Some comments already found their way into the thesis, others will help me in its future elaboration. I am grateful to Gisbert Fanselow, Luis Vicente, Beste Kamali, Malte Zimmermann, Joanna Błaszczak, Craig Thiersch, Lena Karvovskaya, Olga Kellert, Barbara Stiebels, Manfred Krifka, Hans-Martin Gärtner, Manfred Bierwisch, and Kerstin Schwabe.

Writing the dissertation would be absolutely impossible without the help of my informants. Many of them have been mentioned above, but they deserve

to be singled out in this context, as they were willing to lend their minds to often time-consuming fieldwork. *Basque*: Urtzi Etxeberria *Bulgarian*: Kostadin Cholakov, Diana Dimitrova, Milka Dimitrova, Roumyana Pancheva; *Catalan*: Jordi Fortuny; *Czech*: Eva Magnusková, Jakub Dotlačil; *English*: Gisi Cannizzaro, Charlotte Koster; *French*: Guillaume Thomas; *Greek*: Ourania Sinopoulou (special thanks); *Hebrew*: Aynat Rubinstein; *Hungarian*: Anikó Lipták (special thanks), Ildi Berzlánovich, Anna Szabolcsi; *Italian*: Ivano Caponigro (special thanks), Vincenzo Tabacco; *Latvian*: Andris Jankevics; *Polish*: Krzysztof Migdalski; *Portuguese*: Adriana Cardoso (special thanks); *Romanian*: Alexander Grosu (special thanks), Camelia Constantinescu; *Russian*: Aysa Arylova, Zhenya Markovskaya, Natalia Kondrashova, Lena Karvovskaya (special thanks to all); *Serbo-Croatian*: Jelena Prokić, Boban Arsenijević, Miloje Despić; *Slovenian*: Marko Hladnik; *Spanish*: Cintia Widmann (special thanks), Luis Vicente, Paula Menéndez-Benito; *Ukrainian*: Alex Mikhnenko.

These acknowledgements would be incomplete if I didn't mention the people that were the closest to my heart during my Groningen time. Linda Gerlach was my girlfriend in the first year and half and remains my good friend until today. Thanks to her, I maintained my German connections, got to see Tanzania, and found out what it is like to master a German idiolect, in particular "lindish". Being a linguist herself, we also had a lot of fun discussing language and linguistics. I lived in one house with Jorge Tendeiro, Rei Monden Tendeiro, and Tejas Gandhi. We became very good friends and shared all the good, bad, childish, disgusting, and hilarious, the hidden, and the obvious. Besides Aysa and Zhenya, the three are part of the definition of my Groningen. I'm very happy to have met Rink Hoekstra and Jana Stankat. Together with Jorge and Rei, we regularly cooked dinner and watched a movie. I will always miss our eclectic and funny discussions, spiced up by constant English-Dutch-German code-switching. Gisi Cannizzaro was my closest friend from the circle of linguists. We would often go out, have beers, and discuss life. What a pity that I always started falling asleep around two. Eva Magnusková, my closest Czech friend in Groningen, shared my passion for long walks and bike-rides around Groningen. These gave us the opportunity for endless discussions about architecture, future, and Czech and Dutch nature and culture. Jirka Neděla visited Groningen only for a semester. Yet, I really enjoyed the moments we spent together, whether we were making music or going for trips around Groningen. I became a big fan of his art and now I'm really honored to have his picture on the cover of this book. Other good friends that I would like to mention are Tim Van de Cruys, Ildi Berzlánovich, Berfu Unal, Ebru Dogan, Alejandra Wah, and Petro Kuzyk. Thank you all for being there!

My very last words go to the people thanks to whom I can still call the Czech Republic my home. From my friends, these are mainly Nanys (Zdeněk Zálesák), Pavla Zálesáková, Světlana Vořáčková, Radek Klech, Jenda Proksa, and Dean Catchpole. Despite the distance and my relatively rare visits, I greatly enjoy meeting them and sharing the latest news. I consider myself very lucky

to have such a great family as I do. Most of my visits home were centered around family-related events—celebrations, anniversaries, etc. My parents—Věra and Vladimír, my brother Petr, as well as other family members have always been incredibly supportive of whatever I decided to do. It's been a privilege to have this freedom, coupled with such a strong feeling of security. This book is dedicated to them.

Abbreviations and glossing conventions

Abbreviations

1/2/3	1st/2nd/3rd person
CL	clitic
DAT	dative
DO	direct object agreement
ERG	ergative
EVID	evidential
FEM	feminine
FUT	future
IMPRF	imperfective
IMPRS	impersonal
IND	indicative
INF	infinitive
INSTR	instrumental
MASC	masculine
NCI	negative concord item
NEG	negation
NEUT	neuter (gender)
NOM	nominative
NPI	negative polarity item
PL	plural
PPI	positive polarity item
PRS	present (tense)
PST	past (tense)
PTCP	participle
PV	preverb
REFL	reflexive
SG	singular
SBJ	subjunctive

Glossing conventions

For glossing purposes, I adopt the Leipzig Glossing Rules (Bickel et al. 2008). Within these rules, I follow the path of felicity and simplicity. As for the felicity, I try to respect the orthographic rules of particular languages. For this reason, I do not divide (lexical and grammatical) morphemes by hyphens (rule 2), but rather leave morpheme boundaries intact in the text and use a colon in the glosses to mark morpheme division (rule 4C). As for the simplicity, I try to mark as much information as possible within the English glossing words. The past tense of ‘go’ will therefore be glossed as ‘went’ rather than ‘go:PST’. Overt morpheme glosses are used whenever confusion could arise. In addition, I often leave out grammatical information that is not crucial for the understanding of the example or the issue under discussion.

CHAPTER 1

Introduction

This dissertation is concerned with the syntax, semantics, and crosslinguistic typology of modal existential wh-constructions and a number of closely related issues. The phenomenon of modal existential wh-constructions is introduced in §1.1. In §1.2, I lay out the research agenda and clarify the organization of the thesis. The core proposal of this dissertation is briefly introduced in §1.3. In §1.4, I discuss the theoretical and methodological background. Finally, §1.5 is a remark addressed to the reader, suggesting which parts of the thesis s/he should concentrate on, depending on his or her expertise or interest.

1.1 Object of study

Modal existential wh-constructions, illustrated in (1), have three essential ingredients. Firstly, they apparently belong to the class of *wh-constructions*, such as wh-questions and (a type of) free relative clauses, in that they always contain a wh-word (*co* ‘what’ in (1)). This wh-word must be fronted, which is why these constructions only exist in a (proper) subset of languages that independently possess the mechanism of overt wh-movement. Secondly, they belong to the class of *existential constructions*, such as *there*-sentences in English, in that they always assert the existence of some object or individual. This property is related to the fact that they are typically embedded under existential predicates (*mám* ‘have’ in (1)). Thirdly, they belong to the class of *modal constructions*, such as sentences or phrases embedded under modal verbs, in that their interpretation always involves a modal component. The last mentioned property is intimately related to the fact that the main predicate of modal existential

wh-constructions appears in the infinitive or in the subjunctive (*číst* ‘read:INF’ in (1)).

- (1) *Czech*
 Mám [MEC co číst].
 have:1SG what:ACC read:INF
 ‘I have something that I can read.’

The term modal existential wh-construction, henceforth abbreviated as MEC, was introduced by Alexander Grosu (2004) and has recently been adopted by other scholars, too. Grosu came up with this term for two reasons: it capitalizes on three empirical properties that happen to uniquely identify MECs among its related constructions, while not implying or presupposing any particular analysis. In both these respects, the term is superior to its numerous predecessors, which mostly include the term “free relative” modified by various attributes, in particular infinitival, irrealis, nonspecific, non-indicative, indefinite, and existential. MECs have also been called indefinite constructions, wh-existential constructions, or non-indicative wh-complements of possessive and existential predicates.

In this thesis, the term MEC will be used in two senses. In the first sense, the MEC refers to the kind of structure introduced above. That is, it refers to the wh-clause (or, alternatively, to its structural description), *excluding* the selecting predicate. This sense of the term, intended by Grosu, is the basic one and by far the most frequent one in this thesis. The second sense is more technical and refers to a constructional entity defined in terms of a logic of constructions (see Chapter 3 and §4.5). It corresponds to an abstract structural description, which consists of the wh-clause *including* (a subpart of) the selecting predicate. It will be argued that it is this technical sense of the MEC that properly characterizes the phenomenon under discussion and distinguishes it from related constructions such as questions or relatives.

The previous study of MECs has mostly concentrated on their status as wh-constructions. A lot of discussion has therefore been devoted to their relation to other, better understood wh-constructions, in particular free relative clauses, wh-questions, and to a lesser extent infinitival headed relative clauses. The second aspect of MECs—their existential construal—has received some explicit attention only relatively recently, thanks to the gradual drift from the study of MECs’ syntax to the study of their syntax-semantics interface. The most understudied and poorly understood aspect of MECs is their modality.

The cluster of properties that characterizes MECs has always struck linguists as somewhat arbitrary. This has led to the repeatedly pronounced conviction that MECs are “peripheral constructions” (Grosu 2004) or “syntactic idioms” (Rappaport 1986). There are good reasons to strongly reject these views. First of all, I know of no coherent notion of the opposition core vs. periphery which would be applicable in current grammatical theorizing and which could be instrumental in explaining why MECs look and behave as they

do. Secondly, MECs appear in many, often typologically and genetically very different languages, including Slavic, Romance, Finno-Ugric, and Semitic. In all these languages, MECs are highly productive. There is a set of well-defined parameters along which they can systematically vary, which, together with a whole range of various lexical choices, gives rise to a countless number of truth-conditionally different instances of MECs whose meaning is perfectly predictable from its sub-components. This is certainly not a property of idioms. The claims that MECs are peripheral or idiomatic are therefore nothing more than an elevated way of expressing the lack of understanding.

1.2 Claims, agenda, and organization

The overarching aim of this thesis is to meet the challenge that MECs pose to the theory of grammar. As opposed to previous analytical attempts, which have always relied on a number of partial and mutually independent stipulations, often in conjunction with reference to peripherality and idiomacity, I will propose that there is a single property shared by all MECs from which all the partial properties follow. This property is intimately associated with the predicate that selects the MEC. I call the analysis proposed here the *event-extension analysis*, as the MEC will be argued to function as the “event-extension argument” of this predicate. The main ingredients of the analysis can be informally summarized as follows.

- (2) **Main ingredients of the event-extension analysis of MECs**
 - (A) All MECs are selected by one and the same lexical predicate, expressing the state of existence. This predicate either appears on its own or corresponds to the result state of more complex predicates.
 - (B) The MEC is introduced in a different argument position than an internal DP argument in a regular existential sentence. In particular, it functions as what I call an event extension of the existence predicate.
 - (C) The modal quantification comes from the existence predicate that selects the MEC, not from the MEC itself.
 - (D) The narrow scope existential construal is an epiphenomenon of an argument-reducing operation on the existence predicate.

The core proposal is summarized in §1.3 and then fully developed in Chapter 4. In the rest of this section, I summarize the agenda and some partial theoretical claims of the thesis.

Overview of the existing literature (Appendix, Chapters 5, 6) This dissertation is the first comprehensive piece of work on MECs. One of the goals was therefore to collect and study as many contributions on this topic as possible. The existing literature is summarized in the Appendix according to three criteria: chronology (providing also brief descriptions of the contributions), lan-

guage(s) described, and type of analysis employed. In addition, I include two sections, §5.1 and §6.1, which characterize the line of development and state of the art in the study of syntax and semantics of MECs, respectively.

Descriptive adequacy (Chapter 2) In comparison to related constructions such as *wh*-questions and relative clauses, MECs have been understudied. Only a small number of studies deal with them in some descriptive and analytical detail. In Chapter 2, I aim to partly alleviate this inadequacy by providing a systematic description of MECs in 15 languages from various language families, concentrating on roughly 10 parameters, from morphosyntactic ones to semantic ones. It turns out that there is a good deal of cross-linguistic variation, more than one could have inferred from the existing literature. This typological exploration sets the stage for formulating universals of MECs and establishes the agenda for future inquiry into the observed variation.

MECs in relation to other constructions (Chapter 3) Most research has attempted to account for the behavior of MECs by approaching them through the looking glass of related constructions, in particular *wh*-questions, free relative clauses, and infinitival headed relative clauses. This has often led to what I call *reduction claims*, namely that MECs can be reduced to a subtype of one of these constructions. In Chapter 3, taking a logical approach to construction-hood, I wish to prove that any such attempt is doomed to fail. It is shown that making the MEC a subtype of one of the three constructions automatically entails that the MEC is a subtype of one or both other constructions. In result, only a much weaker reduction claim can be upheld, namely that the MEC is a subtype of the *A*-bar construction, i.e. a construction that involves operator movement. The effort to reduce MECs to a subtype of some other, more specific construction, will be taken up again in Chapter 4, where I will argue that MECs constitute a subtype of what I call *possibility clauses*.

Existential predicates (Chapters 4, 6) There has always been a strong intuition (most explicitly expressed in Izvorski 1998) that the interpretation of MECs is tightly connected to existential predicates such as *be* and *have*. I do not intend to do justice to the sizeable literature on existential predicates, neither do I have the ambition to propose a whole new theory of existential sentences. However, there are three aspects of existential predicates that require special attention and will in fact lie at the heart of the present core proposal (see §4.2 and §4.4).

Firstly, I will argue that existential predicates are associated with an inference of possibility. For instance, the sentence *There is a book (on the table)* infers the proposition *somebody can read that book*. While this might seem trivial, it becomes crucial for the analysis of MECs. I will argue that this inference can materialize in syntax as an (additional) argument slot of the existential predicate. It is this argument slot which is occupied by the MEC.

Secondly, existential predicates selecting MECs will be shown to lack a pivot—a constituent which is usually assumed to be the core and obligatory

element of existential sentences (e.g. *a book* in *There is a book (on the table)*). I will incorporate this finding into the analysis by treating existential predicates as “true” predicates, i.e. verbs with genuine argument structure, rather than just a verbal existential quantifier. Consequently, the lack of a pivot can be modelled by applying an argument-reducing operator to this predicate. The high level of the existential predicate’s flexibility will also be discussed in §6.5.

Thirdly, the behavior of MECs, especially their highly restricted distribution, constitutes important evidence in favor of predicate decomposition. In particular, I will argue that each predicate that is capable of embedding an MEC, must also be able to incorporate the existential predicate in place of its result state.

Wh-movement and the internal syntax of MECs (Chapter 5) A common assumption in the current literature (see esp. Izvorski 1998 and Pancheva-Izvorski 2000) is that the internal syntax of MECs is identical to that of wh-questions: both employ an interrogative (rather than a relative) wh-pronoun and are “bare” CPs (rather than DPs).¹ However, there are two relatively recent observations that threaten this position.

The first observation was made in a relatively unknown manuscript of Anikó Lipták (2003) and involves the morphosyntax of Hungarian MECs. Besides forming MECs in the standard interrogative fashion, by using an interrogative pronoun, such as *kit* ‘who’ in (3a), Hungarian also allows for MECs that make use of relative pronouns, such as *ahova* ‘REL:where’ in (3b).

- (3) *Hungarian* (Lipták 2003 and p.c.)
- a. Péter van kit küldjön a postára.
Peter is whom send:SUBJ.3SG the post.office.to
‘Peter has someone whom he could send to the post office.’
 - b. Nincs ahova leüljek.
is:NEG REL:where.to sit:SUBJ.1SG
‘I don’t have any place where I could sit.’

The second kind of observation was first discussed at length by Ceplová (2007) for Czech. Ceplová showed that in many respects, Czech infinitival MECs behave as vPs rather than CPs. One of these observations (which in fact goes back to the first half of the last century) is that infinitival MECs, as opposed to infinitival wh-questions, are transparent for clitic climbing.

- (4) *Czech* (Zubatý 1922:66)
- a. Mám se₁ [_{MEC} nač těšit t₁].
have:1SG CL.REFL on:what look.forward:INF
‘I have something to look forward to.’

¹This analysis was first devised by Pesetsky (1982) and has been standard since Grosu (1987, 1994).

- b. *Vím se₁ [Q kam posaditi t₁].
 know:1SG CL.REFL where sit.down:INF
 ‘I know where to sit down.’

In Chapter 5, I undertake a detailed investigation into the cross-linguistic properties of the internal syntax of MECs. I will conclude that there is nothing inherent to MECs that predetermines their syntactic shape. Despite the clear general bias towards interrogative syntax, MECs can behave as relatives, wh-questions, or neither of the two. The choice between these options is to a certain extent predictable from independent properties of particular languages. The syntactic indeterminacy of MECs is argued to follow from the fact that the operator-variable dependency that they employ is not exploited by a functional head/quantifier, but rather by a lexical predicate. This is not the case in wh-questions and free relatives, both of which are associated with a functional head—Qu and D, respectively. It is the obligatory presence of these functional heads and their designated position in the left peripheral functional sequence that forces these wh-constructions to be CPs. Wh-movement itself is in principle unconstrained. It corresponds to syntactic adjunction and therefore targets arbitrary syntactic projections. This wh-syntax will further be supported by a particular wh-semantics, under which wh-words correspond to logical lambdas (Heim and Kratzer 1998). As such, they are inert with respect to type-theory, and hence can combine with expressions of arbitrary types (see §4.4.1).

Semantic control and PRO as a lambda operator (Chapter 6) With the exception of MECs selected by impersonal existential predicates, the empty subject of MECs is referentially identified with one of the matrix DP constituents. This identification is usually facilitated by an obligatory control relation, as suggested by Pancheva-Izvorski (2000) for Russian and Bulgarian, and further confirmed, also for other languages, in this thesis (see §5.4.4) (but in some languages raising is also an option; see Ceplová 2007 and §5.4.1). The obligatory control is witnessed in (5a) for Spanish. The curious novel observation, discussed in detail in §6.4, is that in a number of languages there is a particular context where the control relation must be avoided. This context is one in which the wh-word of the MEC is also the subject of the MEC, as in (5b). That this is indeed the only context where control is avoided is shown in (5c).

- (5) *Spanish* (Cintia Widmann, Luis Vicente, p.c.)
- a. Tienes con qué escribir?
 have:2SG with what write:INF
 ‘Do **you** have anything with which {**you**/??I/??one} can write?’
 - b. No tengo quién me ayude.
 NEG have:1SG who me:DAT help:SUBJ.3SG
 ‘I don’t have anyone **who** can help me.’

- c. *No tengo qué leer.
 NEG have:1SG what read:SUBJ.2SG
 ‘I don’t have anything that **you** could read.’

The generalization that I draw from this observation is that obligatorily controlled PRO is in complementary distribution with wh-subjects. Based on this generalization, I will propose a theory of control under which PRO is construed on a par with wh-subjects, namely as an operator binding the closest argument variable available. Control verbs will be treated as property-selecting predicates and the reference identification will be executed in the semantics.

MECs with multiple wh-words (Chapter 6) Rudin (1986) was the first one to observe that a single MEC can contain more than one wh-word.

- (6) *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo kŭde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’

Since then, most major studies have explicitly claimed the awareness of this observation and yet, almost none of the proposed analyses are compatible with it. The only exception is the informal analysis of Izvorski (1998) and Pancheva-Izvorski (2000), formalized in Šimík (2009a). However, these analyses are based on the idea that MECs denote propositions rather than properties—an assumption which is problematic in other respects. In §6.3, I discuss multiple wh-MECs in detail. I first establish their exact truth conditions and then provide an account compatible with the property analysis of MECs, taken up in this thesis.

1.3 Core proposal

This section provides a sketch of the core proposal of this thesis. For a complete exposition of the proposal, see Chapter 4. The reader should be aware that the present sketch presupposes a basic familiarity with the theory and notation introduced in §1.4.

I argue that understanding MECs boils down to understanding the nature of the predicate that selects them and the manner in which it selects them. I will show that the predicate is closely related to the English predicate (*be/have*) *available*. The structure and meaning of the MEC in (7) is therefore directly related to the English sentences in (8).

- (7) *Czech*
 Je / mám [MEC co číst].
 is / have:1SG what read:INF
 ‘There is / I have something to read.’

- (8) a. There is something available [_{PC} for me to read].
 b. I have something available [_{PC} to read].

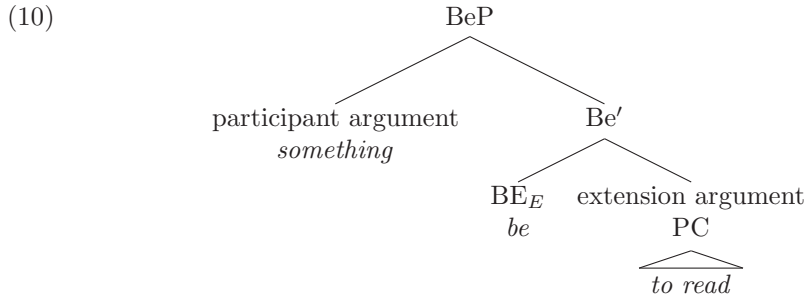
The sentences in (8) assert the possibility for an event of me reading to take place as a result of me having or there being something. The infinitival clause, which I will call the *possibility clause* (PC), directly corresponds to the MEC in (7).² The characteristic property of both PCs and MECs is that they typically contain two gaps: the subject gap and an additional non-subject gap.

Now, notice that the predicate *available* is not an obligatory part of the surface structure of (8). The same truth conditions can also be expressed by (9).

- (9) a. There is something [_{PC} for me to read].
 b. I have something [_{PC} to read].

It has been argued that the type of PC in (9) does not function as a modifier of an empty nominal head (as in an infinitival headed relative analysis; cf. Hackl and Nissenbaum 2003) but rather occupies a separate argument position (Faraci 1974; Bach 1982). I will assume that this additional position is present in the argument structure of the matrix verb by virtue of what I will call the *possibility inference*. Verbs that support this pragmatic inference will be called *availability* or simply *MEC-embedding predicates*.

The proposed argument structure of the availability predicate *be* (designated as BE_E—BE with an event-extension argument) is in (10). The (*event*) *extension argument*, i.e. the possibility clause *to read*, is the first argument of the predicate. The internal argument *something*—corresponding to the pivot of existential sentences—enters the argument structure in the position of the specifier of the availability predicate. The seemingly paradoxical situation in which the internal argument is in fact the external argument will be made more sense of by adopting a system where basically all arguments that represent event or state participants enter the argument structure in the specifier position (Ramchand 2008). In order to avoid confusion, I will refer to such arguments as *participant arguments*.



²The term “possibility clause” is a more neutral designation for what has mostly been called the “purpose clauses” Faraci (cf. 1974).

The semantics of BE_E is given in (11). The predicate characterizes a relation between an evaluation world w , a property P (type $\langle s, et \rangle$)—corresponding to the possibility clause, and an individual x —corresponding to the participant argument.³ The availability component is responsible for introducing an existential modal quantifier, restricted by a circumstantial accessibility relation C , which states that it is possible that the property introduced by the extension argument holds of the variable it introduces.

$$(11) \quad \text{BE}_E \rightsquigarrow \lambda w_s \lambda P_{\langle s, et \rangle} \lambda x_e [\mathbf{Exist}(w)(x) \wedge \exists w' \in C(w) : Q(w')(x)]$$

Notice that the reference of the variable introduced by the extension argument is identified with the reference of the participant argument (x). The very same effect can be achieved by treating the NP restriction of the participant argument variable (*-thing* in the case above) as being *modified* by the possibility clause (P), which is the reason why possibility clauses can be easily mistaken for relative clauses.

If the denotation of the two arguments in (10) is as in (12) (**sp** stands for ‘speaker’), the truth conditions of the sentence (9a), i.e. *There is something for me to read*, are given in (13).

$$(12) \quad \begin{aligned} \text{for me to read} &\rightsquigarrow \lambda w \lambda x [\mathbf{Read}(w)(x)(\mathbf{sp})] \\ \text{something} &\rightsquigarrow \lambda w \lambda x [\mathbf{Thing}(w)(x)] \end{aligned}$$

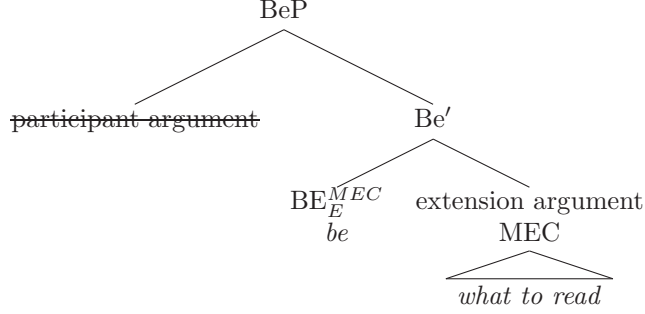
$$(13) \quad \lambda w [\mathbf{Exist}(w)(x) \wedge \mathbf{Thing}(w)(x) \wedge \exists w' \in C(w) : \mathbf{Read}(w')(x)(\mathbf{sp})]$$

The sentence is true in a world w iff there is some x in w such that x is a thing in w and there is a possibility w' where the circumstances are just like in w and where I read x .

It is the main claim of this thesis that MECs match the structural and semantic description of PCs. Yet, there are two closely related differences between them. While PCs make use of a covert operator, MECs make use of an overt *wh*-operator. An inverse situation obtains in relation to the participant argument position. The position is filled with an overt expression in structures with PCs but remains unrealized in structures with MECs. The argument structure of the availability predicate *be* selecting an MEC— BE_E^{MEC} —is therefore as in (14). For clarity, the missing participant argument is represented by the strike-out, but the whole BeP layer could just as well be missing altogether. Notice that the reduction of the participant argument position and the consequent absence of a nominal object creates the false impression that it is the MEC that occupies this position, leading to the misinterpretation of MECs either as embedded questions or as (indefinite) free relative clauses.

³This is a simplification. The full account developed in Chapter 4 will crucially assume a more complex semantics for P (the possibility clause, i.e. also the MEC, see below), namely one which relates worlds, individuals, and events (type $\langle s, \langle e, vt \rangle \rangle$, where v is the type of events).

(14)



The reduction of the participant argument is achieved by the application of an antipassive-like morpheme (to be spelled out later), which also brings about existential quantification over the variable that corresponds to the missing participant argument (x).

$$(15) \quad \text{BE}_E^{MEC} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, et \rangle} \exists x_e [\mathbf{Exist}(w)(x) \wedge \exists w' \in C(w) : Q(w')(x)]$$

If the semantics of the MEC is as in (16) (cf. the semantics of the PC above; the only difference is the presence of the restriction on the variable introduced by the *wh*-word; for simplicity, I assume that the subject of the MEC is the speaker **sp**), the resulting truth conditions of (7) are as in (17).

$$(16) \quad \text{what to read} \rightsquigarrow \lambda w \lambda x [\mathbf{Thing}(w)(x) \wedge \mathbf{Read}(w)(x)(\mathbf{sp})]$$

$$(17) \quad \lambda w \exists x [\mathbf{Exist}(w)(x) \wedge \exists w' \in C(w) : \mathbf{Thing}(w')(x) \wedge \mathbf{Read}(w')(x)(\mathbf{sp})]$$

The sentence is true in a world w iff there is some x such that there is a possibility w' where the circumstances are just like in w and where x is a thing and I read x .

The structures and truth conditions of sentences containing an MEC ((14)/(17)) and those containing a corresponding PC ((10)/(13)) are therefore almost identical. This recognition and the hypothesis that follows from it, namely that MECs do not occupy the canonical participant argument position of the matrix verb, are the main contributions of this thesis. They set the event-extension analysis apart from previous analyses, which were almost unexceptionally based on the relation of MECs to other *wh*-constructions and could therefore be called *wh-based*. I will show that the *wh-based* analyses have led to a deadlock—to a situation in which a number of core properties of MECs (such as their distribution and their modality) remained unexplained, which in turn elicited labeling MECs as “idiomatic” or “peripheral”. The event-extension analysis offers a sensible way out of this deadlock and in addition makes a range of interesting correct predictions, discussed throughout the thesis.

1.4 Theory and methodology

Broadly speaking, the main object of the present interest is I-language—the mental linguistic capacity of human individuals (Chomsky 1986). I-language consists of syntax—a recursive procedure capable of generating arbitrarily complex nested sets (tree structures), so called phrases—and of two interface levels, called phonological form (PF) and semantic form (SF),⁴ which are accessed by sensori-motor and conceptual-intentional systems, respectively. These systems facilitate the relation between I-language and other mental and physical capacities (such as world knowledge or articulated sound production/perception).

There is a set of theoretical and methodological assumptions in the study of I-language that I adopt without any empirical or other evidence. These assumptions are briefly and informally spelled out in what follows, along with the notational conventions to be used in this thesis. For a full and formal exposition of the assumptions, I advise the reader to consult the literature cited. This section is divided into a part describing the theoretical apparatus (§1.4.1) and the methodology of accessing the object of study (§1.4.2).

1.4.1 A theory of I-language

Of the three main components of I-language—syntax, semantic form, and phonological form, the first two are of major importance in this thesis, while the last will not be considered at all. This subsection is therefore divided into two parts, one providing the background assumptions about syntax, and the other about semantics. We will see that both syntax and semantics are firmly grounded in set-theory, in the latter case enriched by predicate logic.

Syntax

The recursive procedure that constitutes the core of syntax is called *merge* (Chomsky 1995) and is defined as a function that takes two objects, α and β , which belong to the domain of syntactic objects (syntactic expressions), and returns a single syntactic object γ , which equals a set whose only two members are α and β .⁵

$$(18) \quad \text{merge}(\alpha, \beta) = \gamma = \{\alpha, \beta\}$$

Syntactic objects are usually classified as members of categories (such as V, N, etc.). The category of complex objects (non-singleton sets) is semi-predictable from the category of its members. In particular, if α is of category C and β is

⁴The term logical form (LF; May 1977) will also be used, but in its traditional meaning, i.e. referring to the syntactic phrase that serves as the input to the mapping to SF—the logico-semantic expression expressing the truth-conditions of a sentence.

⁵For an inverse approach, under which merge is defined as a one-place function, taking a single syntactic expression (a set of lexical items) and returning an ordered pair of syntactic expressions, such that the members of the value (of the pair) belong to the argument set; see Zwart (2009).

of category D , then $\gamma = \{\alpha, \beta\}$ is of category C or D .⁶

The set-forming function merge gives rise to a number of relations four of which are considered linguistically relevant. The first relation is called sisterhood and it holds of two expressions that belong to a single set. This means that α and β in (18) are sisters. The relation of immediate dominance holds between a set and all its members. In the example above, γ immediately dominates α and β . The relation called dominance is derived by making immediate dominance transitive. Suppose that if A immediately dominates B then A dominates B (but not the other way around). Then, if A dominates B and B dominates C , then A dominates C . This means that γ dominates whatever α or β dominate. The last and probably most relevant relation is derived from sisterhood and dominance and is called c-command. It holds between an expression and its sister plus everything that its sister dominates. Thus, α c-commands β and everything that β dominates.

In addition, the relation dominance defines the basic types of syntactic objects. A terminal node (head) is an expression which does not dominate anything. A non-terminal (phrase) node is an expression which dominates something. A constituent is a set of expressions dominated by some α including α .

I adopt two standard notational conventions under which syntactic sets are represented either with the help of square brackets (with subscripts marking categories) or as tree-like graphs, where nodes correspond to syntactic objects and the slanted lines represent (immediate) dominance (set-membership). Nodes are either labeled by the lexical forms corresponding to the syntactic objects, (19a), or, more abstractly, by the categories that they belong to, (19b). Often, these two conventions are mixed within one notation. If the latter convention is used, complex syntactic objects, i.e. non-terminal expressions, are marked by a prime ' or by P, standing for "phrase".

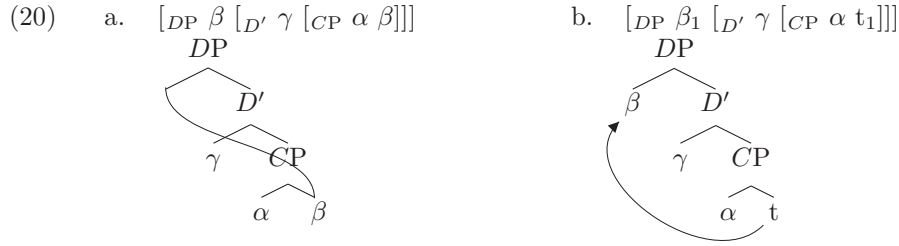
$$(19) \quad \begin{array}{ll} \text{a.} & [\alpha \beta] \\ & \begin{array}{c} \gamma \\ \swarrow \searrow \\ \alpha \quad \beta \end{array} \end{array} \qquad \begin{array}{ll} \text{b.} & [C'/CP [C \alpha] [D \beta]] \\ & \begin{array}{c} C'/CP \\ \swarrow \searrow \\ C \quad D \end{array} \end{array}$$

Traditionally, two types of merge are distinguished. External merge (or simply merge) is a function that takes α and β such that neither α nor β are dominated. Internal merge, also called movement, is a function that takes α and β , such that either α is dominated by β or β is dominated by α .⁷ The tree in (20a) illustrates an internal merge of β and D' . Notice that D' dominates β . I will adopt a more

⁶In some recent approaches (e.g. Starke 2009), syntactic objects and their categories are indistinguishable, i.e. syntactic objects *are* syntactic categories.

⁷There is a third type of merge, so called head movement, in which both α and β are dominated but neither is dominated by the other. The exact properties of head movement and even its sheer existence is a matter of ongoing controversy. It will not be directly relevant in this thesis, though.

traditional notation of (20a), in particular the one in (20b), where β is written only in the position of its last merge, while all the other positions are filled with the symbol t , standing for “trace”. The syntactic identity relation is represented either by numerical coindexing (in square bracket notations), or by an arrow (in tree notations). This notation is convenient especially because both interfaces, PF and SF, do not treat multiple occurrences of a single syntactic object in one complex phrase on a par.



The well-formedness of syntactic objects is subject to syntactic constraints, selectional constraints, and interface constraints. There are three main types of syntactic constraints on merge. The first type involves the prohibition of merging α and β if they do not belong to the same derivational cycle (with the exception of so called edges), called a phase (Chomsky 2001, 2008). The second type is called relativized minimality (Rizzi 1990; Starke 2001) and prohibits the merge of α and β if β is of syntactic category C and there is some γ , belonging to the same category C , such that β dominates γ . Finally, there is an anti-locality constraint (Abels 2003), prohibiting the merge of α and β if α immediately dominates β . Syntactic constraints will not be in the center of attention in this thesis.

Selectional constraints operate on categories of syntactic or in some theories semantic expressions. They are of the following general format: $\text{merge}(\alpha, \beta)$ is undefined if α is of some particular category C and β is of some particular category D . For instance, the merge of a noun and a verb phrase is undefined, as opposed to the merge of a verb and a noun phrase (simplifying somewhat). The source of selectional constraints is unclear, though the recent tendency is to think of selection as being derived from some extralinguistic mental capacity (Chomsky’s 2005 “third factor” of I-language design). The proper placement of selectional constraints within the architecture of grammar (syntax vs. SF) is also a matter of ongoing controversy. The most popular syntactic treatments of selection involve either feature-checking systems (Chomsky 1995), under which selection boils down to controlling (i.e. checking) whether α and β have some matching property (i.e. feature), or functional sequence (or also cartographic) systems, under which selection is defined as a closed set of category-pairs, characterizing the set of all possible pairs of expressions that can serve as input to merge. The most parsimonious view of selection is one which reduces it to the principle of compositionality which holds at SF. In this thesis, I adopt

the last mentioned system of selection, though I admit that it might have too little power when confronted with a larger body of facts.

Interface constraints are constraints on the (broadly construed) interpretability of syntactic expressions at interface levels, i.e. at PF and SF. An example of a PF constraint is the requirement that syntactic objects can be linearized, i.e. mapped from a two-dimensional phrase to a one-dimensional string of phonemes. The most prominent SF constraint is the requirement that phrases be interpreted compositionally, i.e. the meaning of a complex expression is composed of (predictable from) the meaning of its members (an idea that goes back to Frege 1923–26). Since exploring the SF interface lies at the heart of the present investigations, I spell out the properties of SF in more detail below.

Semantics

The semantic system used to interpret syntactic phrases is truth-conditional formal semantics (see e.g. Heim and Kratzer 1998).⁸ The semantics is referred to as truth-conditional because it relies on the assumption that meaning is defined as a set of conditions under which a sentence is true and as formal because it uses predicate and propositional logic in order to spell out these conditions. Besides logic, the adopted semantics relies on type theory and a set of semantic rules facilitating semantic composition.

When a syntactic object reaches the SF interface, in the form of LF, all the terminal nodes are assigned some semantic representation, and the semantic representation of all the remaining (non-terminal) nodes is computed by semantic rules. Semantic expressions are generally assigned a certain type (a kind of semantic category). I will assume a set of four basic types: e (the type of entities), t (truth values), v (events), and s (worlds), and an infinity of complex types, such that for any two types σ and τ , $\langle\sigma, \tau\rangle$ (sometimes abbreviated as $\langle\sigma\tau\rangle$ or simply $\sigma\tau$) is a type of a function that maps an expression of type σ to an expression of type τ . The expression D_σ (for any type σ) refers to the domain of all expressions of type σ .

Functions apply to arguments according to the rule of function application in (21). The reason why I adopt the intensional version of function application is that I will deal with modality and modality is traditionally dealt with in terms of possible worlds and intensions, which are functions whose domain is the set of worlds, i.e. in general functions of type $\langle s, \tau \rangle$.

(21) **Intensional function application**

Let C be a complex semantic expression, composed of A and B . If A is an expression of type $\langle s, \langle\sigma, \tau\rangle \rangle$ and B an expression of type σ , then C equals $A(B)$ (i.e. the value of the function A applied to the argument B) and is an expression of type $\langle s, \tau \rangle$.

Suppose that our simple tree, namely $\gamma = \{\alpha, \beta\}$, reaches the SF interface.

⁸This type of natural language semantics was initiated by Montague (1973) and was modified for the purposes of syntax-semantics interface by Partee (1975).

Subsequently, the nodes of the tree serve as arguments to an interpretation function that maps these nodes to certain semantic expressions. This interpretation function will be denoted as \rightsquigarrow , with its input to the left and its value to the right.⁹ Notice that the type of a semantic expression is written as a subscript of that expression. As already suggested, the terminal nodes, i.e. α and β , map to semantic expressions by virtue of a lexical stipulation (lexical entry), whereas the semantics of the complex expression, i.e. γ , is predictable from its members, by virtue of the intensional functional application (21).

$$\begin{array}{c}
 (22) \qquad \qquad \qquad \gamma \rightsquigarrow C_{\langle s, \tau \rangle} = A(B) \\
 \qquad \qquad \qquad \text{(by intensional functional application)} \\
 \qquad \qquad \qquad \swarrow \qquad \searrow \\
 \alpha \rightsquigarrow A_{\langle s, \sigma \tau \rangle} \qquad \beta \rightsquigarrow B_{\sigma} \\
 \text{(by lexical stipulation)} \quad \text{(by lexical stipulation)}
 \end{array}$$

The notation that will be used to capture the descriptive and logical contents of functions and their arguments is the standard lambda-notation. Suppose that α above is *sleeps*, β is *Mary* and γ is *Mary sleeps*. The expression *sleeps* is translated to its semantic representation by \rightsquigarrow as in (23a). The two lambda-prefixes of that expression— λw and λx —tell us that the function is a two-place function. The second part of the notation—**Sleep**(w)(x)—provides a description of that function and specifies how its two arguments are related. In this case, the function characterizes all world w – individual x pairs such that x sleeps in w . If, further, the syntactic expression *Mary* maps to the individual constant **mary**, as stated in (23b), then the meaning of *Mary sleeps* is computed in two steps as in (23c): (i) the argument **mary** is applied to the function denoted by *sleeps* by intensional functional application (IFA) and (ii) **mary** replaces all occurrences of x in the scope (to the right) of λx within the function, while the lambda prefix λx itself is removed from the representation. This step is referred to as lambda reduction (LR). The result in (23c-ii) denotes a function from worlds to truth values which characterizes all the worlds where Mary sleeps. This function can further be saturated by some particular world, say the actual world \mathbf{w}^0 , yielding the expression in (23d), which equals 1 (true) iff Mary sleeps in \mathbf{w}^0 or 0 (false) iff Mary does not sleep in \mathbf{w}^0 .

$$\begin{array}{ll}
 (23) & \text{a. } \text{sleeps} \rightsquigarrow \lambda w_s \lambda x_e [\mathbf{Sleep}(w)(x)] \in D_{\langle s, et \rangle} \\
 & \text{b. } \text{Mary} \rightsquigarrow \mathbf{mary} \in D_e \\
 & \text{c. } \text{Mary sleeps} \\
 & \quad \text{(i) } \rightsquigarrow [\lambda w_s \lambda x_e [\mathbf{Sleep}(w)(x)]](\mathbf{mary}) \in D_{\langle st \rangle} \qquad \text{(by IFA)} \\
 & \quad \text{(ii) } = \lambda w_s [\mathbf{Sleep}(w)(\mathbf{mary})] \in D_{\langle st \rangle} \qquad \text{(by LR)} \\
 & \text{d. } \mathbf{Sleep}(\mathbf{w}^0)(\mathbf{mary}) \in \{1, 0\}
 \end{array}$$

⁹This interpretation function depends on two more variables: the variable assignment function g and a model M . I introduce the former shortly but abstract away from the latter throughout.

I use a simple notational convention to distinguish between variables and constants on the one hand and basic-type expressions from complex-type expressions (functions) on the other. In particular, variables will be written in italics, e.g. *w* above, and constants will be written in boldface, e.g. **mary** above; basic-type expressions will be written with lowercase letters, e.g. *x* above, and functions will be written with initial capitalization, e.g. **Sleep** above.

This machinery and notational convention is usually sufficient to account for the interpretation of syntactic trees have been built by external merge only. Things get slightly more complicated in the interpretation of a tree involving internal merge (movement). As already suggested above, the two occurrences of one and the same syntactic object within one complex phrase are interpreted differently. The occurrence that c-commands the other is interpreted in a straightforward fashion, just as described above. The representation of the occurrence that is c-commanded, however, is shifted to a what is called a trace (t). The standard assumption is that traces are interpreted as (bound) pronouns. Pronouns are represented at LF as numerical indices, which are in turn interpreted via variable assignment functions, rather than the ordinary interpretation functions introduced above. A pronoun *he*, for instance, is identical (at LF) to a numerical index, e.g. 12, which is then selected by an assignment function *g*, whose value is some individual, say **john**. This is illustrated in (24a). Traces are treated in a parallel fashion, as illustrated in (24b). The only difference between pronouns and traces is that traces are in obligatorily referentially dependent on their higher occurrences. How should this dependency be captured?¹⁰

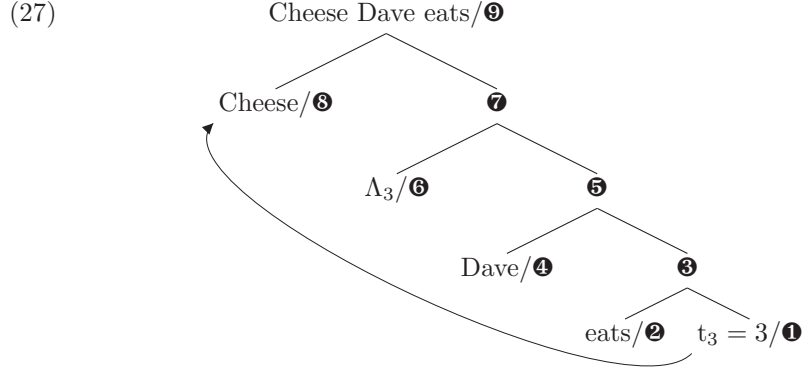
- (24) a. $\text{he} = 12 \xrightarrow{g} g(12) = \mathbf{john}$
 b. $\text{t} = 3 \xrightarrow{g} g(3) = ?$

The standard assumption is that the interpretation of traces is facilitated by two special rules, an LF rule of lambda adjunction (25), and an SF rule of lambda abstraction (26). Once again, I make use of an intensional version of this rule.

- (25) **Lambda adjunction**
 If α and β are sisters and β is dominated by α (i.e. β has moved), Λ_i is (in a countercyclic fashion) adjoined to α , such that i equals the index of the trace (lower occurrence) of β .
- (26) **Intensional lambda abstraction**
 Let γ be a complex syntactic expression, composed of α and Λ_i . If α maps to $\lambda w[A(w)]$, an expression of type $\langle s, \tau \rangle$, then γ maps to $\lambda w \lambda x[A(w)(x)]$, an expression of type $\langle s, \langle e, \tau \rangle \rangle$, and everything that γ dominates is interpreted with respect to the assignment function $g[x/i]$, which is just like g except that it maps i to x .

¹⁰The interpretation function \xrightarrow{g} is identical to \rightsquigarrow if its input node is/contains no pronoun or trace.

Consider the LF of a sentence like *Cheese Dave eats*, which arguably involves movement of *cheese* from the object position of *eats*.



The lower occurrence of *cheese*, i.e. a trace with an arbitrarily selected index 3 (node ❶), which the assignment function $g[x/3]$ maps to the individual variable x , combines with the transitive predicate *eats* (node ❷) by intensional function application (IFA). The result (node ❸) combines with the external argument *Dave*, represented as the individual constant \mathbf{d} (node ❹), also by IFA, and yields the proposition in *Dave eats x in w* (node ❺). The moved expression *cheese* (node ❽) triggers the rule of lambda adjunction (25), which adjoins the expression Λ_3 (❻) to the proposition ❺. The rule entails that the Λ -expression inherits the index of the trace, i.e. 3. Notice further that the Λ -expression is not in the domain of the interpretation function \rightsquigarrow . Rather, its main purpose is to trigger the application of the intensional lambda abstraction rule (26). The last step in the derivation involves an intensional function application of the resulting node ❿ with the moved expression *cheese* (node ❽).

- (28)
- | | | |
|---|--|---------------------------------------|
| ❶ | $\overset{g[x/3]}{\rightsquigarrow} x_e$ | (by trace interpretation) |
| ❷ | $\overset{g[x/3]}{\rightsquigarrow} \lambda w_s \lambda y_e \lambda z_e [\mathbf{Eat}(w)(y)(z)]$ | (by LS) |
| ❸ | $\overset{g[x/3]}{\rightsquigarrow} \lambda w_s \lambda z_e [\mathbf{Eat}(w)(x)(z)]$ | (by IFA) |
| ❹ | $\overset{g[x/3]}{\rightsquigarrow} \mathbf{d}_e$ | (by LS) |
| ❺ | $\overset{g[x/3]}{\rightsquigarrow} \lambda w_s [\mathbf{Eat}(w)(x)(\mathbf{d})]$ | (by IFA) |
| ❻ | $\overset{g[x/3]}{\rightsquigarrow} \text{undefined}$ | (introduced by Λ -adjunction) |
| ❼ | $\overset{g[x/3]}{\rightsquigarrow} \lambda w_s \lambda x_e [\mathbf{Eat}(w)(x)(\mathbf{d})]$ | (by ILA) |
| ❽ | $\overset{g}{\rightsquigarrow} \mathbf{c}_e$ | (by LS) |
| ❿ | $\overset{g}{\rightsquigarrow} \lambda w_s [\mathbf{Eat}(w)(\mathbf{c})(\mathbf{d})]$ | (by IFA) |

The node ❿ characterizes the truth conditions of the sentence *Cheese Dave eats*. The sentence is true in a world w iff Dave eats cheese in w .

Later on, in §4.4.1, a modification will be introduced for the case of wh-movement. In particular, I will show that wh-movement is different from other

types of movements in that it does not trigger the lambda adjunction rule (25). Instead, the fronted wh-word itself corresponds to a Λ , as also assumed by Heim and Kratzer (1998).

In the rest of the thesis, I will simplify somewhat by leaving a number of the presently introduced notational devices implicit. Specifically, I will not explicitly mention the type of composition rule used in particular derivation steps. Also, I will simply write \rightsquigarrow instead of $\overset{g}{\rightsquigarrow}$ or its variants. Finally, the rule of lambda adjunction will not further be commented on and I will often replace Λ_i simply by i .

This set-theoretical and functional semantic apparatus is supplemented with standard predicate logic operators. The ones relevant for this thesis are defined as follows:¹¹

- (29)
- a. $\neg p_t = 1$ iff $p_t = 0$ (negation)
 - b. $p_t \wedge q_t = 1$ iff $p = 1$ and $q = 1$ (conjunction)
 - c. $p_t \vee q_t = 1$ iff $\neg(\neg p \wedge \neg q) = 1$ (disjunction)
 - d. $\exists x_e[\phi] = 1$ on a variable assignment g iff there is an assignment $g[v/x]$ such that $\phi = 1$ on $g[v/x]$ (where $g[v/x]$ is just like g except that it maps x to v) (existential quantification)
 - e. $\forall x_e[\phi] = 1$ iff $\neg \exists x[\neg \phi] = 1$ (universal quantification)

1.4.2 E-language as a key to I-language

The traditional method of accessing I-language is to observe and study the externalizations of linguistic expressions provided by the sensori-motor and conceptual-intentional interface—exponents of so called E-language. (As opposed to I-language, whose properties are mainly biologically determined, E-language comes in a great variety of conventionalized culture-specific systems—languages like English, Portuguese, etc.) This method is still widely used in both formally and typologically oriented linguistics. It is especially well fit for explorations of languages or linguistic phenomena whose properties have not yet been well established, which is definitely the case of modal existential wh-constructions. Behavioral and neurological methods are not used in this thesis.

A proper subset of E-language exponents, the one of special interest here, is the set of (*grammatical*) *sentences*. There are two types of sentence properties (corresponding to the two interfaces), namely sentence form—the lexical material used and the way it is ordered and pronounced, and sentence meaning—the conditions under which a sentence is judged as true, i.e. as faithfully reflecting the state of affairs in the world. Of equal importance are so called ungrammatical sentences, which are sentence-like forms, typically constituting minimal pairs with actual sentences.

Ungrammatical sentences are important in discovering the restrictions and constraints operative in the I-language and in evaluating the predictions of I-

¹¹See Gamut (1991) for an accessible and properly formalized exposition of these definitions.

language models and theories. A sentence can be ungrammatical for instance due to an illicit application of the recursive procedure, due to the violation of some syntactic constraint, or due to an illicit mapping from syntax to PF or LF. While grammatical sentences are usually easy to observe—they can be found in daily human communication and nowadays are collected and organized in large electronic corpora, this is not so with ungrammatical sentences, which generally do not appear in either of the two. Unfortunately, the non-occurrence of certain sentences in communication and/or corpora does not automatically mean that these sentences are ungrammatical. Besides ungrammaticality, there is a whole variety of other reasons why sentences do not occur, such as the non-existence of the kind of reality that they characterize, the availability of more conventional ways of expressing their meaning, limits of working memory, etc. In order to tease non-occurring sentences from ungrammatical sentences apart, I follow a long-standing tradition and resort to native speaker intuition—the introspective method of evaluating the grammaticality of sentences.

1.5 How to read the thesis

Even though the thesis is meant to be a coherent whole, it is possible to read it selectively, depending on the expertise and interest of the reader. A reader who is well-versed in the topic of MECs is invited to consult the summary of the (often novel) empirical findings presented in Chapter 2 (§2.3) and then move on to the main analysis in Chapter 4 and to exploring its predictions in Chapter 5 and Chapter 6. If, at the same time, the reader holds a conviction that MECs are reducible to some other type of construction, s/he is invited to consult the reasoning put forth in Chapter 3 before moving on to Chapters 4, 5, and 6. A reader who is unfamiliar with the topic of MECs should start from Chapter 2, which contains a detailed cross-linguistic description of MECs, and possibly skip Chapter 3. All readers are most welcome to make use of the bibliographic appendix.

CHAPTER 2

Universals and the typology of MECs

In comparison to related constructions such as questions and relative clauses, modal existential *wh*-constructions (MECs) have been understudied. One of the consequences is the lack of a proper cross-linguistic description of MECs. It is the goal of this chapter to broaden and deepen the current empirical knowledge of the morphology, syntax, and semantics of MECs. The putative universal status of a number of MEC phenomena will in some cases be confirmed, while in others disputed. New implicational universals will be established and a new cross-linguistic typology will emerge.

So far, I have been able to identify MECs in twenty-seven languages. A closer characterization of the class of languages that have MECs and one example per each language are given in §2.1. Sixteen languages were chosen for a more thorough examination, the result of which is presented in §2.2. The data reported come from two sources: from the published or unpublished literature on MECs and from my own survey conducted for the purpose of this dissertation. New data were collected from native speakers on the basis of a questionnaire and in some cases personal or email communication. For many languages, I have not been able to consult multiple speakers, which is why occasional idiosyncrasies may occur. The validity of the data and the generalizations drawn from them should therefore be tested by further empirical research. For reasons of space I can only include a fraction of the actual data; most facts will only be reported on.¹ The findings presented in this chapter are summarized in the form of universals, tendencies, and implicational universals in §2.3. In addition, I include a sketch of an emergent typology of MECs. The chapter is concluded in §2.4.

¹The complete body of data, both from the literature and from my informants, will be made available to whoever is interested.

2.1 Cross-linguistic distribution

The cross-linguistic distribution of MECs is fairly well-known.² MECs occur in most languages of Europe and neighbouring areas, i.e. in Romance, Slavic, Finno-Ugric, Baltic, and Semitic languages, Albanian, Greek, and Basque. Germanic languages form a notable exception, where only Yiddish and New York English have been reported to have MECs (see §2.1.2).

Two factors appear to determine the cross-linguistic distribution of MECs: geographical and structural. The relevance of the former is suggested by the fact that MECs appear in typologically and genealogically unrelated languages but their geographical distribution is remarkably continuous. Therefore, it is possible that language contact has affected their distribution. This is especially clear with Yiddish (and possibly New York English, by transitivity), which, of all Germanic languages, had the strongest linguistic contact with Slavic languages (as noted by Caponigro 2003). As for the latter factor, there appears to be a necessary structural substrate that enables a language to develop the class of MECs, namely the ability to form *wh*-dependencies by overt *wh*-movement. Consequently, the distribution of MECs roughly coincides with the distribution of free relatives (Caponigro 2003) and possibly embedded questions utilizing *wh*-movement. Taking the structural view, it would be interesting to search for MECs in *wh*-movement languages that are geographically distant from Europe. Unfortunately, undertaking this task was beyond the research presented in this thesis.

Concerning the curious gap in distribution constituted by most Germanic languages, nobody has a satisfactory explanation of why this gap should exist.³ This thesis will contribute only a little in addressing this issue—by providing a detailed analysis and thus pointing to possible sources of variation.

2.1.1 Examples of MECs

Below, I provide examples of MECs, grouped according to language families. The data come from the literature wherever possible and the particular citations track the oldest observations. For a complete overview of literature on MECs in relation to languages discussed in it, see Appendix A.2.

²A comprehensive list of languages in which MECs can be found is in Caponigro (2003:Ch3). MECs from a cross-linguistic perspective are also discussed in Pancheva-Izvorski (2000:Ch2) and Grosu (2004).

³Pancheva-Izvorski (2000) attempts to derive this distributional gap from the fact that Germanic modal verbs cannot select for clauses. However, this explanation is problematic, as I briefly point out in §2.2.3.

Romance languages

- (1) *French* (Hirschbühler 1978:218)
 Il n'a pas où mourir.
 he NEG:has NEG where die:INF
 'He doesn't have a place to die.'
- (2) *Spanish* (Plann 1980:142)
 Esa familia no tiene de que vivir.
 that family NEG has of what live:INF
 'That family doesn't have anything to live on.'
- (3) *Catalan* (Hirschbühler and Rivero 1981:119)
 La pobra no tenia amb qui parlar.
 the poor NEG has with who talk:INF
 'The poor one did not have who to talk to.'
- (4) *Romanian* (Grosu 1987:52)
 Andrea nu are cu cine { vota / să voteze }.
 Andrea NEG has with who vote:INF / SBJ vote
 'Andrea doesn't have anyone with whom to vote.'
- (5) *Portuguese* (Móia 1992:94)
 O Paulo não tem a quem pedir ajuda.
 the Paulo NEG has to whom ask.for:INF help
 'Paulo doesn't have anybody to ask for help.'
- (6) *Italian* (Pancheva-Izvorski 2000:26)
 Ha con chi parlare.
 have:3SG with who speak:INF
 'There is someone to talk to.'

Slavic languages

- (7) *Czech* (Zubatý 1922:66)
 Mám se čím chlubit.
 have:1SG REFL what:INSTR brag:INF
 'I have something to brag about.'
- (8) *Russian* (Chvany 1975:62)
 Est' komu éto delat'.
 is who:DAT it do:INF
 'There is someone to do it/who can do it.'
- (9) *Bulgarian* (Rudin 1986:156)
 Imam kakvo da četa.
 have:1SG what to read:1SG
 'I've got something to read.'

- (10) *Slovak* (Růžička 1994:59)
 Nemám sa s kým povyprávať.
 NEG:have:1SG REFL with who talk:INF
 ‘There’s nobody for me to talk with.’
- (11) *Serbo-Croatian* (Pancheva-Izvorski 2000:25)
 Nemam kome da ga dam.
 NEG:have:1SG who:DAT DA it:ACC give:1SG
 ‘I have no one to give it to.’
- (12) *Polish* (Grosu 2004:408)
 (Nie) mam co robić.
 (NEG) have:1SG what do:INF
 ‘There {is something, isn’t anything} I can do.’
- (13) *Macedonian* (Grosu 2004:407)
 { Imame / nemame } komu da mu gi
 have:1PL / NEG:have:1PL who:DAT SBJ him:DAT them:ACC
 ispratime parite.
 send:1PL money.the
 ‘We (don’t) have someone to whom to send the money.’
- (14) *Ukrainian* (Alex Mikhnenko, p.c.)
 Ya ne mayu scho robyty
 I NEG have what do:INF
 ‘I have nothing to do.’
- (15) *Slovenian* (Marko Hladnik, p.c.)
 Imam s kom govoriti.
 have:1SG with whom speak:INF
 ‘I have somebody to speak with.’

Finno-Ugric languages

- (16) *Hungarian* (Caponigro 2003:89)
 Van kivel beszélni.
 is who:INSTR talk:INF
 ‘There is someone with whom one could talk.’
- (17) *Estonian* (Caponigro 2003:89)
 Mul on kelle-ga rääkida kui ma kurb olen.
 I:ALL have who-COM talk:INF when I:NOM sad am
 ‘I have somebody to talk to when I’m sad.’
- (18) *Finnish* (Caponigro 2003:90)
 Minulla on kenelle puhua kun olen surullinen.
 I:ADE is who:ALL speak:INF when am sad
 ‘I have somebody I can talk to when I’m sad.’

Baltic languages

- (19) *Lithuanian* (Ambrazas 1997:728)
 Jiems nebùvo kàs veikti.
 they:DAT NEG:be:PAST what do:INF
 ‘They had nothing to do.’
- (20) *Latvian* (Andris Jankevics, p.c.)
 Man ir kur gulēt.
 me:DAT be:IMPRS where sleep:INF
 ‘I have a place to sleep.’

Semitic languages

- (21) *Hebrew* (Grosu 1994:138)
 Eyn li im mi le-daber.
 NEG:is to.me with whom talk:INF
 ‘I do not have (anyone) with whom to talk.’
- (22) *Moroccan Arabic* (Caponigro 2003:90)
 mən-zfiər fiənd-ı mfiə mən n-ədwi məlli kan kun hazim
 from-luck have:1SG with whom 1SG:talk:1SG when was be:1SG sad
 ‘Fortunately, I have somebody I can talk to when I’m sad.’
- (23) *Classical Arabic* (Grosu 2004:409)
 Laysa li mā af’alu.
 is:NEG to.me what do:IND.IMPRF.1SG
 ‘There is nothing I can do.’

Germanic languages

- (24) *Yiddish* (Caponigro 2001:53)
 [...] nisht vayil es iz nisht geven mit vemen tsu redn.
 not because it has not been with who:DAT to speak
 ‘[...] not because there wasn’t anyone to talk to.’
- (25) *New York English* (Caponigro 2003:87) (disputable⁴)
 I don’t have what to eat.

Other languages

- (26) *Greek* (Pancheva-Izvorski 2000:26)
 Exo ti na foreso gia to xoro.
 have:1SG what SBJ wear:1SG for the dance
 ‘I have something to wear for the dance.’

⁴This example does not prove that New York English actually has MECs. It is possible that the example corresponds to the German *Ich habe was zu essen* ‘I have what to eat’, which is not an MEC, despite the superficial difference. See §2.1.2.

- (27) *Albanian* (Grosu 2004:409)
 Nuk ka kush të na dërgojë mall.
 NEG have:IMPRS who SBJ us send:1PL merchandise
 ‘There is noone who can send us the merchandise.’
- (28) *Basque* (Urtzi Etxeberria, p.c.)
 Maria-k ez du zein-eta-z fidatu.
 Maria-ERG NEG has who-INDET-INST trust:INF
 ‘Mary has somebody to trust.’

2.1.2 A note about German and Dutch

It should be mentioned that German and Dutch have now and then been pointed out as languages that also have MECs (e.g. Suñer 1983:377/378 and Lipták 2003), putative examples of which are given in (29).⁵

- (29) a. *German*
 Ich habe was zu tun.
 I have what to do
 ‘I have something to do.’
- b. *Dutch*
 Ik heb wat te doen.
 I have what to do
 ‘I have something to do.’

There are at least two arguments against treating (29) as a MEC: (i) the *wh*-word needs to be formally licensed in the matrix clause, as illustrated by (30a), a requirement not existent in MECs (see the discussion of matching effects in §2.2.2) and (ii) the modality is ambiguous in force: as MECs, it can be existential (30b), but unlike MECs, it can be universal, too (30c) (see the discussion of modality in §2.2.6).⁶

- (30) *German*
- a. *Ich habe über was / worüber zu sprechen.
 I have about what / whereabouts to speak
 ‘I have something to speak about.’
- b. Ich langweile mich nicht: Ich habe hier was zu tun.
 I bore me NEG I have here what to do
 ‘I’m not bored: I have something that I can do here.’

⁵See also Bayer and Brandner (2004), who describe an interesting infinitival construction in two German dialects—Bavarian and Alemanian—and speculate about a possible relation to MECs.

⁶Grosu (1987: 55, footnote 2) gives one more argument: the *wh*-word in the relevant structure does not undergo *wh*-movement. While this is arguably true, no examples are given to support this claim.

- c. Leider kann ich nicht mitkommen: Ich habe hier noch
 unfortunately can I NEG with.come I have hier still
 was zu tun.
 what to do
 ‘Unfortunately, I can’t go with you: I still have something that I
 have to do.’

Even though the examples in (29) and (30) are not MECs, they are arguably closely related to them. At least under one of its two possible construals—the one with existential modal force, as in (30b), the infinitival clause (to the exclusion of the *wh*-word) could correspond to what I called the possibility clause in §1.3 and will investigate in more detail in chapter 6.

2.2 Cross-linguistic description

In this section, I provide a thorough description of the morphological, syntactic, and semantic properties of MECs, drawing data from the following 16 languages (the names in brackets are my primary informants): Bulgarian (Kostadin Cholakov), Catalan (Jordi Fortuny), Czech, French (Guillaume Thomas), Greek (Ourania Sinopoulou), Hebrew (Aynat Rubinstein), Hungarian (Anikó Lipták), Italian (Ivano Caponigro), Latvian (Andris Jankevics), Polish (Krzysztof Migdalski), Portuguese (Adriana Cardoso), Serbo-Croatian (Jelena Prokić), Romanian (Camelia Constantinescu), Russian (Aysa Arylova), Slovenian (Marko Hladnik), and Spanish (Cintia Widmann). I will discuss issues concerning the syntactic distribution of MECs (§2.2.1), the morphosyntax of the *wh*-element (§2.2.2), the grammatical mood of the MEC (§2.2.3), the syntactic transparency of MECs (§2.2.4), sluicing (§2.2.5), the MEC modality (§2.2.6), the quantificational and scopal properties of the MEC (§2.2.7), and the referential dependency of the MEC-internal subject (§2.2.8).

2.2.1 Syntactic distribution

MECs in all languages have a very limited distribution. They are only licensed in the (apparently) direct object position of a narrow class of verbs, to the characterization of which I will turn later. Let us start with a negative delimitation.

Where MECs *cannot* appear

That MECs cannot appear in the subject position was first observed by Plann (1980) for Spanish.

(31) *Spanish*

- a. Plann (1980:124)
 *Con quien dejar los niños llegará a las tres.
 with who leave:INF the children arrive:FUT at the three
 ‘With whom to leave the children will arrive at three.’
- b. Plann (1980:126)
 *{ A quien dirigirse / Con quien platicar / A quien
 A who turn.to:INF.REFL / with who chat:INF / A who
 consultar } no fue encontrado por Julia.
 consult:INF NEG was found by Julia
 ‘{No one to turn to / No one to chat with / No one to consult}
 was found by Julia.’

A part of this observation, namely (31a), holds universally—MECs never appear in the subject position if they realize external arguments (e.g. agents). What some languages do allow is the type of example in (31b), i.e. a situation where the MEC in the subject position corresponds to the internal argument. This was first observed by Pesetsky (1982) for Russian, see the adapted example in (32a). It turns out, however, that there is an additional condition, namely that the MEC must surface after the matrix predicate; hence the ungrammaticality of (32b) (and possibly (31b)).⁷

(32) *Russian* (Aysa Arylova, p.c.; adapted from Pesetsky 1982:154)

- a. Bylo kupleno čem zakusit’.
 was bought what:INSTR eat.after.drinking.vodka:INF
- b. *Čem zakusit’ bylo kupleno.
 what:INSTR eat.after.drinking.vodka:INF was bought
 ‘Something to eat after drinking vodka was bought.’

Similarly, some languages allow MECs as arguments of unaccusatives:

(33) *Russian* (Pesetsky 1982:154)

- Pojavilos’ čem pisat’.
 appeared what:INSTR write:INF
 ‘Something to write with appeared.’

MECs are further ruled out from indirect object and object-of-preposition positions, as illustrated by (34a) and (34b) respectively.

(34) *Czech*

- a. *Daruju to auto s kým jet na dovolenou.
 give:1SG the car with who go:INF on vacation
 ‘I will give the car to somebody with whom I/one could go on vacation.’

⁷For a discussion of MEC passivization, see §6.5.4.

- b. *Potkal ho před kde nakupovat.
 met him in.front.of where do.shopping:INF
 ‘He met him in front of (the place) where one could do shopping.’

Very recently Grosu (2004) added the observation that MECs cannot appear in the predicative position:

- (35) *Romanian* (Grosu 2004:428)
 *Săpunul ăsta este cu ce să te speli pe față.
 soap.the this is with what SBJ REFL.2SG wash on face
 ‘This piece of soap is something with which to wash your face.’

Due to the homomorphy with infinitival relatives, it can be hard to decide whether MECs can function as attributive modifiers. But languages that distinguish relative operators from MEC operators provide evidence that MECs cannot modify NPs. The example below shows that once an MEC-like structure (an infinitival relative) is headed, a relative operator *kogoto* ‘who:REL’ is required. The use of an operator characteristic of MECs, i.e. the bare wh-word *kogo* ‘who’ leads to ungrammaticality.

- (36) *Bulgarian* (Kostadin Cholakov, p.c.)
 Imam njakogo, s kogo*(to) da govorja
 have:1SG somebody with who:(REL) SBJ talk
 ‘There is somebody with whom I can talk.’

Turning the issue of modification around, we can ask: Can MECs be modified? On the one hand, Grosu (1994:139) claims that MECs cannot stack. Stacking is a special case of modification, where one MEC is modified by another MEC.

- (37) *Romanian*
 Maria nu are cu cine să iasă (* de cine să se poată
 Maria NEG has with who SBJ go.out:3SG of who SBJ REFL can
 ataşa).
 attach
 ‘Maria does not have (anyone) with whom to go out (to whom to be able to get close).’

On the other hand, cases of apparent modification have been reported. Consider the following examples, where *dežuren po tova vreme* ‘on duty at this time’ in (38a) and *dans le frigo/en la heladera* ‘in the fridge’ in (38b,c) can be analyzed as modifiers of the respective MECs. Another possible view, one held by Izvorski (1998) about (38a), is that these phrases are small clause predicates that take the MECs as their external arguments.⁸

⁸Notice that if this analysis is right, the ban on subjects discussed earlier does not hold across the board. At the same time, it still holds that the MEC functions as the main argument of an existential verb, even though as part of a bigger constituent.

- (38) a. *Bulgarian* (Izvorski 1998:163)
 Edva-li ima koj da ti pomogne { dežuren po tova
 hardly have who SBJ you:DAT help on.duty at this
 vreme /* umen}.
 time / smart
 ‘There is hardly anyone who can help you {who is on duty at this
 time / who is smart}.’
- b. *French* (Thomas 2008a:7/8)
 Il y a de quoi manger dans le frigo.
 it LOC have:3SG of what eat:INF in the fridge
 ‘There is something that one can eat in the fridge.’
- c. *Spanish* (Cintia Widmann, p.c.)
 En la heladera tengo qué comer.
 in the fridge have:1SG what eat:INF
 ‘There is something to eat in the fridge.’

No matter how the examples in (38) are analyzed, they cannot be replicated in every language. See the two examples below. (39a) has two readings, neither of which is the one that Izvorski reports for (38a): either the putative small clause predicate *ve službě* ‘on duty’ is construed as a modifier of the predicate *pomoct ti* ‘help you’ or as a depictive related to *ti* ‘you’, the object of ‘help’. Similarly, (39b) only has the absurd reading under which *v ledniče* ‘in the fridge’ modifies the predicate *jíst* ‘eat (something)’.

- (39) *Czech*
- a. Sotva ti má kdo pomoct teď ve službě.
 hardly you:DAT has who:NOM help:INF now on duty
 ‘There is hardly anyone who can [help you on duty].’
 ‘There is hardly anyone who can help you while you’re on duty at
 this time.’
 *‘There is hardly anyone who can help you who is on duty at this
 time.’
- b. Mám v ledniče co jíst.
 have:1SG in fridge what eat:INF
 ‘There is something that I can eat while sitting in the fridge.’
 *‘There is something in the fridge that I can eat.’

I will briefly discuss the case of apparent MEC-modification in §6.5.6.

In sum, MECs cannot appear in subject positions, if they realize the external argument or if they appear preverbally. They cannot appear in indirect object and object-of-preposition positions. They cannot function as predicates of nominals. They cannot modify nominals, but in some languages can be modified by non-nominal predicates.

Where MECs can appear

Let us now turn to the internal argument position and try to figure out the right distribution of MECs. The prototypical position of MECs, attested in all languages, is the argument position of the existential verbs ‘be’ and/or ‘have’ (if these exist in the language), often in their impersonal forms. I will call these *stative MEC-embedders*. A proper subset of languages allow their MECs to appear in the object position of other predicates, which I will call *dynamic MEC-embedders*. These include (di)transitive predicates like ‘find’, ‘look for/seek’, ‘choose’, ‘give’, ‘get’, ‘take’, ‘send’, ‘bring’, ‘buy’, or ‘build’, and more marginally unaccusative predicates like ‘arrive’, ‘appear’, or ‘occur’. Grosu (2004:406) characterized this class of dynamic predicates as verbs of “coming into being, view, or availability, or causation of one of these”. Relying on Szabolcsi (1986) (as also Grosu 2004 does), we can characterize the whole set of verbs capable of embedding MECs as verbs whose lexical meaning supports existential quantification over their indefinite internal argument. What is interesting is that modal verbs like ‘want’ or ‘need’ are systematically ruled out.

In table 2.1 below, I give an overview of predicates available in different languages. Needless to say, the judgements are not so clear cut as it may appear from the table. The two-way distinction between + (acceptable) and – (unacceptable) often relies on relative acceptability rather than on sharp grammaticality contrasts. Also, some minus-marked fields stand for non-productivity rather than unacceptability, as it turns out that many predicates that are unacceptable MEC-embedders in general can exceptionally embed some MECs, typically depending on the lexical semantics of the embedded predicate.⁹ The precise characterization remains to be done. The empty spaces indicate lack of data and the letter “n” stands for “not available”. This concerns mainly the predicates ‘be’ and ‘have’, which do not always cooccur in a single language (e.g. in Russian) or only one of them is reserved for existential use (e.g. in Portuguese).

⁹I am grateful to Lena Karvovskaya (p.c.) for helping me understand this intricate situation. Unfortunately, I found out about this acceptability-affecting aspect too late to be able to include a broader discussion.

Table 2.1: MEC-embedding predicates

Language	be	have	find	seek	choose	give	get	buy	send	bring	appear	build	want
Czech	+	+	–	–	–	–	–	–	–	–	–	–	–
Polish	+	+	–	–	–	–	–	–	–	–	–	–	–
Italian	+	+	–	–	–	–	–	–	–	–	–	–	–
Hungarian	+	n	+	–	–	–	–	–	–	–	–	–	–
Slovenian	+	+	–	+	+	–	–	–	–	–	–	–	–
Catalan	+	+	+	+	+	+	–	–	–	–	–	–	–
Bulgarian	n	+	+	+	+	+	–	–	+	–	–	–	–
Hebrew	+	n	+	+	+	+	+	–	–	–	–	–	–
Latvian	+	n	+	+	+	+	+	–	+	–	–	–	–
Portuguese	n	+	+	+	–	+	–	–	–	+	–	–	–
Serb-Croat	n	+	+	+	+	+	+	+	+	–	–	–	–
Greek	–	+	+	+	+	+	–	+	+	+	–	–	–
Russian	+	n	+	+	+	+	–	+	–	+	+	–	–
Romanian	–	+	+	+	+	+	+	+	+	+	+	+	–
French	+	+	+	+	+	+	+	+	+	+	+	+	–
Spanish	+	+	+	+	+	+	+	+	+	+	+	+	–

As pointed out by Pesetsky (1982), there appears to be yet another prerequisite for a verb to be able to select an MEC, namely its capacity to assign structural case (or, analogously, its inability to assign a lexical case). To prove this, Pesetsky gives the minimal pair in (40), where the ability of *zaxvatil* ‘seized’ to select an MEC is correlated with its accusative-assigning capacity (in contexts where it selects an ordinary nominal object) and the inability of *ovladel* ‘seize’ to select MECs correlates with its instrumental-assigning capacity (to nominal objects).

- (40) *Russian* (Pesetsky 1982:153)
- a. *Spekuljant zaxvatil čto prodavat’.*
speculator seized what sell:INF
 - b. **Spekuljant ovladel čto prodavat’.*
speculator seized what sell:INF
‘The speculator seized something to sell.’

Unfortunately, I did not manage to replicate Pesetsky’s test, as my informant (Aysa Arylova, p.c.) finds both of the two examples above equally ungrammatical. Despite the unreliability of Pesetsky’s example, it is most probably correct that structural case assignment is a necessary, though not sufficient condition for a verb to be able to select an MEC.

Particular languages may display occasional idiosyncratic specialties. Hun-

garian, for instance, allows MECs to be embedded under the verb *tud*, which is ambiguous between the epistemic ‘know’ and the circumstantial modal ‘can/be able to’. In the MEC-like example below, the latter meaning is clearly obtained (Anna Szabolcsi, p.c.).¹⁰

- (41) *Hungarian* (Lipták 2003:3)
 Péter tudott mit felvenni az ünnepélyre.
 Peter:NOM can:3SG what:ACC put.on:INF the feast.for
 ‘Peter had things to put on for the feast.’

Obviously, neither of the two meanings of *tud* straightforwardly matches the meaning of ‘be’, ‘have’, or any other standard MEC-embedding predicate. On the other hand, this use of a modal verb is exceptional even within Hungarian, as shown by the data below. Besides *bír*, a substandard variant of *tud*, there is no other modal verb that can embed MECs.

- (42) *Hungarian* (Anna Szabolcsi, p.c.)
- a. Nem bírok mit felvenni.
 NEG can:1SG what:ACC put.on:INF
 ‘There is nothing that I can put on.’
 - b. *Nem engedtem Marinak mit felvenni.
 NEG let:PST.1SG Mari:DAT what:ACC put.on:INF
 ‘I didn’t let Mary to put on anything.’
 - c. *Nem { akartam / próbáltam } mit felvenni.
 NEG wanted:1SG / tried:1SG what:ACC put.on:INF
 ‘I didn’t want / try anything that I could put on.’
 - d. *Nem sikerült mivel betömni a lyukat.
 NEG managed what.with plug:INF the hole:ACC
 ‘[We] didn’t manage to plug the hole with anything.’ / ‘There was nothing we could plug the hole with.’

2.2.2 Wh-element

There are five types of phenomena that pertain to the morphosyntax of the wh-element in MECs: the (in)ability to host affixes, the formal feature licensing (matching effects), the surface syntactic position (wh-movement), the range of wh-elements that can participate in the MEC, and the (un)availability of multiple wh-elements per MEC.

Affixes

All MECs in all languages contain a wh-element. In all languages, the wh-element, whether pronominal, adverbial, or determiner-like, can be “bare”, i.e. no morphemes are attached to it. For the absolute majority of languages, this is the only option. This fact is relevant for the comparison of MECs with related

¹⁰Lipták (2003) glosses this MEC-selecting verb *tud* as ‘know’. Following the suggestion of Anna Szabolcsi (p.c.), I will gloss this use of *tud* as ‘can’.

constructions, especially questions and (free) relative clauses: wh-elements in MECs are morphologically interrogative rather than relative (see esp. Izvorski 1998 and Pancheva-Izvorski 2000). This can be illustrated on two types of ungrammatical MECs: those making use of a specialized wh-based relative operator, e.g. in Greek (43b) or Slovenian (43c), and those making use of the ‘ever’ morpheme, which can attach to wh-words in most languages’ free relatives; cf. (43a).¹¹

- (43) a. *French* (Hirschbühler 1978:176)
 *J’ai trouvé quinconque mettre au travail.
 I.have found whoever put:INF to work
 ‘I found whoever to put to work.’
 b. *Greek* (Agouraki 2005)
 Dhen exo { ti /* oti } na foreso sto parti.
 NEG have:1SG what / what:REL SBJ wear:1SG at.the party
 ‘I have nothing to wear at the party.’
 c. *Slovenian* (Marko Hladnik, p.c.)
 Nimam s { čime /* čimer } pomiti posodo.
 NEG:have:1SG with what / what:REL clean:INF dishes
 ‘I have nothing to clean the dishes with.’

There are three facts that might compromise the universality of the latter effect. One of them has been richly discussed in the literature on Russian MECs (see esp. Rappaport 1986 and the references cited therein) and is illustrated in (44), where the wh-word *komu* ‘who’ is not “bare” but rather is prefixed by a negative morpheme *ne*. This negative morpheme expresses sentential negation, as suggested by the English translation.

- (44) *Russian* (Chvany 1975:62)
 Nekomu bylo éto delat’.
 NEG:who:DAT PAST it do:INF
 ‘There was no one to do it.’

As recently argued by Babby (2000), however, there are good reasons to believe that the wh-word composes with the negative morpheme *ne* only after wh-movement takes place and thus is underlyingly “bare”. See also Kondrashova and Šimík (to appear), who draw the same conclusion, based on a different argument.

The second potential counterargument to the universality of wh-bareness comes from Bulgarian, Macedonian, and a handful of other languages, where two types of wh-based (and hence non-bare) indefinites can be used: a plain indefinite ‘somebody’, as in (45a), and a negative concord indefinite ‘anybody’,

¹¹The example (43b) is constructed from Agouraki’s (2005) example (2) and her claim that MECs “are not marked as RFRs [realis free relatives]” (302).

as in (45b).¹²

- (45) a. *Bulgarian* (Bužarovska and Mišeska Tomić 2008:11)
 Njama njakoj da mi podari takava igračka.
 NEG:have:IMPRS somebody SBJ me:DAT give:3SG such toy
 ‘There is nobody to give me such a toy as a present.’
 b. *Macedonian* (Bužarovska and Mišeska Tomić 2008:11)
 Nema nikoj da te zameni.
 NEG:have:IMPRS anybody:NCI SBJ you replace:3SG
 ‘There is nobody to replace you.’

Though related to MECs, presumably in a similar fashion as infinitival headed relatives, the clauses in (45) do not qualify as MECs proper. The syntactic position which is bound by the indefinite pronoun within the embedded clause is highly restricted. In all the examples given by Bužarovska and Mišeska Tomić (2008), the indefinite binds the embedded subject position. All other positions, though acceptable, yield a different interpretation. This is illustrated in (46) for *nikâde* ‘anywhere:NCI’.

- (46) *Bulgarian* (Diana Dimitrova, Kostadin Cholakov, p.c.)
 Njama nikâde da spja.
 NEG:have:IMPRS anywhere:NCI SBJ sleep:1SG
 ‘I won’t sleep anywhere.’
 *‘There is no place for me to sleep.’

This suggests that the use of ordinary indefinite pronouns is highly restricted and is not an equal alternative to the use of bare *wh*-words.

The third counterargument comes from Hungarian. As observed by Lipták (2003), besides interrogative-like bare *wh*-words (see (47a)), Hungarian can also use *wh*-based relative pronouns in MECs. The morphological make-up of these pronouns is exactly parallel to the one in Greek or Bulgarian; in particular, they are composed of a *wh*-word and the prefix *a-*, morphologically identical to a definite determiner, see *ahova* ‘REL:where.to’ in (47b).

¹²Apparently, this Balkan-Slavic pattern was relatively recently acceptable in Czech, too, as discussed by Zubatý (1922:67/68), who gives the following examples:

- (i) a. Máš něco jíst?
 have:2SG something eat:INF
 ‘Do you have anything (for me/for yourself) to eat.’
 b. Již nemám nic dělat.
 already NEG:have:1SG anything:NCI do:INF
 ‘I have nothing to do anymore.’

Zubatý notices the difference in embedded subject reference determination, thus acknowledging that the sentences in (i) are not quite like MECs. He also speculates that they arise as a result of German influence (cf. *Ich habe nichts mehr zu tun*). For me, these sentences are no longer grammatical (under the intended interpretations) and I am not aware of ever hearing them.

- (47) *Hungarian* (Lipták 2003 and p.c.)
- a. Péter van kit küldjön a postára.
Peter is whom send:SBJ.3SG the post.office.to
'Peter has someone whom he could send to the post office.'
 - b. Nincs ahova leüljek.
is:NEG REL:where.to sit:SBJ.1SG
'I don't have any place where I could sit.'

Though there are some differences between the two types of Hungarian MECs (see Lipták 2003 and §5.3.2), the latter type does qualify as an MEC in that it is interpreted existentially and with purely existential modality.

The last observation clearly falsifies the assumption that MECs universally make use of operators that strictly correspond to interrogatives.

Matching effects

As first discussed in Grimshaw (1977), *wh*-words in standard free relatives are typically subject to double-licensing: their case and syntactic category need to conform to the requirements of both the matrix and the embedded context. This is illustrated by the following examples, borrowed from Van Riemsdijk (2007:350). (48a) is ungrammatical because the category of the *wh*-phrase (adjective) does not match the embedded context and (48b) is bad due to a category mismatch in the matrix context:

- (48) a. *She will make you however happy your ex married.
b. *She will marry however happy her ex made her.

On the other hand, *wh*-phrases in MECs only need licensing in the embedded clause, as illustrated by (49): despite the fact that the verb *encuentra* 'find' requires a direct object (a DP), the *wh*-phrase in the MEC can be a PP.

- (49) *Spanish* (Suñer 1983:365)
- Briana no encuentra { con quien salir / de quien fiarse }.
Briana NEG finds with whom go.out:INF / of whom trust:INF
'Briana can't find anyone to go out with.'

I know of no exception to this generalization. Matching effects will be discussed at more points in the thesis, but for a discussion relevant for the present proposal, see §6.5.3.

Wh-movement

In all languages, the *wh*-element must undergo *wh*-movement. As already pointed out in the introduction to this chapter, the availability of *wh*-movement might well be a necessary condition for a language to be able to construct MECs: there is no known *wh*-in situ language that has MECs. This is illustrated by the ungrammaticality of the examples in (50), where *čto* 'what' in Russian and *ti* 'what' in Greek remain in situ.

(50) Pancheva-Izvorski (2000:41)

a. *Russian*

*Mne est' čitat' čto.
me:DAT be:IMPRS read:INF what
'I have something to read.'

b. *Greek*

*Exo na foreso ti gia to xoro.
have:1SG SBJ wear what for the dance
'I have something to wear for the dance.'

While there has been virtually no dispute about the universality of wh-movement, the nature of the wh-movement might require more investigation, at least in some languages. Recently, I pointed out that in Czech the wh-element needs not move all the way to the left periphery of the infinitival clause (Šimík 2009a:189). Notice the example (51a), where the embedded copula precedes the wh-word. Yet, wh-movement is still required, as showed by the ungrammaticality of (51b).

(51) *Czech*

- a. Nemáš být na co pyšný.
NEG:have:2SG be on what proud
'There's nothing you could be proud of.'
- b. *Nemáš být pyšný na co.
NEG:have:2SG be proud on what
'There's nothing you could be proud of.'

The same very short wh-movement can be applied in Slovenian. The following example shows that in copular contexts, the wh-word (*česa* 'what') can either precede or follow the copula.

(52) *Slovenian* (Marko Hladnik, p.c.)

Nima ti { česa } biti { česa } žal.
NEG:have:3SG you:DAT what be what sorry
'There's nothing you can feel sorry about.'

The range of wh-elements

There is a significant cross-linguistic (and sometimes cross-speaker) variation as for which wh-elements can be used in MECs. Let us first concentrate on non-complex wh-phrases, i.e. wh-pronouns (such as 'what') and wh-adverbials (such as 'how'). All languages can use 'what', 'who', and 'where', including its derivatives ('to-where', 'from-where'), while only some languages can use the adverbials 'when', 'how', and 'why'. According to how liberal they are, languages can be divided roughly into five groups:

1. *Languages with no restrictions*: Bulgarian, Catalan, Czech, Greek, Hungarian, Romanian, Serbo-Croatian, Spanish, Ukrainian
2. *Languages which disallow 'why'*: Hebrew, Slovenian

3. *Languages which disallow ‘how’ and ‘why’*: Latvian, Russian
4. *Languages which disallow ‘when’ and ‘why’*: Polish, Portuguese
5. *Languages which disallow ‘when’, ‘how’, and ‘why’*: French

Below, I provide examples featuring ‘when’, ‘how’, and ‘why’, for each of the groups above.

- (53) *Greek* (Ourania Sinopoulou, p.c.)
- a. Den exo pote na pao volta.
NEG have:1SG when SBJ go:1SG walk
‘I don’t have time to go for a walk.’
 - b. Den exo pos na jiriso sto spiti.
NEG have:1SG how SBJ return:1SG to.the house
‘I don’t have a way to return home.’
 - c. Den vrisko jiat na min pao.
NEG find:1SG why SBJ NEG go:1SG
‘I can’t find a reason not to go.’
- (54) *Hebrew* (Caponigro 2003:84)
- a. mafti’a she-yesh la matay li-kro sfarim.
surprising that-have her:DAT when to-read books
‘I am surprised she has (some) time to read.’
 - b. ani micta’er: eyn li eyx la-asot et ze.
I apologize not-have me:DAT how to-do ACC it
‘I am sorry, but I don’t have a way to do it.’
 - c. *eyn li lama la-asot et ze.
NEG:have me:DAT why to-do ACC it
‘I don’t have any reason to do it.’
- (55) *Latvian* (Andris Jankevics, p.c.)
- a. ?Man nav kad iet iepirkties.
me NEG:be when go:INF shopping
‘I don’t have time to clean my room.’
 - b. *Man nav kā iet uz skolu.
me NEG:be how go:INF to school
‘There was (a/no) way to go to school.’
 - c. *Man nav kāpēc smieties.
me NEG:be why laugh
‘I had (a/no) reason to laugh.’
- (56) *Portuguese* (Adriana Cardoso, p.c.)
- a. *Eu não tenho quando lá ir.
I NEG have when there go:INF
‘I don’t have time to go there.’

- b. Não tenho como resolver este problema.
not have:1SG how solve:INF this problem
'I do not have how to solve this problem.'
- c. *Eu não tenho porque lá ir.
I NEG have why there go:INF
'I don't have any reason to go there.'
- (57) *French* (Thomas 2008a:6)
- a. *Il y a quand partir en vacances.
it LOC have:3SG when leave:INF on holiday
'There is some time when one can go on holiday.'
- b. *Il y a comment résoudre le problème.
it LOC have:3SG how solve:INF the problem
'There is some way to solve the problem.'
- c. *Il y a pourquoi parler à Jean.
it LOC have:3SG why talk:INF to Jean
'There is a reason to talk to Jean.'

This grouping follows from the cross-linguistic hierarchy of wh-words in (58): If a language disallows the use of a certain wh-word in MECs, all wh-words that are lower on the hierarchy are disallowed, too.¹³

- (58) {what, who, where} > {when, how} > why

In some languages, MECs behave like negative polarity items in that they tend to (or even must) appear in the scope negation or some other downward entailing operator. The reason why I mention it at this point is that this property of MECs always depends on the wh-word used. Thus, Plann (1980) claims that in Spanish, 'who'-MECs are only grammatical in negative contexts. Her examples and judgements are in (59). On the other hand, Suñer (1983) gives the example in (60), where a 'who'-MEC is judged to be perfectly fine.¹⁴

- (59) *Spanish* (Plann 1980:123/124)
- a. {*? (No)} tenemos a quien dirigirnos.
(NEG) have:1PL to who turn:INF.REFL
'We have noone/someone to turn to.'
- b. {*? (No)} había con quien jugar.
(NEG) have:IMPRS with who play:INF
'There was noone/someone to play with.'

¹³As is well-known, the very same hierarchy underlies the distribution of locality phenomena: The lower a wh-word is on the hierarchy, the less likely it is to be extractable from embedded structures. See e.g. Rizzi (1990) for a discussion.

¹⁴Later in the same paper (p. 372), Suñer endorses Plann's observation and even provides a tentative solution. Cintia Widmann (p.c.) also feels no polarity sensitivity with *quien* 'who'.

- (60) *Spanish* (Suñer 1983:365)
 Andrea tiene { de quien burlarse es su clase / por quien
 Andrea has of whom make.fun:INF in her class / for whom
 votar }.
 vote:INF
 ‘Andrea has somebody who she can make fun on / who she can vote
 for.’

An NPI-like behavior is also reported on for Greek by Agouraki (2005), unfortunately, without any specific examples.¹⁵ This state of affairs was not confirmed by my informant Ourania Sinopoulou, who reports no such sensitivity. Avgustinova (2003: footnote 3) reports on the finding of Apresjan and Iomdin (1989) that the Russian wh-words *kogda* ‘when’, *čego* ‘why’, and *k čemu* ‘why’ only appear in their negative (*ne-wh*) versions. In Šimík (2008b), I presented a small corpus study showing that in Czech, ‘when’-MECs, ‘how’-MECs, and ‘who:NOM’-MECs are only licensed in downward entailing contexts, such as negation or antecedents of conditionals.

- (61) *Czech*
- a. *Má tady kdo / jak / kdy uklidit.
 has here who:NOM / how / when clean.up:INF
 ‘There is somebody / some way / some time to clean here up.’
 - b. Nemá tady kdo / jak / kdy uklidit.
 NEG:has here who:NOM / how / when clean.up:INF
 ‘There is no one/no time/no way to clean here up’
 - c. Pokud tady má kdo / jak / kdy uklidit, tak to není
 if here has who:NOM / how / when clean.up so it NEG:is
 problém.
 problem
 ‘If there’s any one/any way/any time to clean here up, then it’s
 no problem’

Polarity sensitivity was reported to me by Andris Jankevics and Marko Hladnik for ‘when’-MECs in Latvian and Slovenian respectively. See the contrast below:

- (62) *Latvian* (Andris Jankevics, p.c.)
- a. *Man ir kad tīrīt istabu.
 me:DAT be when clean:INF room
 ‘I have time to clean my room.’

¹⁵ “[T]here could perhaps be some connection between IFRs [irrealis free relatives, i.e. MECs] and negative polarity items. [...] The affinity between IFRs and NPIs does not stop at the observation that IFRs are sometimes licensed in the same environments as NPIs. The interpretation of IFRs seems to bear similarities to the interpretation of NPIs.” (321/322)

- b. ?Man nav kad iet iepirkties.
 me:DAT NEG:be when go:INF shopping
 ‘I don’t have time to go shopping.’

The significance of polarity sensitivity for the structure of MECs will be discussed in §6.5.5.

Finally, it should be mentioned that French and Italian (and probably also Catalan) share a rather mysterious restriction on the use of direct object wh-words in MECs. This is illustrated below:

- (63) *French* (Thomas 2008a:6/7)
 a. *Il y a quoi manger.
 it LOC have:3SG what eat:INF
 ‘There is something that one can eat.’
 b. *Il y a qui employer.
 it LOC have:3SG who hire:INF
 ‘There is someone one can hire.’
- (64) *Italian* (Ivano Caponigro, p.c.)
 *Non avevo che / cosa / che cosa mangiare.
 NEG have:PAST.1SG what / thing / what thing eat:INF
 ‘I didn’t have anything to eat.’

While French has an interesting way around this (at least for ‘what’), namely using *de quoi* instead of *quoi*, Italian requires the use of a paraphrase, for instance by using a verb that does not take a direct object but rather a PP:

- (65) *French* (Thomas 2008a:7/8)
 Il y a de quoi manger dans le frigo.
 it LOC have:3SG of what eat:INF in the fridge
 ‘There is something that one can eat in the fridge.’
- (66) *Italian* (Ivano Caponigro, p.c.)
 Non avevo di che nutrirmi.
 NEG have:PAST.1SG of what feed:INF.REFL
 ‘I didn’t have anything to feed myself with.’

For all languages that I investigated so far, some sort of allergy to complex wh-phrases such as ‘which NP’, ‘whose NP’, or ‘how many/much NP’ has been observed. Some examples are provided below:

- (67) a. *Bulgarian* (Rudin 1986:157)
 *Imam koja / kakva kniga da četa.
 have:1SG which / what.kind.of book SBJ read:1SG
 ‘I’ve got a / some kind of book to read.’

- b. *Hungarian* (Lipták 2003:5)
 *Van hány órákor uszodába járni.
 is which hour swimming pool go:INF
 ‘There is some hour in which one can go to the swimming pool.’

It should be noted that the precise level of unacceptability is subject to speaker variation, as contradicting judgements have been reported. For instance, Jelena Prokić (Serbo-Croatian) and Kostadin Cholakov (Bulgarian) tend to accept ‘which NPs’ but not ‘what.kind.of NPs’. Contrary to these intuitions, Grosu (1994) and Izvorski (1998); Pancheva-Izvorski (2000) are convinced that D-linking is at stake and claim that only D-linked wh-phrases (i.e. ‘which NPs’ as opposed to ‘what.kind.of NPs’ or ‘whose NPs’) are ungrammatical:

- (68) *Russian* (Izvorski 1998:165)
 Mne est’ { * katoruju / kakuju / č’ju knigu čitat’}
 me:DAT is which / what.kind.of / whose book read:INF
 *‘There is some of the books I can read’
 ‘There is some kind of book/someone’s book I can read’
- (69) *Romanian*
 a. Grosu (1994:139)
 *Maria nu găsește cu care să iasă.
 Maria NEG finds with which.one SBJ go.out
 ‘Maria didn’t find anybody to go out with.’
 b. Grosu and Landman (1998:156)
 Nu mai avem ce locuri noi să vizităm
 NEG more have:1PL what places new SBJ visit
 ‘There are no longer any new places for us to visit.’

However, other factors must play a role as well, as ‘how much/many NPs’ are typically non-D-linked and yet sharply ungrammatical in all languages.¹⁶

- (70) a. *Serbo-Croatian* (Jelena Prokić, p.c.)
 *Imam koliko knjiga da pročitam.
 have:1SG how.many books SBJ read:1SG
 ‘There is a number of books that I can read.’
 b. *Bulgarian* (Kostadin Cholakov, p.c.)
 *Imam kolko knigi da cheta
 have:1SG how.many books SBJ read
 ‘There are many books that I can read.’

Other forms of wh-phrase complexity, in particular those arising from pied-piping, are reported to be allowed. However, the only examples I have seen

¹⁶Grosu (2004:416) points out that examples with complex wh-phrases (in particular ‘whose NPs’ in Romanian and Hebrew; see (71d)) are “sometimes accepted by informants only if a suitable context has been made sufficiently salient [...]” and goes on to illustrate that D-linking in fact *increases* the acceptability rather than the other way around.

come from the work of Alexander Grosu, yet, from four different languages.¹⁷

- (71) a. *Spanish* (Grosu 1987:53)
 María no tiene la foto de quien mirar.
 Maria NEG has the picture of who look:INF
 ‘Maria doesn’t have anyone at whose picture to look.’
- b. *Romanian* (Grosu 1987:53)
 Maria nu are la fotografia cui să se uite.
 Maria NEG has the photo whose SBJ REFL look
 ‘Maria doesn’t have anyone at whose picture to look.’
- c. *French* (Grosu 2002:158)
 Je n’ai plus avec la femme de qui danser.
 I NEG:have anymore with the wife of who dance:INF
 ‘There is no longer anyone whose wife I could dance with.’
- d. *Hebrew* (Grosu 2004:414)
 Eyn li im bito šel mi le-daber.
 NEG me with his.daughter of who speak:INF
 ‘There is nobody whose daughter I can talk to.’

This relatively heavy pied-piping is certainly not universally allowed, as witnessed by the ungrammatical Czech example:

- (72) *Czech*
 *Už nemám s ženou koho tančit.
 already NEG:have:1SG with wife who:GEN dance:INF
 ‘There is no longer anyone whose wife I could dance with.’

It is possible that pied-piping in MECs is allowed only if it is also allowed in embedded questions. The validity of this implicational universal needs further investigation.

MECs with multiple wh-elements

The availability of multiple (non-coordinated) wh-elements in MECs was first noted for Bulgarian by Rudin (1986). According to whether this is allowed or not, languages divide into two groups:

1. *Multiple wh-elements allowed*: Bulgarian, Czech, Hungarian, Latvian, Polish, Romanian, Russian, Serbo-Croatian, Slovenian, Ukrainian
2. *Multiple wh-elements disallowed*: French, Greek, Hebrew, Italian, Portuguese, Spanish

¹⁷The Spanish example in (71a) is claimed to be ungrammatical by Cintia Widmann (p.c.).

Some examples follow:

- (73) a. *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo kŭde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’
 b. *Russian* (Pancheva-Izvorski 2000:41)
 Tebe est’ kuda s kem pojti?
 you:DAT be:IMPRS where with whom go:INF
 ‘Do you have somewhere to go and someone to go with?’
 c. *Latvian* (Andris Jankevics, p.c.)
 Man ir ar ko par ko parunāt.
 me:DAT be with who about what speak:INF
 ‘I could speak with someone about something.’
- (74) *Spanish* (Cintia Widmann, p.c.)
 a. *Todavía tengo con quién sobre qué hablar.
 still have:1SG with who about what speak:INF
 ‘I still have somebody with whom I can speak about something.’
 b. *Todavía tengo con quién hablar sobre qué.
 still have:1SG with who speak:INF about what
 ‘I still have somebody with whom I can speak about something.’

So far, it appears that the implicational universal suggested by Grosu (2004:418) could hold: Multiple *wh*-elements in MECs are allowed only in multiple *wh*-fronting languages.

The following examples point to a contrast between Bulgarian and Czech multiple *wh*-MECs. While the former exhibit superiority effects, the latter do not. This pattern replicates the behavior of multiple *wh*-interrogatives in the respective languages (cf. Rudin 1988), which in turn suggests that *wh*-fronting in MECs is closely related to *wh*-fronting in interrogatives.

- (75) *Bulgarian* (Bošković 1998:8)
 a. Ima ko šta da ti proda.
 has:3SG who what SBJ you sell:3SG
 b. *Ima šta ko da ti proda.
 has:3SG what who SBJ you sell:3SG
 ‘There is someone who can sell you something.’
- (76) *Czech*
 a. Tady už ti nemá kdo co prodat.
 here already you:DAT NEG:has who:NOM what:ACC sell:INF
 b. Tady už ti nemá co kdo prodat.
 here already you:DAT NEG:has what:ACC who:NOM sell:INF
 ‘Here, nobody can sell you anything anymore.’

2.2.3 Grammatical mood

MECs in all languages are characterized predominantly as non-indicative. Their main verb appears in the infinitive or subjunctive form.¹⁸ According to the grammatical mood(s) that a language uses for its MECs, three groups can be distinguished:

1. *Infinitive*: Catalan, French, Hebrew, Italian, Latvian, Lithuanian, Polish, Portuguese, Russian, Slovenian, Spanish, Ukrainian, Yiddish
2. *Subjunctive*: Albanian, Bulgarian, Greek, Macedonian
3. *Infinitive and subjunctive*: Czech, Hungarian, Serbo-Croatian¹⁹, Romanian

The infinitive is the primary MEC mood. This is because all languages that have the infinitive in their verbal paradigm can use it in MECs, while not all languages that have the subjunctive can use it in MECs (e.g. Russian, French, Italian, and Latvian), or can do so only under very restricted conditions (Portuguese, Spanish, possibly Lithuanian).²⁰ Generally, a language is in the subjunctive-only group if it possesses no infinitival morphology.

Examples are given below, (77) for group 1, (78) for group 2, and (79) for group 3:

- (77) a. *French* (Thomas 2008a:1/2)
- (i) Il y a où dormir
it LOC have:3SG where sleep:INF
'There is some place where one can sleep.'
 - (ii) *Il y a où { on dort / on
it LOC have:3SG where one sleep:IND.3SG / one
dorme}
sleep:SBJ.3SG
'There is some place where one can sleep.'
- b. *Latvian* (Andris Jankevics, p.c.)
- (i) Man ir ar ko parunāt.
me:DAT be:IMPRS to who speak:INF
'There's someone with whom I can speak.'
 - (ii) *Man ir ar ko būt rakstīt
me:DAT be:IMPRS with what SBJ write:PST.PTCP
'I have something with which I can write.'

¹⁸The existence of subjunctive MECs was recognized by Grosu (1987), i.e. later than that of the infinitive.

¹⁹Serbian is claimed to prefer the infinitive and Croatian the subjunctive.

²⁰Portuguese and Hungarian also have inflected infinitives (see Raposo 1987; Tóth 2000 for discussion). Hungarian can use inflected infinitives in MECs, while Portuguese cannot. Arguably, this discrepancy can be explained by the (in)ability of inflected infinitives to be controlled into; see §5.4.3.

- (78) a. *Albanian* (Grosu 2004:409)
 Nuk ka kush të na dërgojë mall.
 NEG have:IMPRS who SBJ us send:1PL merchandise
 ‘There is noone who can send us the merchandise.’
 b. *Greek* (Pancheva-Izvorski 2000:26)
 Exo ti na foreso gia to xoro.
 have:1SG what SBJ wear:1SG for the dance
 ‘I have something to wear for the dance.’
- (79) a. *Czech* (Ceplová 2007:33)
 Petr neměl koho { pozvat / by pozval }.
 Petr NEG:had who invite:INF / SBJ.3 invite:PST.PTCP
 ‘Petr didn’t have anyone he could invite.’
 b. *Hungarian* (Grosu 2004:408)
 Nincs kinek { írunk / írjunk }
 is:NEG who:DAT write:INF.1PL / write:SBJ.1PL
 ‘We have no one we can write to.’

Is there any reason why languages in group 3 display optionality? Or, looking from the inverse perspective, what prohibits the use of subjunctive for languages in group 1 (i.e. for those that have it)? Pancheva-Izvorski (2000:66) draws a correlation between the kind of mood used in MECs and the kind of mood used in clauses embedded under modals. It is unclear, though, what kind of modals Pancheva-Izvorski has in mind. Take Czech and Russian as examples of the two respective groups. Despite the difference in MEC-mood, both languages display the same choice of mood under modals. If we take circumstantial, deontic, and epistemic modals such as *can*, *may*, *must*, etc., both languages can only use the infinitive:

- (80) a. *Czech*
 Můžu / musím { zůstat v posteli /* abych
 can:1SG / must:1SG stay:INF in bed / COMP.SUBJ.1SG
 zůstal v posteli }.
 stay:PST.PTCP in bed
 ‘I can / must stay in bed.’
 b. *Russian* (Aysa Arylova, p.c.)
 Ja mogu / dolžna { navestit’ tjetju /* čtoby ja
 I can / have.to visit:INF aunt / COMP.SBJ I
 navestil tjetju }.
 visit:PST.PTCP aunt
 ‘I can / have to visit my aunt.’

If we take bouletic modals such as *wish* or *want*, both languages have a choice (sometimes restricted by independent grammatical factors) between infinitive and subjunctive.

- (81) a. *Czech*
 Přejí si / chci { zůstat v posteli / aby
 wish:1SG REFL / want:1SG stay:INF in bed / COMP.SUBJ.3
 zůstal v posteli}.
 stay:PST.PTCP in bed
 ‘I wish / want {to stay in bed / that he stays in bed}.’
- b. *Russian* (Aysa Arylova, p.c.)
 Ja xoču { navestit’ tjotju / čtoby on navestil tjotju}.
 I want visit:INF aunt / COMP.SBJ he visit:PST.PTCP aunt
 ‘I want (him) to visit my/his aunt.’

Pancheva-Izvorski’s idea that the choice of mood in MECs correlates with the choice of mood under modals might be on the right track. Nevertheless, her formulation is too general and in the light of (80) and (81) appears to be incorrect.

A remark is due concerning Spanish, which I categorize as a group 1 language despite previous claims that it can use the subjunctive and therefore belongs to group 3. Consider the examples below:

- (82) *Spanish* (Izvorski 1998:159)
 El Coronel no tiene quien le escriba
 the colonel NEG has who him write:SBJ.3SG
 ‘The colonel has no one who could write to him’

The problem is that the subjunctive is not really productive in Spanish MECs (as correctly noticed by Grosu 2004:409). This is witnessed by the following examples, which employ *wh*-elements in the direct and prepositional object function.

- (83) *Spanish* (Cintia Widmann, p.c.)
- a. *No tengo qué me ponga.
 NEG have:1SG what me wear:SBJ.1SG
 ‘I don’t have anything to wear.’
- b. *Esa familia no tiene de qué viva.
 that family NEG have:3SG of what live:SBJ.3SG
 ‘That family has nothing to live of.’

It turns out that (82) is grammatical only because it is the subject that takes the form of the *wh*-element. As is implicit in Plann’s (1980:123) discussion and as clearly demonstrated in (84), infinitival MECs prohibit the use of a *wh*-subject. Apparently, this is because the infinitive contains no functional structure capable of licensing the nominative.²¹

²¹It is worth mentioning that no other subject than one realized by a *wh*-word can enforce the use of the subjunctive. Consider the following ungrammatical example, where the subject is a 2sg *pro*.

- (84) *Spanish* (Cintia Widmann, p.c.)
 No tengo quién me { ayude /* ayudar }.
 NEG have:1SG who me:DAT help:SBJ.3SG / help:INF
 ‘I don’t have anyone who can/will help me.’

The subjunctive should therefore not be seen as a genuine MEC mood in Spanish, but rather as a last resort device used to accommodate wh-subjects. This observation will be further elaborated on in §5.4.3 and its consequences for the syntax and semantics of control (in MECs) will be discussed in §6.4. Let us now see that the infinitive-subjunctive switch and the condition under which it happens is not limited to Spanish. Exactly the same situation obtains in Portuguese. Notice that the subjunctive in Portuguese can only be used in (85a), i.e. in the context where the infinitive fails.

- (85) *Portuguese* (Adriana Cardoso, p.c.)
- a. Eu não tenho quem { * fazer / faça } isto.
 I NEG have who do:INF / do:SBJ this
 ‘I do not have anyone who could do this.’
 - b. Eu não tenho com quem { falar /* fale }.
 I NEG have with who talk:INF / talk:SBJ
 ‘I don’t have anyone to talk with.’
 - c. Eu tenho quem { convidar /* convide } para jantar amanhã.
 I have who invite:INF / invite:SBJ for dinner tomorrow
 ‘I have somebody who I can invite for dinner tomorrow.’

Interestingly, the very same condition, i.e. the presence of a wh-subject, leads to the use of the indicative in Hebrew. The reason why Hebrew uses the indicative in this context is that it lacks the subjunctive altogether.²²

- (86) *Hebrew* (Grosu 2004:423)
 Eyn li mi { * la’azor / še yuxal la’azor } li.
 NEG to.me who help:INF / that can:FUT help:INF me
 ‘I have no one who will be able to help me.’

A mixed pattern conditioned by the same environment is reported for Italian, which uses the subjunctive in case the matrix verb is negated and the indicative in case it is affirmative.²³

(i) *Spanish* (Cintia Widmann, p.c.)
 *No tengo qué leas.
 NEG have:1SG what read:SBJ.2SG
 ‘I don’t have anything for you to read.’

²²See Landau (2004), who argues that Hebrew future tense is the spell-out of subjunctive in Hebrew.

²³See Manzini (2000) for a discussion of indicative-subjunctive switch in Italian.

(87) *Italian* (Ivano Caponigro, p.c.)

- a. Non ho chi si { prenda /?* prende} cura
 NEG have:1SG who REFL take:SBJ / take:IND.PRS.3SG care
 di me quando sono malato.
 of me when am sick
- b. Ho chi si {* prenda / prende} cura di me
 have:1SG who REFL take:SBJ / take:IND.PRS.3SG care of me
 quando sono malato.
 when am sick
 ‘I (don’t) have anybody/somebody who could take care of me
 when I am sick.’

Arguably, Lithuanian also belongs to this group of languages. While the primary mood of Lithuanian MECs is clearly the infinitive, as confirmed by Ambrazas (1997) and Kalėdaitė (2008), the subjunctive and indicative can also be used, though only to a limited degree. Ambrazas says that these forms have “a dialectal colouring” (728) and Kalėdaitė says that the “grammatical form is restricted to the present active participle, subjunctive mood, or present indicative form of the verb [...]” (132). Interestingly enough, five out of six examples provided by these sources exhibit a nominative wh-word in the subject position. Two examples are given below:

(88) *Lithuanian*

- a. Ambrazas (1997:728)
 Nėrà kàs āria.
 NEG:is who ploughs
 ‘There is no one to do the ploughing.’
- b. Kalėdaitė (2008:132)
 Nėra kas jai būtu gera rimba
 NEG:be who she:DAT be:SBJ.3 good:ACC whip:ACC
 parodęs.
 PREF:show:PRS.PTCP
 ‘There was no one to teach her a lesson.’

Lithuanian is also interesting because it does not conform to the idea that subjunctive/indicative steps in as a last-resort strategy to license wh-subjects. The reason is that Lithuanian can independently express subjects of infinitives by marking them dative:

(89) *Lithuanian* (Kalėdaitė 2008:131)

- Aš kovoju, kraują lieju, o dabar nėra kam mane
 I fought blood:ACC shed and now NEG:be who:DAT me:ACC
 apginti?
 protect:INF
 ‘I fought, I shed my blood and now there is no one to protect me?’

I have found a number of counterexamples to the generalization that the subjunctive and indicative in MECs (in infinitive-only languages) can only appear in contexts of *wh*-subjects/nominatives. They come from Lithuanian, Yiddish, and Catalan:

- (90) a. *Lithuanian* (Ambrazas 1997:728)
 Nèrà kàs dāra su tókiu
 NEG:is what:ACC do:ACT.PRESPART.NEUT with such
 karāliumi.
 king:INSTR.SG
 ‘There is nothing one can do with such a king.’
- b. *Yiddish* (Caponigro 2001:53)
 Ikh hob nit mit vemen ikh kan reden az ikh bin
 I have NEG with who:DAT I can speak when I am
 troyerik.
 sad
 ‘I don’t have anybody to talk to when I’m sad.’
- c. *Catalan* (Jordi Fortuny, p.c.)
 Tinc en qui puc confiar.
 have:1SG in who can:1SG trust:INF
 ‘I don’t have anybody who I can trust.’

Notice that one of the conditions on indicative MECs, namely that it be modal/non-episodic, is still satisfied in (90). Due to the lack of informants, I have not been able to verify the acceptability of these examples.

2.2.4 Syntactic transparency

MECs are syntactically transparent structures: In almost all languages MECs allow for A-bar extraction. I give some examples below.

- (91) a. *Bulgarian* (Pancheva-Izvorski 2000:53)
 Kāde imaš s kogo da otideš?
 where have:2SG with who SBJ go:2SG
 ‘Where is the place such that you have someone to go with to that place?’
- b. *Romanian* (Grosu and Landman 1998:157)
 Despre ce (nu) ai [cu cine să vorbești t]?
 about what (NEG) have:2 with whom SBJ talk
 ‘What is such that you have no one with whom to discuss it?’

- c. *Portuguese* (Peres and Mória 1995, Adriana Cardoso, p.c.)
 Este é um dos assuntos que a Ana não tem com quem
 this is one of.the subjects that the Ana NEG has with whom
 discutir.
 discuss:INF
 ‘This is one of the subjects that Ana does not have with whom to talk’
- d. *Hebrew* (Grosu 2004:413)
 Al ma eyn lexa im mi ledaber?
 on what is:NEG to.you with who talk:INF
 ‘What is such that you have no one with whom to talk about it?’
- e. *Latvian* (Andris Jankevics, p.c.)
 Ar Jāni tev ir par ko parunāt(?)
 with Janis you be about what speak:INF
 lit. ‘With Janis there is nothing about which I can speak with (him).’

The only exception that I found so far is Italian:

- (92) *Italian* (Ivano Caponigro, p.c.)
 *Chi non avevi dove far dormire?
 who NEG have:PAST.2SG where let:INF sleep
 ‘Who is such that you don’t have a place where you could let him sleep.’

It is often assumed that the level of transparency for extraction matches the one of embedded wh-questions (Grosu 1994; Grosu and Landman 1998; Izvorski 1998; Pancheva-Izvorski 2000). However, some report the transparency of MECs to be intuitively higher than in corresponding wh-questions. Consider the following contrasts:

- (93) *Greek* (Ourania Sinopoulou, p.c.)
 - a. Se pjon den exis ti na dosis?
 to whom:ACC NEG have:2SG what:ACC SBJ give:2SG
 ‘Who don’t you have what to give to?’
 - b. ?Se pjon anarotiese ti na dosis?
 to whom:ACC wonder:2SG what:ACC SBJ give:2SG
 ‘To whom do you wonder what to give?’
- (94) *Czech* (Šimík 2008a:123)
 - a. Komu nemáš co dát?
 who:DAT NEG:have:2SG what:ACC give:INF
 ‘Who is such that you can’t give anything to him.’
 - b. *Komu se ptal co dát?
 who:DAT REFL asked what:ACC give:INF
 ‘Who did he ask what to give?’

Furthermore, in some languages the transparency of MECs clearly exceeds the one of *wh*-questions, as even clitic climbing is allowed—something completely impossible for *wh*-questions.²⁴ This holds for Serbo-Croatian, Slovenian, and Czech MECs, even though only for their infinitival versions, the subjunctive being opaque. Observe the following two examples, where the clitics (*ga* ‘him’ and *ho* ‘him’) are arguments of the embedded predicates but appear in the matrix clause in case the MEC is infinitival.

- (95) a. *Serbo-Croatian* (Pancheva-Izvorski 2000:53, Jelena Prokić, p.c.)
 Nemam ga [kome dati /*kome da dam].
 NEG:have:1SG it:CL whom give:INF / whom SBJ give:1SG
 ‘I have no one to give it to.’
 b. *Czech* (Ceplová 2007:37)
 Petr ho má [kam pozvat /*kam by
 Petr him:CL has where invite:INF / where SBJ.3
 pozval].
 invite:PST.PTCP
 ‘Petr has a place where he could invite him.’

Yet, not all languages that allow for clitic climbing also allow it in MECs:

- (96) *Portuguese* (Adriana Cardoso, p.c.)
 a. Tenho [com que me entreter].
 have:1SG with what myself:CL amuse:INF
 b. *Tenho-me [com que entreter].
 have:1SG-myself:CL with what amuse:INF
 ‘I have with what to amuse myself.’

Finally, we should note that the transparency may depend on the matrix verb. While Serbo-Croatian and Spanish MECs generally allow for *A*-bar extraction, embedding them under the verb ‘send’ (*poslao* and *mandaste* respectively) makes them opaque. This is illustrated by the ungrammaticality of *wh*-extraction of *šta* ‘what’ in (97b) and *qué* ‘what’ in (98b).

- (97) *Serbo-Croatian* (Jelena Prokić, p.c.)
 a. Na ovu zabavu nisam odabrao [koga da pozovem].
 for that party NEG:be:1SG chose who SBJ invite:1SG
 ‘I didn’t choose anyone who I could invite for that party.’
 b. *Šta si mu poslao [čime da popravi]?
 what be:2SG him:DAT sent:PST.PTCP what:INST SBJ repair:3SG
 ‘What is the thing that you send him such that he can repair something with that thing.’

²⁴See §5.2.2 for the discussion of a well-known Italian example of apparent clitic climbing out of infinitival *wh*-questions.

(98) *Spanish* Cintia Widmann (p.c.)

- a. Con quién ya no tenés [de qué hablar]?
with whom already NEG have:2SG of what speak:INF
‘Who is such that you no longer have anything to speak about with that person?’
- b. *Qué le mandaste [con qué limpiar]?
what him:DAT sent:2SG with what clean:INF
‘What is such that you sent him something with which you can clean that?’

2.2.5 Sluicing

Sluicing is a term for an IP-ellipsis which is fed by wh-movement or focus movement (see e.g. Merchant 2001; van Craenenbroeck and Lipták 2006). That sluicing (or its variants, such as sprouting) is possible in MECs was first observed by Rudin (1986):

(99) *Bulgarian* (Rudin 1986:191)

- a. Njama zašto.
NEG:have:IMPRS why
‘There’s no reason (for what X to happen).’
- b. Šte ima koj.
will have:IMPRS who
‘There will be someone (to do it).’

The absolute majority of investigated languages allow for sluicing in MECs. The outlier is, once again, Italian. Some examples are provided below.

(100) a. *Serbo-Croatian* (Jelena Prokić, p.c.)

- Želela bih da idem na zabavu, ali nemam s
wanted be:1SG SBJ go:1SG to party but NEG:have:1SG with
kim.
who
‘I wanted to go to the party but there was nobody to go with.’

b. *Czech*

- Čtěl jsem tam jít, ale nebylo kdy.
wanted PAST.1SG there go but NEG:be:IMPRS when
‘I wanted to go there but there was no time.’

c. *Latvian* (Andris Jankevics, p.c.)

- Es gribēju iztīrīt istabu, bet es neatradu ar ko.
I wanted clean:INF room but I NEG:found with what
‘I wanted to clean the room but I didn’t find anything to clean it with.’

- (101) *Italian* (Ivano Caponigro, p.c.)
 *Volevo andare al cinema con qualcuno ma non {
 wanted:1SG go:INF to.the movie.theater with somebody but NEG
 avevo / c'era} con chi.
 had:1SG / was with whom
 'I wanted to go to the movies with somebody but I didn't have / there
 wasn't anybody (I could go with).'

Finally, it should be noted that in most languages, the availability of sluicing disappears under certain predicates, such as 'send'.

- (102) a. *Bulgarian* (Kostadin Cholakov, p.c.)
 *Toj iskaše da izčisti kolata, no az ne mu izpratih s
 he wanted to clean car.the but I NEG him sent with
 kakvo
 what
 'He wanted to clean the car but I didn't send him anything (with
 which he could do it).'
- b. *Serbo-Croatian* (Jelena Prokić, p.c.)
 *Hteo je da očisti auto ali mu nisam
 wanted be:3SG SBJ clean:3SG car but him:DAT NEG:be:1SG
 poslala čime.
 sent what:INST
 'He wanted to clean the car but I didn't send him anything (with
 which he could do it).'

2.2.6 Modality

MECs are always modal. Traditionally, two parameters of modality are distinguished (Kratzer 1981): the modal force and the modal flavor. I discuss both in turn.

Modal force

As first explicitly pointed out by Izvorski (1998:160), the modality in MECs invariably has an existential force, i.e. it expresses possibility rather than necessity:

- (103) *Czech*
 Mám kam jít.
 have:1SG where go:INF
 'There is a place where I can go'
 *'There is a place where I am supposed to / have to go.'

The fact that this property is a MEC universal is indirectly confirmed by the numerous paraphrases of MECs given in various papers.

The only apparent exception that I know of comes from Czech:

- (104) *Czech* (Zubatý 1922:67)
 Máš co dělat, chceš-li přijít v čas.
 have:2SG what do:INF want:2SG-COND come:INF in time
 ‘There’s a lot you have to do if you want to come in time.’
 *‘There’s something you can do if you want to come in time.’

Even though this MEC is perfectly grammatical, it is highly restricted in range and productivity. No other *wh*-words, for instance, seem to support an analogous deontic necessity reading:

- (105) *Czech*
 #Máš kam jít, chceš-li to všem
 have:2SG where.to go:INF want:2SG-COND it:ACC everybody:DAT
 předat.
 give:INF
 *‘There are (a lot of) places where you have to go if you want to hand it over to everybody.’

Notice also that the plain existential nature of MECs is compromised in this type of examples: as suggested by the English paraphrase, there is a clear amount reading, which can in fact be explicitly marked by an amount adverbial such as *dost* ‘a lot/enough’:

- (106) *Czech*
 Máš dost co dělat, chceš-li přijít včas.
 have:2SG a.lot what do:INF want:2SG-COND come:INF in time
 ‘There’s a lot you have to do if you want to come in time.’

I conclude that this is a slightly different type of construction (see §6.5.2 for a brief discussion) and does not directly affect the existential-only generalization about MEC modality.

Modal flavor

The issue of modal flavor is slightly more intricate. While all scholars agree on the point that the modality expressed by MECs is of the root-type (i.e. it is surely not epistemic), the exact nature of it has been a matter of controversy. Izvorski (1998:160) says the modal in MECs is “restricted by a bouletic accessibility relation”. Pancheva-Izvorski (2000:27/28) says that “we are dealing with [...] a circumstantial accessibility relation.” Grosu (2004:406) claims that besides “possibility”, MECs can also express “ability”. Thomas (2008a:1), similarly to many others, points out that the modality has a flavor of “availability”, which he dubs in more technical but also less specific terms as “existential circumstantial modality”.

My investigation so far sides with Pancheva-Izvorski (2000) and Thomas (2008a), who claim that MECs express modality of circumstantial possibility. This is apparent from the translations/paraphrases provided by native speak-

ers. To the best of my knowledge, the claims that MECs can express bouletic (Izvorski 1998) or ability (Grosu 2004) modality have not been supported by evidence. Furthermore, the examples below suggest that these types of modality are indeed ruled out.

- (107) *Czech*
- a. #Přišel jsem, protože ti mám co říct.
 came be:1SG because you:DAT have:1SG what tell:INF
 ‘I came because I want/with/have to tell you something.’
 - b. #Nemáme proti tomu viru co udělat.
 NEG:have:1PL against that virus what do:INF
 ‘There is nothing we can (are able to) do against that virus.’

The only reading that the above MECs can receive are pragmatically odd (due to the context) circumstantial possibility readings: ‘I came because it is possible for me to tell you something’ for (107a) and ‘There is nothing such that it is possible that we do it’ for (107b). The issue of modal flavor is discussed in §4.1.2.

Different types of modality might occasionally be attested if a language allows the use of indicative (see §2.2.3). In that case, MECs can be interpreted generically or habitually:

- (108) *Italian* (Caponigro 2003:94)
- C’è chi sa dire solo no.
 there.is who can:3SG say only no
 ‘There are people who say no all the time.’

However, this type of MEC is not only cross-linguistically rare, but also extremely limited in productivity (it depends on the use of the *wh*-word in the subject position) and therefore should not be considered in a general account of MECs.

2.2.7 Quantification and scope

Two issues are of particular interest here: the quantificational force and scope. I discuss them in turn.

Quantificational force

MECs have the semantics of existentially construed indefinites. As pointed out by Caponigro (2004), the arguably indefinite *wh*-word contained in the MEC is not subject to quantificational variability effects (cf. Berman 1991). Consider the following example, which demonstrates that the MEC (or the *wh*-word in it) must preserve its existential character even when “lured” by the adverbial universal quantifier.

- (109) *Czech*
 Vždycky mám s kým mluvit.
 always have:1SG with who talk:INF
 ‘All situations/times are such that I have somebody to speak with.’
 *‘All individuals that I can speak with are such that I have them.’

The existential-only generalization was challenged on the grounds of Hungarian MECs with multiple wh-words by Lipták (2000, 2003) and Surányi (2005). They claim that higher wh-words can have a universal force.

- (110) *Hungarian* (Surányi 2005)
 Végre Jánosnak van kinek mit adnia
 finally Janos:DAT be:3SG who:DAT what:ACC give:INF.3SG
 ‘Finally John has something to give to everyone’
 ‘John has things to give to people’

However, the facts are not very convincing. As noted by Lipták (2000), if an MEC like the one above is negated, the higher wh-word must apparently be construed as a wide-scope universal:

- (111) *Hungarian* (Lipták 2000:163)
 Nincs kinek mit adnom.
 be:NEG who:DAT what:ACC give:INF.1SG
 a. ‘Everyone of them is such that there is nothing I could give it to them.’
 b. *‘It is not the case that I could give everybody something.’

While it is possible to assume (as Lipták does) that the wh-word is a true universal, which obligatorily scopes high (i.e. above the matrix negation), it is also possible that the wh-word is construed as a narrow scope existential, giving rise to the truth conditions which are equivalent to (111a), i.e. ‘it is not the case that I could give something to somebody’. I will discuss this issue in more detail in §6.3.

Quantificational scope

Plann (1980) was probably the first to point out that MECs typically scope very low. Pancheva-Izvorski (2000:45/46) confirms this claim and demonstrates that MECs cannot outscope matrix negation (112a), DP quantifiers (112b), intensional verbs (112c), or modals (112d).

- (112) a. **Scope of negation** (*Serbo-Croatian*)
 Jovan nema što čitati.
 Jovan NEG:have:3SG what read:INF
 ‘Jovan doesn’t have anything to read.’
 *‘There is something such that Jovan cannot read it.’

- b. **Scope of quantifiers** (*Bulgarian*)
 Vseki ima kakvo da čete.
 everyone has what SBJ read:3SG
 ‘For everyone there is something that they can read.’
 *‘There is something particular that everyone can read.’
- c. **Scope of attitude predicates** (*Bulgarian*)
 Ana vjarva če Ivan ima kakvo da čete.
 Ana believe:3SG that Ivan have:3SG what SBJ read:3SG
 ‘Ana believes that there is something that John can read.’
 *‘There is something such that Ana believes that John can read it.’
- d. **Scope of modals** (*Bulgarian*)
 Marija može da ima kakvo da čete.
 Marija may SBJ have:3SG what SBJ read:3SG
 ‘It is possible that there is something that Marija can read.’
 *‘There is something such that it is possible that Marija can read it.’

In Šimík (2008a) I demonstrated that the MEC scopes even below MEC-internal quantifiers. (113a) and (113b) differ only in word order, which by the way has no impact on the semantics: in both cases the universal scopes over the MEC. Incidentally, it is the version that reflects the semantic scope (113a) that happens to be more acceptable.²⁵

- (113) *Czech*
- a. Mám každému studentovi co říct.
 have:1SG every student:DAT what tell
 ‘For every student there is something I can tell that student.’
- b. ?Mám co říct každému studentovi.
 have:1SG what say:INF every student:DAT
 *‘There is something such that I can tell it to every student.’

However, as illustrated by the following example, this scopal property is not a universal.

- (114) *Portuguese* (Adriana Cardoso, p.c.)
 Eu tenho o que dizer a todos os estudantes.
 I have the that say:INF to every the students
 ‘There is some particular thing that I can tell to every student.’
 ‘For every student there is something that I can tell that student.’

The last issue possibly related to scope was recently raised in Šimík (2009a:197). I showed that MECs are incapable of introducing referents that could be picked up in subsequent discourse. Thus, (115b) is not a natural continuation of (115a),

²⁵My original example was somewhat clumsy due to the unnecessary use of matrix negation. The example (113) is a clearer exposition of the same point.

arguably because *to* ‘it’ has no discourse referent to pick up.²⁶

- (115) *Czech*
- a. Mám [čím napsat ten dopis]_i.
have:1SG what:INSTR write:INF that letter
‘I have something to write the letter with.’
 - b. #Tady to_i je.
here it is
‘Here it is.’

One possible explanation of this inability to introduce discourse referents dwells in the idea that the quantifier over individuals scopes below the modal quantifier. Thus, the referent is introduced only within a non-actual possible world and cannot be picked up by a pronoun which is evaluated with respect to a different (e.g. the actual) world.

The issue of discourse referent introduction is subject to language and also speaker variation. The speakers who have agreed with my judgement, i.e. that discourse referent introduction does not take place, are Adriana Cardoso (Portuguese) and Ivano Caponigro (Italian). Opposite judgements are reported by Cintia Widmann (Spanish) and Maria Aloni (Italian). Consider the following example from Italian:

- (116) *Italian*
- A: Com’era la festa ieri?
how.was the party yesterday
‘How was the party yesterday?’
 - B: Non male. Almeno c’era / avevo [MEC con chi parlare]_i.
not bad at.least was:3SG / had:1SG with who talk:INF
‘At least I had somebody to speak with.’
pro_i Si chiama Luca. (I. Caponigro # ; M. Aloni OK)
he REFL call Luca
‘His name is Luca.’

2.2.8 Referential dependency of the MEC-internal subject

In many MECs, the subject position is occupied by an empty category. For some languages, this is the only option available, irrespective of whether the mood is infinitive or subjunctive (e.g. Czech or Hungarian), others can fill it with an overt subject, esp. when it is supported by the subjunctive mood (e.g. Serbo-Croatian):

²⁶The judgement is relatively subtle. Due to the lack of any other referent in the discourse, the MEC will most likely participate in establishing the referent of the pronominal, even though by some sort of coercion rather than a conventional discourse anaphoric relation.

- (117) a. *Czech*
 Karel nemá ke komu by (* Petr) šel na
 Karel NEG:have:3SG to whom SBJ.3 Petr go:PST.PTCP for
 prohlíku.
 checkup
 ‘Karel has nobody to whom Petr could go for a checkup.’
 b. *Hungarian* Lipták (2003:3)
 Péter van (* Anna) kit küldjön a postára.
 Péter is Ann who:ACC send:SBJ.3SG the post.office.to
 ‘Peter has someone who he/Anna can send to the post office.’
- (118) *Serbo-Croatian* (Jelena Prokić, p.c.)
 Imam čime da očistiš ruke.
 have:1SG what:INST SBJ clean:2SG hands
 ‘I have something with which you can clean your hands.’

If the subject is an empty category, how is it interpreted? There is a very strong and apparently universal tendency for coreference with the matrix subject. This is illustrated by the following examples, where the embedded subject cannot be disjoint from the matrix one, even if that reading is facilitated by context.

- (119) Context: You and me are sitting in an exam and my pen stops writing.
 I want to find out whether you have any pen that I could use.
- a. *Russian* (Aysa Arylova, p.c.)
 Tebe est’ čem pisat’?
 you:DAT be:IMPRS what:INSTR write:INF
 b. *Spanish* (Luis Vicente, p.c.)
 Tienes con qué escribir?
 have:2SG with what write:INF
 ‘Do you have anything (*for me) to write with?’

How and why the referential dependency between the matrix and embedded subject is created (raising, control), is a question that will be addressed in detail in §5.4 and §6.4.

2.3 Universals and emerging typologies

In Chapter 1, I provided the following heuristic definition of MECs.

Defining properties (D)

D1 MECs make use of fronted wh-words.

D2 MECs are interpreted as existential quantifiers.

D3 MECs express modality.

The primary concern of this chapter was to explore how exactly these three properties are instantiated in particular languages. We saw that there is a good deal of variation. Concerning **D1**, there are differences in the particular manner of wh-fronting and also in the morphological shape of the wh-word. Concerning **D2**, there are differences in the particular set of predicates which can provide the desired existential force. Concerning **D3**, there are differences in the particular mood used to express the modality and to a very limited extent also in the type of modality used.

2.3.1 List of universals, tendencies, and implications

Though the empirical base of MECs has expanded significantly, there are still many languages whose MECs are to be described. The set of (absolute or implicational) universals and tendencies that I put forth below should therefore be viewed as strong but falsifiable hypotheses about the nature of MECs. The strength of the hypotheses is indicated by the formula $[x/y; L]$, showing how many languages it is supported by (x), how many languages constitute counterexamples (y), and which languages constitute counterexamples (L). I also provide references to the literature in which that particular universal or tendency has been stated for the first time or at least most clearly.

Absolute universals (U)

There are four absolute universals, all of which will be explained in Chapter 6. Universals **U1** and **U2** are closer specifications of the defining property **D2**. They will be explained by locating the existential quantifier in the lexical representation of MEC-embedding predicates. Universal **U3** is a specification of the defining property **D3**. It will be explained by the assumption that all MECs are ultimately selected by one particular predicate, which is responsible for introducing the observed type of modality. Universal **U4** will be explained by the assumption that MECs do not occupy the canonical internal argument position of their selecting predicates.

U1 MECs appear in the internal argument position of a subset of verbs whose lexical meaning supports an existential closure of their object. MECs appear nowhere else. [16/0] (Grosu 2004)

U2 MECs take narrow scope with respect to other scope-taking elements. [16/0] (Pancheva-Izvorski 2000)

U3 MECs' modality is one of circumstantial possibility. [16/0]²⁷ (Pancheva-Izvorski 2000; Thomas 2008a)

U4 MECs display no matching effects. [16/0] (esp. Suñer 1983)

²⁷I disregard indicatives and the corresponding generic/habitual modality because of their non-productivity.

General tendencies (T)

There are five cross-linguistic tendencies, all of which are listed below. Tendencies **T1** and **T2** will not be directly addressed. The former is left for future research and the latter is in need of further empirical clarification. Tendency **T3** will be discussed at various point of Chapter 5 (§5.1, §5.2, §5.3.2, and §5.3.3). Tendency **T4** will be addressed in §5.5. Tendency **T5** will be addressed esp. in §6.4.

- T1** MECs tend to use bare (interrogative) wh-words. [16/1; Hungarian] (e.g. Hirschbühler 1978)
- T2** MECs tend to use wh-pronouns (as opposed to complex wh-phrases). [16/?; speaker variation]
- T3** MECs tend to be as syntactically transparent as corresponding interrogatives (A-bar extraction), or more (clitic climbing). [15/1; Italian] (e.g. Grosu and Landman 1998)
- T4** MECs tend to allow sluicing. [15/1; Italian] (Rudin 1986)
- T5** MECs tend to have a subject (typically empty) that is referentially identical to a matrix argument (if there is one). [10/3; Serbo-Croatian, Bulgarian, Greek] (Pancheva-Izvorski 2000)

Implicational universals (I)

There are four implicational universals. Implication **I1** will be explained by the assumption that category II predicates literally “contain” a category I predicate (see §4.4). The two-way implication **I2** will be explained by the assumption that only moved wh-words correspond to lambda-abstractors (see §6.3). Implications **I3** and **I4** are left for future research.

- I1** If a language allows MECs to be embedded under dynamic predicates, it allows MECs to be embedded under stative predicates. [16/0] (Grosu 2004)
- I2** Iff a language has multiple wh-fronting, it has multiple wh-MECs. [16/0] (Grosu 2004)
- I3** If a language has the infinitive mood, it uses it in its MECs. Otherwise, it uses the subjunctive (or its functional equivalent). [16/0]
- I4** If a language disallows its MECs to utilize a wh-word on a particular point in the hierarchy (120), it disallows any wh-word that appears lower on the hierarchy. [16/0]

$$(120) \quad \{\text{what, who, where}\} \succ \{\text{when, how}\} \succ \text{why}$$

2.3.2 Emerging typologies

While the absolute universals provide the solid ground on which every MEC in every language is built, the general tendencies and implicational universals correspond to parameters which give rise to the formation of natural classes. These class can in turn be formulated in terms of MEC or language typologies. Let me briefly present some of the emergent types, especially those that will be further discussed in this thesis.

Transparency The level of syntactic transparency (**T3**) divides MECs into three major groups. The most common MECs are *interrogative-like MECs* (e.g. Spanish), whose transparency roughly matches the one of interrogatives. Less common are two other types of MECs—*restructuring MECs* (e.g. Czech), which are more transparent than interrogatives, and *relative-like MECs* (e.g. Hungarian) which are less transparent than interrogatives. The non-transparency of relative-like interrogatives can further be accompanied by the use of relative-like wh-pronouns (**T1**) and the unavailability of sluicing (**T4**). It will turn out that this typology is a typology of MEC types, rather than a typology of languages, since one language can have more types of MECs.

Embedded subject identification The embedded subject identification parameter (**T5**) gives rise to a three-way distinction, too. The basic division has already been mentioned: the embedded subject either is or is not obligatorily identified (e.g. Portuguese vs. Serbo-Croatian). Within the former, there are two subgroups: *control MECs*, where the subject is identified by obligatory control (e.g. Spanish) and *raising MECs*, where the subject is identified by raising (e.g. Slovenian). As in the typology based on transparency, also this one identifies types of MECs rather than types of languages. It should also be mentioned that there are some interesting correlations between this typology and the previous one; in particular, raising MECs are always restructuring MECs. (Interestingly, however, the distinction between obligatory and non-obligatory control MECs does not correlate with interrogative-like and relative-like MECs, as one would suspect.)

Embedding predicates The embeddability implication (**I1**) gives rise to two basic types of MEC languages: languages that only allow the embedding of MECs under stative predicates such as ‘be’ (e.g. Czech) and languages that also allow for dynamic predicates such as ‘buy’ (e.g. French). Within the latter type, one could distinguish a high number of further types, depending on exactly which predicates can embed MECs. This typology does not seem to correlate with any other parameter, suggesting that the embeddability is a rather idiosyncratic factor.

Multiple wh-MECs The issue of the availability of multiple wh-words in a single MEC (**I2**) gives rise to two basic types: languages which allow multiple wh-MECs (e.g. Romanian) and languages that do not (e.g. Catalan). As already suggested, this typology is reducible to a broader one, namely the typology of multiple wh-fronting. Languages falling into the first type correspond to

multiple wh-fronting languages and the rest falls into the category of single wh-fronting languages.

Mood The particular choice of MEC mood (**I3**) gives rise to three basic language types: those that utilize the infinitive (e.g. Russian), those that utilize the subjunctive (and at the same time those that lack the category of infinitive) (e.g. Greek), and those that utilize both (e.g. Hungarian). The last category has a further subdivision, depending on whether the subjunctive is used freely (e.g. Czech) or is subject to particular structural conditions (e.g. Hebrew).

2.4 Conclusion

The goal of this chapter was to deepen, broaden, and organize our knowledge of the empirical properties of MECs. The presentation in §2.1 and especially §2.2 has culminated by the postulation of a number of MEC universals, tendencies, and implications in §2.3. A number of previously made claims about the possible universality of certain phenomena have materialized in absolute or implicational universals (e.g. the dependency of multiple wh-MECs on multiple wh-fronting). Others had to be weakened to tendencies (e.g. the use of bare wh-words).

In the rest of the thesis, I abandon the breadth of description in favor of a greater depth, giving way to a detailed analysis. I will devote more attention to particular phenomena in languages which represent individual MEC/language types and carefully translate the empirical properties and distinctions to the level of syntax and semantics. The ultimate goal is to reduce the observed variation to some independent properties of particular languages.

CHAPTER 3

The position of MECs among related constructions

Modal existential wh-constructions bear notable resemblance to three related constructions: free relatives (FR), embedded/indirect wh-questions (EQ), and headed relatives (HR). The latter two have infinitival versions, which are superficially quite close to the MEC.

- (1) Boris has [_{MEC} on who to rely]
- a. Jane solved [_{FR} what troubled us].
 - b. Mark knows [_{EQ} who to invite].
 - c. Paula has [_{HR} a book to read].

The affinity of these constructions to MECs dwells mainly in the following properties: (i) like MECs, all three of them are syntactically dependent (they are always part of bigger structures); (ii) like MECs, all three of them exhibit an operator-variable dependency; (iii) like MECs, all three of them (can) make use of a wh-operator.

Not surprisingly, these resemblances have been noted and investigated, which resulted in attempts to reduce MECs to some more familiar type of construction. Most notably, Plann (1980) argued that MECs are a kind of HRs, Izvorski (1998) argued for an EQ analysis, and Caponigro (2003) argued that MECs represent a subtype of FRs. Yet, some authors argue that MECs cannot be reduced to any of the three constructions (Babby 2000) and yet others remain agnostic with respect to the construction-identity of MECs (Rudin 1986; Thomas 2008a,b). For ease of reference, I will call these three constructions the “candidate constructions”.

It should be recognized that any reduction would be very vital in that at least a part of the problems that MECs pose for the linguistic theory could

be tackled by well-known analytical strategies. The goal of this chapter is thus to see whether any of the proposed reductions can hold up to closer scrutiny. The answer will be negative. I approach this task in a logical fashion: I assume that it is enough to find *some* examples of MECs that contradict the respective hypotheses. The reader should therefore not expect this section to bring either a positive outcome or a wealth of data: I will merely show, by giving a handful of carefully chosen examples, what MECs are *not*.

Before I come to actual comparisons (§3.3) and to the conclusion that MECs are irreducible, I devote some space to methodological remarks (§3.1) and provide basic analyses of the candidate constructions (§3.2). The chapter is concluded in §3.4.

3.1 A logic of constructions

Constructions have only an indirect relevance for the study of I-language. In the theoretical framework used here (see §1.4), I-language is defined as a set of abstract categories and rules. Nevertheless, the study of constructions, their properties, and their mutual relations has always played a crucial role in linguistic theorizing. Constructions have proven to be a useful descriptive tool, lying somewhere between the infinite number of linguistic expressions and the system that generates them. Knowing what we understand under the term “construction” is especially pressing once we deal with MECs, as the desire to understand them has so often been manifested by efforts to reduce them to other, more familiar constructions. In this section I devise a simple logic of constructions, which will help us understand the relation between MECs and the three candidate constructions: embedded *wh*-questions, free relatives, and headed relatives. The logic will also make it possible to distinguish between valid and invalid arguments.

The result of this section—a taxonomy of a subset of A-bar constructions—is of course not the only purpose of the discussion. The ultimate goal is to determine whether frequently made statements like “the MEC is a subtype of the X” give us any insight into the nature of the MEC or whether they face a danger of obscuring it. I will argue that despite a number of striking similarities, MECs require a special treatment.

First, let us define what a construction is.

(2) **Construction**

A *construction* *C* is a conventionalized linguistic structure, where a *structure* is defined in terms of syntax and semantics.

Admittedly, the word “conventionalized” smuggles a big deal of vagueness into the definition. For our purposes, though, the definition will be sufficient, as it locates the term “construction” on a well understood layer of linguistic descrip-

tion: syntax and semantics. A construction can be characterized by its intension and its extension.

(3) **Intension of a construction**

The intension of a construction C , I_C , is a structural description which contains all and only those properties that uniquely identify the construction. A structural description is a pair consisting of a syntactic tree and the logical expression to which the tree maps.

(4) **Extension of a construction**

The extension of a construction C , E_C , is the set of natural language expressions ε whose structural description matches I_C . A structural description of an expression ε , δ_ε , *matches* I_C iff

- i. δ_ε is a superset of I_C and
- ii. there is no expression ε' such that δ_ε is a proper superset of $\delta_{\varepsilon'}$ and $\delta_{\varepsilon'}$ is a superset of I_C .

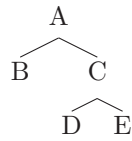
Now we need to define what it means for a structural description to be a superset of another structural description. For simplicity, I only provide a definition in terms of one member of the structural description pair, namely in terms of syntax.

(5) **Structural superset**

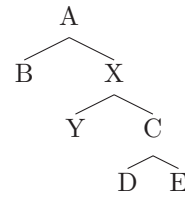
A structural description δ is a superset of a description δ' iff all syntactic categories of δ' are also in δ , and the dominance relations in δ' are preserved in δ .

Observe the trees below. The tree (7) is a superset of the tree (6) because (7) contains all the syntactic categories that (6) does it preserves all the dominance relations. The tree in (8), on the other hand, is not a superset of (6) because it does not contain the category D and the tree in (9) is not a superset of (6) since it does not preserve all its dominance relations (C does not dominate D).

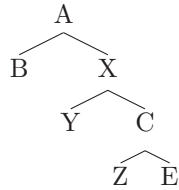
(6)



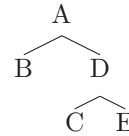
(7)



(8)



(9)



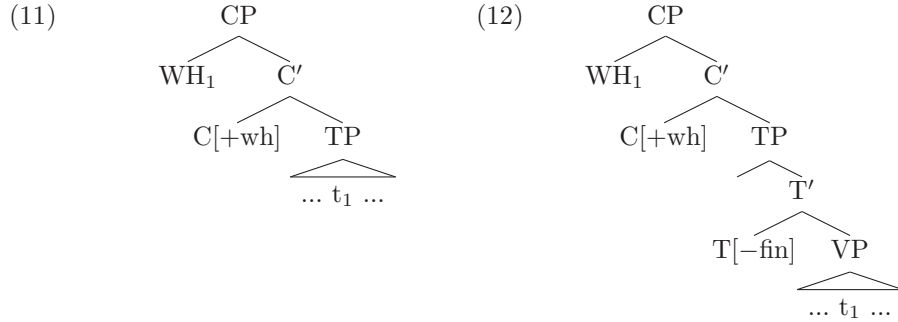
Finally, let us turn to the problem of relations between constructions. Given the tools that we have, we can define what a subtype of a construction is.

(10) **Subtype of a construction**

A construction C' is a subtype of a construction C iff $I_{C'} \supseteq I_C$ and (trivially) $E_{C'} \subseteq E_C$.

In general, in order to characterize a construction C' as a subtype of another construction C , some properties may be *added* to the structural descriptions of C but no properties can be *removed* from the description of C .

Let us consider an example relevant for the present purposes. In our learned intuition, the *infinitival embedded wh-question* construction is a subtype of the *embedded wh-question* construction. How can this intuition can be accounted for in the present logic of constructions? Let us assume, quite uncontroversially, that the intension (structural description) of the embedded wh-question construction I_{EQ} is the tree in (11) and the intension of the infinitival embedded wh-question construction I_{IEQ} is the tree in (12).



According to the present logic, the infinitival embedded wh-question construction *is a subtype of* the embedded wh-question construction iff $I_{IEQ} \supseteq I_{EQ}$, i.e. the intension of the former is a superset of the intension of the latter. This is true because all the categories in (11) are also in (12) and all the dominance relations of (11) are preserved in (12).

I believe that this simple logical apparatus matches most linguists' intuitions concerning the characterization of constructions, their mutual relations, and their relations to actual natural language expressions. With this taxonomical device at hand it will be much easier to evaluate the claims that MECs are a subtype of other constructions.

(13) **Reduction claims (to be tested)**

- i. The MEC is a subtype of the free relative construction
is true iff $I_{MEC} \supseteq I_{FR}$
- ii. The MEC is a subtype of the embedded wh-question construction
is true iff $I_{MEC} \supseteq I_{EQ}$

- iii. The MEC is a subtype of the headed relative construction
is true iff $I_{MEC} \supseteq I_{HR}$

Before turning to the evaluation, one more methodological remark is due. Note that the present logic imposes strict limits on the validity of arguments. In other words, it helps us distinguish between arguments and non-arguments. What constitutes a valid argument? It is one based on the observation that the MEC *lacks* some of the *obligatory* properties of its putative supertype. This means that the supertype is too specific for the MEC to be able to “fit in”. And what is a non-argument? It is any claim that the MEC is not a subtype of a particular construction because it has properties that the construction does not. In fact, this is precisely what one expects from a subtype: it is more specific than its supertype. To give an example, some scholars have attempted to argue against the FR analysis of MECs by observing that *wh*-words in MEC cannot be modified by the ‘ever’ morpheme—an optional part of FRs. Clearly, this is a non-argument: it is perfectly sensible that the MEC has some property *in addition to* the general properties of the FR that prohibits the ‘ever’ morpheme to be used. The only conclusion that one can draw from this observation is quite a trivial one, namely that MECs are not a subtype of FRs with ‘ever’ morphemes.

I proceed further by providing the structural descriptions (intensions) of the three constructions under consideration (§3.2). The goal is to arrive at baseline linguistic descriptions that are mutually comparable and can thus be more or less equally evaluated with respect to MECs. For the reason of potential bias, I refrain from using analyses that underlie some specific comparisons with MECs conducted in the literature. Nevertheless, the work and observations of other scholars will be acknowledged wherever possible.

3.2 Structural descriptions of the candidate constructions

In their strong versions, the reduction claims presuppose that none of the candidate constructions is reducible to any other candidate construction. In order to make sure that we are testing these strong claims, we have to come up with structural descriptions that are specific enough. In other words, the candidate constructions must not constitute supersets of each other.

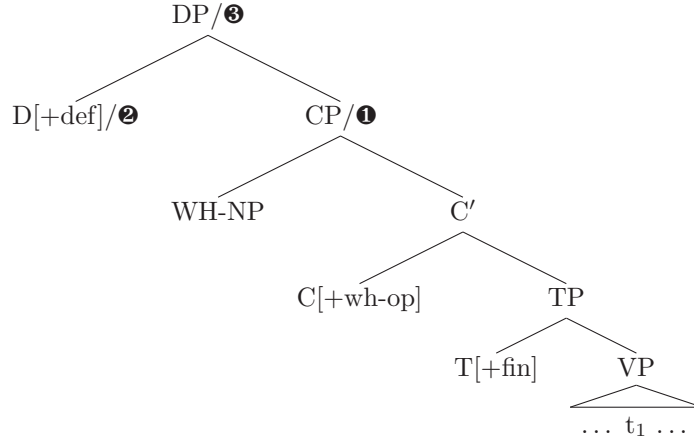
3.2.1 The free relative construction

Free relative clauses are generally believed to be clauses (CPs) with a fronted *wh*-word in SpecCP (WH-NP) and selected by a covert definite determiner (D). To the best of my knowledge, free relatives must be finite (T[+fin]).¹ This or

¹This property of FRs is left unexplained and is usually neglected in the literature. For brief discussions, see Rudin (1986: Ch3 and p. 190, fn. 40), Baker (1989:169), and

very similar syntax has been assumed for free relatives since the late 1970s (see e.g. Hirschbühler 1978, Groos and Van Riemsdijk 1981), when it was labeled as the COMP analysis, and is still standard nowadays (see e.g. Caponigro 2003, whose structural description I am adopting).

(14) **Free relative clause**



Semantically, the wh-clause behaves as a property P (which is composed of the property denoted by the wh-word and the one denoted by C'). When selected by the determiner (essentially Link's 1983 sigma-operator or Partee's 1987 iota-operator ι), the wh-clause returns the maximal entity in the set denoted by the property. The assumption that FRs have the semantics of plural definite DPs has been standard since Jacobson (1995) and has recently been defended by Hinterwimmer (2008). For the sake of uniformity, I use intensional representations (see §1.4.1).

- (15) ① $\rightsquigarrow \lambda w_s \lambda x_e [P(w)(x)]$
 ② $\rightsquigarrow \lambda w_s \lambda X_{\langle s, et \rangle} [\iota x [X(w)(x)]]$
 ③ $\rightsquigarrow \lambda w_s \iota x [P(w)(x)]$

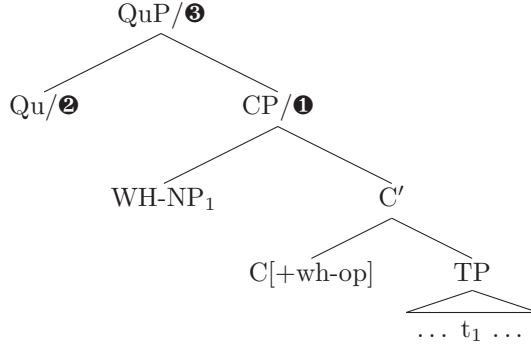
A free relative clause construction is exemplified by the highlighted part of (16a). The syntax and semantics of the whole sentence are given in (16b,c).

- (16) Jane solved _[FR] what troubled us].
 a. [TP Jane T [VP solved [DP D [CP what₁ [TP t₁ T [VP troubled us]]]]]
 b. $\lambda w [\textbf{Solved}(w)(\iota x [\textbf{Thing}(w)(x) \wedge \textbf{Troubled}(w)(x)(\textbf{us})])](j)$

3.2.2 The embedded wh-question construction

The syntax of embedded wh-questions is also fairly uncontroversial. If we abstract away from the potential complexity of the CP-domain (cf. Rizzi 1997) it is safe to assume that EQs are CPs with a fronted wh-word in SpecCP. I include the QuP, a specific kind of ForceP (Qu as ‘question’), for two reasons. Firstly, its absence would have the consequence that free relatives are a subtype of embedded wh-questions—something we need to avoid here. Secondly, something like a Qu head has been assumed in most approaches to the semantics of questions (Baker 1970; Karttunen 1977; Groenendijk and Stokhof 1984; Cable 2007 *inter alia*).

(17) **Embedded wh-question**



The semantics of (embedded) wh-questions has been slightly more controversial than their syntax. Nowadays, three types of analyses are still competing: the set-propositional analysis of Hamblin (1973) and Karttunen (1977), the propositional analysis of Groenendijk and Stokhof (1984), and the structured meaning analysis of Von Stechow (1991) and Krifka (2001). For the present purposes, I adopt Groenendijk and Stokhof’s propositional analysis, under which (embedded) questions denote propositions that define so-called partitions, which are non-intersecting groupings of the set of possible worlds. The denotation of the CP is identical to the one of the CP in free relatives. The only difference is that SpecCP in questions can be occupied by multiple wh-operators (alternatively, there are multiple specifiers), in which case the CP-denotation is of a higher order ($\langle s, \langle e, et \rangle \rangle$). I am leaving these cases aside. The CP is selected by the operator Qu, which turns the property into a propositional concept (type $\langle s, st \rangle$ which characterizes all the world-world pairs such that the extension of the property denoted by the CP in one world is identical to the extension of that property in the other world.

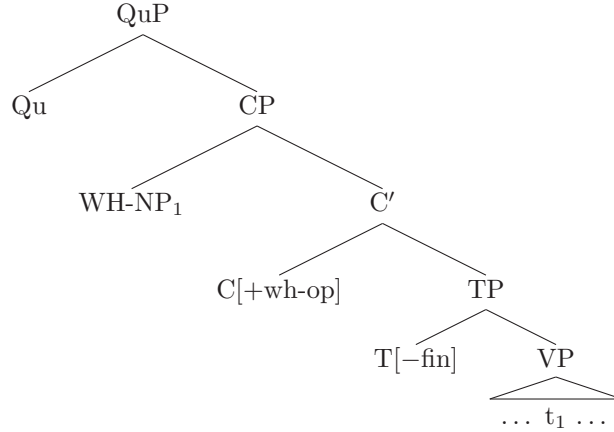
- (18) ① $\rightsquigarrow \lambda w_s \lambda x_e [P(w)(x)]$
 ② $\rightsquigarrow \lambda w_s \lambda X_{\langle s, et \rangle} \lambda w'_s [X(w') = X(w)]$
 ③ $\rightsquigarrow \lambda w_s \lambda w'_s [\lambda x [P(w')(x)] = \lambda x [P(w)(x)]]$

Consider the following example. The question-embedding verb *know* selects for two arguments—a propositional concept and an individual—and states that the individual knows the extension of the propositional concept (a proposition) in the world of evaluation. In the particular case below, Mary knows that the set of individuals who John invited in her belief-worlds is identical to the set of individuals who John actually invited.²

- (19) Mary knows [_{EQ} who John invited].
- a. [_{TP} Mary [_{VP} knows [_{QuP} Qu [_{CP} who₁ [_{TP} John [_{VP} invited t₁]]]]]]]
- b. $\lambda w[\mathbf{Know}(w)(\lambda w'[\lambda x[\mathbf{Invited}(w')(x)(\mathbf{j})]$
 $= \lambda x[\mathbf{Invited}(w)(x)(\mathbf{j})]])(\mathbf{m})]$

Let us also provide a description of a subtype of embedded wh-questions, namely infinitival embedded wh-questions (IEQs). The reason is that IEQs bear even a closer superficial resemblance to the MEC and we might therefore suspect that MECs represent a subtype of IEQs. The description is very similar to the one above, with the difference that the T-head of IEQs is [–fin].

- (20) **Infinitival embedded wh-question**



Infinitival questions involve covert modality, presumably licensed by C[+wh-op] (see Bhatt 1999). An example of an embedded infinitival question is given below along with its syntax and semantics. The accessibility relation *A* with respect to which the covert modal is interpreted is a variable with a contextually specified value.

- (21) Mark knows [_{EQ} who to invite].
- a. [_{TP} Mark [_{VP} knows [_{QuP} Qu [_{CP} who₁ [_{TP} to [_{VP} invite t₁]]]]]]]

²The denotation of *know* is as follows:

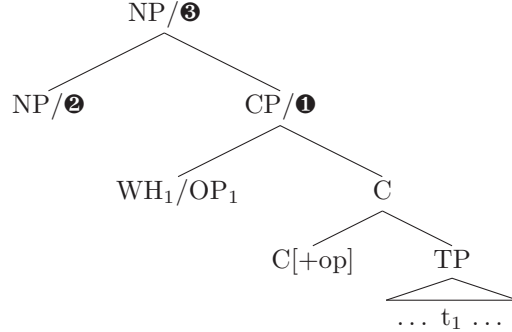
(i) $\text{know} \rightsquigarrow \lambda w \lambda V_{\langle s, st \rangle} \lambda x_e [\mathbf{Know}(w)(\lambda w' [V(w')(w)])(x)]$

- b. $\lambda w[\mathbf{Know}(w)(\lambda w'[\lambda x[\forall w'' \in A(w') : \mathbf{Is.invited}(w'')(x)]]$
 $= \lambda x[\forall w'' \in A(w) : \mathbf{Is.invited}(w'')(x)]]](\mathbf{m})]$

3.2.3 The headed relative construction

Now, let us move on to the last relevant construction: the headed relative. The situation with analyzing headed relative clauses is virtually opposite to that of embedded questions. While the core semantics is rather clear and simple, the syntax has been subject to continuing controversy, especially since Kayne (1994), who revived the so-called head-raising analysis of Vergnaud (1974), under which the relative-clause head (pivot) originates within the HR itself. This analysis, further developed by a range of scholars (e.g. Bianchi 1999; Zwart 2000; De Vries 2002; Sauerland and Hulsey 2004), stands in opposition to the analysis where the relative clause functions as a modifying adjunct to the pivot NP (Partee 1975). I remain agnostic with respect to this controversial issue and will adopt the latter analysis, for the sake of simplicity. As in the previous two constructions, the core of the HR is a CP that contains an operator-variable dependency. SpecCP hosts the relative operator, which can be covert (OP) or overt (WH), depending on various factors. The relative CP is adjoined to the pivot NP.

- (22) **Headed relative**



Semantically, both the pivot NP and the relative CP denote a property, which combine by the rule of predicate modification.

- (23) ① $\rightsquigarrow \lambda w_s \lambda x_e [P(w)(x)]$
 ② $\rightsquigarrow \lambda w_s \lambda x_e [Q(w)(x)]$
 ③ $\rightsquigarrow \lambda w_s \lambda x_e [P(w)(x) \wedge Q(w)(x)]$

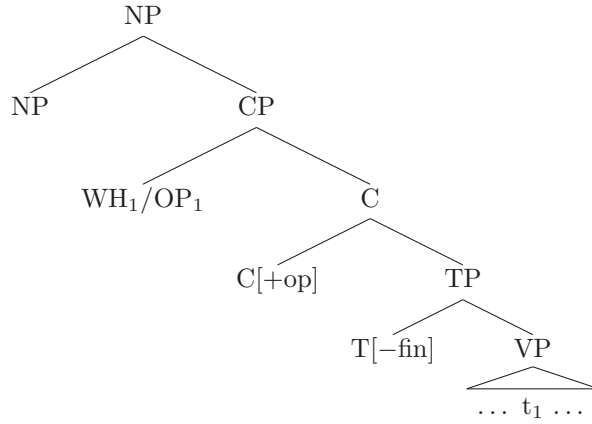
Consider the example below, where a relative clause together with its pivot function as a restrictor of a quantificational determiner *every*.

- (24) Mary found $[_{\text{HR}}$ every book that John lost].
 a. $[_{\text{TP}}$ Mary $[_{\text{VP}}$ found $[_{\text{DP}}$ every $[_{\text{NP}}$ book $[_{\text{CP}}$ OP₁ that $[_{\text{TP}}$ John $[_{\text{VP}}$ lost $t_1]$]]]]]

- b. $\lambda w \forall x [\mathbf{Book}(w)(x) \wedge \mathbf{Lost}(w)(x)(j) \rightarrow \mathbf{Found}(w)(x)(m)]$

As in the previous section, a particular subtype of the present construction might be relevant: the infinitival headed relative construction (IHR). This construction differs from its supertype in that it specifies the non-finiteness of T.

- (25) **Infinitival headed relative**



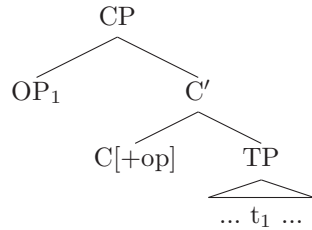
Analogously to infinitival embedded wh-questions, the covert modality is subject to contextual specification.

- (26) Paula found _[IHR a book to read].
- a. $[\text{TP Paula}_i [\text{VP found} [\text{DP a} [\text{NP book} [\text{CP OP}_1 [\text{TP PRO}_i \text{ to} [\text{VP read } t_1]]]]]]]$
- b. $\lambda w \exists x [\mathbf{Found}(w)(x)(p) \wedge \mathbf{Book}(w)(x) \wedge \forall w' \in A(w) : \mathbf{Read}(w')(x)(p)]$

3.2.4 Relations among the candidate constructions

All the candidate constructions are subtypes of a more general construction, the A-bar construction, whose structural description is provided in (27). Notice that all the categories and dominance relations in (27) are preserved in the candidate constructions characterized above.

- (27) **A-bar construction**

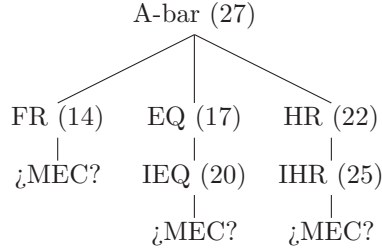


At the same time, none of the candidate constructions is a subtype of any other. In order to verify this, we need to show that none of them is a structural superset of any other. The FR and the EQ are not subtypes of one another because each contains a category that the other one does not: Qu in the EQ and D[+def] in the FR. Neither the FR, nor the EQ can be a subtype of the HR. Even if they contain the category NP (which is possible, of course), they do not preserve the dominance relations: in the HR, the NP dominates the CP, which is not the case in the FR and the EQ. Finally, the HR cannot be a subtype of the FR or the EQ. The reason is that it does not contain all their categories, lacking both D[+def] and Qu.

For the constructions EQ and HR, we introduced relevant subtypes: IEQ and IHR. The reader can easily verify that they are indeed subtypes in the technical sense.

We arrive at the taxonomy in (28), where dominance maps to the relation *subtype of*, such that a daughter *is a subtype of* her mother. As defined in our logic, daughters inherit all the properties from their mothers and add some more. Going down the tree therefore translates to becoming a more and more specific construction. The nodes with MECs enclosed in question-marks indicate the current hypothesis space.

(28) **Taxonomy of A-bar constructions (hypotheses)**



The goal of the next section is to try to reduce the hypothesis space.

3.3 Testing the hypotheses

In the preceding section, I provided simplified structural descriptions of the candidate constructions. In order to evaluate the validity of the reduction claims in (13), however, we also need the structural description of the MEC. To give one is a task of this thesis, in particular Chapters 5 and 6. The step I am going to take in this section is a heuristic one. I am not going to have a look at the structural description of the MEC itself, rather, I will investigate the empirical properties of actual instances of MECs, in logic-talk, of (some) members of the extension of the MEC. These properties will be compared to the properties of the three constructions, one by one. To the extent that we are able to provide a reliable mapping from the properties of the candidate constructions to their

structural descriptions and compare them to the properties of MECs, we will be able to evaluate the reduction claims. Two disclaimers are due. Firstly, the results of the tests are not absolute, in the sense that they rely on the theoretical/analytical assumptions about certain empirical phenomena. Though most of the assumptions made are uncontroversial, there is always a chance of them being wrong. If that is the case, the tests can be revisited. Secondly, the set of properties discussed below is far from exhaustive. It should be clear that the rest of this section only concentrates on properties that are relevant for a comparison with the candidate constructions.

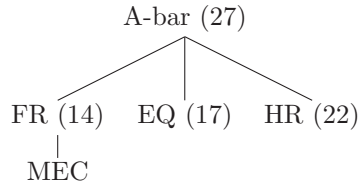
3.3.1 The free relative hypothesis

I will proceed in two steps. In the first subsection I will show that the MEC cannot be a subtype of the FR as defined above. In order to acknowledge the insights of some scholars, we will “relax” the structural description of FRs by removing some of its properties and see whether MECs and FRs can be viewed as subtypes of one, more abstract construction.

First take

Let us start with testing the hypothesis in (29), i.e. that the MEC is a subtype of the FR:

(29) **Taxonomy of A-bar constructions (The FR hypothesis)**



Free relative clauses are always definites, as indicated in (14) by the [+def] feature on the D head. This property of the structural description has two consequences: FRs are ungrammatical in contexts sensitive to definiteness effects and they do not exhibit scopal interactions (they appear to always take the highest scope). The examples in (30a,c) come from Izvorski (1998:163):

- (30)
- a. *There is what she cooked on the table.
 - b. Everyone loved what John painted.
 ‘There {is a unique picture / are unique pictures} that John painted and everybody loved the picture(s).’
 *‘Everybody loved {a picture/pictures} that John painted [(a) potentially different one(s)].’
 - c. John doesn’t have what Bill wants.
 ‘Bill wants something and John doesn’t have it.’
 *‘John doesn’t have anything that Bill wants.’

MECs behave in a virtually opposite way. They not only can appear in environments that require indefiniteness, they can never outscope quantifiers or negation (see §2.2.7). One could therefore argue that the structural description of the MEC should contain a D-head with the features $[-\text{def}, -\text{specific}]$. The examples (31b,c) come from Izvorski (1998:164):

- (31) a. *Russian*
 Mne est' komu zvonit'.
 me:DAT be:IMPRS who:DAT call:INF
 'There is somebody I can call.'
- b. *Bulgarian*
 Vseki ima kakvo da čete.
 everyone has what SBJ read:3SG
 'Everyone has something to read.'
 *'There is something that everyone can/has to read.'
- c. *Serbo-Croatian*
 Jovan nema što čitati.
 Jovan NEG-has what read:INF
 'There is nothing for Jovan to read.'
 *'There is something that Jovan does not have available for reading.'

Another property where FRs and MECs contrast is the verbal mood. The T-head in the structural description (14) contains the feature $[+\text{fin}]$, while MECs are typically infinitival (alternatively subjunctive) and for many languages the infinitive is the only option, as witnessed in §2.2.3 and illustrated by the Russian examples in (33). If a language has no infinitive, such as Bulgarian, it uses the form that is functionally equivalent to it, while disallowing all other finite forms. This is illustrated in (34). Apparently, the finiteness requirement in FRs and the non-finiteness requirement in some languages' MECs is in conflict.

- (32) a. *I will watch what(ever movie) to show.
 b. I will watch what(ever movie) they might show.
- (33) *Russian* (example (b) from Izvorski 1998:162)
 a. Est' što čitat'.
 be:IMPRS what read:INF
 'There's something to read.'
 b. *Est' što čitaju / pročitaju.
 be:IMPRS what read:PRS.1SG / read:FUT.1SG
 'There is something that I (will) read.'
- (34) *Bulgarian* (Rudin 1986:189)
 a. Imam koj da se griži za mene.
 have:1SG who to REFL care:3SG for me
 'I have someone to take care of me.'

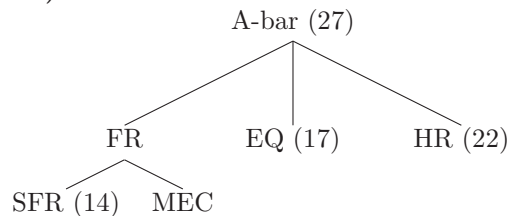
- b. *Imam koj će (šte) se griži za mene.
 have:1SG who that (will) REFL care:3SG for me
 ‘I have someone that will take care of me.’
- c. *Imam koj (da) se grižeše za mene.
 have:1SG who (to) care:PST for me
 ‘I have someone that used to take care of me.’

In order for the MEC to qualify as a subtype of the FR, it has to retain all the properties of FRs. This is apparently not the case: MECs cannot be construed as definites and they do not have to (and in some languages cannot) be finite. This proves that the MEC is not a subtype of the FR as standardly defined.

Relaxing the notion of the FR

Suppose that both the FR and the MEC represent subtypes of a more abstract construction. This is trivially true: we only need to remove enough properties from the structural description of the FR. It is very plausible, for instance, that both FRs and MECs represent subtypes of the A-bar construction. However, the A-bar construction is too general, as it also subsumes the other two candidate constructions. What we need is a construction that is a supertype of both FRs and MECs but not of headed relatives and embedded wh-questions.³ In order to comply with commonly used terminology, I relabel the FR above as the *standard free relative* construction (SFR) and reserve the label FR for our new object. We are now trying to verify the following taxonomical picture:

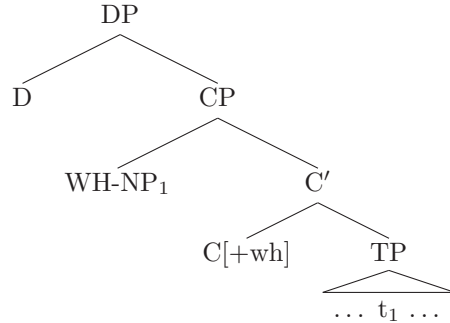
- (35) **Taxonomy of A-bar constructions (The refined FR hypothesis)**



Let us start by relaxing two properties of the FR: suppose that it is underspecified for definiteness and finiteness, the two offending properties:⁴

³This taxonomy is also assumed by De Vries (2002) in the comprehensive cross-linguistic study of relative constructions.

⁴This line of reasoning was pursued e.g. by Suñer (1983), who assumed that the finiteness (tense) parameter is the only difference between FRs and MECs. More recently, a DP analysis for MECs was proposed by Agouraki (2005).

(36) **Free relative construction** (*first revision*)

Notice that the SFR is a subtype of the FR: it preserves all its properties and adds some more, namely definiteness on the D-head and finiteness on the T-head. Can the same be claimed about MECs? Do MECs preserve all the properties of (36)?

Let us first concentrate on the property of the construction that makes it a DP. DPs, whether definite or indefinite, specific or non-specific, can function as complements of verbs and prepositions, as well as subjects of most predicates. This expectation is indeed borne out for SFRs. Their DP-hood is also supported by the availability of truth-condition preserving DP paraphrases (cf. Caponigro 2003:12ff).

- (37) a. **Direct object position**
I really like what she bought. \approx I really like [_{DP} her new dress].
- b. **Object of a preposition**
Give it to whoever you think deserves it most. \approx Give it to [_{DP} Mary].
- c. **Subject position**
Whoever helped me saved my life. \approx [_{DP} The mysterious man] saved my life.

The distribution of MECs, on the other hand, is far more limited (see also §2.2.1). As first observed by Plann (1980), MECs cannot appear in the subject position, (38b). Grosu (2004) added the observation that MECs are ruled out from predicative positions, (38c). Finally, I add a Czech example showing that MECs cannot appear as objects of prepositions, (38d).

- (38) a. **Direct object position** (*Spanish*; Plann 1980:123)
María no tiene de quien fiarse.
Mary NEG has on who rely:INF
'Mary doesn't have anyone to rely on.'
- b. **Subject position** (*Spanish*; Plann 1980:124)
*De quien fiarse no es fácil de encontrar.
on who rely:INF NEG is easy find:INF
'Who to rely on is not easy to find.'

- c. **Predicate position** (*Romanian*; Grosu 2004:428)
 *Săpunul ăsta este cu ce să te speli pe față.
 soap.the this is with what SBJ REFL.2SG wash on face
 ‘This piece of soap is something with which to wash your face.’
- d. **Object of preposition** (*Czech*)
 *Potkal ho před kde nakupovat.
 met him in.front.of where do.shopping:INF
 ‘He met him in front of (the place) where one could do shopping.’

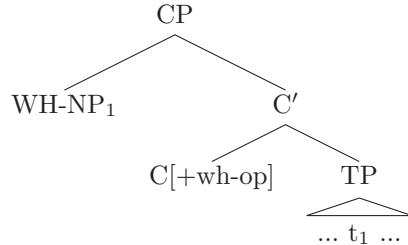
Notice that truth-conditionally similar paraphrases making use of non-specific DPs are completely grammatical:

- (39) a. **Subject position**
 A good baby-sitter is not easy to find (\approx just any good baby-sitter)
- b. **Object of preposition**
 He met her in front of a store (\approx just any store)
- c. **Predicate position**
 This piece of soap was a gift.

One way of identifying empty nominal heads heading *wh*-clauses, and free relatives in particular, are matching effects. The term characterizes a phenomenon where the *wh*-word in the left periphery of an embedded clause apparently enters into an A-relation with the verb that selects the *wh*-clause. In effect, the embedded *wh*-word is constrained by case and/or selectional relations with the matrix verb. Most approaches to free relatives assume that it is an empty N/D head that mediates these A-relations (e.g. Grosu 1987). If a D-head selects the MEC, as we currently hypothesize, one might expect matching effects to be operative, which is not the case (see also §2.2.2). This is illustrated by (40), where the verb *găsește* ‘find’ selects an MEC with a *wh*-word embedded in a PP, *cu cine* ‘with whom’, even though normally it can only select for DPs.

- (40) *Romanian* (Grosu 1994:138)
 Maria nu găsește cu cine ieși.
 Maria NEG finds with whom go.out:INF
 ‘Maria doesn’t find anyone with whom to go out.’

In sum, MECs lack two properties characteristic of DPs—a DP-like distribution and matching effects. The refined FR in (36) can thus only be correct if the D heading the MEC is a very special one, basically one that is designed for MECs *ad hoc*. I will not attempt here at such a characterization and I will assume that an analysis which can make without a D-layer is preferable. What happens if we get rid of the offending D-layer in the structural description of the MEC? We arrive at the following picture:

(41) **Free relative construction** (*second revision*)

This structural description almost perfectly matches the analyses of Grosu (1994), Grosu and Landman (1998), and Caponigro (2003). The SFR is created from this mother in three steps: add a D-layer, add a definiteness feature to it, and add a finiteness feature on T. The MEC is created in one step, simply by adding the irrealis mood requirement. This is fine. However, there is one problem with this construction: it is suspiciously similar to the one that underlies embedded wh-questions. Is there a difference between the two? Recall that there is one CP-level property that distinguishes the class of relatives from the class of interrogatives: the number of wh-words is restricted in the former but not in the latter. Even though the most parsimonious assumption is that this requirement comes about as a result of the semantic interaction between the nominal (D/NP) and clausal (CP) material (D/NP can only combine with expressions type $\langle e, t \rangle$ and not $\langle e, \langle e, t \rangle \rangle$: D by functional application and NP by predicate modification), we can also assume that this requirement is a syntactic one and is encoded in the C-head. If this is the case, we expect MECs to only allow for single wh-operators. Unfortunately, this does not match reality, as first observed by Rudin (1986) for Bulgarian and subsequently by others for other languages (e.g. Izvorski 1998; Grosu and Landman 1998; Grosu 2004); see also §2.2.2.⁵

- (42) a. *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo kŭde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’

⁵Recently, Catherine Rudin (2008) has argued that multiple standard free relatives could exist in some Slavic languages. However, the argument is not yet fully developed and on the face of it, it seems to me that additional wh-words in SFR function as indefinites rather than additional operators. This is supported by the fact that only one wh-word can bear the definite *-to* suffix:

- (i) *Bulgarian*
 a. Vzemajte koj kakvoto može.
 take who what can
 ‘Let everyone take whatever they can.’
 b. *Vzemajte kojto kakvoto može.

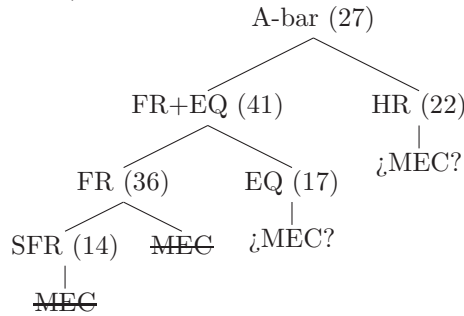
- b. *Hungarian* (Surányi 2005)
 Végre Jánosnak van kinek mit adnia
 finally Janos:DAT be:3SG who:DAT what:ACC give:INF.3SG
 ‘Finally John has something to give to everyone / John has things
 to give to people’
- c. *Romanian* (Grosu and Landman 1998:157)
 Nu mai avem pe cine cu cine împerechia
 NEG more have:1PL ACC who with who match:INF
 ‘We no longer have any pairs to match.’ [said by an unsuccessful
 matchmaker]

Having observed this fact, we have reached the taxonomical ceiling: there is no structural description of the FR that includes both SFRs and MECs but at the same time *excludes* embedded wh-questions. Before we conclude, let us verify whether the structural description (41) also underlies the headed relative construction. This is *not* the case because the C-head in the HR is not limited to hosting wh-operators. It can also host empty operators.

Conclusion

The investigations in this section proved successful, as our hypothesis space shrank significantly. This is where we stand now:

- (43) **Taxonomy of A-bar constructions (The FR hypothesis proved false)**

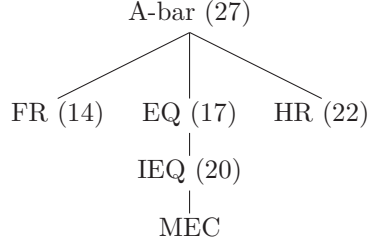


This conclusion points to an important aspect of construction classification: The fact that two constructions *A* and *B* qualify as subtypes of *C* does not mean that they are the only subtypes. And one should be especially careful if a potential additional subtype, say *D*, is not precisely that construction, whose relation to *A* one is trying to argue against by showing that *A* is related to *B* via *C*. In more concrete terms, this section proved that not all MECs are amenable to the FR-treatment advocated by Grosu (1994) and Caponigro (2003).

3.3.2 The embedded question hypothesis

This section explores the validity of the following taxonomy:

(44) **Taxonomy of A-bar constructions (The EQ hypothesis)**



Treating MECs as a subtype of EQs, an analysis pursued mainly in Izvorski (1998), is attractive especially because there is already a subtype which is specified for non-finiteness, namely the infinitival EQ. The relation between the IEQ and the MEC is strengthened by the fact that both express a similar kind of root modality. The subtype-relation between MECs and EQs thus seems to hinge on a single property of the EQs—the only property that prevents EQs from being analyzed as a supertype of FRs: the Qu projection. Let us recall the function of this projection: it turns a property denoted by the wh-clause into a propositional concept, an object that is suitable for reaching the proper semantics of embedding. The main motivation for this approach is the following kind of entailment, where the combination of (45a) and (45b) entails (45c):

- (45)
- a. Mary knows who to invite.
 - b. John (and nobody else) should be invited.
 - c. Mary knows that John (and nobody else) should be invited.

This is captured by the general semantics for EQ assumed here. The particular semantics of (45a) is given below. For reasons of illustration, I choose a deontic modal base, but because the modality is underspecified, other options are viable as well (for instance, the modal can quantify over all worlds where certain goals are reached).

- (46) $\lambda w[\mathbf{Know}(w)(\lambda w'[\lambda x[\forall w'' \in \{w''' : \text{all obligations in } w' \text{ are complied with in } w''\} : \mathbf{Is.invited}(w'')(x)] = \lambda x[\forall w'' \in \{w''' : \text{all obligations in } w \text{ are complied with in } w''\} : \mathbf{Is.invited}(w'')(x)]](\mathbf{m})]$
 ‘For all the individuals that must be invited in order to comply with the obligations in the actual world, Mary knows that they must be invited in order for all the obligations to be complied with.’

Can this semantics be used for MECs? Unfortunately, it is impossible to check whether an entailment similar to (45) holds because verbs that embed MECs cannot embed declarative clauses. Abstracting away from this problem, let us try to construct a semantics similar to the one in (46) for an MEC embedded

by the verb ‘have’, the most common MEC-embedder cross-linguistically. The semantics of ‘have’ involves an existential component, as argued by all scholars who have worked on MECs. Even though the standard assumption is that ‘have’ quantifies over individuals, we might modify this for our purposes and assume that ‘have’ quantifies over worlds. As a result, this modified ‘have’ is ready to select a propositional concept, i.e. for a QuP. Instead of ‘there is an individual x , the verb roughly conveys ‘there is a world w (for x)’—a more technical paraphrase of ‘it is possible (for x) that’, where x is the subject of ‘have’. I assume that the subject is somehow involved in restricting the worlds over which the modal quantifies (below, this is marked by the subscript m (for *Mary*) on the accessibility relation variable A). Also, I remain open with respect to the flavor and force of modality. I explicate the hypothetical interpretations in the informal paraphrase.

(47) Mary has who to invite.

(48) $\lambda w \exists w' \in A_m(w) : [\lambda x \forall / \exists w'' \in A'(w') : \mathbf{Is.invited}(w'')(x) = \lambda x \forall / \exists w'' \in A'(w) : \mathbf{Is.invited}(w'')(x)]$
 ‘For all the individuals that can/have to be invited in order to comply with certain obligations/reach certain goals in the actual world, it is possible for Mary to invite those individuals in order for all the obligations to be complied with/for all goals to be reached.’

Whatever the actual intuitive meaning of (48) is, it does not appear to be the simple meaning that the MEC in (47) expresses, namely (as most scholars put it) ‘there is somebody Mary can invite’ or (as Avgustinova 2003 puts it) ‘it is possible for Mary to invite somebody’.

In the absence of better arguments, I conclude that the MEC does not denote a propositional concept in the sense of Groenendijk and Stokhof (1984), i.e., it does not define a partition.

Let me show that also the set-propositional approach to the semantics of questions (Hamblin 1973; Karttunen 1977) has no straightforward account of MEC intuitive semantics. Under this approach, a question denotes (at least at a certain point of derivation) a set of propositions, which are identified with the set of possible or true answers. If a set of proposition is the type of the argument of the existential ‘have’, one would expect the MEC in (49) to have the semantics in (49a) (this comes from Izvorski 1998). This does not match reality, though.⁶

(49) I have where to go.

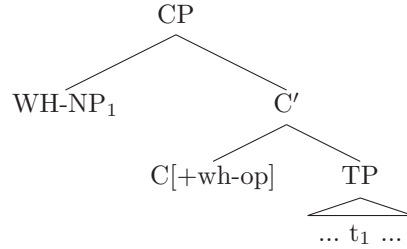
a. #‘There exists an answer to the question “Where can I go?”’

⁶Interestingly, Izvorski (1998), who argues for the EQ hypothesis, notes these problems, but nevertheless concludes that “it appears to be possible to claim that the wh-clause in the existential construction [MEC] is indeed interpreted as a question [...]” (169). However, she goes on to propose a non-interrogative semantics, which, by the way, turns out exactly the same as the FR-style one proposed by Caponigro (2003). See §6.1.2 for a more detailed discussion of the semantics proposed by Izvorski.

I conclude that the MEC is not a subtype of the IEQ as defined in (20). Note that the very same problems carry over to the more general EQ. It seems that the problem lies in the Qu projection, which is responsible for the question interpretation of EQ, whether the resulting semantics defines a partition or a set of answers.

Now, the question is: Can we get rid of this projection and assume that the MEC is a subtype of a more abstract construction, one that is the mother-construction of the EQ? Once we do this, we arrive at the construction below—a construction that is identical to the second revision of the FR construction in (41).

- (50) **Embedded question** (*revision*)

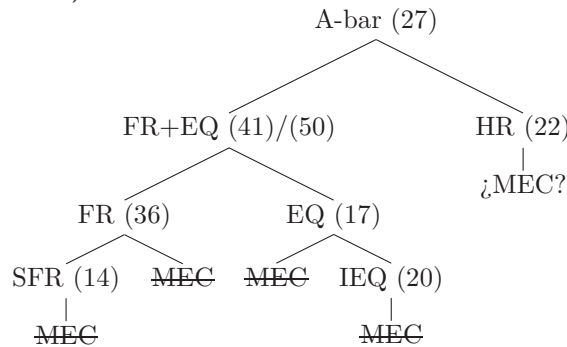


We encounter the same problem, only from a different perspective: there is no structural description that commonly characterizes the (I)EQ and the MEC *to the exclusion* of the FR.

Conclusion

In this section, we reduced the hypothesis space even further, as indicated in the graph below:

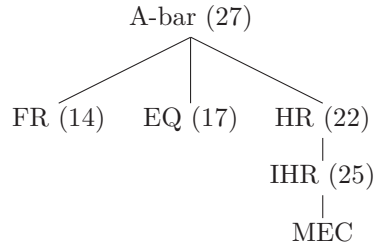
- (51) **Taxonomy of A-bar constructions (The EQ hypothesis proved false)**



3.3.3 The headed relative hypothesis

The last hypothesis that remains to be explored holds that the MEC is a subtype of headed relatives, an idea seriously pursued e.g. by Plann (1980):

(52) **Taxonomy of A-bar constructions (The HR hypothesis)**



According to this hypothesis, MECs have all the properties of HRs and maybe some more. So what are the properties characterizing the HR and at the same time missing from free relatives and embedded questions? It is mainly the presence of the nominal pivot. After witnessing the severely restricted distribution of MECs in §3.3.1, I ignore the option that MECs could be D-headed and assume that they are subtypes of “bare NP” headed relatives. Because MECs never have an explicit NP head, we have to assume that MECs form an HR subtype whose head always remains phonologically unrealized. However implausible this may seem, it is not impossible.⁷ It is a fairly common assumption that there are syntactic categories that have no phonological realization, such as PRO. Under this hypothesis, MECs are structurally very close, if not identical to the following NP, which is an example of the infinitival headed relative construction:⁸

(53) I have [_{NP} somebody to speak with].

The assumed structural identity is supported by the fact that IHRs can serve as paraphrases of MECs in languages that lack them. This suggests that they have a very similar semantics as well.

(54) Mám [_{MEC} co číst].
 have:1SG what read:INF
 ≈ I have [_{IHR} something to read].

Do all languages that have MECs also have IHRs? It seems that a positive answer follows from the present logic: in general, if a language has a construction

⁷In fact, this analysis roughly matches the original COMP analysis for free relative clauses (Groos and Van Riemsdijk 1981, Suñer 1983, among others). While it is no longer used for free relatives, for which the research has converged on the assumption that they are D-headed rather than N-headed, it makes sense to pursue the analysis for different purposes, e.g. for MECs.

⁸I use NP (vs. DP) as a shorthand for a non-quantificational indefinite NP/DP. The syntactic NP-notation used in (53) should therefore not be taken too seriously.

C' such that C' is a subtype of C , it also has C . Indeed, this entailment is valid for some languages, e.g. Spanish.⁹ The following minimal pair is from Plann (1980:123):

- (55) a. María no tiene [_{IHR} a nadie de quien fiarse].
 Maria NEG has nobody on who rely:INF
 b. María no tiene [_{MEC} de quien fiarse].
 Maria NEG has on who rely:INF
 ‘Mary doesn’t have anyone to rely on.’

However, it is not valid for all languages, as one would hope. Consider the following minimal pair from Czech:

- (56) a. *Nemám [_{IHR} nikoho na koho se spolehnout].
 NEG:have:1SG nobody on who REFL rely:INF
 b. Nemám [_{MEC} na koho se spolehnout].
 NEG:have:1SG on who REFL rely:INF
 ‘There is nobody for me to rely on.’

A remedy that comes to mind is that in some languages MECs actually *are* IHRs, i.e. all IHRs are such that their nominal pivot is never overtly realized. But this is not true either. Despite the general lack of IHRs in Czech, one type of IHRs can be formed, namely one headed by the NP *důvod* ‘reason’. Example (57b) shows that the corresponding MEC is also well-formed, which shows that (57a) is not just a way of saying MECs that abstract over reasons.

- (57) a. Není [_{IHR} důvod (proč) tam jít].
 NEG:is reason (why) there go
 b. Není [_{MEC} proč tam jít].
 NEG:is why there go
 ‘There’s no reason to go there.’

These observations cast doubt on the idea of MECs being a subtype of IHRs. We are left with the hypothesis that MECs are a subtype of ordinary HRs. In order to prove this, we have to show that MECs are headed by nominals. Even though these nominals are always silent, they should be detectable by syntactic tests. The first one that comes to mind is locality. Since Ross (1967), we know that complex NPs are islands for extraction. This is indeed the case for (I)HRs:

- (58) a. *About what₁ did you have [_{IHR} somebody to speak with t₁]?

⁹The validity of this entailment is used by some to support a relative clause analysis. E.g. Suárez (1983:365) writes: “every IFR [infinitival free relative] with an empty head [i.e. MEC] [...] has a corresponding relative with a lexical head [...]”

- b. *Romanian* (Grosu and Landman 1998:157)
 *Despre ce₁ (nu) ai [IHR pe cineva cu cine să
 about what (NEG) have:2 ACC someone with whom SBJ
 vorbești t₁]?
 talk
 ‘What do(n’t) you have someone with whom to talk about?’

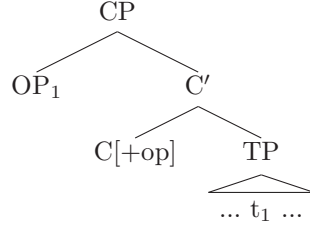
As observed by many scholars, though, MECs are quite transparent for extraction (see also §2.2.4):

- (59) a. *Russian* (Rappaport 1986:13)
 Drug drugu₁ nam bylo [MEC čto rasskazyvat’ t₁]
 each other us:DAT was what:ACC tell:INF
 ‘To each other for us there was [something to tell]’
 b. *Romanian* (Grosu and Landman 1998:157)
 Despre ce₁ (nu) ai [MEC cu cine să vorbești t₁]?
 about what (not) you-have with whom SBJ talk
 ‘What do(n’t) you have with whom to talk about?’

Another test that comes to mind is coordination. If MECs are hidden NPs, they should be able to coordinate with semantically similar (i.e. non-specific) nominals, as in (60). Unfortunately, this is not possible, as witnessed by the Czech example in (61).

- (60) I have [DP₁ a dog] and [DP₂ somebody to speak with].
 (61) *Czech*
 (61) *Mám [DP psa] a [MEC s kým mluvit].
 have:1SG dog and with whom speak:INF
 ‘I have a dog and somebody to speak with.’

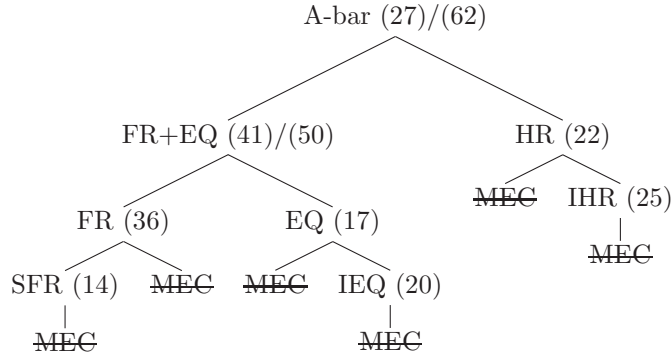
Sticking to the HR hypothesis would therefore require the following: the nominal head MECs is very special in that (i) it never gets phonologically realized and (ii) it is also invisible in syntax. It is not difficult to see that the combination of these two assumptions is completely *ad hoc* and it seems to be much safer to assume that there is no nominal head in MECs whatsoever. But once we remove the nominal head from the structural description of HRs, we arrive at (62)—a structure which is identical to the A-bar construction (27), which is in turn a proper subset (and therefore a supertype) of all the structures discussed so far.

(62) **Headed relative** (*revision*)

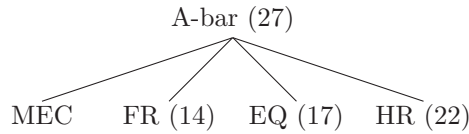
Once again, we hit the taxonomical ceiling: there is no structural description that characterizes HRs and MECs *to the exclusion of* free relatives and embedded questions.

Conclusion

This section finalized the reduction of the hypothesis space:

(63) **Taxonomy of A-bar constructions** (The HR hypothesis proved false)**3.3.4 Summary**

In this section, we explored three rather strong hypotheses concerning the analysis of the modal existential wh-constructions. All of them have been pursued in the literature and according to all of them, some properties of MECs are fully reducible to the properties of some other construction. While this is trivially true for at least some abstract construction (e.g. the A-bar construction), I showed it to be false for three more specific constructions: free relatives, embedded questions, and headed relatives. We have to conclude that the MEC is a *sister* rather than a *daughter* of these constructions.

(64) **Taxonomy of A-bar constructions** (Final version)

A similar conclusion was reached for example by Rudin (1986), who acknowledges the A-bar properties of MECs, such as operator movement but explicitly denies categorizing the MEC as a free relative or embedded question. A few other authors also remain agnostic with respect to this question, e.g. Grosu (2004) and Thomas (2008b).

The conclusion finds support even in the work of scholars that *do* incline to analyze MECs as a subtype of some other construction. Thus, Grosu and Landman (1998), much in the spirit of Grosu (1994), categorize MECs as a subtype of FRs, but at the same time explicitly argue for an EQ syntax. Izvorski (1998), on the other hand, wants to argue for an EQ analysis but ends up with a proposal which is virtually identical (syntactically and semantically) to that of Caponigro (2003), who argues for an FR analysis. Caponigro (2001, 2003) argues for a FR subtype analysis, but his structural description of MECs also underlies EQs.¹⁰ This clearly shows that the controversy is about labels rather than substance, which in turn indirectly supports the present conclusion.

3.4 Conclusion

This chapter explored the relation of MECs to other related constructions. In §3.1 I set up the methodological baseline—a logic of constructions. In §3.2 I provided structural descriptions of the three candidate constructions: free relatives, embedded questions, and headed relatives. The result of §3.3 was primarily negative: using the preliminaries from the preceding two sections, it falsified the hypothesis that there are properties of MECs that are reducible to one of the three candidate constructions. More precisely, by showing (65i), we proved the negative statement in (65ii).

- (65) i. For each candidate construction there are some properties of MECs (in some language) that are incompatible with the structural description of that construction.
- ii. The construction that characterizes MECs (cross-linguistically) is not a subtype of any of the candidate constructions.

Notice that the conclusion in (65ii), though a strong one, is still compatible with a number of weaker hypotheses, two of which are given below.

- (66) i. The MEC is a subtype of some other, yet unrecognized construction.
- ii. There is a subpart of the MEC which is a subtype of a subpart of one of the candidate constructions.

¹⁰Indeed, the three well-known analysis of MECs, namely the ones by Izvorski (1998); Pancheva-Izvorski (2000); Grosu (1994); Grosu and Landman (1998); Caponigro (2003) turn out to be identical in essentials: in all of them, the MEC is a bare CP with property semantics.

In the rest of this thesis, I will argue that both (66i) and (66ii) are in fact correct. Concerning (66i), I will show in Chapter 4 that MECs are a subtype of what I call the possibility clause. The structural description of the possibility clause consists of the A-bar construction and a particular stative predicate that it is selected by. In that respect, it really turns out to be a “sister” of the candidate constructions. In this chapter, I showed that the candidate constructions differ mainly in terms of the material that their common core—the A-bar construction—is combined with: D in FRs, Qu in EQs, and NP in HRs. Similarly, the MEC will be shown to be uniquely characterized by the material it is selected by.

Concerning (66ii), I will show that the hypothesis holds in relation to particular languages. Languages might have different strategies of building the A-bar core for different subtypes of the A-bar construction. Thus, even if one abstracts away from the selecting material (D, Qu, NP), a FR can be distinguishable from an EQ. Typically, the point of variation is the landing site of the wh-operator. In Chapter 5, I will show that wh-operators in MECs can utilize a whole range of landing sites, sometimes making them (or their subparts) a subtype of (a subpart of) the FR, other times of (a subpart of) the EQ.

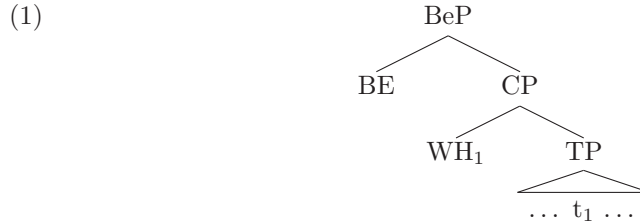
CHAPTER 4

An event-extension analysis of MECs

In the preceding chapter, I tried to prove that the MEC is a self-standing constructional entity which is irreducible to any of the three constructions under discussion—the free relative, the embedded *wh*-question, and the headed relative. If the specific attributes that uniquely define these three construction types are removed, one arrives at a structural description that is traditionally referred to as the A-bar construction, i.e. a syntactic tree containing an operator-variable dependency. Obviously, it is not explanatory to analyze the MEC simply as an A-bar construction (of the *wh*-type), which is by the way precisely the kind of analysis that has recently been devised by a number of scholars (even if under different labels; see the remarks in §3.3.4). Proponents of such a “minimal” analysis have two basic options: either they remain agnostic with respect to any MEC-specific properties and hence massively overgenerate (as in Caponigro 2003, at least to a certain extent) or they heavily rely on stipulations (as in Grosu 2004, who postulates an MEC-specific C-head). It seems self-evident that a proper analysis of MECs will involve something in addition to the structural description of the A-bar construction. But what is this “something”? And where is it located?

In this chapter I put forth a novel hypothesis that addresses precisely these questions. In direct analogy with MECs’ “sister constructions” (the “candidate constructions” of the preceding chapter), I will assume that the MEC-specific expression is placed on the top of the MEC. As opposed to MECs’ sister constructions, however, I will propose that this element is not purely functional, i.e. a functional head with no non-logical content, but rather a lexical one. In particular, it is a verbal predicate with its own descriptive content (though quite an impoverished one) as well as its own argument structure. The structural

description of MECs is therefore of the following format:¹



The verb BE maps to a predicate predicating existence of individuals. This is somewhat in the spirit of Barwise and Cooper (1981) and McNally (1998), who also make use of a lexical existence predicate rather than just a functional existential quantifier (see e.g. Milsark 1974 for the general case and Kondrashova and Šimík to appear for MECs). The predicate will be argued to take the MEC as its “event extension argument”, for which reason I call the analysis the *event-extension analysis*. The “participant argument” slot (SpecBeP), normally filled by the object whose existence is predicated will be removed from the structure and the variable that corresponds to it will be existentially closed by the predicate. The way this MEC-selecting BE functions, both syntactically and semantically, is well detectable on the English predicate *available* around which the informal discussion will revolve. I will argue that the predicate BE can be held responsible for the core MEC properties, including their distribution, modality and mood, and narrow scope existential quantification.

This chapter is organized as follows. In §4.1, I devote some space to the characterization of two crucial but very special properties of MECs—their limited distribution and their modality. I will investigate the state of the art in approaching these issues and will conclude that none of the existing analyses provides a satisfactory account. In §4.2, I take the first steps towards an analysis by investigating the properties of the predicate *available*. We will see that in its fully spelled-out argument structure, it relates two individuals by a possessive-like relation and states that it is possible that some event takes place in which one or both of these individuals are involved. This possible event is expressed by what I will call the *possibility clause*, which is an infinitival clause with an operator-variable dependency. In this section, I also spell out my background assumptions concerning the theory of argument structure and event composition. In §4.3, I look more into the properties of the class of predicates that are capable of selecting MECs, so called *MEC-embedding predicates*. It turns out that there is a significant overlap of this class and the class of predicates that can embed *purpose clauses* (Faraci 1974; Jones 1991). I will argue that both classes of predicates are uniquely characterized by involving the same stative predicate that is also found in the predicate *available*. This predicate predicates the existence of some object/individual and at the same time introduces modal quantification over the possibility clause. It will be schematically referred to as

¹The universality of MECs’ CP-hood is compromised in Chapter 5.

BE_E (the predicate BE with an event-extension component). Finally, in §4.4, I investigate how MEC-embedding predicates compose with MECs. It will be shown that a modification in the argument structure of BE_E is needed. In particular, the MEC-selecting predicate undergoes a process akin to antipassivization. The consequence of this is the apparent “headlessness” of MECs, as opposed to purpose clauses. In §4.5, I conclude the chapter.

4.1 Open issues: distribution and modality

There are two major issues that are central to the syntax and semantics of MECs but for which no explanatory account is available: distribution and modality. Thanks to the work of Alexander Grosu (2004), the problem of distribution has at least received a proper description. Concerning the problem of modality, there has been no doubt about MECs always exhibiting existential (as opposed to universal) modality. With the exception of Pancheva-Izvorski (2000), there has never been a serious attempt at explaining why the modal force can only be existential. Concerning the modal flavor, it still awaits a proper description.

4.1.1 Distribution

The first serious attempt to constrain the distribution of MECs is in Pesetsky (1982), who argues that MECs are limited to object positions which are under normal circumstances assigned a structural case, typically accusative. Indeed, it appears to be a necessary condition for an MEC to appear in such a position, however, it is by far not a sufficient condition. The issue of precise distribution was then ignored for more than twenty years, typically being glossed over with a few unrevealing comments about the existential nature of the selecting predicates. It was Alexander Grosu (2004) who provided the first more systematic description of the class of predicates that can select MECs.

By and large, MECs occur as arguments of verbs/predicates whose semantics includes an existential component, and which fall into two major classes; (i) assertion of existence (usually expressed by verbs of the ‘be’ or ‘have’ type), and (ii) coming into being, view, or availability, or causation of one of these (for example, ‘arrive’, ‘be born’, ‘choose’, ‘look for’, ‘find’, ‘send’, ‘obtain’, and ‘wangle’). Some languages disallow MECs entirely, while others permit them only with predicates of type (i). There are also more “permissive” languages, which allow MECs with predicates of type (i) and with some predicates of type (ii), but none, to my knowledge, that freely allow MECs with all of Szabolcsi’s (1986) predicates. In relation to the more permissive languages just referred to, Szabolcsi’s predicates are partly ordered by a scale of accessibility (that marks type

- (i) predicates as most accessible), with individual languages selecting different cut-off points on this scale. (Grosu 2004:406)

Grosu's claim is that the class of predicates that can select MECs is a (possibly proper) subset of predicates that Szabolcsi (1986) identifies (for Hungarian) as imposing an indefiniteness requirement on their internal argument and which she therefore calls *definiteness effect predicates*. According to Szabolcsi, these verbs fall into 4 categories: (i) verbs that simply assert *existence*, (ii) verbs that express *becoming available in a particular fashion*, (iii) *causing to become available in a particular fashion*, and (iv) *causing to become existent in a particular fashion*. The first Szabolcsi's class corresponds to Grosu's class (i) and Szabolcsi's classes (ii)-(iv) correspond to Grosu's class (ii). The terms that I will use to refer to these categories of predicates are *stative* and *dynamic* MEC-embedders (or simply predicates), respectively. Grosu's classification strongly implies that the factor determining the upper bound on MEC-selecting predicates has to do with definiteness effects and hence with the indefinite nature of the MEC. This would in turn support the view that MEC-selecting predicates contain an existential component and MECs are non-quantificational expressions (properties) that are greedy for being existentially quantified over. As I will show in §6.1.2, this is indeed a view of the semantics of MECs that has occasionally been adopted (though not by Grosu 2004 himself). Although I will assume that the existential force comes from the embedding predicate, I will not consider it the primary factor in determining the right distribution. Rather, it will fall out as an epiphenomenon of an argument reduction process (see §4.4).

Grosu's classification in terms of Szabolcsi's definiteness effect predicates is a clear step forward. It gains even more credibility from my personal cross-linguistic survey presented in Chapter 2, which gives us confidence to claim that with Grosu's insight, we have achieved descriptive adequacy. However, descriptive adequacy should never be mistaken for explanatory adequacy. First of all, it is still unclear *why* MECs are distributed as they are. The existing accounts, however they capture the observed existential quantification (see §6.1), boil down to mere technical redescriptions of the fact. Moreover, it seems to me that existential quantification cannot be the only determinant of the distribution. If it were, one would expect MECs to have the distribution of weak indefinite DPs (just like FRs have the distribution of definite DPs). Not only can weak indefinites be distributed in external argument positions, they can even be licensed as argument of non-existential predicates, just as long as they are in the right position to be quantified over by the existential closure (Heim 1982; Diesing 1992). Why is the existential closure not enough for licensing MECs?

4.1.2 Modality

Modality is probably the most understudied and puzzling aspect of MECs. Many scholars have had the intuition that MECs express more than just a plain assertion of possibility. In particular, the possibility is closely related to the assertion of the existence of an individual (or a place/time/etc. for that matter). Consider some of the intuitions provided in the literature:

[...] with the sentence [Jest co jíst? lit. ‘Is there what to eat?'] I am asking whether, by [the existence/presence/availability of] some food, the first condition for eating is satisfied at all [...]² (Zubaty 1922:66)

The function of affirmative infinitive existential sentences [i.e. MECs] [...] is to assert that the necessary conditions exist for the realization of the action denoted by the infinitive [...]. (Babby 2000:2)

This is the type of modality in *I can (always) talk to John*—not in view of a permission or of a physical ability to talk on my part (as deontic and dynamic possibility would have it), but because John is physically present (at relevant times/locations) and there is no prohibition on, or impossibility of, my talking to him. There is a further element in this modal meaning, brought out quite successfully by a paraphrase such as *I can (always) talk to John if I feel like it*. Thus, to characterize the meaning, in terms of quantification over possible worlds: in some of the worlds in which I wish to talk to John, I do so. More formally, we are dealing with a possibility modal with a circumstantial accessibility relation. (Pancheva-Izvorski 2000:27/28)

The NE~ items in Russian [i.e. the conflation of negation and wh-words in Russian MECs; see the discussion in §2.2.2 and §5.2.1] infinitival existential constructions [i.e. MECs] point at the impossibility of performing the action expressed by an agentive infinitive, due to the absence or non-existence or unavailability of (the referent of) a grammatical relation that is originally associated with (i.e. selected or required by) this infinitive. For instance, in [*Detjam negde igrat*] ‘There is no place where the children can play’ the children cannot play due to the lack of space, while in [*Nam ne za čto ego blagodarit*] ‘There is no reason why we could thank him.’ we cannot thank him because there is no reason for doing that. (Avgustinova 2003:461)

Arguably, the availability reading associated with IFRs [irrealis

²The Czech original is “[...] větou [jest co jíst?] se ptám, je-li nějakými zásobami vůbec dána první podmínka jídla [...].”

free relatives, i.e. MECs] could be attributed to the interpretation of IFRs. In particular, it could be claimed that IFRs do not have a modal reading either [as Greek “future wh-clauses”, the topic of Agouraki’s paper], and that what *prima facie* appears to be a modal reading is in fact the intensional indefinite reading of IFRs. (Agouraki 2005:306)

It is noticeable how often the word “availability” pops up in the intuitive descriptions of the modality. Arguably, this reflects the tight connection between the possibility to “perform an action” and the existence of an object/individual, both of which seem to be integrated in the meaning of the predicate *available*. Another aspect that often comes up is the conditional or causal relation between these two, so that the existence of an object/individual is a *condition* or a *cause* for the possibility to be realized.

Despite the rough intuitive consensus about the MEC modality, none of the existing analyses actually reflects the intuition about the tight relation between the individual existence and the possibility. Most analyses (e.g., Caponigro 2003; Grosu 2004) treat the MEC modality essentially on a par with the modality in ordinary (headed) infinitival relative clauses, so that (2a) is expected to be semantically equivalent to (2b):

- (2) a. *Czech*
 Mám mu co říct.
 have:1SG him what tell:INF
 ‘There is something that I can tell him.’
 b. I have something to tell him.

However, this approach clearly overgenerates, not only with respect to the force of the modality, which is exclusively existential in MECs but ambiguous in relatives (see Bhatt 2006), but also with respect to its flavor. Besides the plain circumstantial possibility modality typical of MECs, infinitival relatives can express bouletic (referring to e.g. desires), deontic (referring to laws or rules) (3a) or ability (3c) modality:

- (3) a. I came because I have something to tell you.
 ‘I came because there is something I want/wish/have to tell you.’
 b. There’s nothing to do against this virus.
 ‘There’s nothing we {can/are able to} do against this virus.’

MECs are completely ungrammatical under these readings:³

³Alexander Grosu (p.c.) informs me that translations of these MECs are grammatical and interpretable in Romanian. However, they only have the readings predicted by the present account, i.e. ‘I came because there is something that I can tell you’ and ‘There is nothing that we can (in view of the (non-)existence of something, not in view of our ability) do against the virus.’ I should note that this is also true of the Czech example in (4a), but not really of (4b), which seems unacceptable on any reading. I do not know the source of the contrast between Czech and Romanian in this respect.

(4) *Czech*

- a. *Přišel jsem, protože ti mám co říct.
 came be:1SG because you:DAT have:1SG what tell:INF
 ‘I came because I want/wish/have to tell you something.’
- b. *Nemáme proti tomu viru co udělat.
 NEG:have:1PL against that virus what do:INF
 ‘There is nothing that we are able to do against that virus.’

The approach taken by Pancheva-Izvorski (2000) seems more promising, as she tries to tie the existential quantification over the individual variables introduced by *wh*-words to the existential flavor of the modality. Unfortunately, the semantic account she offers is entirely informal. Moreover, it is unclear why tying together the two existential forces (also present in Šimík 2009a) should be instrumental in constraining the modal flavor.

Despite the numerous intuitive descriptions, it is necessary to conclude that no scholar has managed to provide any analytical insight into how modality in MECs should be handled.

4.1.3 Summary

The aim of this subsection was to point out two issues that are crucial for a theory of MECs but that have so far resisted explanation and to some extent even proper description: distribution and modality. In the rest of this chapter I will argue that the key to understanding these two problems is a formalized notion of availability.

4.2 Introducing availability

The last section left us with two big puzzles. In this section, I take the first steps towards a unified solution. The basic idea is that both MEC-selecting predicates and the MEC modality are associated with a common semantic component, namely availability. Availability will be characterized as the possibility for an event to take place as a result of the existence, presence, or possession of some individual/object.

This section lays the foundations of the account by spelling out the notion of availability and the way availability is associated with MEC-selecting predicates. In §4.2.1 I discuss some relevant properties of the English predicate *available*, especially its argument structure, the role of its arguments, and their mutual relations. In §4.2.2 I set up the stage for a formal account of availability. I discuss my background assumptions concerning the theory of argument structure and event composition and then I provide a background analysis of existence and possession. In §4.2.3 I spell out an explicit formal semantics of the predicate *available*. I argue that with all its arguments saturated, it conveys a conjunction of two propositions, one expressing a have-like relation and

another expressing a modal statement. Finally, §4.2.4 concludes the present section.

4.2.1 The predicate *available*

The adjectival predicate *available* has quite a flexible realization of argument structure, as illustrated below.

- (5)
- a. The book is available.
 - b. The book is available to Dave.
 - c. The book is available to read.
 - d. The book is available for Dave to read.
 - e. The book is available to Dave for his children to read.

In (5a) *available* behaves as a simple property, semantically close to existence, which is attributed to a nominal argument, *the book* in this case. In (5b) *available* is a two-place predicate, which is semantically very close to the possessive predicate *have* in that the two individuals which it relates are in some contextually specified relation based on spatial proximity. For instance, *Dave* has access to *the book* by virtue of the book being in a library of which Dave is a member. In (5c), the internal argument is an infinitival clause. It expresses an event of reading which can take place thanks to the availability of the external argument. I will call this infinitival clause the *possibility clause*. The sentence in (5d) is just like (5c), except that it overtly expresses the individual that can benefit from the availability of the book by reading it. Finally, the example in (5e) contains all the participants of the complex semantic structure which is made available by the predicate *available*.⁴

I will be particularly interested in the argument realizations of *available* that make use of the possibility clause, i.e. (5c) through (5e). Notice first that the examples are superficially similar to so-called *tough*-constructions, illustrated below.

- (6) The book is easy (for Dave) to read.

There is an important difference between *tough*-predicates and the availability predicate, though. While in *tough*-constructions the structurally prominent nominal (*the book*) reaches its position by raising and is therefore interpreted only as an argument of the embedded clause (Rosenbaum 1967; Hicks 2003), the comparable nominal in (5) is a real argument of the predicate *available*. This is reflected by the fact that the availability predicate cannot take expletive subjects.⁵

⁴Charlotte Koster (p.c.) informs me that (5e) is slightly pragmatically odd; however, it is by no means ungrammatical.

⁵The question whether *tough*-constructions really are raising constructions or not is a controversial one. However, the issue is not central to the present discussion, so I am not going to defend any particular analysis here. For a recent discussion and overview of issues, see Hicks (2003).

- (7) a. It is easy (for Dave) to read the book.
 b. *It is available (for Dave) to read the book.

The inability of *available* to take expletive subjects is further related to the fact that it only takes infinitival complements with gaps. This in turn suggests the presence of an operator that binds this gap. The members of this operator-variable chain are necessarily coindexed with the external argument of *available*.

- (8) The book_{*i*} is available [Op_{1/*i*} to read t_{1/*i*} / *it_{*i*}].

Another question that pertains to the argument structure of *available* is the structural position of the prepositional arguments *to Dave* and *for Dave* in (5b) and (5d), respectively. At first sight, their semantic role in these sentences appears indistinguishable: the former appears in absence of the possibility clause, while the latter appears in its presence. However, the sentence in (5e) suggests that they are in principle independent. The *to*-phrase is an argument of *available* and the *for*-phrase is an argument in the possibility clause.⁶

In summary, in the presence of the possibility clause, *available* is a three-place predicate. It takes the possibility clause as its internal argument, a nominal phrase as its external argument (possessum, broadly construed), and an optional additional argument in the form of the *to*-phrase (possessor, broadly construed). The possibility clause obligatorily contains a gap coindexed with the external argument and optionally realizes its external argument in the form of the *for*-phrase. In the next subsection, I provide an explicit semantics for the predicate *available*.

4.2.2 Argument structure, existence, and possession

The semantic formalization used here relies on a version of Neo-Davidsonian (cf. Parsons 1990) event-based system proposed by Ramchand (2008). I first characterize the system and then move on to the analysis of existence and possession. The reader should keep in mind that I do not follow Ramchand (2008) in every respect of her analysis. Any modifications of mine will be clearly stated. The material presented in this subsection is the set of background assumptions that I will use for the upcoming analysis of MEC-embedding predicates. As

⁶An interesting support for this view comes from Hartman's (to appear) discussion of *tough*-constructions. Hartman shows that experiencers introduced by the preposition *to*, unlike those introduced by *for*, defectively intervene for the *tough*-raising of the embedded argument:

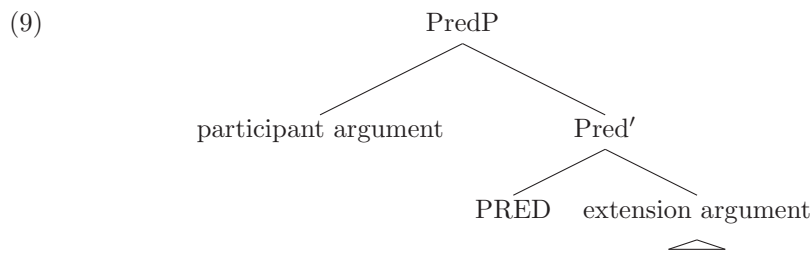
- (i) Adapted from Hartman (to appear)
 a. It is annoying {for / to} those boys to talk to John.
 b. John is annoying {for / *to} those boys to talk to.

On the basis of this evidence, Hartman argues that *to those boys* is an object of the *tough*-predicate (rather than subject of the embedded predicate) and as such defectively intervenes (in the sense of Chomsky 2000) for the raising of *John*. The fact that this intervention is not triggered with *for those boys* suggests an embedded position in turn.

the reader can verify shortly, these assumptions are not among the most standard ones. However, I hope to show that their use is justified by the upcoming analysis of availability and MECs.

A theory of argument structure and event extension

The basic idea of Ramchand's (2008) theory of argument structure is that predicates that express complex (possibly dynamic) events are decomposed into atomic two-place predicates, each of which expresses a relation between an individual x and an event predicate E , stating that the individual x is involved in some particular event e that *extends* to the existence of another event e' in the domain of E .⁷ The *event extension*, marked as $e' \rightarrow e''$ (for e' extends into e''), is equal to the complex event that characterizes the semantics of the complex predicate. The extension relation underlies the (typically) causative semantics that holds between atomic events which constitute a complex event.⁸ Every atomic event has at most one participant. The argument that corresponds to this participant, i.e. the external argument of the two-place predicate, will be called the *participant argument*. This argument is equated with the participant role (corresponding to the traditional theta role, hence marked by $\theta(e)$) introduced by the predicate. The internal argument, i.e. the predicate of events characterizing the event to which the event introduced by the predicate extends, will be called the *(event) extension argument*. The schema of the argument structure of some atomic predicate PRED is given in (9).



The semantics of predicates like PRED in (9) will be of the general format in (10). The predicate expresses a relation between a world w , a property of events E , an individual x , and a complex event e , such that there is an event e' , which is characterized by **Pred** (the descriptive content of PRED) in w and x is the participant in that event and there is an event e'' , characterized by the

⁷The term “event” is broadly construed and subsumes both states and processes (cf. Bach 1986), as well as atomic and composite events.

⁸It corresponds almost perfectly (modulo complex-state semantics; see below) to Ramchand's “leads-to” relation. The reason why I choose to use a different label is rather superficial, namely a bigger terminological flexibility. Also, I join Ramchand in avoiding the term “causation”, which is rather overloaded in the literature on events and often refers not to a general relation between any two composed atomic events but to a particular causative predicate, whether explicit or implicit (see Dowty 1979 for the introduction of the CAUSE predicate).

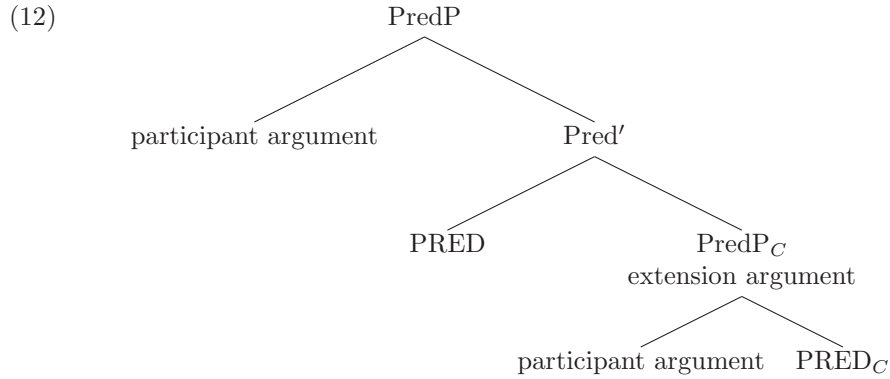
event property E such that the extension of e' to e'' is equal to the complex event e .

$$(10) \quad \text{PRED} \rightsquigarrow \lambda w_s \lambda E_{\langle s, vt \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Pred}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [E(w)(e'') \wedge e = e' \rightarrow e'']]$$

I will further assume that predicates can express *coda events*, i.e. events that have no extension argument (i.e. no argument corresponding to E above and, consequently, no existential quantification over events). These predicates are of the following general pattern:

$$(11) \quad \text{PredP}_C \rightsquigarrow \lambda w_s \lambda x_e \lambda e_v [\mathbf{Pred}_C(w)(e) \wedge \theta(e) = x]$$

The syntax of a complex predicate composed of two atomic predicates, one of which expresses a coda event, is given in (12).



The fact that predicates can introduce at most one participant has some notable consequences. Firstly, there are no predicates that genuinely relate two or more individuals. Relations between individuals are mediated by the relations between the events in which the individuals take part.⁹ Secondly, there are no theta roles in the traditional sense of the word, i.e. no agents, patients, experiencers, etc. (If I use these terms in what follows, it will be purely for the sake of convenience.) The descriptive content of $\theta(e)$ (i.e. agent vs. patient, etc.), which could be read as “participant in the event e ”, is fully predictable from the descriptive content of the predicate, simply because it is the only one.

Existence and possession

I will depart from Ramchand’s system in that I will allow for extensions $e' \rightarrow e''$ even if both e' and e'' are states.¹⁰ Such extensions are equal to *complex states*,

⁹I am reminded by Larson (2010) that this assumption receives some empirical support from the semantics of plurality and conjunction (Schein 1993, to appear; Pietroski 2005) as well as focus (Herburger 2000).

¹⁰Ramchand only allows for extensions from states to processes and from processes to states. A state whose extension characterizes a process is so called initiation state (*init*) and

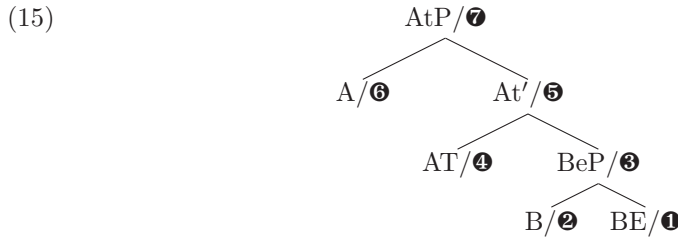
i.e. states with more than one participant. An example of a complex state is possession, which involves two participants: a possessor and a possessum. Suppose that the state of possessing (something) is represented as a state of constituting some region of influence (**Reg**) and the possessor is represented as a participant of this state. The state of being possessed is represented simply as a state of being existent (**Exist**) and the possessum is a participant of this state. The extension from the former state to the latter state is conventionalized as the complex state of possession such that the region of influence of the possessor involves the state of being existent of the possessum. The terms “region of influence”, as well as “existence” should be understood very loosely. I assume that they are subject to contextual and lexical specification. For instance, *having an idea* refers to a “mental region”, *having flu* to a “bodily region”, *having a friend* to a “social region”, etc. Similarly, being in existence can also stand for being in “view” (as in *there is a man on the backporch*), in “awareness” (as in *there is a problem*), being “in reach”/“available”, etc. The hypothesis therefore is that these “flavors” of region and existence belong to our world knowledge and are not directly linguistically relevant—all of them share the same syntax and semantics.¹¹

The lexical entries of the two atomic predicates that constitute possession is given in (13) and (14). For the sake of simplicity, I label these predicates BE and AT, evoking the existential predicate *there be* and the locative preposition *at*, respectively. The set of events characterized by the predicate BE functions as the extension argument of the predicate AT. Since there is no extension of the event characterized by BE, this predicate expresses a coda event.

$$(13) \quad AT \rightsquigarrow \lambda w_s \lambda E_{(s,vt)} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Reg}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [E(w)(e'') \wedge e = e' \rightarrow e'']]$$

$$(14) \quad BE \rightsquigarrow \lambda w_s \lambda x_e \lambda e_v [\mathbf{Exist}(w)(e) \wedge \theta(e) = x]$$

Suppose that we have a sentence like *A has B*. The syntactic structure of this sentence is in (15).



The semantic computation is given in (16).

a state characterized by an extension of a process is a result state (*res*).

¹¹See for instance Heine (1997) and the references cited therein for all the flavors “possession” can have.

$$\begin{aligned}
(16) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Exist}(w)(e) \wedge \theta(e) = x] &= (14) \\
& \textcircled{2} \rightsquigarrow \mathbf{b} \\
& \textcircled{3} \rightsquigarrow \lambda w \lambda e [\mathbf{Exist}(w)(e) \wedge \theta(e) = \mathbf{b}] \\
& \textcircled{4} \rightsquigarrow \lambda w \lambda E \lambda x \lambda e \exists e' [\mathbf{Reg}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [E(w)(e'') \wedge e = e' \rightarrow e''] &= (13) \\
& \textcircled{5} \rightsquigarrow \lambda w \lambda x \lambda e \exists e' [\mathbf{Reg}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [\mathbf{Exist}(w)(e'') \wedge \theta(e'') = \mathbf{b} \wedge e = e' \rightarrow e'']] \\
& \textcircled{6} \rightsquigarrow \mathbf{a} \\
& \textcircled{7} \rightsquigarrow \lambda w \lambda e \exists e' [\mathbf{Reg}(w)(e') \wedge \theta(e') = \mathbf{a} \wedge \exists e'' [\mathbf{Exist}(w)(e'') \wedge \theta(e'') = \mathbf{b} \wedge e = e' \rightarrow e'']] \\
& \textcircled{7}' \rightsquigarrow \lambda w \exists e \exists e' [\mathbf{Reg}(w)(e') \wedge \theta(e') = \mathbf{a} \wedge \exists e'' [\mathbf{Exist}(w)(e'') \wedge \theta(e'') = \mathbf{b} \wedge e = e' \rightarrow e'']]
\end{aligned}$$

The truth conditions of *A has B* are characterized by $\textcircled{7}'$, which is an existentially closed version of the compositionally derived $\textcircled{7}$.¹² The sentence characterizes the set of worlds w where there is a complex event e and two atomic events e' and e'' such that e' is the state of constituting a region of influence, whose participant is B, and e'' is the state of being existent, whose participant is A, and e equals the extension of e' into e'' , which is construed as e'' being in e' . Less technically, the sentence is true if A's state of being existent "happens" in the region of influence constituted by B. As already suggested, the actual semantics of the states depends heavily on context and on the descriptive content of A and B. Clearly, the sentence *Dave has the flu* means something quite different than *The tree has leaves*, for instance.

The issue of how the set of adjacent predicates, AT and BE in our case, gets lexicalized as *have* is not trivial, but is also not in the center of our attention. The options include head movement, lexicalization under adjacency (Ramchand 2008) or remnant movement of offending constituents and subsequent lexicalization of a maximal projection (Caha 2009). As far as I can tell, there is nothing in my account that favors one option over another, so I remain agnostic with respect to this issue.

The present analysis of possession has two sources of inspiration. Firstly, it is based on the idea that the possessive verb *have* can be decomposed into two basic components, one that corresponds to the existential verb *be* and the other to some locative predicate (see e.g. Freeze 1992, Kayne 1993, Harley 2002; 2004, or Beck and Johnson 2004 for various implementations of this idea; within the context of MECs, this analysis was assumed by Izvorski 1998).¹³ The other source is the idea that the existential (*there*) *be* is in fact a predicate with its own argument structure (see e.g. Barwise and Cooper 1981; McNally 1998),

¹²I take the existential closure to be a mechanism that steps in in the absence of any other element (such as another event predicate or an aspectual head) that would operate on the event predicate.

¹³I humbly admit that the presently adopted assumptions about possession are in desperate need of a thorough comparison with some standard analyses, such as the ones devised by Szabolcsi (1994) and Partee (1997). For time reasons, I cannot do more now than promise to look into this in the future.

rather than just the logical existential quantifier (see e.g. Milsark 1974, Kondrashova 1996; a logical existential-quantifier analysis was assumed for MECs by Kondrashova and Šimík to appear). It is not accidental that I opt for this type of analysis. The decomposition will be made use of in accounting for the various MEC-embedding predicates. The predicate-hood of the existential *be* will in turn play a role in accounting for the pivot-reduction phenomenon observed in MECs, which, under the present semantics, boils down to a relatively standard process of argument reduction (see §4.4, §6.5, and esp. §6.5.7 for discussion).¹⁴

4.2.3 Formalizing availability

The intuitive truth conditions of a sentence like (17) have two basic components, given in (17a) and (17b).¹⁵

- (17) The book is available to Dave for his children to read \rightsquigarrow true iff
- a. The book exists in the region of influence of Dave, and
 - b. it is possible that Dave’s children read the book (as a result of (a)).

That (17b) is an integral part of the truth conditions of (17) is supported by the observation that (18) sounds awkward as a continuation of (17). The only way for (18) to be felicitous after (17) is to interpret it with a deontic reading (‘Dave’s children are not allowed to read the book’), in which case it does not contradict the entailment, as it quantifies over a different set of worlds than the modal in (17).

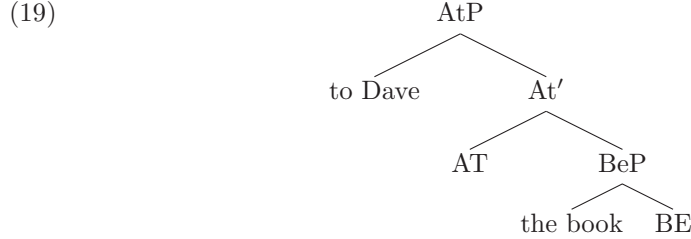
- (18) But Dave’s children can’t read the book.

The first truth condition, (17a), is based on the broadly construed possessive semantics introduced in the preceding section. This means that *the book is available to Dave* is construed just like *Dave has the book*, which roughly corresponds to intuition (but see footnote 15). The differences between them can be attributed to different flavors of the semantics of “region” and “influence”. Trying to characterize these differences in some systematic way would lead us astray, so I will abstract away from them and simply assume that both *have* and

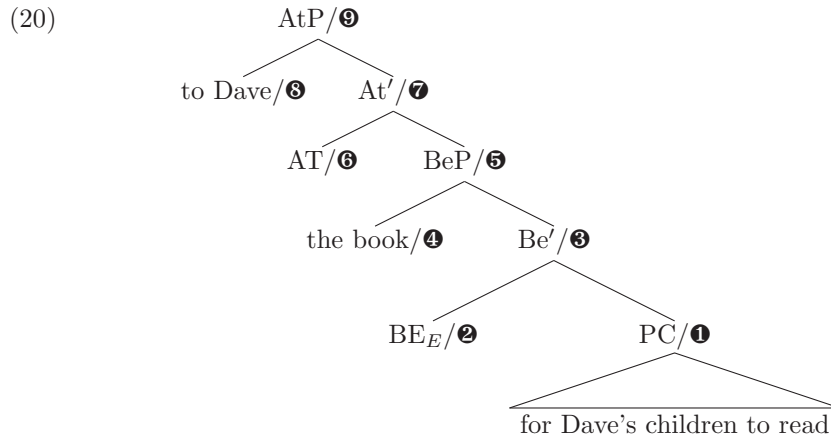
¹⁴Thanks to the comments of Manfred Bierwisch (p.c.) and Kerstin Schwabe (p.c.) I have realized that the presently assumed concept of linguistic existence deserves an explicit delimitation with respect to the existence presupposition induced by some determiners. Let me just note here that the two concepts of existence are independent of each other. While existence presuppositions are entailments that are evaluated with respect to models or evaluation worlds, the presently assumed existence characterizes a set of states, which could possibly be construed in terms of minimal situations, i.e. proper subparts of worlds (cf. Kratzer 2008). This is why a DP carrying an existence presupposition can participate as an argument of the eventive existence predicate BE.

¹⁵There is an additional meaning component which I abstract away from, namely the potentiality of the possessive-like relation, rather than its actual instantiation. This meaning is arguably conveyed by the morpheme *able*.

available have the same underlying semantics which is based on the structure in (19) (see (16) for the derivation of the truth conditions).



How is the second truth condition, (17b), which corresponds to the infinitival possibility clause (PC), introduced in the structure? The simplest assumption (the one considered so far) seems to be that it functions as an argument of *available*. In particular, I assume that it is the extension argument of the sub-predicate BE, which means that it is introduced in the sister of that predicate, just like BeP above is introduced as the extension argument (the sister) of AT. In order to distinguish the coda predicate BE from the one that takes an event extension argument, I use the subscript *E* for the latter.



There are three things to keep in mind in constructing the semantics of (20). First, we want to capture the intuition that the possibility clause (PC) is a sort of event extension of the existence state. This means that the BE_E predicate should have access to the highest event variable of the PC, i.e. the variable, whose value is characterized by the (complex) embedded predicate, *read* in this case. Second, the event extension is not an ordinary one in that the embedded event is not guaranteed to take place in the world of evaluation. It is only *possible* that it takes place. This means that BE_E must have access to the world variable with respect to which the PC is evaluated and perform existential quantification over that variable. In other words, the predicate BE_E must be

a modal. Last but not least, as noted in §4.2.1, the PC always contains a gap/variable, whose reference is identified with the participant argument of the predicate BE_E —*the book* in this case. As usual, the identification is mediated by an operator located at the edge of the PC that binds the variable.

Taking these three aspects of the semantics into consideration, we can construct the semantics of the PC. It expresses a relation between a world w , an individual x , and a reading event e such that e takes place in w and x is a participant in e . In case e is complex, as in our case, then x is a participant in some subevent of e , rather than in e itself. I will abstract away from this complication and will treat the embedded event e as atomic and, accordingly, the individual x as the participant in e . In order to distinguish between different participants of that event, I will use participant predicates like **Ag**, **Th**, instead of the variable θ . Notice, however, that this is just a notational convention used for the sake of simplicity; no theta role constants such as agent and theme exist in the present system.

$$(21) \quad \text{for Dave's children to read/}\mathbf{1} \\ \rightsquigarrow \lambda w_s \lambda x_e \lambda e_v [\mathbf{Read}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{dc} \wedge \mathbf{Th}(e) = x]$$

Knowing the semantics of the possibility clause—the extension argument of BE_E , we can formulate the semantics of BE_E itself by the function in (22). It characterizes a relation between a world w , a three-place relation Q (an expression of type $\langle s, \langle e, vt \rangle \rangle$, corresponding to the possibility clause), an individual x (corresponding to the object in existence), and a complex event e such that there is an atomic event e' and e' is a state of existence in w and x takes part in this state and there is a world w' such that all the circumstances in w' are just like in w , which is expressed by $w' \in C(w)$ (where $C(w)$ is a circumstantial modal base, i.e. a set of worlds “circumstantially accessible” from w), and there is an event e'' in w' and the relation Q holds of the world w' , the event e'' , and the individual x , and the complex event e equals the extension from e' to e'' .

$$(22) \quad BE_E/\mathbf{2} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$$

This semantics incorporates the three aspects just mentioned: the event variable of the possibility clause participates in the event extension introduced by BE_E , BE_E existentially quantifies over the world variable with respect to which the PC is evaluated, i.e. it expresses the semantics of possibility, and finally, it unifies the denotation of the participant argument (x) with the denotation of the gap in the PC.¹⁶

¹⁶A fully explicit account of modality would include considerations related to another “conversational background”, besides modal base, namely the so-called ordering source, which imposes a degree of accessibility on the set of accessible worlds (see Kratzer 1981, 1991). However, as will become clear in the subsequent discussion, there seems to be no traceable ordering source, at least none of the “standard” types, defining bouletic, teleological, or deontic modalities.

Now we are ready to compute the truth conditions of the whole sentence *The book is available to Dave for his children to read*, whose LF is represented in the tree (20).

$$\begin{aligned}
(23) \quad \textcircled{1} &\rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Read}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{dc} \wedge \mathbf{Th}(e) = x] &= (21) \\
\textcircled{2} &\rightsquigarrow \lambda w \lambda Q \lambda x \lambda e \exists e' [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
&\quad \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] &= (22) \\
\textcircled{3} &\rightsquigarrow \lambda w \lambda x \lambda e \exists e' [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
&\quad \exists e'' [\mathbf{Read}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{dc} \wedge \mathbf{Th}(e'') = x \wedge e = e' \rightarrow e'']] \\
\textcircled{4} &\rightsquigarrow \mathbf{b} \\
\textcircled{5} &\rightsquigarrow \lambda w \lambda e \exists e' [\mathbf{Exist}(w)(e') \wedge \theta(e') = \mathbf{b} \wedge \exists w' \in C(w) : \\
&\quad \exists e'' [\mathbf{Read}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{dc} \wedge \mathbf{Th}(e'') = \mathbf{b} \wedge e = e' \rightarrow e'']] \\
\textcircled{6} &\rightsquigarrow \lambda w \lambda E \lambda x \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = x \wedge \exists e'''' [E(w)(e''') \wedge e = \\
&\quad e''' \rightarrow e''']] &= (13) \\
\textcircled{7} &\rightsquigarrow \lambda w \lambda x \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = x \wedge \exists e'''' [\exists e' [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = \mathbf{b} \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Read}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{dc} \wedge \\
&\quad \mathbf{Th}(e'') = \mathbf{b} \wedge e''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']] \\
\textcircled{8} &\rightsquigarrow \mathbf{d} \\
\textcircled{9} &\rightsquigarrow \lambda w \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = \mathbf{d} \wedge \exists e'''' [\exists e' [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = \mathbf{b} \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Read}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{dc} \wedge \\
&\quad \mathbf{Th}(e'') = \mathbf{b} \wedge e''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']] \\
\textcircled{9'} &\rightsquigarrow \lambda w \exists e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = \mathbf{d} \wedge \exists e'''' [\exists e' [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = \mathbf{b} \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Read}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{dc} \wedge \\
&\quad \mathbf{Th}(e'') = \mathbf{b} \wedge e''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']]
\end{aligned}$$

The truth conditions are in $\textcircled{9'}$. If we simplify the complex formalization, we can say that the sentence is true iff the book is in Dave's region of influence (in other words, if the book is available to Dave) and it is possible (if the relevant circumstances are satisfied) that there is an event of Dave's children reading the book. Clearly, these truth conditions capture the intuition with which I started this subsection, i.e. (17). Interestingly, the semantics captures even the weakly causal/conditional relation between the two propositions involved: the book is available to Dave and *as a result* Dave's children can read the book. This is because the first proposition, expressing a circumstance that characterizes the world of evaluation, restricts the possibility modal which quantifies over the second proposition. This relation between the two proposition is reminiscent of Kratzer's (1986) classical analysis of conditional antecedents as restrictors of universal modal quantifiers.

In this subsection, I provided a compositional semantics for the the predicate *available* in its full argument structure potential: relating two individuals and an event such that one individual is available to the other and it is possible that the event, involving the available individual, takes place. The account is formulated in terms of Ramchand (2008)-style event semantics, where predicates with more participants are decomposed into a hierarchically organized set of atomic single-participant predicates. Though this level of detail might seem superfluous now,

it will pay off when we turn to the semantic and syntactic variation in MEC-embedding predicates.

4.2.4 Conclusion

In this section, I investigated the properties of the English predicate *available*. Even though it is compatible with many different argument structure realizations, under one of which it is very close to the run-of-the-mill possessive predicate *have*, it particularly readily accommodates an internal infinitival argument. This argument, called here the possibility clause, characterizes an event that can take place if the other conditions expressed by that predicate are satisfied, i.e. if the possessive-like relation expressed by *available* is realized. The modal existential quantification is assumed to originate in the lexical entry of the lowest component of the predicate *available*, namely the stative existence predicate BE_E . This idea and its subsequent formal implementation becomes the basis for the upcoming argumentation. I will argue that there is a class of predicates that can behave just like the predicate *available*, in that they can accommodate an “additional” argument in the form of an infinitival clause—the possibility clause.

4.3 MEC-embedding predicates as availability predicates

In this section, I turn to MEC-embedding predicates and prepare the grounds for the definitive proposal, put forth in §4.4, concerning how they combine with MECs. For now, I will stick to English and consider the behavior of MEC-embedding predicates in combination with their objects and infinitival clauses.

The section is organized as follows. In §4.3.1 I investigate the behavior of so called purpose clauses. It has been argued before that despite their appearance of (infinitival) relative clauses, purpose clauses are in fact arguments (or very low adjuncts) of verbal predicates. What is important for the present purposes that the class of predicates that license them is almost identical to the class of MEC-embedding predicates. In §4.3.2, I explore the hypothesis that the relevant class of predicates is unified under a single property, namely the presence of the existence predicate in their result state. This existence predicate, corresponding to the predicate BE defined above, is in turn responsible for a pragmatic inference, the meaning of which corresponds to the semantics of the possibility clause. In §4.3.3, I provide a formalization of this hypothesis, exploiting the system introduced above, and show a few examples of how dynamic MEC-embedding predicates can be decomposed. §4.3.4 concludes the section.

4.3.1 Purpose clauses

It turns out that there is a remarkable match between MEC-embedding predicates, as characterized by Grosu (2004) (remember also that Grosu bases his characterization on Szabolcsi's 1986 existential predicates), and predicates that can select so called *purpose clauses*, as characterized by Faraci (1974). Before I turn to the class of predicates, let me introduce the notion of a purpose clause.

Faraci (1974) observes that infinitival clauses like the one in (24) are ambiguous between an infinitival relative reading, more clearly spelled out in (24a), and a purpose clause reading, spelled out in (24b).

- (24) Faraci (1974:7)
 Carol bought a rack to hang coats on.
 a. Carol bought a rack on which to hang coats.
 b. Carol bought a rack so that she can hang coats on it.

That these two infinitivals represent truly independent types is witnessed by the fact that they can cooccur in one sentence (RC in (25) refers to relative clause and PC in to purpose clause).

- (25) Faraci (1974:9)
 Carol bought a rack [RC to hang coats on] [PC to hang her dresses on].

Faraci (1974) argues that purpose clauses, unlike relative clauses, do not form a constituent with the DP that they are associated with (*a rack* in the examples above) to the exclusion of the verb. Nevertheless, as opposed to VP modifiers, they appear *within* the VP. This ingredient of the analysis has survived in the subsequent literature on purpose clauses, namely Bach (1982) and Chierchia (1989b), both of whom assume that the PC can in fact be an argument of the verb.¹⁷ One of a number of arguments against the constituent-hood of purpose clauses and their DP associates is that syntactic processes such as passivization or pseudocleft formation that target the DP leave the purpose clause intact. Thus, the following two examples are not ambiguous: (26a) involves a relative clause and (26b) a purpose clause.

- (26) Faraci (1974:12)
 a. A rack to hang coats on was bought by Carol.
 b. A rack was bought by Carol to hang coats on.

Purpose clauses have to be distinguished from what Faraci (1974) calls rationale clauses, illustrated in (27b). Unlike purpose clauses, (27a), rationale clauses do not contain a gap coreferent with a matrix DP and can be introduced by the connective *in order*.

¹⁷Purpose clauses have also been analyzed as low adjuncts, see Jones (1991).

- (27) Faraci (1974:28)
- a. Bill bought the piano (*in order) for Mary to practice on.
 - b. Bill bought the piano (in order) for Mary to practice on it.

Now, what is most relevant to the present purposes is that purpose clauses, unlike the related relative and rationale clauses, are very limited in distribution. In particular, they cannot be embedded under just any predicate. Consider the following contrast (based on Faraci 1974:35):

- (28)
- a. *Mary repaired the board to play chess on. *purpose*
 - b. Mary repaired the board (on which) to play chess (on). *relative*
 - c. Mary repaired the board (in order) to play chess on it. *rationale*

Faraci writes: “In general, purpose clauses are compatible with certain fairly broad classes of predicates in English. Among them are (1) predicates of transaction, such as *give, buy, sell, take, steal, borrow, lend*, (2) transitive verbs of motion, such as *send, bring, take*, (3) verbs of creation, such as *build, construct, devise, make*, and (4) the verb *use*.” (35/36) Bach (1982), who builds on Faraci’s work, extends this class by the stative predicates *be* and *have* (in a place, on hand, available, at one’s disposal, in existence), and by the predicate *choose*. The match between purpose clause-embedding predicates and MEC-embedding predicates (see §2.2.1) is remarkable and can hardly be accidental.¹⁸

Apart from the distribution, there are two more striking similarities between purpose clauses and MECs: the fact that they obligatorily contain a gap (putting PRO aside) and the fact that they have the same sort of modality. Take the example in (25), repeated below. Notice that after filtering out the relative clause construal, it can only have the interpretation in (29a) but not in (29b), i.e. its modality must be of existential force.

- (29) Carol bought a rack to hang coats on.
- a. Carol bought a rack. Now she can hang coats on it.
 - b. *Carol bought a rack. Now she has to hang coats on it.

Interestingly, the modal flavor of purpose clauses also matches the one of MECs. The modal *can* in (29a) (and the corresponding implicit modal in (29)) is interpreted in terms of pure circumstantial possibility, possibly as a result of the circumstances created by the activity of buying. The modality is certainly not deontic or epistemic.

It seems that we have found a construction that is very close in its syntactic and semantic behavior to MECs—the purpose clause. In order to capture the observed similarities, I hypothesize that the MEC and the purpose clause are both subtypes of the possibility clause.

¹⁸I have not been able to check whether all the predicates mentioned by Faraci (1974) can in fact embed MECs in some language. Nevertheless, they are clearly of the same type as the attested MEC embedders, unified under the existence/availability result state; cf. §4.3.2. The only notable outlier is the verb *use*. I do not know what to think about this.

Before I move on to the discussion of the embedding predicates, let me mention one reservation that could compromise this working hypothesis. It is not clear that MECs exhibit what appears to be a core aspect of the purpose clause semantics, namely the purpose meaning. There are two arguments that should help us disperse this worry. First of all, there are good reasons to believe that the purpose meaning does not constitute a core property of purpose clauses. Notice for instance that the purpose meaning is not *sufficient* to license purpose clauses. The example in (28a) is unacceptable even though there is a clear purpose meaning available: repairing something with the purpose of using it later makes perfect sense. After all, that such meaning can be easily expressed is witnessed by the felicity of the rationale clause in (28c). More importantly, however, it turns out that purpose meaning is not even a *necessary* part of purpose clauses. Consider the example in (30). Even though the infinitival clause qualifies as a purpose clause in all other aspects (and is treated by Bach 1982 as such), it seems very strange to assume that the state of being available is somehow purposeful. As both Faraci (1974) and Bach (1982) note, what is purposeful are activities that are under the control of agents. Thus, it seems safer to assume that the reading of War and Peace is a sheer possibility brought about by its availability.

- (30) Bach (1982:38)
War and Peace is available to read to the students.

That the purpose reading is just a pragmatic implicature which is based on world knowledge rather than a solid entailment is also suggested by Bach (1982) and even for dynamic verbs. Consider the following example:

- (31) Bach (1982:50)
John bought The Golden Notebook for his children to read.

Bach comments on (31) as follows: “[...] it’s not at all clear just what the intention is or that it is always the intention that the object *have* the property represented in the purpose clause. For example, suppose (31) [Bach’s (69)] is true. Can’t this be true in a situation where after months of clamoring, John finally gave in? Here he is merely making it possible for his children to read the book in question.” (50) Thus, Bach himself has doubts about the reality of the purpose reading in purpose clauses. Like myself, he suggests that what is asserted is a simple possibility.

The second argument to disperse the worry is that MECs in fact *can* involve purpose meanings. This is discussed by Grosu (2004), who considers the purpose meaning to be a pragmatic factor that contributes to the acceptability of predicates as MEC-embedders. Grosu writes: “Felicity thus depends not only on the possibility of a narrow-scope existential construal of the MEC [...], but also on the extent to which the content of the matrix coheres with the purpose import of the MEC.” (433) One of the examples he gives involves the verb ‘be born’. Under normal circumstances, if a child is born, the result—its

existence—does not infer any possibility. This is reflected by the fact that the predicate ‘be born’ is not such a good MEC embedder, Grosu argues. Yet, if such a possibility is made salient, for instance in terms of being born for a *purpose*, like Messiahs are, then the MEC is licensed (in Romanian). Consider the following example:

- (32) *Romanian* (Grosu 2004:434)
 S-a născut în fine cine să ne { conducă țara /
 REFL-has born at last who SBJ us rule country.the /
 răscumpere păcatele}.
 redeem sins:DEF
 ‘There has finally been born someone who can rule our country / re-
 deem our sins.’

I will briefly return to this issue after the formal analysis is put in place. In the spirit of Grosu’s suggestion and following the observations made here, I will argue that the purpose meaning is a pragmatic inference that arises as a consequence of interpreting the matrix verb as a restriction of the modal quantifier BE_E .

In conclusion, I adopt the hypothesis that the syntactic and semantic similarities between purpose clauses and MECs are not accidental. I will capture these similarities by assuming that both types of clauses are subtypes of the possibility clause. A crucial part of the definition of a possibility clause is the selecting predicate—the predicate BE_E . How does this abstract predicate relate to the set of MEC/purpose clause-embedders? I turn to this issue in the next subsection.

4.3.2 The common denominator of MEC-embedding predicates

What unifies the class of predicates that have the capacity to select MECs and purpose clauses? In this subsection, I would like to propose that it is the predicate BE_E as defined in §4.2.3, i.e. the predicate that predicates the existence of some object and at the same time expresses the possibility of that object’s involvement in some event.

Let us start with the stative predicates, i.e. *be* and *have*. In §4.2.2 and §4.2.3 I argued that the possessive predicate *have* is very closely related to the predicate *available*. I argued that both can be analyzed as complex stative predicates, composed of two subpredicates: AT and BE. The only difference between them is the argument structure of BE. In *have*, BE is an event coda, i.e. it has no syntactic complement corresponding to an event extension argument. In *available*, on the other hand, BE does have an event extension—the possibility clause. Now, notice that something like the possibility clause can be

present in *be* and *have* in the form of a pragmatic inference.^{19,20}

- (33) a. There's a book.
 ... It is possible to do something with the book, e.g. read it.
 b. Dave has a book.
 ... It is possible for Dave to do something with the book, e.g. read it.

I would like to suggest that these pragmatic inferences can materialize into semantic entailments by opening up an event extension argument slot and filling it with the infinitival possibility clause, as in (34).²¹ In effect, this boils down to saying that *be* can be construed as 'be available' and *have* as 'have available'.

- (34) a. There's a book (available) to read.
 b. Dave has a book (available) to read.

How about the dynamic predicates? Virtually all the dynamic predicates that are capable of embedding MECs (or purpose clauses) express a change of state, where the result state corresponds to the existence or availability of some object or individual. The following sentences represent a sample of MEC-selecting dynamic predicates. Just like above, the three dots introduce what I take to be an availability inference. (Here, of course, the same reservations expressed in footnote 19 apply.)

- (35) a. Dave found a key.
 ... The key is available [for Dave to use].
 b. Dave bought Mary some food.
 ... The food is available [for Mary to eat].

¹⁹Clearly, the presence of this inference is subject to all sorts of factors, especially world-knowledge. A sentence like *David has a child*, for instance, does not seem to infer that one can do something with the child. Such uses of *have* are then predicted to be bad purpose clause embedders, which is borne out by the oddness of sentences like *David has a child to cook dinners*. Yet, in an immoral world where it is normal to use children as slaves, this sentence would not sound strange at all. Notice also that in such a world *David has a child* can easily have the possibility inference. Thanks to Jan Koster for pointing this out to me.

²⁰The inference should not be mistaken for a part of the nominal argument's lexical meaning in the sense of Pustejovsky (1995) (where e.g. *book* implies (the possibility of) *reading*). The reason is that this inference feeds the grammatical structure of the existence/availability predicates even in the absence of any nominal argument, as will become clear from the discussion of MECs. I am grateful to Hans-Martin Gärtner and Manfred Krifka for making me aware of this caveat.

²¹This "materialization" of a pragmatic inference into a syntactically and semantically active component of a predicate is reminiscent of what McConnell-Ginet (1982) called "natural extensions" or "augmentations" of predicates. What she notes is that a sentence like *John spoke* infers that John spoke to somebody (though this need not be true, of course). This inference can "materialize" into an explicitly expressed argument, giving rise to *John spoke to somebody*. See also Chierchia (1989b) for discussion.

- c. Dave got a car.
... The car is available [for Dave to drive].
- d. Dave sent you the book.
... The book is available [for you to read].
- e. A letter arrived.
... The letter is available [for somebody to read].
- f. The opponent appeared.
... The opponent is available [for somebody to fight].

Roughly speaking, ‘finding a key’ results in ‘having a key’, ‘buying Mary food’ results in ‘Mary having food’, ‘the opponent’s appearing’ results in ‘there being an opponent’, etc. This recognition goes back to Von Wright (1963) and Dowty (1972). There is a solid tradition (cf. Larson 1988) that assumes an explicit syntactic and semantic treatment of this result state in a verbal decomposition (see also Beck and Johnson 2004, who argue specifically for an existence/possessive result state). In the context of MECs, the relevance of the relation between the class of MEC-selecting predicates and the stative predicates *be* and *have* was first noted by Izvorski (1998).²² Once *be* (BE) or *have* (AT+BE) are explicitly represented in the syntax and semantics of the dynamic predicates, the availability inference comes for free, at least to the extent that it “comes for free” with the stative predicates themselves.

Once again, I will assume that this pragmatic inference can in principle materialize into entailment by opening up the event extension argument slot of BE, effectively turning BE into BE_E. This argument is then filled by a possibility clause, i.e. an MEC or a purpose clause. Under which conditions, with which predicates, and in which languages this actually happens is a difficult issue to resolve and one that I leave open for now. In the next subsection I finally turn to a formalization of the class of predicates.

4.3.3 Formalizing MEC-embedding predicates

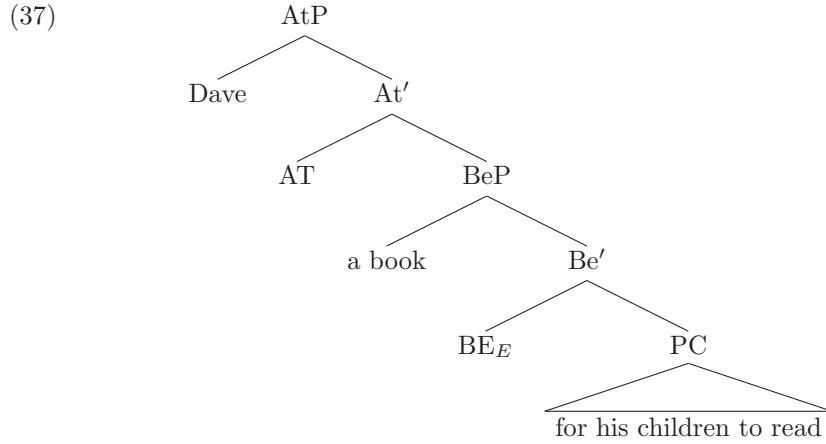
The main idea behind my proposal is that the existential/possessive predicates *be* and *have* in languages with MECs can be interpreted just like the English predicate *available* in that their argument structure can be extended in order to accommodate a possibility clause. This means that *have* is interpreted just like *available* as defined in §4.2.3—it corresponds to two subpredicates, AT and BE_E, an assumption we can express in terms of lexicalization (36a), where the semantics of AT and BE_E is as in (36b) and (36c), respectively.

$$\begin{aligned}
 (36) \quad & \text{a. } \text{AT} + \text{BE}_E \leftrightarrow \text{have} \\
 & \text{b. } \text{AT} \rightsquigarrow \lambda w_s \lambda E_{\langle s, vt \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Reg}(w)(e') \wedge \theta(e') = x \wedge \\
 & \quad \exists e''_v [E(w)(e'') \wedge e = e' \rightarrow e'']] = (13)
 \end{aligned}$$

²²In order to support her assumption, Izvorski cites Burton (1995). Unfortunately, I failed to get hold of this dissertation.

$$\begin{aligned} \text{c. } \text{BE}_E &\rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \\ &\quad \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] \end{aligned} \quad = (22)$$

The structure of a sentence like *Dave has a book for his children to read* is then virtually identical to the one proposed in (20) for the sentence *The book is available to Dave for his children to read*. The only differences are in the morphological realization of the arguments. The *to*-phrase (*to Dave*) of the predicate *available* corresponds to the nominative subject (*Dave*) of the predicate *have* and the nominative subject (*the book*) corresponds to an accusative object (*a book*). The possibility clause itself (*for his children to read*) remains structurally intact—it is merged as the extension argument of BE.



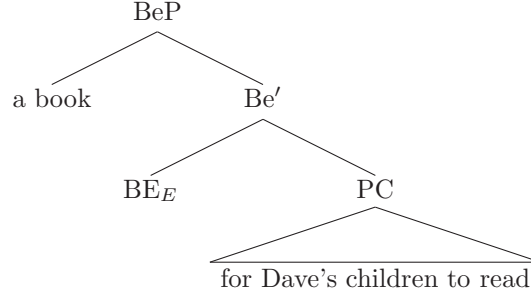
There is no point in repeating the semantic derivation, since it is identical to the one given for the predicate *available* in (23).

The syntax and semantics of *be* is a proper subset of this complex predicate. It corresponds simply to the atomic predicate BE_E , (38a), whose lexical semantics is identical to (36b).

$$\begin{aligned} (38) \quad \text{a. } \text{BE}_E &\leftrightarrow \text{be} \\ \text{b. } \text{BE}_E &\rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in \\ &\quad C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] \end{aligned} \quad = (22)$$

The structure of a sentence like *There is a book for Dave's children to read* is given in (39). Notice that it is a proper subset of (37).

(39)



The predicates *be* and *have* typically impose an indefiniteness requirement on their (internal) argument, in the present terms the participant argument of BE/BE_E. This requirement is most often referred to as the definiteness restriction and is illustrated in (40) for ordinary uses of the existential predicates and in (41) for its availability uses.

- (40) a. There is a/*the book on the shelf.
 b. I have a/*the sister in Paris.

- (41) a. There is a/*the book for Mary to read.
 b. I have a/*the book to read.

One of the traditional ways of dealing with this restriction (see e.g. Milsark 1974) is to assume that the relevant argument of these predicates is semantically not an individual (*the book on the shelf*, *the sister in Paris*), but rather a property of individuals expressed by the corresponding (modified) nominals. The lexical semantics of the predicates then contains an existential quantifier, which closes off the variable introduced by the property.²³ These existential versions of BE and BE_E, superscripted by \exists , are in (42) and (43). Notice that the semantics is closely related to (14) and (38b) except that the participant argument slot is filled by a property (type $\langle s, et \rangle$) and that the variable x introduced by this property is existentially quantified over.

$$(42) \quad BE^{\exists} \rightsquigarrow \lambda w_s \lambda P_{\langle s, et \rangle} \lambda e_v \exists x [\mathbf{Exist}(w)(e) \wedge \theta(e) = x \wedge P(w)(x)]$$

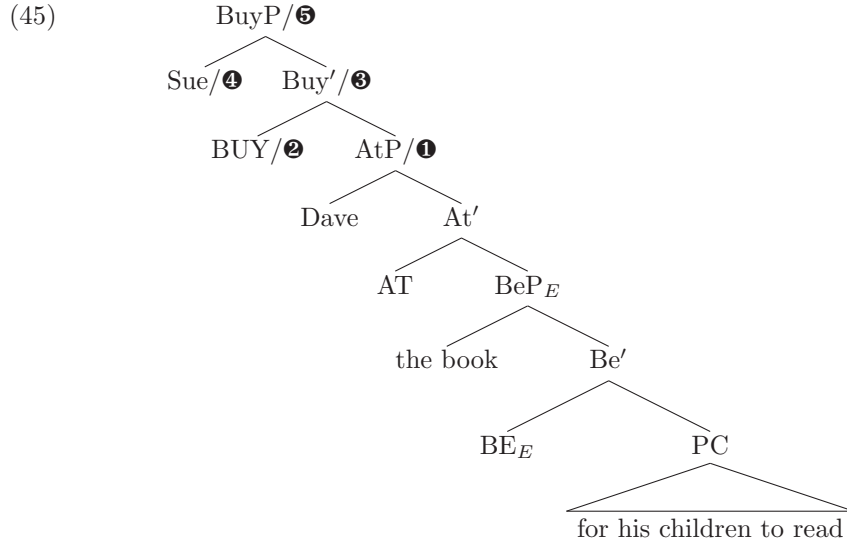
$$(43) \quad BE_E^{\exists} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda P_{\langle s, et \rangle} \lambda e_v \exists e'_v \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge P(w)(x) \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$$

Let us now turn to the formalization of the class of dynamic predicates. I have assumed that these predicates are syntactically and semantically complex and contain an implicit *be* or *have* as their subpart. Let us consider the predicate *buy* as an example. This predicate expresses a process of buying, whose participant

²³See McNally (1998) for an alternative proposal, under which these so called existential predicates do not introduce existential quantification at all. The existential predicate simply takes a property (or more generally a “nonparticular”) as its argument and states that the property is instantiated. For a recent overview of competing proposals for existential predicates and sentences, see McNally (to appear).

is the individual active in this process. This process extends into the complex result state of having some object, which can in turn turn out in its extended version, i.e. AT+BE_E.²⁴ The syntactic structure of a sentence like (44) is given in (45).

(44) Sue bought Dave the book for his children to read.



The lexical item *buy* therefore corresponds to three atomic predicates, (46a). The semantics of BUY, the processual part of the complex predicate, is given in (46b). The semantics of AT and BE_(A) is already familiar.

- (46) a. $\text{BUY} + \text{AT} + \text{BE}_{(E)} \leftrightarrow \text{buy}$
 b. $\text{BUY} \rightsquigarrow \lambda w_s \lambda E_{\langle s, vt \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Buy}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [E(w)(e'') \wedge e = e' \rightarrow e'']]$

Now we can compute the truth conditions of (45). For the sake of simplicity, I do not unwrap the full complex semantic representation of AtP (node 1) until the end of the derivation (node 5'). Instead, I use the standard notation— $\llbracket \text{AtP} \rrbracket$ —where $\llbracket \cdot \rrbracket$ is an alternative notation of the interpretation function \rightsquigarrow . What is important is that $\llbracket \text{AtP} \rrbracket$ is of the right type, i.e. $\langle s, vt \rangle$ and can thus function as the extension argument of BUY (node 2). When they combine, they give rise to a complex event which equals the extension of the buying process to the state of Dave having a book for his children to read. The participant of the buying process, *Sue* (node 3), combines with its predicate in a straightforward way, yielding the characteristic function over events (node 5), as usual.

²⁴Possibly, the predicate consists not only of the process and the result state but also of the initiation state, expressing causative semantics (Ramchand 2008). I abstract away from this complication and conflate the initiating and the processual subevents.

$$\begin{aligned}
(47) \quad & \textcircled{1} = \llbracket \text{AtP} \rrbracket = \textcircled{9} \text{ in (23)} \\
& \textcircled{2} \rightsquigarrow \lambda w \lambda E \lambda x \lambda e \exists e' [\text{Buy}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [E(w)(e'') \wedge e = e' \rightarrow e'']] = (52) \\
& \textcircled{3} \rightsquigarrow \lambda w \lambda x \lambda e \exists e' [\text{Buy}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [\llbracket \text{AtP} \rrbracket(w)(e'') \wedge e = e' \rightarrow e'']] \\
& \textcircled{4} \rightsquigarrow \mathbf{s} \\
& \textcircled{5} \rightsquigarrow \lambda w \lambda e \exists e' [\text{Buy}(w)(e') \wedge \theta(e') = \mathbf{s} \wedge \exists e'' [\llbracket \text{AtP} \rrbracket(w)(e'') \wedge e = e' \rightarrow e'']] \\
& \textcircled{5}' \rightsquigarrow \lambda w \exists e_7 \exists e_5 [\text{Buy}(w)(e_5) \wedge \theta(e') = \mathbf{s} \wedge \exists e_6 [\exists e_3 [\text{Reg}(w)(e_3) \wedge \theta(e_3) = \mathbf{d} \wedge \exists e_4 [\exists e_1 [\text{Exist}(w)(e_1) \wedge \theta(e_1) = \mathbf{b} \wedge \exists w' \in C(w) : \exists e_2 [\text{Read}(w')(e_2) \wedge \text{Ag}(e_2) = \mathbf{dc} \wedge \text{Th}(e_2) = \mathbf{b} \wedge e_4 = e_1 \rightarrow e_2]] \wedge e_6 = e_3 \rightarrow e_4]] \wedge e_7 = e_5 \rightarrow e_6]]]
\end{aligned}$$

The full truth conditions are given in $\textcircled{5}'$. Informally, the sentence *Sue bought Dave a book for his children to read* is true if Sue was involved in a buying process which extended to (brought about) the state of Dave having a book, which in turn extends to the possibility of Dave's children reading the book.

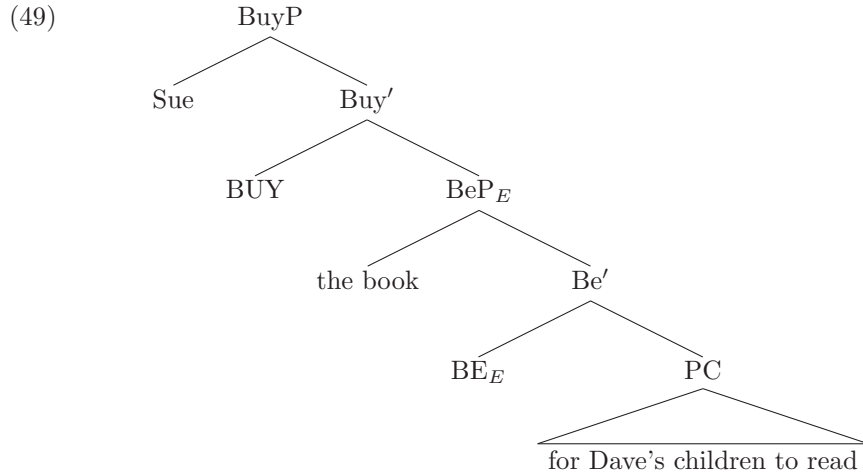
Let us now make a small digression and look into the problem of the purpose meaning, discussed in §4.3.1. What is interesting about the resulting truth conditions is that the whole cascade of subevents that leads to the possibility statement effectively functions as a restrictor of the possibility modal. This is because the restrictor of the modal introduced by BE_E (i.e. $C(w)$) corresponds to the intersection of all the propositions that express the circumstances in the world of evaluation. Apart from a set of contextually supplied circumstances, there is a set of explicitly expressed subevents—the subevent of buying (BUY), of constituting a region (AT), and of the state of existing (BE), all of which contribute to the characterization of the world w and hence also the accessibility predicate $C(w)$. Because these event-circumstances are explicitly expressed (and not just present in the common ground), they are also among the most salient ones. It seems reasonable to assume that salient propositions that are present in the restrictor of a modal participate in a pragmatic enrichment of that modal. Thus, if Dave's children can read a book in the worlds where it matters that this book was bought by Sue and if we know that Sue's buying the book was intentional and purposeful, then we can infer that the possibility of Dave's children reading the book was the purpose of Sue's buying the book. This reasoning is similar to the one put forth in Bach (1982), however, here it gains further support from an explicit (yet underspecified) semantic relation between the buying process (and the having state) and the potential reading process, namely the modal accessibility relation C . Notice also that the presence or absence of the purpose meaning is predicted to correlate with the predicate that selects the possibility clause. Whenever the predicate contains a (typically processual) subevent whose participant's behavior can be construed as intentional and purposeful, the purpose meaning can arise. On the other hand, if there is no such participant, as in the case of the stative predicates *be*, *have*, or *available*, the purpose meaning is correctly predicted not to occur.

I conclude that the present analysis provides a tentative but promising solution to the problem of the purpose meaning in purpose/possibility clauses.

In our previous example, subevents map to participants in a neat one-to-one fashion: BUY–*Sue*, AT–*Dave*, BE_E–*the book*. However, the situation can get more intricate very easily. Consider the example in (48), in which there is no recipient of the buying process, i.e. no participant of AT:

(48) Sue bought the book for Dave’s children to read.

What structural description does this sentence map to? There are two options, both of which might be needed for different purposes. The first option is that the AT predicate is completely missing. This is illustrated in (49).

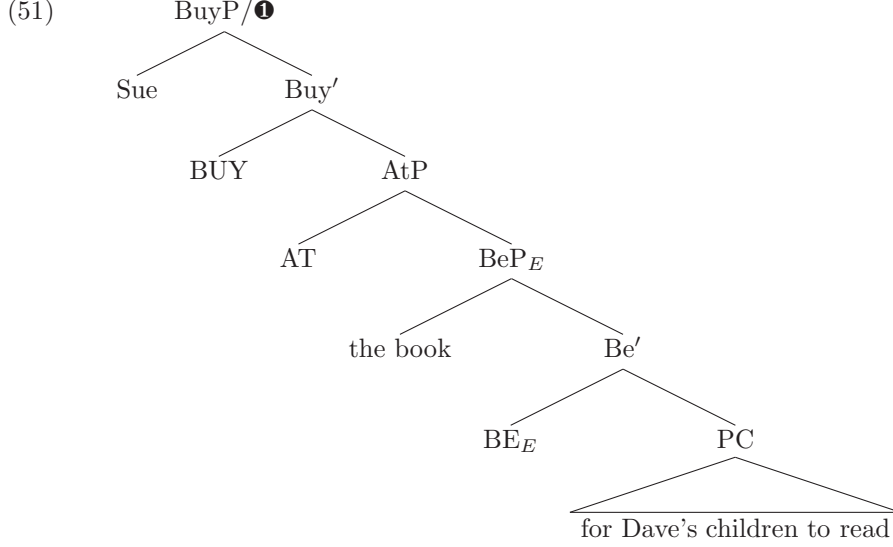


In this case, the process of buying the book simply leads to the existence of the book: the existence is not assigned any particular region, i.e. no possessive-like relation is established. Note that the composition can proceed just like before because BeP_E is of the right semantic type for BUY to be able to select it.

This option, i.e. the direct embedding of BeP_E (or simply BeP) by a processual event, is independently needed for dynamic unaccusative predicates like *appear*, where existence, but no spatial attribution/possession, is entailed. Thus, the syntax of *appear* can be represented as in (50). It seems reasonable to assume that the processual predicate APPEAR has no participant, it simply characterizes an event of appearing extending in the existence of some object, predicated by BE_(E).



Another way to deal with (48) is to assume that the predicate *AT* is present in the structure and the possessive relation therefore is asserted, but the participant is not explicitly supplied. The structure then looks as follows:



This structure raises two issues: First, how is the reference of the participant of *AT* determined? Second, given that the participant argument slot of *AT* is not saturated, *AtP* is of a different type than what *BUY* is able to absorb. Let us address the latter issue first. It seems inevitable that the semantics of *BUY* is modified in such a way that it is capable of selecting expressions of type $\langle s, \langle e, vt \rangle \rangle$. Notice that this modification is not completely arbitrary, since there is already one atomic predicate that selects expressions of type $\langle s, \langle e, vt \rangle \rangle$, namely *BE_E* (selecting the possibility clause). Now, suppose that the two predicates in fact have more in common in that the variable that corresponds to the participant of the lower predicate—*AT*, picks up its reference from the participant of the higher predicate—*BUY*, just like the variable in the possibility clause picks up the reference of the participant of *BE_E*. This solves our first issue—the determination of the reference of *AT*’s participant argument. The modified lexical entry of *BUY* (call it *BUY⁺*) is in (52). The usual event extension argument *E* (of type $\langle s, vt \rangle$) is replaced by the argument *Q* (of type $\langle s, \langle e, vt \rangle \rangle$) and the individual-argument slot of *Q* is filled by *x*—the participant argument of *BUY*.

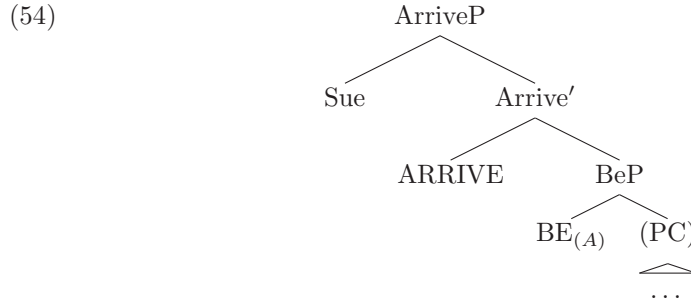
$$(52) \quad \text{BUY}^+ \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Buy}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [Q(w)(x)(e'') \wedge e = e' \rightarrow e'']]$$

Let us skip the computation and come to the predicted truth conditions of (51).

$$\begin{aligned}
(53) \quad \textcircled{1} \rightsquigarrow & \lambda w \exists e_7 \exists e_5 [\mathbf{Buy}(w)(e_5) \wedge \theta(e') = \mathbf{s} \wedge \exists e_6 [\exists e_3 [\mathbf{Reg}(w)(e_3) \wedge \theta(e_3) = \\
& \mathbf{s} \wedge \exists e_4 [\exists e_1 [\mathbf{Exist}(w)(e_1) \wedge \theta(e_1) = \mathbf{b} \wedge \exists w' \in C(w) : \\
& \exists e_2 [\mathbf{Read}(w')(e_2) \wedge \mathbf{Ag}(e_2) = \mathbf{dc} \wedge \mathbf{Th}(e_2) = \mathbf{b} \wedge e_4 = e_1 \rightarrow \\
& e_2]] \wedge e_6 = e_3 \rightarrow e_4]] \wedge e_7 = e_5 \rightarrow e_6]]
\end{aligned}$$

Because the participant argument of AT gets identified with the participant argument of BUY, the sentence is true iff **Sue** was active in an event of buying which resulted in **Sue** having the book and that in turn resulted in the possibility of Dave’s children reading the book. It seems to me that these truth conditions match the intuition. I conclude that both (49) and (51) are feasible ways of analyzing sentences like *Sue bought the book for Dave’s children to read*.

Once the type of meaning like BUY^+ in (52) is in place, it can be used more generally, i.e. whenever two participants of two adjacent subevents share reference. We can hypothesize, for instance, that this is the proper analysis of another unaccusative MEC-embedding predicate—*arrive*. The hypothesized structure of *arrive* is given in (54). Suppose that *Sue* is the participant argument of the processual event of arriving. At the same time, the result of this process is that *Sue* is in the state of being existent. Once again, we can model this by letting the participant argument slot of BE unsaturated and let its reference be identified with the participant argument of ARRIVE.



Some readers might already have noticed that this mechanism of argument identification is highly reminiscent of control, as construed in so-called property/ predicate-analyses of control (see e.g. Williams 1980; Chierchia 1984; Dowty 1985). This similarity is certainly not accidental. I will come back to the issue of cross-event argument identification and control in §6.4 and provide more evidence for treating control constituents as properties.

In conclusion, I provided a formalization of three types of MEC-embedding predicates: the stative predicates *be* and *have*, dynamic transitive predicates such as *buy*, and dynamic unaccusative predicates such as *appear* or *arrive*. The basic idea is that all these predicates are unified under containing a common result state, the existence predicate BE, which can “mutate” into its extended version— BE_E —which is different from the ordinary BE in that it accommodates an event extension argument. This argument corresponds to the possibility clause. Finally, I introduced some more flexibility into the system

of argument structure, in order to account for cases of cross-event participant argument identification. In such cases, the event extension does not only characterize a set of events, but rather a set of participant-event pairs. The predicate that selects this extension then identifies the participant of that pair with the participant of its own.

4.3.4 Conclusion

The class of MEC-embedding predicates is unified under a single common property—the presence of the existence atomic predicate BE (or the more complex AT+BE, i.e. *have*) in the position of the result state. It is this result state and its paradigmatic association to the analogous predicate *available* that brings about the possibility to extend the argument structure of MEC-embedding predicates and integrate possibility clauses. The analysis receives some independent support from previous analyses of so called purpose clauses (Faraci 1974; Bach 1982; Chierchia 1989b), which have been argued to occupy a VP-internal position and function as verbal arguments. I also attempted to show that purpose clauses can in fact be reduced to a special case of the possibility clause. In the next section, I finally turn to the core proposal of this chapter. I will argue that MECs form a subtype of the possibility clause.

4.4 The event-extension analysis of MECs

The previous two sections introduced the semantics of availability, first for the English predicate *available*, then as an enriched inference-based semantics the stative predicates *be* and *have*, and finally for dynamic predicates like *buy* or *appear*, which were argued to contain a silent availability *be*. In this section I turn to the core proposal of this chapter and show how these predicates interact with MECs. I will argue that contrary to the generally accepted belief, MECs are not introduced as ordinary internal arguments (such as *a book* in *I have/bought a book*), rather, they enter the argument structure as event extensions of the availability predicate BE_E (such as *to read* in *I have/bought a book [to read]*). The ordinary internal argument position, normally filled with an overt DP (*a book*), is completely eliminated, by a process akin to antipassivization.²⁵ This, together with the fact that the operator is realized overtly in MECs—by a *wh*-word, brings about the misguided free-relative appearance of MECs.

In order to be able to fully develop the account of MECs, I need to introduce some preliminary assumptions about *wh*-movement semantics. It turns out that the predicted semantic shape of MECs highly constrains the possibilities of analyzing fronted *wh*-words.

²⁵In §6.5, I will show that an alternative analysis is possible, one in which the position is filled by a phonologically empty nominal. I will argue that both alternatives might be needed in order to capture the whole range of facts.

4.4.1 Semantics of fronted wh-words

There are many different ways of interpreting wh-words—as existential quantifiers (e.g. Karttunen 1977; May 1977), as Heimian indefinites, i.e. restricted individual variables (e.g. Berman 1991; Beck 2006), as sets of individuals (e.g. Hamblin 1973; Kratzer and Shimoyama 2002), as lambda-operators, i.e. expressions without a semantic type (e.g. Groenendijk and Stokhof 1984; Heim and Kratzer 1998), or, almost equivalently, as type-preserving functions contributing a restriction on the variable introduced by the wh-word (Caponigro 2003). Which of these analyses is well fit for the present purposes?

What we already know is the desired semantics of MECs, including their semantic type. The idea has been that MECs are just like possibility clauses, i.e. of type $\langle s, \langle e, vt \rangle \rangle$, and that the wh-word in MECs corresponds to the empty operator in the possibility (or purpose) clause, binding the variable that is to be identified with the participant argument of the embedding predicate. This assumption in itself significantly reduces the possible denotations of fronted wh-words. They cannot denote quantifiers (Karttunen 1977), individuals (Berman 1991), or sets of individuals (Hamblin 1973). This is because the function application that would follow the wh-movement would immediately saturate the individual-argument position created by the movement (by the rule of lambda-adjunction; see §1.4.1) and consequently change the type of the MEC from $\langle s, \langle e, vt \rangle \rangle$ to $\langle s, vt \rangle$. But an expression of this type cannot be selected by the MEC-embedder.

This leaves us with the last two options: wh-words as type-preserving functions (Caponigro 2003) or wh-words as syncategorematic expressions that correspond to Λ (Groenendijk and Stokhof 1984). Opting for Caponigro’s analysis is *prima facie* problematic because the object that is the sister of the wh-word after its movement in MECs is not of the right type, i.e. t . Hence, the wh-word function, which is of type $\langle et, et \rangle$ could not apply. It seems inevitable that fronted wh-words can be sisters to expressions of various types. These should include t (or $\langle st \rangle$), for the purpose of relative clauses and wh-questions, but also $\langle (s,)et \rangle$, for multiple wh-questions (see §6.3), or $\langle s, vt \rangle$, as assumed here. If this is right, then there are two ways out for an account like Caponigro’s. Either wh-words are multiply ambiguous or their semantics is defined in terms of variables over types and is therefore intrinsically flexible. The first solution seems *ad hoc* and therefore suboptimal. The second solution, though attractive, does not work. Let us see why. Say that the movement of wh-words can target expressions of type t , or $\langle et \rangle$, as in double questions, or $\langle e, et \rangle$, as in triple questions. After wh-movement and lambda adjunction, these types will correspond to $\langle et \rangle$, $\langle e, et \rangle$, and $\langle e, \langle e, et \rangle \rangle$, respectively. Assume further that wh-words are type-preserving functions of type $\langle e\sigma, e\sigma \rangle$, for any type σ . Now, suppose that *what* combines with a single wh-clause, which is of type $\langle e, et \rangle$ (after lambda-adjunction). In this case, $\sigma = \langle et \rangle$. The sample derivation is in (55).

$$(55) \quad \llbracket \text{what} \rrbracket(\llbracket \text{wh-clause} \rrbracket) = [\lambda P_{\langle e\sigma \rangle} \lambda x [P(x) \wedge \mathbf{Thing}(x)]](\lambda y [\lambda z [Q(z)(y)])] = \lambda x [\lambda z [Q(z)(x)] \wedge \mathbf{Thing}(x)]$$

The problem with (55) is that it is an illicit logical object: the object $\lambda z [Q(z)(x)]$ cannot enter into a conjunction, since it is not of type t , but of type $\langle et \rangle$. Intersection (\cap) cannot be used either because $\mathbf{Thing}(x)$ is of type t .

The impossibility to define Caponigro-style semantics in a flexible way leaves us with the solution of Groenendijk and Stokhof (1984) and Heim and Kratzer (1998), who treat wh-words as syncategorematic expressions (i.e. expressions without a type) which correspond to lambdas (Λ ; see §1.4.1).

$$(56) \quad \text{what}_i = \Lambda_i$$

The question is how to treat the restriction on the variable that is contributed by the wh-word (i.e. \mathbf{Thing} for *what*). There are two options. Either the restriction is treated as a presupposition (Heim and Kratzer 1998) or it is interpreted in the trace position, in the form of a definite description (Rullmann and Beck 1998; Sauerland 1998; Johnson to appear). Without going into the technicalities, I tentatively adopt the latter option. This is because I will assume that the world variable with respect to which the restriction is interpreted can be bound by expressions in the clause, something that is impossible to achieve with the presupposition account.

This account of fronted wh-words, necessitated by the general account of MECs and possibility clauses, has one interesting consequence. In particular, wh-movement is predicted to be completely semantically unconstrained. It can target any expression because wh-words are completely inert with respect to the type theory. I will explore this consequence in Chapter 5 and will show that thanks to freedom of wh-movement, MECs can be of various syntactic sizes (corresponding to different semantic types).

4.4.2 Formalizing MEC-embedding

Let us now turn back to MECs and the way they are integrated into the argument structure of the embedding predicates. In §4.3.3, I introduced two versions of the stative predicate BE_E . One version, repeated in (57), takes an entity-type object (x) as its participant argument. The other, repeated in (58), is an existential version of BE_E , designated as BE_E^\exists . Instead of an entity-type object, it takes a property-type one (P), existentially quantifying over the variable x that this property introduces. The very same variable is construed as the participant of this predicate.

$$(57) \quad \text{BE}_E \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] = (22)$$

$$(58) \quad \text{BE}_E^\exists \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda P_{\langle s, et \rangle} \lambda e_v \exists e'_v \exists x_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge P(w)(x) \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$$

The expression that fills the participant argument slot of BE_E is scopally and referentially independent of the verb: it could be definite as well as (specific) indefinite. The expression that fills the argument slot of BE_E^\exists , on the other hand, is referentially backgrounded and scopally very restricted: it provides a description but lacks any referential properties; moreover, the variable it introduces gets existentially closed by the predicate and can therefore never outscope it.

What is the nature of MEC-embedding predicates? I would like to suggest that these predicates go even further in reducing the participant argument, in fact, they go to the extreme and get completely rid of that argument position. All that remains is the existential quantification over the variable that corresponds to the argument.²⁶ Thus, we arrive at the semantics in (59). It is possible to assume that the representation in (59) is derived from the basic representation in (57) by the application of a silent arity-reducing morpheme, whose denotation is given in (60). Notice that (60) closely resembles the antipassive morpheme (cf. Dixon 1994), which eliminates the participant argument position and at the same time existentially quantifies over the variable that corresponds to the participant argument in the representation of the predicate. (The simplified notation *sevt* corresponds to $\langle s, \langle e, vt \rangle \rangle$.)

$$(59) \quad BE_E^{MEC} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda e_v \exists e'_v \exists x_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$$

$$(60) \quad \text{ANTIPAS} \rightsquigarrow \lambda w_s \lambda X_{\langle s, \langle sevt, \langle e, \langle vt \rangle \rangle \rangle} \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda e_v \exists x [X(w)(Q)(x)(e)]$$

The derivation of BE_E^{MEC} from BE proceeds by simple function application, as in (61). Notice that this ingredient of the analysis crucially depends on the assumption that BE is a lexical predicate and not just a functional existential quantifier with no lexical content.

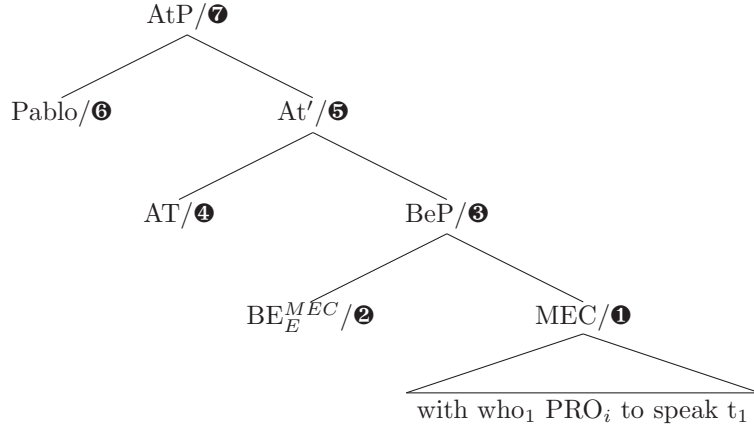
$$(61) \quad \llbracket BE_E^{MEC} \rrbracket = \llbracket \text{ANTIPAS} \rrbracket (\llbracket BE \rrbracket)$$

In view of previous approaches to the syntax and semantics of MECs, the representation of the MEC-embedding predicate in (59) raises an obvious question: How does the MEC enter the derivation if the participant argument position is eliminated? The answer to this question should already be obvious from the preceding sections: the MEC enters the derivation in the position of the event extension argument of the BE predicate. It turns out that MECs have precisely the right properties in order for this to be possible. Firstly, they are relative clause-like in that they involve a gap bound by a *wh*-operator and for that reason they can be analyzed as properties (or, more precisely, relations between individuals and events). Secondly, they are typically in the infinitive or subjunctive—a dependent mood which is well fit to be selected by predicates with a modal component.

²⁶See Bok-Bennema (1991) for arguments that antipassivization is standardly accompanied by existential quantification.

Now that the background assumption about wh-semantics is settled, let us come back to MECs. Consider the following simple MEC example from Spanish.

- (62) *Spanish*
Pablo tiene con quién hablar.
Pablo has with who speak:INF
‘Pablo has somebody to speak with.’



For the sake of notational parsimony, I will abstract away from a lot of detail in the composite event semantics of the embedded predicate *hablar (con)* ‘speak (with)’ and treat it essentially as a predicate with more participant arguments. The two participant role predicates that it is associated with are represented as **Ag** (agent) and **With**. For now, I sidestep the issue of how exactly the reference of the PRO is determined and will just assume that it is bound by the matrix subject (λz). See §6.4 for discussion. The truth conditions of (62) are computed as follows. The MEC (node 1), denoting a relation between individuals and events, is selected by the MEC-version of the predicate BE (node 2). The predicate existentially quantifies over the variable bound by the wh-word and equates this variable with the participant role of the existence predicate. The participant argument itself remains unrealized, due to the antipassivized nature of BE_E^{MEC} . The BeP is further selected by AT (node 4) as its extension argument and finally, the participant of AT—*Pablo* (node 6)—is introduced.

- (63) 1 $\rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Speak}(w)(e) \wedge \mathbf{Ag}(e) = z \wedge \mathbf{With}(e) = x \wedge \mathbf{Human}(w)(x)]$
2 $\rightsquigarrow \lambda w \lambda Q \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$ = (59)
3 $\rightsquigarrow \lambda w \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = z \wedge \mathbf{With}(e'') = x \wedge \mathbf{Human}(w')(x)] \wedge e = e' \rightarrow e'']$
4 $\rightsquigarrow \lambda w \lambda E \lambda z \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = z \wedge \exists e'''' [E(w)(e''') \wedge e = e''' \rightarrow e''']]$ = (13)

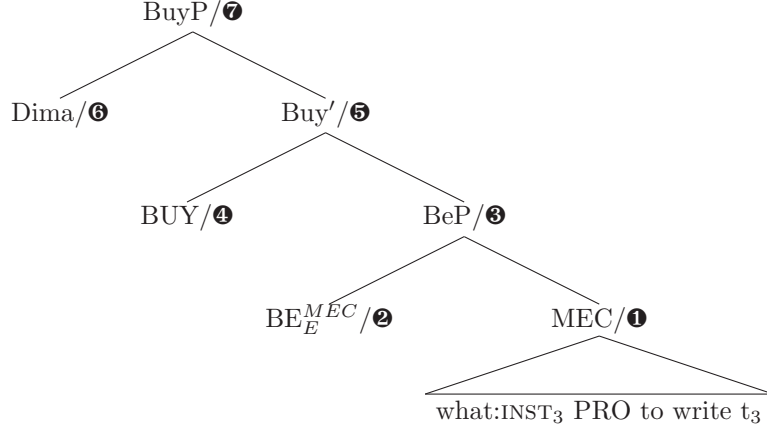
$$\begin{aligned}
\textcircled{5} &\rightsquigarrow \lambda w \lambda z \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = z \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = z \wedge \\
&\quad \mathbf{With}(e'') = x \wedge \mathbf{Human}(w')(x)] \wedge e'''' = e' \rightarrow e''] (w)(e''') \wedge e = \\
&\quad e''' \rightarrow e'''']] \\
\textcircled{6} &\rightsquigarrow \mathbf{p} \\
\textcircled{7} &\rightsquigarrow \lambda w \lambda e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = \mathbf{p} \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{p} \wedge \\
&\quad \mathbf{With}(e'') = x \wedge \mathbf{Human}(w')(x)] \wedge e'''' = e' \rightarrow e''] (w)(e''') \wedge e = \\
&\quad e''' \rightarrow e'''']] \\
\textcircled{7}' &\rightsquigarrow \lambda w \exists e \exists e''' [\mathbf{Reg}(w)(e''') \wedge \theta(e''') = \mathbf{p} \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
&\quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{p} \wedge \\
&\quad \mathbf{With}(e'') = x \wedge \mathbf{Human}(w')(x)] \wedge e'''' = e' \rightarrow e''] (w)(e''') \wedge e = \\
&\quad e''' \rightarrow e'''']]
\end{aligned}$$

The truth conditions of (62) are in $\textcircled{7}'$. The sentence is true in w iff there is some x in Pablo's region in w such that x is in the state of being existent/available in w and as a result, it is possible (if all circumstances are like in w) that Pablo speaks with x .

The exact same reasoning applies to other types of predicates, such as *buy*. In §4.3.3 I argued that the syntactico-semantic representation of these dynamic MEC-embedding predicates contains a silent *be* or *have*, expressing the result state. I proposed that the result state predicate can be of the ordinary (BE) as well as extended (BE_E) flavor. I take it to be a null hypothesis that this incorporation is quite mechanical, i.e. the predicate BE contained in *buy* is just like the predicate BE in isolation. (The only difference is their lexicalization.) There is nothing in principle that should prevent dynamic predicates from incorporating the antipassivized version of BE—BE_E^{MEC}.

Let us consider the Russian example below.

- (64) *Russian*
Dima kupil čem pisat'.
Dima bought what:INST write:INF
'Dima bought something to write with.'



Let us go through the steps of the semantic derivation. Like before, the MEC (node ①) denotes a relation between individuals x and events e , such that e is an event of writing, x is the instrument of that writing event, and there is some agent y in that event (I treat it as a variable for convenience; see §6.4 for discussion). This structure is selected by the MEC-embedding BE predicate (node ②), which states the existence of some instrument of the embedded event x . The resulting characteristic function (node ③) is fed into the processual predicate BUY (node ④). This predicate states that the existence state is an extension of some process of buying, in which *Dima* (node ⑥) is active.

$$\begin{aligned}
 (65) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Write}(w)(e) \wedge \mathbf{Inst}(e) = x \wedge \mathbf{Ag}(e) = y] \\
 & \textcircled{2} \rightsquigarrow \lambda w \lambda Q \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] = (59) \\
 & \textcircled{3} \rightsquigarrow \lambda w \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [\mathbf{Write}(w')(e'') \wedge \mathbf{Inst}(e'') = x \wedge \mathbf{Ag}(e'') = y] \wedge e = e' \rightarrow e'']] \\
 & \textcircled{4} \rightsquigarrow \lambda w \lambda E \lambda z \lambda e \exists e''' [\mathbf{Buy}(w)(e''') \wedge \theta(e''') = z \wedge \exists e'''' [E(w)(e''') \wedge e = \\
 & \quad e''' \rightarrow e''']] = (52) \\
 & \textcircled{5} \rightsquigarrow \lambda w \lambda z \lambda e \exists e''' [\mathbf{Buy}(w)(e''') \wedge \theta(e''') = z \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
 & \quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Write}(w')(e'') \wedge \mathbf{Inst}(e'') = x \wedge \\
 & \quad \mathbf{Ag}(e'') = y] \wedge e'''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']] \\
 & \textcircled{6} \rightsquigarrow \mathbf{d} \\
 & \textcircled{7} \rightsquigarrow \lambda w \lambda e \exists e''' [\mathbf{Buy}(w)(e''') \wedge \theta(e''') = \mathbf{d} \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
 & \quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Write}(w')(e'') \wedge \mathbf{Inst}(e'') = x \wedge \\
 & \quad \mathbf{Ag}(e'') = y] \wedge e'''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']] \\
 & \textcircled{7}' \rightsquigarrow \lambda w \exists e \exists e''' [\mathbf{Buy}(w)(e''') \wedge \theta(e''') = \mathbf{d} \wedge \exists e'''' [\exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \\
 & \quad \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Write}(w')(e'') \wedge \mathbf{Inst}(e'') = x \wedge \\
 & \quad \mathbf{Ag}(e'') = y] \wedge e'''' = e' \rightarrow e'']] \wedge e = e''' \rightarrow e''']]
 \end{aligned}$$

The node ⑦' represents the truth conditions of (64). The sentence is true (in informal terms) iff there is an event of buying such that Dima is active in that event and such that the result of this event is the existence of some x and

it is possible (given that all circumstances are like in w) that x serves as an instrument in some event of writing. As discussed above for purpose clauses, this semantics can give rise to a pragmatic strengthening due to which the process of buying may be interpreted as being purposeful, where the goal to be achieved is the event of writing.

4.4.3 Conclusion

The semantics of sentences containing MECs falls out quite naturally from the previous discussion. MECs behave simply as possibility clauses, i.e. extension arguments of BE_E . The only challenge that MECs present for the account is their “headlessness”, i.e. the lack of an overt participant argument. I formalized this property by applying a silent antipassive morpheme to the “transitive” BE_E , giving rise to the “unaccusative” BE_E^{MEC} . As standardly assumed, the antipassivization process is accompanied by an existential closure of the backgrounded argument. Interestingly, this very fact gives rise to what has always been considered one of the core properties of MECs—their strictly narrow scope. In the present account, this property need not be stipulated, it falls out from an independently needed process of argument reduction. Notice also that the account lends support to the set of background assumptions introduced in §4.2.2. Sentences containing MECs are, effectively, existential sentences that lack their core component—the nominal pivot. As far as I can see, getting rid of the pivot in theories where it is the main (or even the only) lexical component of existential sentences would be particularly difficult. In a theory like the one proposed here, i.e. a theory where the pivot is “just” an argument of a lexical predicate—the existence predicate—removing the pivot simply reduces to removing an argument.

4.5 Conclusion

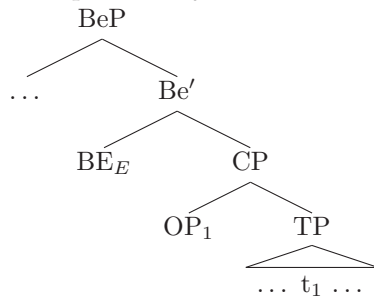
At the beginning of this chapter, we were facing a problem inherited from previous analyses and stated particularly clearly in Chapter 3: MECs appeared to be constructions that have no properties besides being A-bar constructions of the wh-type. The fact that this “minimal” style of analysis fails to account for two very specific but core properties of MECs—their distribution and their modality—clearly indicated that more needs to be said about the nature of MECs. The hypothesis I started out with is that the source of MECs’ highly specific behavior is the structure in which MECs are embedded. After all, this is precisely what we observe for other types of A-bar constructions like free relatives or wh-questions, whose syntax and semantics is based on the general A-bar pattern, but is further obligatorily specified by the selecting material: the D-head and the Qu-head respectively. In a similar fashion, I proposed the defining property of MECs is that they are embedded under a particular predicate—the existence predicate BE_E , which manifests itself most clearly in the predicate

available, but is present in all verbs whose result state corresponds to the existence of some object. The MEC is integrated into the structure of this predicate as its event extension argument, which is present in the argument structure by virtue of materializing a pragmatic inference of possible events.

The event-extension analysis has a range of welcome predictions, often quite detailed ones. Most of them will be discussed in the subsequent two chapters. For now, let me mention that it resolves the two long-standing open issues of MECs—distribution and modality—in a particularly elegant and non-stipulative way. It is the existence predicate that is responsible for both properties. MECs can only be selected by predicates that include the existence/availability predicate as their subpart, in particular as their result states. The existence/availability predicate is also responsible for the particular kind of modality used in MECs. The existence of objects makes it *possible* for some event (involving that object) to happen, it makes it by no means *necessary*. Moreover, the possibility is one that refers to the *circumstances* of the world rather than obligations (deontic modality), knowledge (epistemic modality), or other types of modal bases.

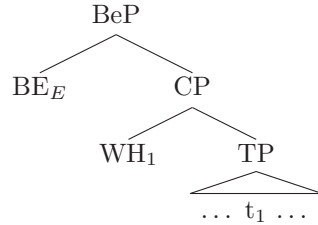
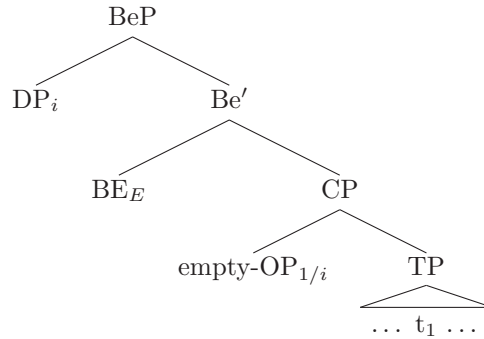
Another significant aspect of the event-extension analysis is that it attributes MECs a new place in the taxonomy of A-bar constructions. Perhaps even more interestingly, I found a construction which constitutes MEC's immediate sister in the taxonomy, to the exclusion of all other A-bar constructions—the purpose clause. I argued that both MECs and purpose clauses share the structural description in (66)—the construction that I have throughout referred to as the possibility clause.

(66) **The possibility clause**



The MEC and the purpose clause are subtypes of this construction. They differ in two important respects: (i) the MEC makes obligatory use of overt wh-operators, whereas the purpose clause makes obligatory use of an empty operator; (ii) the BE_E that selects the MEC has a reduced participant argument slot, making the MEC what has been called “free” or “headless”,²⁷ whereas the BE_E that selects the purpose clause uses a full-fledged argument structure. The two constructions are schematically represented below:

²⁷However, see the discussion in §6.5, where I argue that Spanish MECs allow for their corresponding participant arguments to be overtly expressed.

(67) **The modal existential wh-construction**(68) **The purpose clause**

Interestingly, the shape of these two subtypes of the possibility clause are not completely arbitrary. All in which they seem to differ is the position where the restriction on the variable bound by the operator is expressed: the MEC uses the operator itself to do this, while the purpose clause relies on the participant argument. These two strategies do differ in their expressive power. Because of the restrictions on wh-word complexity (see §2.2.2), MECs are less flexible than purpose clauses in descriptive characterization of the object in existence. On the other hand, thanks to the overttness of the operator, MECs allow for sluicing (see §5.5 for discussion). Apparently, both subtypes of the possibility clause have their advantages and disadvantages. I have not yet been able to find out whether there are languages that have both the MEC and the purpose clause; however, there is no *a priori* reason why this should not happen.

CHAPTER 5

The internal syntax of MECs

In the previous chapter I put forth a proposal concerning the external syntax of MECs, i.e. their base-generation position within the argument structure of the matrix predicate. As opposed to all previous approaches, I argued that MECs do not correspond to direct objects of the matrix predicate (or what I called the participant arguments), but rather to their event extensions. In this chapter, I explore the consequences of this proposal for the internal syntax of MECs.

One of the most striking accomplishments of the event-extension analysis is that it provides a principled explanation of the apparently ambivalent nature of MECs—they behave as clauses (or more generally extended projections of the verb) syntactically but as nominals semantically. While this somewhat paradoxical generalization has been well-established and not seriously challenged for about twenty years now (roughly since Grosu 1987), nobody has ever provided an insightful explanation of this generalization (and few have actually tried). Under the event-extension account, the MEC must be verbal in nature, since it is integrated as an event extension within the spine of verbal projections. The source of their apparently nominal interpretation is the *wh*-operator in their left periphery, which binds a variable whose reference is identified with the reference of the participant argument. In effect, the verb-noun ambivalence is quite explicitly reflected in the semantic representation, since MECs characterize relations between events and individuals.

The investigation of MECs' internal syntax does not finish with stating that MECs are verbal rather than nominal projections. It remains to be determined what level of projection they correspond to. In the mainstream literature, this problem has been largely ignored and scholars have assumed that MECs are CPs. After all, they exhibit *wh*-movement and *wh*-movement always targets

the CP. However, there have been episodic observations which strongly suggest that MECs in some languages cannot be as big as CPs (this argument was most clearly formulated in Ceplová 2007 for Czech). So, what is the prediction of the event-extension analysis?

There is one important respect in which the MECs (under the present analysis) differ from their related constructions, in particular wh-questions and free relative clauses, and that is the embedding context. Both wh-questions and free relatives are types of A-bar constructions which crucially rely on being selected by a functional head (Qu and D, respectively; see §3.2), i.e. a head that maps to an expression with a purely logical meaning. MECs, on the other hand, represent a type of A-bar construction which is selected by a lexical head. As the generally accepted working hypothesis about functional and lexical categories has it, only the former kind of categories are strictly and universally constrained in the position where they are generated and in the kind of category they select for. It follows from this hypothesis that questions and free relatives—constructions headed by functional categories—are predetermined to be of a certain syntactic size, namely precisely that size that the corresponding functional category requires. Consequently, wh-questions and free relatives are always CP-based.

The prediction for MECs is precisely the opposite because they are selected by a lexical head. What syntactic material lexical heads select is subject to cross-linguistic (and intra-linguistic) variation. This is especially apparent from the phenomenon of serial verb constructions. In these constructions, lexical verbs select projections of other verbs, such as in *begin to work* or *try to go*. The level of predictability with respect to what syntactic size a particular lexical verb in a particular language calls for is remarkably low. In some languages the verb *try* selects for a CP, in others for a TP, and yet in others perhaps for a VP (see e.g. Wurmbrand 2001; Dotlačil 2004; Ter Beek 2008). Moreover, in many languages, one particular verb can be compatible with more selectional patterns. Therefore, if MECs are selected by a lexical predicate, as argued in the preceding chapter, then we predict there to be no *a priori* constraint on their syntactic size. In this chapter, I will argue that this prediction is borne out. I will show that there are MECs of various syntactic sizes—from VPs (or vPs) to CPs. The only effective constraint that can (partly) predict the size of the MEC in a particular language, is wh-movement, on which the MEC heavily relies. If wh-movement in a language is constrained to target the CP domain (which is the case in most languages), then MECs in that language must be CPs. If, on the other hand, wh-movement is not constrained in that way (as in West Slavic languages), then MECs are allowed to be smaller, in particular vPs.

The finding that wh-fronting constructions need not be CPs has interesting implications for the theory of wh-movement. It seems to suggest that wh-movement is not feature-driven, at least to the extent that there is no particular functional head that has a “wh-feature” (such as C[+wh]). What forces wh-

constructions to be of some particular size, e.g. a CP, are factors *external* to wh-movement, mainly general constraints on movement in that language and also functional heads that operate on the operator-variable dependencies that the wh-movement creates. Wh-movement itself applies freely, targets any projection, and therefore reduces to syntactic adjunction. This conclusion matches the assumption about fronted wh-word semantics introduced in §4.4.2, where I argued that fronted wh-words have no type, simply correspond to logical lambda-operators (Heim and Kratzer 1998), and therefore impose no restrictions whatsoever on the semantic type of their sister (contra Caponigro 2003). This in turn points to the tentative conclusion that the unconstrained nature of wh-movement has its source in semantics.

This chapter is built up as a careful exposition of arguments supporting the predictions and hypotheses stated above. It is organized as follows. In §5.1 I briefly discuss the development of analyses of MECs' internal syntax. The currently held position that MECs are CPs (i.e. like embedded questions) will be shown to be superior to the (free) relative clause DP/NP analysis, pursued mainly in the 1980s. This supports the event-extension analysis, which predicts MECs to be verbal. In the rest of the chapter, I will provide support for the more specific aspect of the event-extension analysis, namely that MECs are selected by a lexical (rather than functional) head and are therefore predicted to be flexible in terms of their syntactic size. In §5.2 I show that the CP analysis, despite its great potential, cannot possibly be the only one. There are languages with MECs that are not CPs. The verbs that select them behave as restructuring verbs, either of the control or even of the raising type. The issue of control and raising is discussed in §5.4. It will be shown that even for languages with sub-CP strategies, the CP strategy is generally available, pointing to the flexibility of the MEC syntactic size. In §5.3 I turn to the problem of wh-movement and related issues (such as sluicing). The question of interest is: what kind of wh-movement are we witnessing in cases of MECs that are not CPs? Again, we will see that different languages use different strategies, and some can use more. In §5.6 I conclude the chapter.

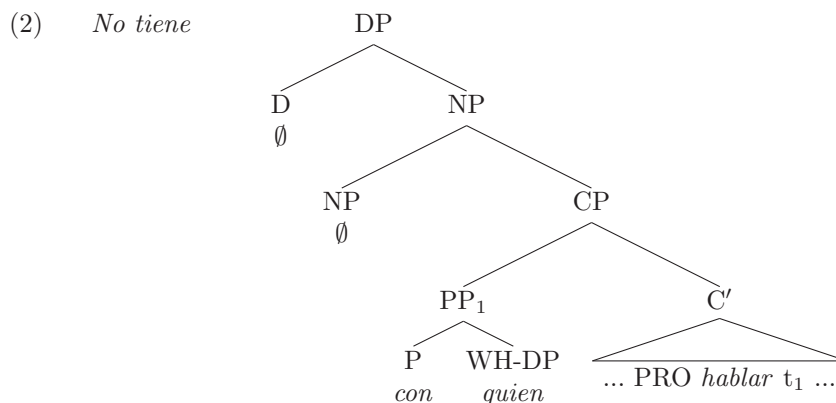
5.1 Internal syntax: state of the art

There are two main types of syntactic analyses of MECs: (i) analyses based on the idea that MECs are (free) relative clauses, adjoined to phonologically empty nominal material (NP/*pro*); (ii) analyses arguing that there is no nominal material present in the syntax and MECs are simply wh-clauses (CP). Below, I pay some attention to these analyses and the arguments that led scholars to adopt them.

5.1.1 The nominal analysis

In the context of Romance linguistics, the formal study of MECs branched off from the study of relative clauses. This is reflected in the early analyses. For instance Plann (1975, 1980) argues that MECs are essentially relative clauses adjoined to an empty nominal head and an empty determiner. The diagram in (2) illustrates her analysis of (1), modified according to current labeling and analytical standards.¹

- (1) *Spanish* (Plann 1980:134/135)
 No tiene con quien hablar.
 NEG have:3SG with who speak:INF
 ‘She doesn’t have anybody to speak with.’



Adopting (2), Plann also explicitly rejects the clausal analysis, under which the NP and DP layers are absent. Her argument has to do with selection: she correctly notices that MECs are selected by predicates that normally select for nominal phrases rather than clauses. She further supports her analysis by putting forth a number of correlations between MECs and overtly headed infinitival relatives: (i) heads of infinitival relatives must be indefinite (3a), (ii) headed infinitival relatives cannot occupy the subject position (3b), and (iii) they can only be selected by a limited set of predicates (not illustrated by Plann).

- (3) *Spanish* (Plann 1980:128)
- a. Ana no pudo encontrar { ningún /* el } libro que leer.
 Ana NEG could find:INF any / the book COMP read
 ‘Ana couldn’t find {any / the} book to read.’

¹I am using the following correspondences: $C' \approx S$; $CP \approx S'$; $NP \approx N''$; $D \approx \text{DET}$; $DP \approx N'''$; $\text{WH-DP} \approx N'''[+\text{WH}]$. Notice that Plann treated nominal phrases as projections of N heads, a standard assumption before Abney (1987).

- b. Un abrigo (* que ponerse) ha llegado por correo.
 a coat COMP put.on:REFL has arrived by mail
 'A coat (to put on) has arrived by mail.'

Notice that these three properties also characterize MECs. On Plann's analysis, they are derived automatically—simply by virtue of MECs belonging to the of class infinitival headed relatives. Unfortunately, Plann gives no explanation of why these properties hold of overtly headed infinitival relatives in the first place. We are thus left with a mere correlation. Another problem is that the correlation only holds of a subset of headed infinitival relatives, namely those relativizing the relative clause-internal direct object.² If they are introduced by a relative pronoun embedded in a PP these restrictions vanish. This is illustrated by (4a), which shows that such infinitival relatives can be headed by a definite DP, and by (4b), which shows a DP with an infinitival relative in the subject position.

- (4) *Spanish* (Plann 1980:128/129)
- a. Ana no pudo encontrar el lápiz con el que firmar el
 Ana NEG could find the pencil with the which sign:INF the
 contrato.
 contract
 'Ana couldn't find the pencil with which to sign the contract.'
- b. Una maleta en la que meter los libros ha llegado por
 a suitcase in the which put the books has arrived by
 correo.
 mail
 'A suitcase in which to put the books has arrived by mail.'

In MECs, on the other hand, these restrictions apply across the board, i.e. irrespective of the underlying syntactic position of the *wh*-element. It should be emphasized, however, that this fact does not prove Plann's analysis wrong. The restrictions can well have a common source in both object-infinitival relatives and MECs, while some specific factor causes them to apply more generally in MECs (or less generally in infinitival relatives). Unfortunately, Plann does not suggest what this factor might be.

Some version of Plann's analysis was adopted by a number of scholars. Mostly, they provide no further supporting arguments in favor of the nominal nature of MECs and deal with issues orthogonal to their categorial status. Virtually the same analysis as Plann's is assumed in Růžička (1994), who concentrates on issues specific to Russian negative MECs. Rappaport's (1986) analysis of Russian MECs is similar in spirit. The matrix verb is considered a two-place predicate, whose internal argument is the *wh*-word, which is in turn obligatorily modified by an infinitival relative. Suñer's (1983) agenda is to pro-

²The data also appear to be compatible with a different characterization, namely that the restrictions only hold of infinitival relatives introduced by the complementizer *que*.

vide a more or less unified account of MECs and free relatives, while capturing the fact that matching effects are observed in the latter but not in the former. The structure that Suñer uses is minimally different from that of Plann's: she assumes that MECs are headed by a phonologically empty *pro*, which is dominated by an NP; no determiner layer is postulated. See below for Grosu's (1987) criticism of this account. The most recent nominal analysis is provided by Agouraki (2005) for Greek, who also proposes to treat MECs roughly on a par with free relatives, i.e. as D-headed CPs. Agouraki assumes that the D head is the locus of intensional and polarity properties, causing MECs' limited distribution.

Summing up, the most convincing evidence supporting the view that MECs are syntactically nominal comes from three facts: (i) they are selected by verbs that normally subcategorize for NPs, rather than CPs, (ii) they are interpreted as (existential) indefinites, and (iii) they can typically be paraphrased by NPs modified by a relative clause. As we saw, Plann (1980) constructs one more argument, which is based on partial analogy between MECs and infinitival headed relatives.

Problems of the nominal analysis

Despite the overall plausibility of the nominal analyses, they fall short of accounting for a whole range of facts. Let us first evaluate them with respect to Spanish and Russian, which are among the (few) languages that this type of analysis was devised or at least intended for.

First of all, the MEC can hardly be seen as a subtype of the infinitival headed relative in a language where the latter does not exist. This is the case of Russian, for which the relevant contrast is illustrated below: (5a) is an MEC, (5b) is an ungrammatical infinitival relative. The analysis of Růžicka (1994) is therefore dubious from the very start.³

(5) *Russian* (Zhenya Markovskaya, p.c.)

- a. Ja našel čto počitat'.
 I found what:ACC read:INF
 'I found something to read.'

³Rappaport (1986) gives three examples of infinitival relatives in Russian, two of which are illustrated below:

(i) *Russian* (Rappaport 1986:17)

- a. U menja net stola, za kotorym rabotat'.
 at me:GEN NEG:be:IMPRS table at which work:INF
 'I do not have a table to work at.'
- b. Ja tak i ne našel čeloveka, k kotoromu obratit'sja.
 I in.the.end NEG found person to whom turn:INF.REFL
 'I did not find a person to turn to.'

Judgements about these examples vary. Lena Karvovskaya (p.c.) confirms Rappaport's judgements, while Aysa Arylova (p.c.) informs me that these are hardly acceptable for her, marking them as *?.

- b. *Ja našel knigu (kotoruju) počitat'.
 I found book:ACC (which:ACC) read:INF
 'I found a book to read.'

Grosu (1987) was the first to explicitly criticize the application of the nominal analysis to Spanish (and Romanian). Grosu's paper is mainly a reply to Suñer (1983) and her treatment of matching effects. Suñer argues that in MECs, the *pro* that appears in the head position of the *wh*-clause is liberated from any licensing requirements. If matching effects are an overt reflection of an empty-category licensing relation, no matching effects are predicted for MECs—a correct result. Grosu points out that Suñer's analysis beats the very idea of licensing empty categories, a concept which is based on the well-grounded observation that the distribution of empty categories is very limited. Each empty category (such as *pro* or PRO) must participate in some well-defined relation/configuration, in other words, it must be syntactically licensed. From this perspective, Suñer's *pro* in MECs is a clear outlier and that is better to be avoided. It is conceptually cleaner, Grosu argues, to assume that *pro* is simply absent in MECs.

A number of empirical arguments support the general conclusion of Grosu's, most of which were already discussed and exemplified in §3.3.1 and §3.3.3 of Chapter 3. The gist of all the arguments dwells in the observation that MECs lack characteristic nominal properties. In particular, (i) they have a very limited distribution (they are ruled out from most argument positions), (ii) they cannot be coordinated with other NPs, (iii) they lack complex-NP behavior in that they are transparent for extraction.⁴ Let us illustrate at least the last two properties for Russian and Spanish

(6) **Coordination**

- a. *Russian* (Aysa Arylova, Zhenya Markovskaya, p.c.)
 U menja est' s kem rabotat' (*i sobaka).
 at me:GEN be:IMPRS with whom work:INF and dog
 'I have somebody to work with and a dog.'
- b. *Spanish* (Luis Vicente, p.c.)
 Estoy en un buen departamento: tengo con quién
 am in a good department: have:1SG with who
 colaborar (?? y una carga lectiva ligera).
 collaborate:INF and a load teaching light.
 'I am in a good department: I have somebody to collaborate with
 and a light teaching load.'

⁴A notable exception is Italian, as pointed out in §2.2.4. I will discuss the case of Italian in more detail in §5.3.3. Also, see Chung and McCloskey (1983) for a discussion of English examples where subject relatives are transparent for extraction:

- (i) Chung and McCloskey (1983:708)
 This is a paper that we really need to find someone who understands.

(7) **Transparency**

- a. *Russian* (Rappaport 1986:13)
 Drug drugu₁ nam bylo čto rasskazyvat' t₁
 each other us:DAT be:PAST.IMPRS what:ACC tell:INF
 '[To each other]₁ there was something for us to tell t₁.'
- b. *Spanish* (Cintia Widmann, p.c.)
 Con quién ya no tenés de qué hablar?
 with whom already NEG have:2SG of what speak:INF
 'Who is such that you no longer have anything to speak about with that person?'

Below are examples of headed relatives analogous to the MECs above. Notice that while Russian behaves as expected in that the relative blocks extraction, (8a), extraction out of Spanish infinitival headed relatives is perfectly fine, (8b). It might seem that this observation lends more support to Plann's analysis of Spanish MECs in terms of headed relatives. However, later on (§6.5) I will argue that this impression is unsubstantiated and that these apparent infinitival headed relatives should be analyzed as possibility clauses in the sense introduced in the previous chapter. Under that assumption, the quirky observation (8b) will follow.

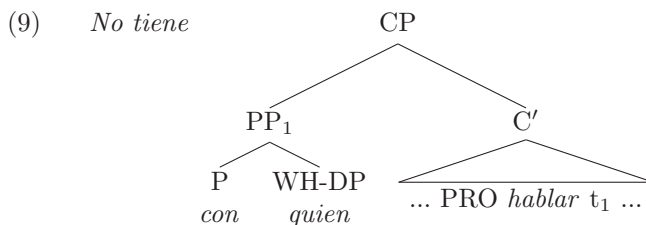
- (8) a. *Russian* (Aysa Arylova, Zhenya Markovskaya, p.c.)
 *Drug s drugom u nas est' čto-to o čem
 each with other at us:GEN be:IMPRS something about what
 možno pogovorit'.
 possible speak:INF
 '[With each other]_i there is something for us to speak about t_i.'
- b. *Spanish* (Luis Vicente, p.c.)
 Con quién ya no tienes nada de que
 with whom already NEG have:2SG anything:NCI about what
 hablar?
 speak:INF
 'Who is such that you no longer have anything to speak about with that person.'

In sum, the conceptual argument based on the matching effects phenomenon, as well as the empirical problems reviewed above render the nominal analysis inadequate, at least for the languages for which they were proposed. Also the prospects of applying the analysis to other languages are meager. As I showed in Chapter 2, the lack of matching effects in MECs is an absolute universal and the high transparency of MECs is a very strong cross-linguistic tendency. Both of these facts suggest the absence of any empty nominal category on top of the MEC. In §5.3 I will discuss subtypes of MECs (in Italian and Hungarian) which create a strong impression of being headed by nominals. Yet, if the event-extension analysis is correct, no version of the nominal analysis can be upheld

even for these cases.

5.1.2 The clausal analysis

The clausal analysis builds up on the affinity of MECs with embedded questions. It was first proposed by scholars working on Slavic languages. The oldest proposal in this vein that I am aware of is a paper by Zubatý (1922) on Czech MECs. For Russian, the clausal analysis was first proposed by Garde (1976).⁵ Russian MECs are analyzed as CPs (in current terms) also by Pesetsky (1982: Chapter 2, §4.4.1), even though he labels them infinitival free relatives. In particular, Pesetsky claims that “[t]he simplest hypothesis [...] is that both infinitival indirect questions and infinitival free relatives are S’s [i.e. CPs in today’s terms], and do not differ in internal structure.” (152) This analysis was later picked up by Grosu (1987) for Spanish and Romanian and independently arrived at by Rudin (1986: Chapter 6) for Bulgarian. Finally, the clausal analysis received wider attention thanks to the subsequent work of Alexander Grosu (Grosu 1994; Grosu and Landman 1998; Grosu 2004) and especially Roumyana Pancheva-Izvorski (Izvorski 1998; Pancheva-Izvorski 2000). It was also adopted in the work of Ivano Caponigro (Caponigro 2001, 2003, 2004). For illustration, I include the following diagram representing the clausal analysis of the Spanish sentence in (1), i.e. *No tiene con quien hablar* ‘I don’t have anybody to speak with.’ As you can verify, the analysis is minimally different from the nominal analysis in (2).



At present, it is safe to state that the CP analysis has become a well-accepted standard, despite the apparent controversies between the free-relative “camp” (Caponigro) and the embedded-question “camp” (Pancheva-Izvorski). This controversy is more ideological and terminological and has little to do with substance, where there is surprising agreement (see also §3.3.4).

What evidence is there in favor of the clausal analysis? It turns out that the evidence is almost entirely negative, collected to argue against the nominal analysis. We have seen most of it in the preceding section and in Chapter 3, so there is no point in unwrapping the whole argumentation once again.

Is there any positive evidence at all? The reason why most scholars do not even bother to give positive evidence for the CP-hood of MECs is the fact that every MEC involves wh-movement. By default, wh-movement targets an A-bar

⁵Unfortunately, I could not get hold of this paper.

position in the left periphery of the clause, which in turn is accommodated by the specifier of a C head (or, alternatively, some head in the split CP domain). Therefore, the presence of the CP projection follows. This conjecture is so strongly engrained in our syntactic theorizing that hardly anybody even considers it an issue that is worth discussing. However, I would like to bring this conjecture to the surface and give it a label:

- (10) **The wh-movement/CP conjecture** (to be proven false)
Overt wh-movement entails the presence of a CP.

Before turning to a discussion of transparency phenomena that will eventually lead to the denial of (10), let us briefly discuss the problem of selection.

Selection

In §5.1.1, I concluded that the fact that MECs are selected by noun-selecting verbs is one of the virtues of the nominal analysis. For the clausal analysis, on the other hand, the issue of selection is not so straightforward: How is it possible that verbs that normally subcategorize for NPs can subcategorize for CPs, too? As already pointed out in the introduction to this chapter, the event-extension analysis in fact predicts that MECs are verbal rather than nominal projections. Yet, selection is a genuine problem for all previous clausal analyses, so, for completeness, let us have a look at the range of answers offered in the literature.

Pesetsky (1982) argues that the MEC undergoes obligatory quantifier raising at LF. The trace left after this movement has a nominal status and can thus satisfy the selectional requirements of the matrix verb. This solution is relatively elegant; however, we will see that a quantifier-raising analysis makes a number of highly problematic predictions (see §6.1.1). Rudin (1986) solves the problem by positing a lexical ambiguity. She suggests that MEC-selecting verbs systematically come in two versions differing in subcategorizational patterns: [₋ NP] and [₋ CP]. Another potential solution is to adopt a system where syntactic subcategorization is dispensed with altogether, giving way to semantic selection (i.e. s-selection; cf. Grimshaw 1979).⁶ Thus, Caponigro (2003) argues that MECs, categorially CPs, denote a one-place predicate and are therefore of type $\langle e, t \rangle$, which is also the type of predicative NPs. The last type of answer is provided by Pancheva-Izvorski (2000). She proposes that MECs are not directly selected by the existential predicate, but rather by a covert modal head. Under this approach (a version of which can also be found in Šimík 2009a), it comes as natural that MECs are CPs, as CPs are standard syntactic input into a whole class of modal and intensional verbs.

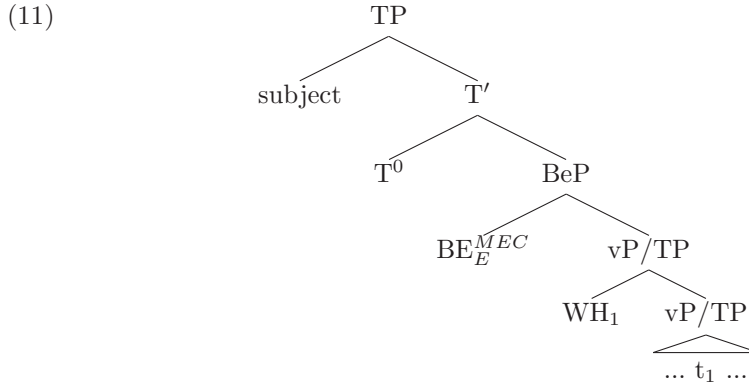
⁶This system presupposes that there is no strict correspondence between syntactic categories and semantic types, a restriction operative e.g. in Montague (1970, 1973). Nowadays, it is standard to assume that no such strict correspondence holds (see e.g. Partee and Rooth 1983; Partee 1987).

5.1.3 Summary

On the basis of empirical and theory-internal arguments presented in this section, I conclude that the CP analysis is more adequate than the DP/NP analysis and has a greater explanatory potential, despite the lack of clear positive evidence in its favor. This is a welcome result, as its general format matches the prediction of the event-extension analysis, under which MECs are event extensions. In the next section, I turn to the discussion of transparency phenomena, which pose problems for the generality of the CP approach and the conjecture (10), on which it heavily relies.

5.2 Restructuring phenomena: not all MECs are CPs

In this section, we will see that the popular CP analysis is in fact too restrictive. Based on the evidence from a variety of transparency and restructuring phenomena in a number of languages, I will argue that some MECs have to be analyzed as TPs or vPs and accordingly, their embedder belongs to the class of restructuring predicates. I will call such MECs *restructuring MECs*.



Even though it has never been fully developed, the suggestion that MECs can be smaller than CPs is not new. It was first tentatively proposed by Chvany (1975) for Russian, followed by Avgustinova (2003), Kondrashova (2008) and Kondrashova and Šimík (to appear). For Czech, this analysis was first hinted at in a footnote in Lenertová (2004), and later argued for by Ceplová (2007) and Šimík (2008a, 2009a). It was also tentatively proposed for Hungarian by Lipták (2003) and Surányi (2005).

In §5.2.1 I introduce the problem in the form of three observations involving clitic climbing (in Czech and Serbo-Croatian), genitive of negation licensing (in Slovenian), and wh-incorporation into the matrix negative marker (in Russian). In §5.2.2 I give a brief background on the phenomenon of restructuring. §5.2.3

is a failed attempt to save the CP analysis by trying to adopt one of two theories of restructuring which allow clitic climbing over a CP boundary. The conclusion that MECs need not be CPs raises further questions: What kind of restructuring predicate selects the MEC? What kind of wh-movement does the restructuring type of MEC employ, if the CP layer is missing? What determines the amount of structure that a language requires to build a grammatical MEC? These questions are addressed in subsequent sections, namely 5.3 and §5.4.

5.2.1 Stating the problem

There are a number of phenomena that pose a problem to the run-of-the-mill CP analysis of MECs. In this subsection, I will illustrate three of them: (i) some MECs in some languages are transparent for clitic climbing; (ii) the matrix negation in Slovenian triggers genitive of negation on the embedded object; and (iii) in Russian, the wh-word can incorporate into the matrix negative marker.

Clitic climbing

As already recorded in §2.2.4, some languages allow for clitic climbing out of infinitival MECs. The relevant examples are repeated in (12). See also (13), which shows that clitic climbing out of infinitival questions is impossible (cf. Junghanns 2002).

- (12) a. *Serbo-Croatian* (Pancheva-Izvorski 2000:53)
 Nemam ga₁ [kome dati t₁].
 NEG:have:1SG it:CL whom give:INF
 ‘I have no one to give it to.’
- b. *Czech* (Ceplová 2007:37)
 Petr ho₁ má [kam pozvat t₁].
 Petr him:CL has where invite:INF
 ‘Petr has a place where he could invite him.’
- (13) a. *Serbo-Croatian* (Šimik 2009a:188)
 *Neznam to₁ [kome dati t₁].
 NEG:know:1SG it:CL whom give:INF
 ‘I don’t know who to give it to.’
- b. *Czech* (Zubatý 1922:66)
 *Vím se₁ [kam posaditi t₁].
 know:1SG REFL.CL where seat
 ‘I know where to sit down.’

However, not all languages that generally allow for clitic climbing allow it to happen in MECs, as witnessed by Romance languages. The example below demonstrates this for Portuguese, where the clitic *me* ‘myself’ has to attach to the embedded infinitive and can by no means move outside of the MEC:

- (14) *Portuguese* (Adriana Cardoso, p.c.)
- a. Tenho com que me entreter.
have:1SG with that myself:CL amuse:INF
'I have with what to amuse myself.'
 - b. *Tenho-me com que entreter.
have:1SG-myself:CL with what amuse:INF

In sum, the phenomenon of clitic climbing divides MECs into two types: opaque and transparent. The former type matches the behavior of infinitival questions and can therefore be easily captured by the CP analysis. For the latter type, the plain CP analysis is inadequate. I can see two logical ways of improving the inadequacy. Either we modify the CP analysis so that clitic climbing becomes available in exactly the cases where it should be, i.e. in Slavic MECs selected by 'be/have', or we abandon the CP analysis for those cases. After providing a background on restructuring phenomena in general (§5.2.2), I will argue that the universal CP position needs to be abandoned (§5.2.3).

Slovenian genitive of negation

Slovenian makes a productive use of so called genitive of negation, i.e. a structurally case-marked (in particular accusative) argument surfaces as genitive in case it is in the scope of sentential negation. Some examples are below.

- (15) *Slovenian* (Marko Hladnik, p.c.)
- a. Nameraval sem pisati diplomo.
planned be:1SG write:INF thesis:ACC
'I planned to write a thesis.'
 - b. Nisem nameraval pisati diplome.
NEG:be:1SG planned write:INF thesis:GEN
'I didn't plan to write a thesis.'

Even though some transparency is allowed, as shown by the examples above, where the sentential negation is associated with the verb *nameravati* 'plan' rather than the verb *pisati* 'write', the genitive of negation cannot be licensed across a clausal boundary. Thus, negating the verb *vem* 'know' does not trigger the genitive on the embedded *diplomo* 'thesis'.

- (16) *Slovenian* (Marko Hladnik, p.c.)
- Ne vem kdaj pisati {diplomo /*diplome}.
NEG know:1SG when write:INF thesis:ACC / thesis:GEN
'I don't know when to write the thesis.'

However, in an analogous MEC, the genitive of negation is obligatory, as illustrated by the ungrammaticality of the accusative argument *knjigo* 'book':

- (17) *Slovenian* (Marko Hladnik, p.c.)
 Včeraj mu nisem imel kdaj dati { * knjigo /
 yesterday him:CL NEG:be:1SG had when give:INF book:ACC /
 knjige}.
 book:GEN
 ‘Yesterday I didn’t have any time to give him a book.’

Thus, we observe that with respect to the licensing of genitive of negation, Slovenian MECs behave on a par with complements of restructuring verbs like ‘plan’ rather than questions embedded under ‘know’. By the way, the position of the clitic *mu* ‘him’ in (17) also illustrates that Slovenian MECs are transparent for clitic climbing.

Russian neg-wh items

The following are examples of Russian MECs:

- (18) *Russian* (Apresjan and Iomdin 1989)
 a. Budet gde spat’.
 be:FUT where sleep:INF
 ‘There will be a place to sleep.’
 b. Ne budet gde spat’.
 NEG be:FUT where sleep:INF
 ‘There will be no place to sleep.’

Clearly, it is possible to form the negative version (18b) simply by adding a negative marker *ne* to the matrix existential verb, *budet* ‘will be’ in this particular case. However, this apparently standard way of building “negative MECs” is claimed to be colloquial (Apresjan and Iomdin 1989; Avgustinova 2003), or even impossible (Chvany 1975). The primary and prescriptively preferred way to express the truth-conditions of (18b) is (19):

- (19) *Russian*
 Budet negde spat’.
 be:FUT NEG:where sleep:INF
 ‘There will be no place to sleep.’

In this case, the wh-word *gde* ‘where’ and the negative marker *ne* form a single unit, which I will refer to as the *neg-wh item* (following Kondrashova and Šimík to appear). The challenge for the CP account is: How is it possible that a negative marker construed in the matrix clause ends up being spelled-out together with the wh-word in the embedded SpecCP? There is an apparent easy way out: the integration of the two morphemes happens postsyntactically, say in the PF component or in morphology. There are two serious problems with this analysis (pursued e.g. by Babby 2000 and Grosu 2004). First, the neg-wh item behaves as a word/constituent in syntax. In the following example, the neg-wh item *nekomu* ‘neg-who’ precedes a sentential adverb construed in the matrix

clause. On the postsyntactic incorporation account, it is hard to see how the neg-wh item could reach its surface position.

- (20) *Russian* (Šimík 2009a:188)
 Nekomu navernoe Saše ego otdat'.
 NEG:who:DAT perhaps Saša:DAT it give:INF
 'Perhaps, Sasha has no one to give it to.'
 *'Sasha has no one to whom she can perhaps give it.'

This fact suggests that the neg-wh item is not just a morphonological unit, but also a syntactic unit. There are two ways to go about this. The first option is to analyze the neg-wh item as a pre-syntactic complex (a word) that enters the syntactic derivation ready-made—an account on which the CP analysis could perhaps be upheld. The problem with this type of analysis (pursued e.g. by Rappaport 1986 or Avgustinova 2003) is that it creates a great discrepancy between the structure of “canonical MECs” and “neg-wh MECs” and offers no principled account of the systematic similarities between them (see Kondrashova and Šimík to appear for discussion). The second option is to maintain the incorporation account, under which the wh-word incorporates into the matrix negation. Then, however, we are left with the theoretically problematic concept of syntactic incorporation over a CP boundary. If, on the other hand, Russian MECs are not CPs, an idea that goes back to Chvany (1975), such incorporation should be straightforward.

5.2.2 Background on restructuring

The transparency phenomena discussed above take place in so-called restructuring contexts. Under most current approaches (cf. Wurmbrand 2001; Cardinaletti and Shlonsky 2004; Cinque 2006) the term restructuring refers to a situation where two predicates share a single functional structure, which c-commands both of the predicates and consequently appears to belong to the higher one, often called a *restructuring verb*. Some licensing requirements of the embedded predicate then can be discharged against this shared functional structure. Apart from the phenomena discussed above, such structure sharing has been argued to underlie phenomena like auxiliary switch, long NP movement, and long-distance agreement:

- (21) a. **Auxiliary switch** (*Italian*; Cardinaletti and Shlonsky 2004:522)
 Ci { sarei /* avrei } voluto andare con Maria.
 there would.be / would.have wanted go:INF with Maria
 'I would have wanted to go there with Maria.'
 b. **Long A-movement** (*Italian*; Roberts 1997:424)
 [Le nuove case]₁ si cominceranno a costruire t₁
 the new houses REFL start:FUT to build
 'The new houses will start being built.'

- c. **Long-distance agreement** (*Czech*; Dotlačil 2004:15)
 Na Zelený čtvrtek se doporučovala jíst
 on green thursday REFL recommend:PAST.PART.FEM eat:INF
 zelená strava.
 green:NOM.FEM food:NOM.FEM
 ‘It was recommended to eat green diet on Green Thursday [Thursday before Easter].’

(21a) shows that in the context where the modal *volere* ‘want’ selects for a VP headed by the predicate *andare* ‘go’, the auxiliary verb is not *avere*, as ‘want’ would have it, but rather *essere* ‘be’, as required by ‘go’.⁷ (21b) is an example of an A-movement accompanying the process of reflexive passivization. This movement can take place even though the object belongs to the lower verb *costruire* ‘build’ while it is the higher verb *cominceranno* ‘start’ that is passivized. Finally, (21c) is a corresponding example, only involving agreement rather than movement. The reflexively passivized verb *doporučovat* ‘recommend’ embeds a transitive verb like *jíst* ‘eat’, whose direct object *zelená strava* ‘green diet’ can enter into a long distance case/agreement relationship with the functional material realized on the verb ‘recommend’. In that case the object is in nominative (rather than accusative, as objects of ‘eat’ normally are) and the verb ‘recommend’ agrees with it in gender (feminine).⁸

In the next subsection, I push the apparently problematic hypothesis that MECs are universally CPs to its limits. I will concentrate on one of the restructuring phenomena, namely clitic climbing, and will try to determine whether it is tenable to assume that clitics in the relevant languages (Czech, Serbo-Croatian) climb across a CP boundary.

5.2.3 Restructuring across a CP boundary?

If MECs are to be always CPs, one has to allow restructuring over a CP boundary. There is a class of approaches, represented by Kayne (1989) or Roberts (1997) where precisely this is allowed. Let us have a look at these theories in a greater detail.

Both authors share the assumption that clitic climbing is in some sense facilitated by head movement. Following Rizzi (1982), Kayne proposes that climbing in fact *is* head movement, where clitics move from within the embedded VP, adjoin to I and then move through C to the matrix I. V-heads are allowed to be skipped because they are L-marked and therefore form no barriers for head-movement. Roberts, on the other hand, proposes to assimilate clitic climbing to long A-movement. He follows Sportiche (1992), who argues

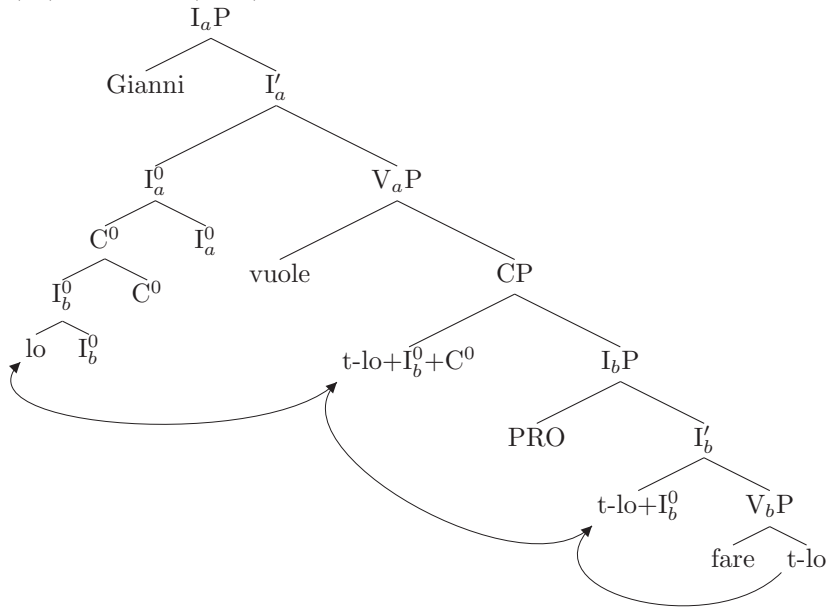
⁷The auxiliary switch in Italian is obligatory if it is accompanied by clitic climbing, as in (21a), and optional otherwise.

⁸Both long distance A-movement in Italian and long distance agreement in Czech are optional. If these don’t take place, the restructuring verb is impersonal (displays default agreement) and the object is in the accusative case.

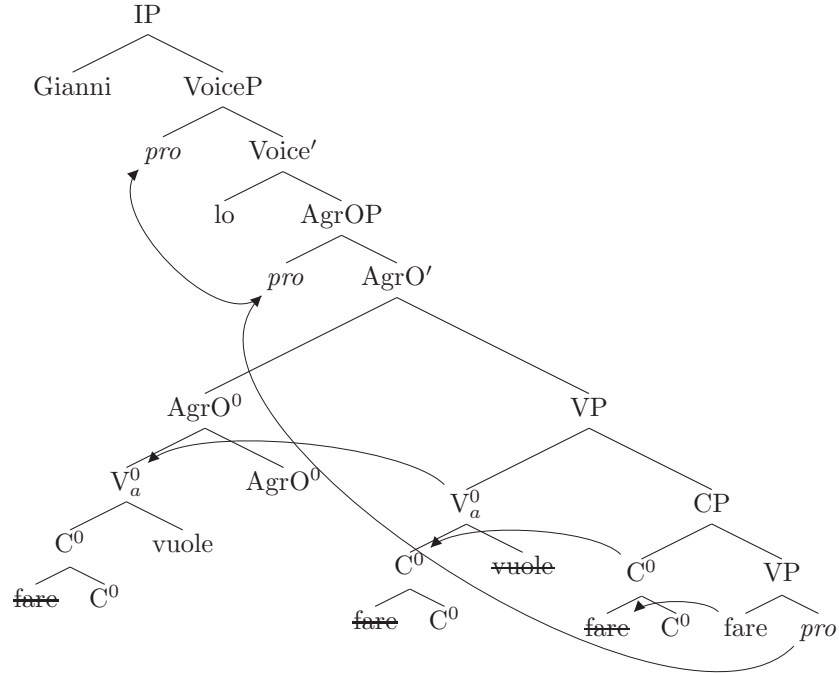
that what appears to be clitic movement is in fact only a sequence of two movements of an empty *pro*, which has a phrasal status: first, it A-moves to some SpecAgrP position, triggering agreement (in particular participle agreement), and then it A-bar-moves to SpecVoiceP, checking the features of the Voice head, which is placed between I and C and which gets spelled out as the clitic. In case of clitic climbing, the *pro* undergoes a long A-movement, which is facilitated by the movement of the embedded verb into the matrix clause. The two accounts are illustrated in (23) and (24) on the example (22) (irrelevant details and projections are left out):

- (22) Gianni lo vuole fare.
 Gianni it:CL wants do:INF
 ‘Gianni wants to do it.’

- (23) Kayne (1989)



(24) Roberts (1997)



Notice that Roberts assumes the copy theory of movement (Chomsky 1995). The fact that the embedded verb *fare* is spelled-out much lower than expected under the standard copy theory, is a result of an interplay of two PF filters: (i) two morphological words can never be spelled-out in one head-position, (ii) a head is spelled out at the highest L-related position possible. The former filter rules out the ungrammatical sequence *fare vuole* and the latter ensures that the verb is realized in the embedded clause rather than in the matrix. The interested reader should consult the original paper for further details.

This style of restructuring account is motivated by two observations. Firstly, some control verbs belong to the class of restructuring verbs, e.g. ‘want’. Control verbs require a PRO subject. In pre-minimalist theories (to which Kayne’s, and partly Roberts’ belong), PRO was only licensed in ungoverned positions (Chomsky 1981, 1986). This in turn required the presence of a CP barrier between the PRO and the matrix verb. Secondly, it has been known since Rizzi (1978, 1982) that clitic climbing is marginally allowed out of Italian wh-infinitivals. Coupled with the wh-movement/CP conjecture (10), this observation leads to the conviction that restructuring over CP boundaries is a sheer necessity.

- (25) *Italian* (Rizzi 1982:36)
 Non t_{i1} saprei [che dire t_1].
 NEG you:DAT would.know what say:INF
 ‘I wouldn’t know what to tell you.’

However, these two arguments turn out to be rather weak. In current theories, where the notion of government is largely dispensed with, PRO can be licensed even without a CP “barrier”, simply by a relation (such as spec-head or agreement) with a defective (infinitival) T head (cf. Chomsky and Lasnik 1993). This theory-internal argument for restructuring over CP boundaries therefore lost its strength with the advent of minimalism. Also, the status of the example in (25) is somewhat dubious. As already noted by Rizzi (1978), this construction is severely limited in productivity. Furthermore, Cinque (2006) argues that such transparency of wh-questions is only possible if the verb ‘know’ has a modal reading akin to ‘be able’, i.e. (presumably) ‘I wouldn’t be able/couldn’t tell you anything’ for (25). If this is true, (25) is hardly a case of an embedded question at all.⁹

Leaving the motivation aside, let us see whether either of these two accounts is fit for Czech and Serbo-Croatian clitic climbing. Kayne’s account is problematic because it relies on the idea that clitics adjoin to verbal projections. This is substantiated for Romance languages and a small subset of Slavic languages (Bulgarian and Macedonian) where clitics indeed always cliticize onto verbs. However, Czech and Serbo-Croatian have second-position (2P) clitics, i.e. they

⁹A strikingly parallel situation obtains in Hungarian. As observed by Lipták (2003, p.c.), the verb *tud*, which is ambiguous between ‘know’ and ‘can’, can receive a modal/existential interpretation, but only if it selects an infinitive (ia). This infinitive can be a wh-infinitive, argued by Lipták (2003) to belong to the class of MECs (ib). Even though run-of-the-mill MECs in Hungarian can be in subjunctive mood (iia), this is not possible for wh-clauses embedded under *tud*, in which case they are interpreted simply as embedded questions (iib).

- (i) *Hungarian* (Lipták 2003:3/4)
- a. Péter tudott úszni.
 Peter knew/could:3SG swim:INF
 ‘Peter was able to swim. / Peter knew how to swim.’
 - b. Péter nem tudott mit felvenni.
 Peter NEG could:3SG what:ACC put.on:INF
 ‘Peter couldn’t put on anything.’
- (ii) *Hungarian* (Lipták 2003:3, p.c.)
- a. Péter van kit küldjön a postára.
 Peter is who:ACC send:SBJ.3SG the post.office.to
 ‘Peter has someone whom he can send to the post office.’
 - b. Tudta, hogy mit olvasson.
 knew:3SG that what:ACC read:SBJ
 ‘He knew what to read/He knew what he should/can read.’
 *‘He had something to read. / He could read something.’

This suggests that the verb ‘know’ in Hungarian and Italian receives a modal/existential reading only if it is also a restructuring verb. For more discussion of aspects of Hungarian MECs, see §5.3.2.

cliticize to whatever word/constituent comes first in the clause, irrespective of its syntactic category. This is illustrated below where the auxiliary clitic *sam* ‘be:1SG’ and the pronominal clitic *joj* ‘her:DAT’ cliticize on an NP (26a) and a PP (26b).

- (26) *Serbo-Croatian* (adapted from Franks and King 2000:28)
- a. [NP Zanimljivu knjigu] sam joj kupio u
interesting book:ACC be:CL.1SG her:CL.DAT bought on
utorak.
Tuesday
- b. [PP U utorak] sam joj kupio zanimljivu
on Tuesday be:CL.1SG her:CL.DAT bought interesting
knjigu.
book:ACC
‘I bought her an interesting book on Tuesday.’

This led researchers to assume that the movement of 2P clitics ignores verbal heads, at least in the strict sense imposed by head-movement. That is, 2P-clitics need not obey the head movement constraint (Travis 1984) and move independently as phrases.

Roberts’ account fares better from this perspective because the landing site of the clitic movement does not in any direct way depend on the position of the verb. In fact, it is closely related to a number of proposals that are quite well accepted within Slavic linguistics (cf. Stjepanović 1998a,b; Bošković 2001; Boeckx and Stjepanović 2005; Migdalski 2006), under which clitic movement in 2P-clitic languages is essentially phrasal. It remains to be determined whether it is tenable to assume that clitic movement, albeit phrasal, can escape CPs. There is one obvious and another not so obvious reason why allowing clitic climbing out of CPs is not desirable. The obvious reason is that all structures where a CP is uncontroversially present, i.e. clauses containing an overt (finite) complementizer or wh-questions (whether finite or infinitival), happen to be opaque for clitic climbing. I illustrate this below for Czech.

- (27) *Czech* (Junghanns 2000)
- a. *Řekl mi₂ ho₁ že můžete ukázat t₂ t₁
said me:CL.DAT him/it:CL.ACC that can:2PL show:INF
‘He said that you can show him/it to me.’
- b. *Ale nevím ho₁ opravdu jak zapisovat t₁.
but NEG:know:1SG him:CL.ACC really how record:INF
‘But I really don’t know how to record him.’

Thus, a theory like Roberts’, where climbing out of CPs is allowed faces a serious overgeneration issue. It would have to be supplemented with special mechanism rendering the absolute majority of (if not all) CPs opaque, thus overriding the general rule which makes them transparent.

The not-so-obvious reason why allowing clitics to climb out of CPs is discussed by Dotlačil (2007). Dotlačil argues that any movement that crosses a CP leads necessarily to a contrastive interpretation of the moved constituent, making it either a contrastive focus or contrastive topic (see Büring 2003 for a discussion of contrastive topics).¹⁰ As it turns out, however, contrastiveness is precisely the property that a clitic must *not* have. Consider the following discourse, where the clitic *ho* ‘him’ refers to the salient referent denoted by *Jirka*. The context requires that in the sentence uttered by B the pronoun ‘him’ is to be interpreted in contrast to *Marie*. This is only possible if the pronoun is expressed in its full form *jeho* ‘him’, as in B’. Using a clitic, as in B, is infelicitous.

(28) *Czech* (Dotlačil 2007:88/89)

- A Honza měl dva sourozence, Marii a Jirku. Koho z nich měl rád?
 glad
 ‘Honza had two siblings, Marie and Jirka. Which one of them did he like?’
 B #Nejradši ho měl.
 most.glad him:CL had
 ‘He liked him the most.’
 B’ Nejradši měl jeho.
 most.glad had him
 ‘He liked HIM the most.’

In summary, the assumption that clitics can climb out of CPs and, more generally, that restructuring can take place over a CP boundary, is highly problematic on both empirical and conceptual grounds. Before wrapping up this section and moving on to MECs, I discuss the issue of clitic movement in some more detail, aiming to determine the target of clitic movement in 2P-clitic languages.

5.2.4 A note on clitic movement

In the last subsection I argued that clitics cannot move over a CP boundary. But where exactly do they actually move?¹¹ Since aspects of clitic placement will play a role in determining the exact structure of Czech MECs (see §5.4.2), it is desirable to set up at least a working account of clitic movement. I will follow Lenertová (2004) in assuming that clitic movement targets the domain

¹⁰A similar claim can be found in Frey (2005), who argues that contrastivity is implied in any left-peripheral movement (of which the long-distance movement out of CPs is just a subcase).

¹¹The notably harder question of *why* clitics move is left open here, as it is not directly relevant for the issue of MECs. Opinions on this issue naturally vary. Some assume that clitic movement is essentially formal and can be modelled in terms of feature checking (Progovac 1993; Rezáč 2005), others hold that it is prosodically motivated (Bošković 2000).

immediately below Rizzi's (1997) FinP, which arguably marks the boundary between the contrastive and the non-contrastive domain of the clause.

Lenertová (2004) argues that clitics are capable of escaping TPs. The evidence for this comes from the grammaticality of clitic climbing out of infinitivals whose temporal specification differs from the matrix one. As argued by Wurmbrand (1998), the infinitival complement of 'decide' is a case in point. Notice that the event denoted by the embedded infinitive *ignorovat* 'ignore' is interpreted as temporally forward-shifted with respect to the matrix.

- (29) *Czech* (Lenertová 2004:§4.1.1)
 Místo toho se ho₁ rozhodl [TP příště ignorovat t₁].
 instead that CL.REFL him:CL decided next.time ignore:INF
 'Instead, he decided to ignore him next time.'

If the disjoint temporal specification entails the presence of a temporal variable in the embedded clause and if it is T that introduces this variable, it follows that the infinitival structure in (29) is (at least) a TP. Thus, clitics can move beyond TPs.

On the other hand, clitics cannot move beyond finiteness-related projections. This is clear from the ordering of auxiliary and pronominal clitics. Notice that the verbal auxiliary clitic *jsem* 'be' must precede the pronominal clitic *ho* 'him':

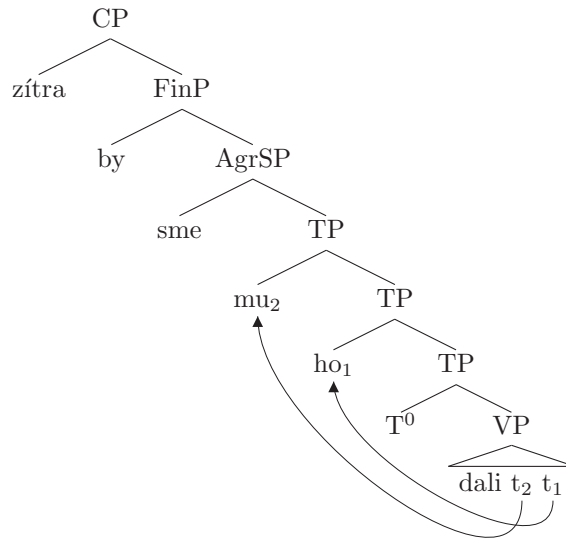
- (30) *Czech*
 Včera { jsem ho /* ho jsem } ještě chtěl pozvat.
 yesterday be:1SG him:CL / him:CL be:1SG still wanted invite:INF
 'Yesterday I still wanted to invite him.'

Following Lenertová (2004) (who in turn follows Toman 1999), I will take these facts at face value and assume that pronominal clitics can never cross finiteness-related projections, be it Rizzi's Fin, Chomsky's AgrS, or both. This significantly narrows down the area targeted by clitic movement. The tree in (32) gives the hypothesized structure for (31). For explicitness, I assume that the first constituent *zítra* 'tomorrow' occupies the left periphery (CP) and that the clitics *mu* 'him' and *ho* 'him/it' adjoin to TP. The presence of functional heads located between T and AgrS, whose specifiers host these clitics (in the spirit of Kayne 1994), is, of course a viable alternative. I leave this issue aside.¹²

- (31) *Czech* (colloquial)
 Zítra by-sme mu ho dali.
 tomorrow would-1PL him:CL.DAT him/it:CL.ACC give:PAST.PART
 'Tomorrow we would give it to him.'

¹²I use the Czech colloquial (but very wide-spread) form of the first person plural subjunctive morpheme *bysme* (instead of the standard but largely obsolete *bychom*), as it clearly reveals the division into two morphemes: the invariant subjunctive marker *by* and the first person plural auxiliary *jme*, pronounced /sme/ (which in turn surfaces as [zme] due to voicing assimilation). Both *by* and (*j*)*sme* behave as enclitics themselves.

(32)



It should not be forgotten that an analysis of clitic placement should not only determine where in the structure clitics appear but also why they have to appear in the second position. It is not difficult to imagine a structure like (32) with the missing first constituent, *zítra* ‘tomorrow’ in the case above, leading to a “clitic-first” configuration. On the other hand, the left periphery could also be expected to be able to accommodate more than just a single constituent, leading to a “clitic-more-than-second” configuration. There seems to be nothing in (32) that prohibits these configurations so we face the danger of overgeneralization. As shown by Lenertová (2004), however, these configurations are actually attested. Clitic-third phenomena appear quite naturally in embedded contexts in Czech. The constituent *kvalitní předlohu* ‘good pattern’ is (possibly contrastively) topicalized and is therefore placed in Rizzi’s (1997) SpecTopP. Together with the subordinator *protože* ‘because’, they constitute two constituents, both of which precede the clitic *mu* ‘him’.¹³

(33) *Czech* (Lenertová 2004:§2.1)

Měl štěstí, protože kvalitní předlohu mu poskytl sama
 had luck because good pattern him:CL.DAT provided itself
 historie.
 history
 ‘He was lucky because history itself provided him with a good pattern.’

Interestingly, the problem of “clitic-first” is not so serious either, as it occurs rather readily in the colloquial speech. Typically, these are cases of topic-drop, as in (34a), where there is, arguably, at least a syntactic presence of a constituent preceding the clitics in the CP domain. However, this is not necessarily

¹³Czech never fronts both focus and topic in one clause, as e.g. Italian. Therefore, “clitic fourth” phenomena are not expected to be attested.

the case; notice that there is no obvious candidate for dropping in (34b), as all arguments are expressed overtly. Lenertová (2004) speculates that it is an agreeing expletive *on* ‘he’ that is dropped (see Řezáč 2004:Ch4 for a discussion of this agreeing expletive). While I agree with Lenertová that the clitic-first version of (34b) is functionally closely related to the alternative with the overt expletive *on*, this hypothesis is clearly very hard to verify. Moreover, inserting an *expletive* element just to save the clitic-second (or clitic-non-first) generalization and subsequently dropping it seems rather dubious. It is therefore possible that clitic-first exists as a genuine phenomenon in Czech, though it manifests itself only in colloquial speech.

(34) *Czech* (Lenertová 2004:§2.4)

- a. ~~to~~ bych neřekl.
 that would:CL.1SG NEG:say
 ‘I wouldn’t say that.’
- b. ~~On~~ se mi včera narodil kluk, tak jsme
 he:EXPL REFL.CL me:CL.DAT yesterday born boy so be:1PL
 trochu oslavovali.
 a.bit celebrated
 ‘My son was born yesterday, so we celebrated a bit.’

I conclude that the highly constrained analysis of clitic placement in (32), adapted from Lenertová (2004), is descriptively adequate for Czech. The analysis will become relevant for determining the structure of a subtype of Czech infinitival MECs characterized by the absence of clitic climbing (see §5.4.2). Besides corroborating the present analysis, I will strengthen one of the assumptions made here, namely that clitics *can* climb out of the TP, to the conclusion that clitics *must* climb out of the TP.

5.2.5 Conclusion

The goal of the present section was to try to defend the universal applicability of the standard CP-approach to MECs, despite the observation that MECs exhibit various transparency phenomena, including clitic climbing, which I discussed at length. Two accounts were discussed in which clitics can climb out of CPs, in particular Kayne (1989) and Roberts (1997). It turned out that only the latter could in principle be fit for the present purposes. The reason was that it assumes that clitics move as phrases rather than heads, which, arguably, is the case in the class of Slavic languages where clitic climbing out of MECs is witnessed. Despite the overall compatibility of Roberts’ account with the facts, I argued that clitic climbing out of CPs should be avoided on independent grounds. Firstly, allowing clitics to climb out of CPs leads to a massive over-generation. Secondly, as argued by Dotlačil (2007), clitic movement out of a CP would be expected to lead to a contrastive interpretation of the clitic, a kind of construal that is inherently incompatible with clitics. In the final subsection,

I followed Lenertová (2004) in adopting a syntactically constrained analysis of clitic placement, under which clitics cannot reach any position above FinP but can reach a position above TP.

The conclusion that restructuring MECs are not CPs has one specific and one general consequence. The specific consequence is that a unified treatment of the internal syntax of MECs must be given up. It will be the task of the rest of this chapter (mainly §5.3 and §5.4) to determine the range of possible structures of MECs cross-linguistically. The general consequence is that the *wh*-movement/CP conjecture introduced in (10), and repeated below, is untenable.¹⁴

- (35) **The *wh*-movement/CP conjecture** (proven false)
 Overt *wh*-movement entails the presence of a CP.

The falsification of the *wh*-movement/CP conjecture resonates with the flexible approach to *wh*-movement envisioned in the introduction to this chapter. *Wh*-movement as such is unconstrained—arguably a consequence of the semantic combinatorial flexibility of fronted *wh*-words. The only restrictions have external sources, such as general constraints on movement or selectional restrictions of the operators that exploit the *wh*-operator-variable dependency.

The present conclusion also bears an indirect consequence for the syntax-semantics interface of *wh*-interrogatives. Judging on the criterion of clitic climbing, MECs need not be CPs, while *wh*-questions *must* be CPs (see the contrast between (12) and (13)). Given that a non-CP *wh*-dependency strategy is independently available, the question arises why (single) *wh*-questions can never use this strategy. This question receives a straightforward answer in systems where *wh*-questions require the application of a specialized question operator and where this operator has a predetermined position in the functional sequence of the clause. On the other hand, the problem remains mysterious in approaches to question semantics that make no use of question operators, for instance the structured proposition approach (e.g., von Stechow 1991), under which a question is represented simply as a lambda-abstract (and hence similarly to MECs). Unless further constrained, such approaches do not prevent interrogative *wh*-dependencies to be established lower than at the CP level. One could argue that the relevant constraint prohibiting the formation of vP-level questions is the non-existence of question embedding restructuring verbs. Even though this is a plausible hypothesis, it turns out to be wrong, as witnessed by the Czech verb *rozhodnout se* ‘decide’. This verb can select both declarative and interrogative clauses; however, only in the former case it behaves as a restructuring verb: clitic climbing out of interrogatives is ruled out.

¹⁴See also Pancheva (2010), who argues that *wh*-operator-variable dependencies in Slavic phrasal comparatives are established at the level of vP rather than CP.

- (36) *Czech*
- a. Včera se { ho} rozhodl odkázat { ho}
 yesterday REFL it:CL.ACC decided bequeath:INF it:CL.ACC
 synovi.
 son:DAT
 ‘Yesterday he decided to bequeath it to his son.’
- b. Včera se {* ho} rozhodl komu { ho}
 yesterday REFL it:CL.ACC decided who:DAT it:CL.ACC
 odkázat.
 bequeath:INF
 ‘Yesterday he decided to whom to bequeath it.’

I conclude that the contrast between embedded questions and MECs in terms of the size of the syntactic structure they require constitutes an interesting argument in favor of question-operator-based theories of interrogatives.

5.3 Wh-movement

The previous section established that MECs can be of different sizes, or more precisely, that they do not always have to be full-fledged CPs, despite the fact that they exhibit wh-fronting. This flexibility follows from the conjunction of hypotheses adopted in this thesis. First, I have argued that the MEC-embedding predicate is of lexical rather than functional nature. As such, its selectional requirements are relaxed. Second, wh-movement is free to target any position, as soon as it is allowed by independent principles of grammar and possibly language-specific constraints. The consequences of the first hypothesis will be discussed at length in §5.4. In this section, I will investigate the consequences of the second hypothesis.

The ultimate constraint on the type of syntactic structure that the MEC-embedding predicate BE_E^{MEC} can select is semantic: it has to be of the right type, in particular a type characterizing a relation between individuals and events ($\langle s, \langle e, vt \rangle \rangle$). I leave aside the problem of how the event variable gets abstracted over and concentrate on the abstraction over the individual variable. This abstraction is mediated by wh-movement in MECs. The particular kind of wh-movement is predicted to be unimportant, as soon as it serves the purpose of creating the abstract. We will see that this prediction is in principle borne out, even though eventually, relevant language-specific restrictions will have to be found in order to prevent overgeneration.

We will see that languages divide into a number of categories depending on which type of wh-movement their MECs exhibit. The most common type, by far, is the interrogative-like wh-movement. The properties of this type of movement in MECs are familiar (see esp. Pancheva-Izvorski 2000) and I will therefore not discuss it at any length. Yet, the discussion of Hungarian (§5.3.2) will reveal some interesting differences between actual interrogatives and interrogative-like

MECs, which follow from the fact that only the former constructions are genuine interrogatives (i.e. are selected by the Qu operator). A less common type is wh-movement to the edge of the vP/VP, discussed in §5.3.1. This type of movement is exploited in MECs of all languages that allow for short scrambling of indefinite pronouns (called here indef movement). It turns out that it is exactly these languages (mostly Slavic languages) whose MECs are particularly likely to exhibit restructuring phenomena. The most uncommon and yet attested type of wh-movement is relative operator-like wh-movement, discussed in §5.3.2 in close comparison to the interrogative type of movement. It was discovered by Lipták (2003) in her manuscript on Hungarian MECs and has gone virtually unnoticed since then. That this type of movement might not be limited to Hungarian is suggested in §5.3.3, where I discuss some relevant properties of Italian MECs and MECs selected by dynamic predicates. For discussion of multiple wh-fronting in MECs see §6.3.

5.3.1 Short wh-movement: the case of some Slavic languages

In §5.2 I observed that some Slavic MECs display restructuring effects such as clitic climbing, which led me to argue that MECs can lack the CP layer. This implies that the wh-movement in restructuring MECs must target some relatively low projection, presumably the edge of the vP. In this subsection, I will first show that the class of languages that have restructuring MECs is also characterized by making two other types of short movement available: a short wh-movement in multiple interrogatives and a scrambling-like movement of indefinite pronouns, which I will call indef-movement. These two types of movement have been associated before and I will hypothesize that wh-movement in restructuring MECs should be assimilated to them, too.

The restructuring MEC generalization

Let us start with the following Serbo-Croatian examples. The contrast between (37a) and (37b) shows that in Serbo-Croatian multiple questions, only one wh-word moves all the way to the left periphery; the other one moves to a lower position. In a similar vein, Serbo-Croatian indefinite pronouns such as the weak negative polarity item (NPI) *ikoga* ‘anyone’ in (36) (but also the negative concord item (NCI) *nikoga* ‘anyone’ and positive polarity item (PPI) *nekoga* ‘someone’; see the literature cited) are fully acceptable only in scrambled positions. Let us call the movement they undergo indef-movement.

(37) *Serbo-Croatian* (Rudin 1988:453/454)

- a. Ko₁ želite da vam šta₂ t₁ kupi t₂
 who:NOM want:2PL SBJ you:DAT what:ACC buy:3SG
- b. *Ko₁ šta₂ želite da vam t₁ kupi t₂
 who what want:2PL SBJ you buy:3SG
 ‘Who do you want to buy you what?’

- (38) *Serbo-Croatian* (Progovac 2005b:36)
- a. Da li je on ikoga uvredio?
that Q is he anyone insulted
 - b. ?Da li je on uvredio ikoga?
that Q is he insulted anyone
'Did he hurt anybody's feelings?'

Both of these facts also hold of Czech.¹⁵ Consider the following examples. In the multiple question formation (39), only one *wh*-word can move to the left periphery, the other has to stay within the TP. Similarly, the default position for unaccented indefinite pronouns is preverbal, (40).

- (39) *Czech*
- a. Co jste komu včera řekli?
what:ACC be:2PL who:DAT yesterday said
 - b. *Co komu jste včera řekli?
what:ACC who:DAT be:2PL yesterday said
'What did you say to whom yesterday?'
- (40) *Czech*
- a. Chtěl jsem se někomu omluvit.
wanted be:1SG REFL somebody:DAT apologize
 - b. *#Chtěl jsem se omluvit někomu.
wanted be:1SG REFL apologize somebody:DAT
'I wanted to apologize to somebody.'

As first explicitly pointed out in Rudin (1988), this type of short *wh*-movement contrasts with the situation in Bulgarian, where all *wh*-words front to the left periphery, (41).¹⁶ Importantly, the lack of short *wh*-movement in multiple interrogatives correlates with the lack of indef-movement, as shown in (42).¹⁷

- (41) *Bulgarian* (Rudin 1988:450; Kostadin Cholakov, p.c.)
- a. Koj₁ kŭde₂ misliš če e t₁ otišŭl t₂?
who where think:2SG that is gone

¹⁵Polish and a number of other languages (Slovenian, Slovak) behave in the same way. For the syntax of multiple *wh*-questions see e.g. Wachowicz (1974); Cichocki (1983); Citko (1998) for Polish and e.g. Toman (1981); Veselovská (1993); Sturgeon (2007) for Czech. The short movement of indefinite pronouns is discussed in Citko (1998) for Polish and Kučerová (2007); Šimík (2009b) for Czech.

¹⁶Romanian behaves as Bulgarian, see Comorovski (1986).

¹⁷The word order in (42)B' is not ungrammatical but rather infelicitous. This means that there are contexts or registers (such as poetry) where it is acceptable. The same holds of Czech, where the order corresponding to (42)B' is the neutral one whereas (42)B is reserved for a narrow/contrastive focus reading of the indefinite. Therefore, the relevant contrast is observable only in broad-focus contexts.

- b. *Koj₁ misliš če e kŭde₂ t₁ otišŭl t₂?
 who think:2SG that is where gone
 ‘Who do you think went where?’
- (42) *Bulgarian* (Kostadin Cholakov, p.c.)
- A Zašto e iznenadana Maria?
 why is surprised Maria
 ‘Why is Maria surprised?’
- B Zaštoto e namerila nešto.
 because is found something
- B’ #Zaštoto e nešto namerila.
 because is something found
 ‘Because she found something.’

We see that there is a correlation between the availability of short wh-movement in multiple wh-questions and the availability of indef-movement. The former is available if and only if the latter is available. Let us now turn back to MECs. It turns out that precisely those languages that allow for short wh-movement and indef-movement, for instance Serbo-Croatian and Czech, also exhibit restructuring effects in MECs (such as clitic climbing; see §5.2.1).

(43) **Restructuring MEC generalization**

A language has restructuring MECs iff it has indef-movement.

The validity of the generalization in (43) cannot be tested on Bulgarian, which in general displays no restructuring phenomena. However, it is instrumental in the explanation of the behavior of languages like Italian, Spanish, and Portuguese, which generally do exhibit various restructuring phenomena, including clitic climbing. Yet, these languages completely prohibit clitic climbing out of MECs, as illustrated in (14) and repeated below.

- (44) *Portuguese* (Adriana Cardoso, p.c.)
- a. Tenho com que me entreter.
 have:1SG with that myself:CL amuse:INF
- b. *Tenho-me com que entreter.
 have:1SG-myself:CL with what amuse:INF
 ‘I have with what to amuse myself.’

Importantly, these languages also lack short wh-movement and indef-movement. This is illustrated for Portuguese in (45). Notice that the example (45b) is simply ungrammatical.

- (45) *Portuguese* (Adriana Cardoso, p.c.)
- a. Porque ele encontrou alguém.
 because he found somebody

- b. *Porque ele alguém encontrou.
 because he somebody found
 ‘Because he found somebody.’

These observations corroborate the restructuring MEC generalization in (43). The independent prohibition on short scrambling of indefinite pronouns and *wh*-words targets the *wh*-movement in MECs, too. Consequently, *wh*-movement in Portuguese MECs (and MECs of many other languages) must target the left periphery of the clause. Once a full CP is constructed, no restructuring phenomena, including clitic climbing, are allowed.

In summary, the availability of short *wh*-movement and indef-movement—a factor completely independent of the grammar of MECs—provides an important clue to why some languages form vP-level (restructuring) MECs while others do not. In addition, the above discussion strengthens the general hypothesis that there is nothing inherent to either MECs or the MEC-embedding predicate that would force MECs to be of a certain syntactic size. In general, if MECs can be smaller than CPs, they will be.

This subsection left many interesting questions unanswered, such as why some languages allow for short *wh*-movement and others do not, or what the exact properties of the short *wh*-movement are. The existing attempts (most notably Citko 1998, Progovac 2005a, 2005b, and Bošković 2008) have all relied on feature-checking systems of both short *wh*-movement and indef-movement. These accounts are inherently incompatible with the present overarching hypothesis that *wh*-movement is not motivated or constrained by feature-checking. It seems to me much more plausible that this type of movement is motivated by an interface requirement, presumably by the principles of accent-assignment. All the languages that have short *wh*-movement are word order-flexible and at the same time accent-rigid (cf. Vallduví 1992). In these languages, the grammar puts very few constraints on what can move where but at the same time imposes strict requirements on prosodic phrasing of sentences. This concerns especially the requirement that pitch-accented constituents surface in the right-most position. Since indefinite pronouns as well as *wh*-words are typically unaccented, they move out of their base-generated positions, in order to comply with the prosodic requirement. What is interesting is that this PF-motivated movement is discernible at LF in the form of lambda-abstraction. That seems to suggest that despite the potential interface-motivation for short *wh*-/indef-movement, the movement still needs to take place in syntax.

5.3.2 Two different landing sites: the case of Hungarian

Hungarian provides further interesting evidence that the *wh*-syntax of MECs does not necessarily match the one of interrogatives. In §2.2.2, we saw that for constructing MECs, Hungarian can use both bare *wh*-words, used in interrogatives, and *wh*-words prefixed by *a*-, which spell out relative operators. I will call these MEC-subtypes *wh*-MECs and *a-wh*-MECs, respectively. Both these

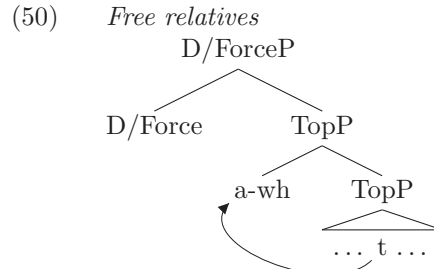
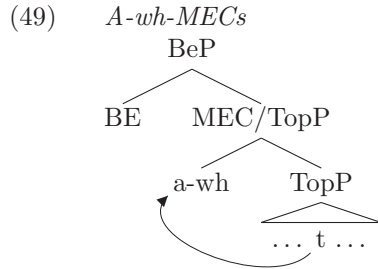
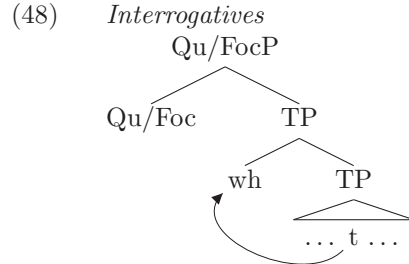
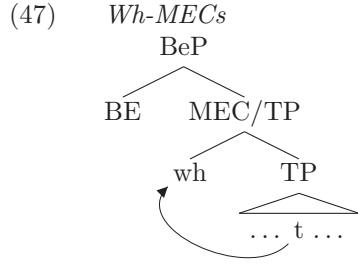
subtypes share the essential MEC properties. First of all, they have the same truth-conditional semantics, being construed as narrow-scope existential indefinites and express existential circumstantial modality. Moreover, both have a very limited distribution, characteristic of MECs, and their *wh*-operators display no matching effects. Consider the pair of examples below. The only apparent difference is the presence of the relative *a*- prefix on the *wh*-word in (46b) and its absence in (46a).

- (46) Anikó Lipták (p.c.)
- a. Nincs kivel beszéljek.
is:NEG who.with speak:SBJ.1SG
 - b. Nincs akivel beszéljek.
is:NEG REL:who.with speak:SBJ.1SG
'I don't have anyone to speak to.'

Despite the commonalities that make both constructions above MECs, there are also important differences. Following Lipták (2003), I will argue that *a*-*wh*-MECs have the internal syntax of free relatives (i.e. the syntax to the exclusion of the D-head that selects the *wh*-clause). According to the standard account of Hungarian (*wh*-)operator movement (see e.g. Lipták 2001 for an overview), interrogative operators move lower than relative operators (see also Rizzi 1997). The former is usually argued to target SpecFocP, the lowest projection of the split CP, while the latter moves higher than TopP, presumably SpecForceP. Even though I give up on the idea that *wh*-words themselves target some particular projections, I do keep the assumption that they can adjoin in particular positions for altruistic reasons—in order to facilitate the application of certain operators. The operators themselves, being functional categories, must be merged in a position predetermined by the (universal) functional sequence. Under this approach, it is therefore not surprising that different types of *wh*-operators (relative vs. interrogative) occur in different structural heights.

What Hungarian seems to show us is that different types of *wh*-movements (interrogative vs. relative) can be “mimicked” in MECs, giving rise to different kinds of MECs. It is only “mimicking” because as opposed to the genuine interrogative and relative *wh*-movements, there is no altruism in the MEC *wh*-movement. The *wh*-words move to certain positions simply because it is independently allowed by the grammar, not because it would be “motivated”. The structures I propose for the two types of Hungarian MECs are below. In the case of *wh*-MECs, (47), the MEC is based on the internal structure of interrogatives, which is provided in (48). This means that the *wh*-word is adjoined to TP—the projection normally selected for by the question operator *Qu*, or, for the purpose of Hungarian, the focus operator *Foc*. In the case of *a*-*wh*-MECs, (49), the *a*-*wh*-word adjoins to the TopP, presumably the projection normally selected by the free relative D head (where D is arguably a flavor of the Force head), providing the definiteness. The corresponding free-relative structure is given in (50). Notice that the only difference between the two types

of MECs and the structures that they are “based on” is the absence of the the operators, Qu/Foc and D/Force, respectively.



In what follows, I will show that an interesting detailed prediction of the present approach is borne out. In particular, the two types of MECs are faithful to their “originals” with respect to the syntactic position and a number of other effects derived from that. However, they differ from them in respects that pertain to the selecting operator, which is present in interrogatives and relatives but not in MECs. Notice that we have already observed some of these effects for the a-wh-MECs: the absence of the D-operator is reflected in the absence of a definite construal and of case-matching effects. Below, we will see that a similar effect is observed also with wh-MECs.

Similarities

Below, I summarize all the similarities that hold between wh-MECs and interrogatives on the one hand, and between a-wh-MECs and free relatives on the other.

Similarity 1: Word order and cooccurrence restrictions When wh-operators cooccur with topicalized expressions, the latter will *precede* the wh-operator in case it is interrogative, i.e. adjoined to TP, and *follow* the wh-operator in case it is relative, adjoined to TopP. Under the present analysis, the same behavior is expected from wh-MECs and a-wh-MECs, respectively. The following examples, marking topicalized constituents by *T*-subscripts, corroborate this expectation. The examples in (51) make clear that a topicalized

phrase must precede a *wh*-word in MECs. The examples in (52) show the opposite behavior for *a-wh*-MECs.

- (51) *Hungarian* (Lipták 2003:5/6)
- a. Van [_T a macskát] **kire** { bízni / bízzuk }.
 the cat:ACC who:SUBLAT trust:INF / trust:SBJ
 ‘There is somebody who can keep an eye on my cat.’
 - b. *Van **mit** [_T Maritól] tanulni.
 is what:ACC Mary.from learn:INF
 ‘There is something that one can learn from Mary.’
- (52) *Hungarian* (Lipták 2003:6/7)
- a. *Van [_T a macskát] **akire** bízzuk.
 be:IMPRS the cat:ACC REL:who:SUBLAT trustsBJ
 ‘There is somebody who can keep an eye on my cat.’
 - b. ?Van **akit** [_T a postára] elküldjünk.
 is REL:who:ACC the post.office.to sent:SBJ.1PL
 ‘There is somebody who we can send to the post office.’

Similarity 2: Locality The two types of MECs differ in their island-hood status. *Wh*-MECs are transparent for *wh*-extraction (53a) as well as VP topicalization (54a). *A-wh*-MECs are islands, as shown by (53b) and (54b).

- (53) *Hungarian* (Lipták 2003:9)
- a. Hova₁ nincs kit { küldeni / küldjünk } t₁?
 where is:NEG who:ACC send:INF / send:SBJ.1PL
 - b. ?*Hova₁ nincs akit küldjünk t₁?
 where is REL:who:ACC send:SBJ.1PL
 ‘To which place don’t we have anyone to send to?’
- (54) *Hungarian* (Lipták 2003:9)
- a. [odaadjam a pénzt]₁ nem volt kinek t₁
 give:SBJ.1SG the money:ACC NEG was who:DAT
 - b. *[odaadjam a pénzt]₁ nem volt akinek t₁
 give:SBJ.1SG the money:ACC NEG was REL:who:DAT
 ‘As far as giving the money to anyone is concerned, I couldn’t give it to anyone.’

Without going into details, it seems reasonable to assume that the ungrammaticality of extraction out of *a-wh*-MECs reduces to relativized minimality. The structure may well contain some projection (presumably TopP) that blocks *A*-bar movement.

Similarity 3: Sluicing It is well-known that relative operators, unlike interrogative operators, do not support sluicing (cf. Lobeck 1995; Merchant 2001). This (im)possibility of sluicing is often correlated with the syntactic position of the relevant *wh*-operator (see esp. Van Craenenbroeck and Lipták 2009).

- (55) *Hungarian* (Anikó Lipták, p.c.)
- a. Szeretnék elmenni, de nincs mikor.
would.like:1SG go:INF but is:NEG when
'I would like to go, but there is no time for it.'
 - b. *Szerettem volna küldeni Marinak valamit, de nem
liked:1SG COND send:INF Mari:DAT something:ACC, but not
volt amit.
was REL:what:ACC
'I'd like to send something to Mary but there is nothing I can send to her.'

Sluicing will also be discussed in §5.5.

Similarity 4: Multiple wh-words Only wh-MECs support multiple wh-words. This is expected, since multiple wh-MECs correspond syntactically to multiple interrogatives. Similarly, the existence of multiple operators in free relatives is cross-linguistically dubious and the ungrammaticality of multiple a-wh operators in MECs, illustrated in (56b), is therefore expected, too.

- (56) *Hungarian* (Lipták 2003:10)
- a. Van kit kire { bízni / bízunk }.
is who:ACC who.to trust:INF / trust:SBJ.1PL
'Everyone can be trusted to someone.'
 - b. *Van amikor ahol aludjunk.
is REL:when REL:where sleep:SBJ.1PL
'There is a time and a place to sleep.'

Interestingly, Lipták (2000) argues that multiple free relatives actually exist in Hungarian. However, in her later work (Lipták 2004), she reassesses these constructions as multiple correlatives, whose existence is cross-linguistically attested and therefore not surprising (see, e.g., Dayal 1996).¹⁸

Differences

The relevant differences between a-wh-MECs and free relatives were already mentioned: a-wh-MECs, unlike FRs, do not display matching effects and are interpreted as indefinites. Both of these differences follow from the fact that only FRs are D-headed. Let us now concentrate on the differences between wh-MECs and interrogatives. I will attribute them to the fact that interrogatives but not wh-MECs (must) have the Qu/Foc operator. For control, I will also mention what the corresponding properties of a-wh-MECs with respect to free relatives are.

Difference 1: Position of the preverb The position of the so called “preverb” has been considered a very reliable diagnostics of focus fronting in Hun-

¹⁸See also Rudin (2008) for a discussion of examples that look like genuine multiple free relatives. Even these, however, are highly distributionally restricted, suggesting that what seems like a multiple free relative is in fact a free relative with a wh-indefinite in it.

garian. In the presence of focus fronting, including interrogative wh-fronting, the verb obligatory moves, stranding the preverb. In wh-MECs, contrary to wh-questions, this preverb-verb inversion is only optional. Notice that in (57) the preverb *el* either follows or precedes the verb *adjam* ‘sell’.

- (57) *Hungarian* (Lipták 2003:6/7)
 Van kinek { eladjam / adjam el } a
 is who:DAT PV:sell:SBJ.1SG / sell:SBJ.1SG PV the
 kocsimat.
 car:POSS.1SG.ACC
 ‘There is somebody to whom I can sell the car.’

Yet, the inversion is not optional for all speakers, for some it is even ungrammatical.

- (58) *Hungarian* (Surányi 2005)
 Van mit { megosztani /* osztani meg }
 be:IMPRS what:ACC PV:share:INF / share:INF PV
 ‘I have something to share.’

A-wh-MECs, on the other hand, behave as expected in that the movement of a-wh-words does not trigger inversion, as illustrated in (59). This is expected, since no focus is involved.

- (59) *Hungarian* (Lipták 2003:6/7)
 Van akinek { eladjam /* adjam el } a
 is REL:who:DAT PV:sell:SBJ.1SG / sell:SBJ.1SG PV the
 kocsimat.
 car:POSS.1SG
 ‘There is somebody to whom I can sell the car.’

What causes the difference between wh-MECs and their corresponding interrogatives? Suppose that what is responsible for the verb-preverb inversion in wh-questions is not the wh-movement itself, but rather the application of the focus/question operator. Because there is no such operator in wh-MECs, no inversion is triggered.¹⁹ Interestingly, this assumption is supported by the recent literature on Hungarian focus/wh-fronting, which often argues that it is not the fronting itself that is responsible for focusing, but rather the application of some operator (Horváth 2007; Cable 2008). If the verb-preverb inversion really correlates with focusing, then its presence in MECs is predicted to be at most optional.

Difference 2: Verbal mood Hungarian has no infinitival questions, as illustrated below.

¹⁹More precisely, there must not be a question operator, for obvious reasons, but there may be a focus operator. The reason is that wh-words in MECs can be focused. See also §5.5.

- (60) *Hungarian* (Grosu 2004:421)
 Tudom, hogy kit { *látni / lássak }.
 know:1SG that who:ACC see:INF.1SG / see:SBJ.1SG
 ‘I know who to see.’

Nevertheless, the infinitive mood is also readily used in wh-MECs (besides the subjunctive and the agreeing infinitive), as illustrated in (61a). A-wh-MECs behave like free relatives in that they only allow for a finite mood, in particular the subjunctive; see (61b).

- (61) *Hungarian* (Lipták 2003:4)
 a. Van kit { meghívni / meghívunk / meghívjunk }.
 is whom invite:INF / invite:INF.1PL / invite:SBJ.1PL
 ‘There is somebody who we can invite.’
 b. Van akit { meghívjunk / *meghívni }.
 is whom:REL invite:SBJ.1PL / invite:INF
 ‘There is somebody who we can invite.’

Under the present approach, this contrast between (60) and (61a) does not seem surprising at all. MECs and interrogatives are selected by a fundamentally different type of head. If (for some reason) the Qu head requires its complement to be finite, this property is not predicted to be shared by wh-MECs. Interestingly, a-wh-MECs retain the free relative property of being obligatorily finite, which seems to suggest that the finiteness property in free relatives have to do with the structural size rather than with the selector. I do not know why that should be the case.

Difference 3: Complementizer Wh-words in Hungarian embedded questions can be preceded by the complementizer *hogy* (62a), while free relatives cannot (62b). Grosu (2004) notices that MECs (in particular wh-MECs in the present terminology) behave on a par with free relatives rather than embedded questions (62c). A-wh-MECs, as expected, pattern with free relatives, too.

- (62) *Hungarian* (Grosu 2004:421/422, Anikó Lipták, p.c.)
 a. Tudom hogy kit lássak
 know:1SG that who:ACC see:SBJ.1SG
 ‘I know who to see’
 b. Elek látta (*hogy) ami Anna előtt volt
 Alec saw:DO (that) REL:what:NOM Anna before was
 ‘Alec saw what was before Anna.’
 c. Nincs kinek (*hogy) { írunk / írjunk }
 is:NEG who:DAT (that) write:INF.1PL / write:SBJ.1PL
 ‘We have no one we can write to’
 d. Nincs akinek (*hogy) írjunk
 is:NEG REL:who:DAT (that) write:SBJ.1PL
 ‘We have no one we can write to’

Grosu uses the above observation to support his claim that Hungarian MECs [i.e. wh-MECs] pattern “with interrogatives morphologically, and with relatives configurationally.” (p. 422) Wh-words in MECs are like relative operators in that they target the CP and since the doubly filled COMP filter is operative in Hungarian, the occurrence of *hogy* is ruled out. However, we already know that this is not really true. It is indeed possible for Hungarian MECs to pattern with (free) relatives configurationally, but this only concerns a-wh-MECs and not wh-MECs. The effect above therefore calls for an alternative explanation.

It seems that the relevant observation falls out perfectly from the present account. The construction of MECs is completed right after the wh-movement and then it is directly selected by the MEC-embedding predicate BE. Given that the complementizer layer hosts various functional operators, it is clear that it must be missing from MECs.

Summary

I argued, following Lipták (2003), that Hungarian MECs come in two types. These two types share the core features of MECs, such as the narrow scope indefinite and existential modal construal and the absence of matching effects. However, they differ a number of morphosyntactic aspects, such as the morphology of the wh-operator, its positions in the functional spine of the clause, and locality. I argued that these two types arise as a sort of mimicry of the corresponding interrogatives and relatives. The reason why they only mimic the constructions is that they lack the operators (Qu and D) and are selected directly by the lexical MEC-embedding predicate BE. This mimicry aspect leads to a number of empirical discrepancies between wh-MECs and interrogatives on the one hand and a-wh-MECs and relatives on the other. In §5.4, I will return to a similar situation in Czech. In this language, wh-words can move either to the edge of vP or to the left periphery (the edge of FinP). Once again, this gives rise to two different types of MECs, which in this case are detectable by their control/raising properties.

5.3.3 Relative clause-like MECs

In the preceding section, we saw that Hungarian provides multifaceted and exceptionally clear evidence that the syntax of MECs does not necessarily mimic the syntax of interrogatives. This provides yet another argument against the universality of Pancheva-Izvorski’s (2000) analysis. In this section, I will show that the relative-like structure of MECs is not a Hungarian quirk. In some languages, it seems to be exploited in MECs that are selected by dynamic MEC-embedders. Moreover, to the extent that the relevant arguments are applicable, the relative-clause strategy appears to be the primary one in Italian.

Dynamic embedding predicates

So far, I have mostly concentrated on the properties of MECs embedded under the stative predicates *be* or *have*. At a closer examination, it turns out that

some dynamic predicates (e.g. *send*) behave as though they were selecting a relative clause-like MEC, rather than an interrogative-like one. This is manifested by various phenomena such as the embedded mood, where some dynamic predicates require the use of subjunctives even if infinitives are generally allowed (Romanian; Alexander Grosu, p.c.), locality, where dynamic predicates are less transparent for extraction than stative ones, or sluicing, which is not supported by some dynamic predicates. The last two phenomena are illustrated below for Serbo-Croatian. The examples in (63) show a contrast in acceptability between the extraction out of MECs selected by two dynamic predicates. While the MEC selected by *odabrao* ‘chose’, (63a), is transparent, the one selected by *poslao* ‘sent’, (63b), is not. The examples in (64) show a comparable contrast in the availability of sluicing. While sluicing in MECs selected by the stative *nimam* ‘NEG:have’, (64a), is perfectly acceptable, it is impossible in MECs selected by *poslala* ‘sent’, (64b).

(63) *Serbo-Croatian* (Jelena Prokić, p.c.)

- a. Na ovu zabavu₁ nisam odabrao koga da pozovem t₁.
for that party NEG:be:1SG chose who SBJ invite:1SG
‘I didn’t choose anyone who I could invite for that party.’
- b. *Šta₁ si mu poslao čime da popravi t₁?
what be:2SG him:DAT sent what:INST SBJ repair:3SG
‘What is the thing that you send him such that he can repair something with that thing.’

(64) *Serbo-Croatian* (Jelena Prokić, p.c.)

- a. Želela bih da idem na zabavu, ali nemam s
wanted be:1SG SBJ go:1SG to party but NEG:have:1SG with
kim.
who
‘I wanted to go to the party but there was nobody to go with.’
- b. *Hteo je da očisti auto ali mu nisam
wanted be:3SG SBJ clean:3SG car but him:DAT NEG:be:1SG
poslala čime.
sent what:INST
‘He wanted to clean the car but I didn’t send him anything (with which he could do it).’

Clearly, the properties of Serbo-Croatian MECs illustrated in the b-examples above correlate with the ones of Hungarian relative-like a-wh-MECs.

The case of Italian

As observed in Chapter 2, Italian MECs are opaque for extraction and do not allow for sluicing. The relevant observations are repeated below:

(65) *Italian* (Ivano Caponigro, p.c.)

- a. *Chi non avevi dove far dormire?
 who NEG have:PAST.2SG where let:INF sleep
 ‘Who is such that you don’t have a place where you could let him sleep.’
- b. *Volevo andare al cinema con qualcuno ma non {
 wanted:1SG go:INF to.the cinema with somebody but NEG
 avevo / c’era} con chi.
 had:1SG / there.be:3SG with whom
 ‘I wanted to go to the movies with somebody but I didn’t have /
 there wasn’t anybody who I could go with.’

Even though this behavior is cross-linguistically rare, it correlates with Hungarian a-wh-MECs and MECs selected by some dynamic predicates. The question why Italian MECs should behave in this way is not easy to answer. One possibility is that they actually behave as questions and that Italian questions just happen to be configurationally like other languages’ relatives. This idea receives some interesting support. Firstly, Italian is notoriously known by its property of disallowing multiple wh-questions (Calabrese 1984). Secondly, as opposed to the widely accepted claim of Rizzi (1997) (cf. Stoyanova 2009 for a recent implementation), Italian does not seem to utilize the focus projection for placing its wh-words, at least not in embedded questions. The evidence comes from Venetian, a dialect of Italian which is characteristic by licit violations of the doubly filled COMP filter. While contrastive foci in embedded clauses *follow* the complementizer *che* (66a), wh-words must *precede* it (66b), suggesting that they are placed in SpecCP rather than in SpecFocP.

(66) *Venetian Italian* (Van Craenenbroeck and Lipták 2009:§6)

- a. Credo { che } NANE { * che } i gabia visto, no Piero.
 think:1SG that Nane that they have seen not Piero
 ‘I think they have seen Nane, not Piero.’
- b. Me domando { * che } chi { che } Nane ga visto al marcà.
 me ask:1SG that who that Nane has seen at.the market
 ‘I wonder who Nane saw at the market.’

However, this line of thinking offers no explanation of the fact that questions, as opposed to MECs (and relative clauses), *do* allow for extraction and sluicing.

(67) *Italian*

- a. Rizzi (1990:73)
 [Che problema]₁ credi che potremo risolvere t₁?
 which problem think:2SG that could:1PL solve:INF
 ‘Which problem do you think that we could solve?’

- b. Ivano Caponigro (p.c.)
 Volevo andare al cinema con qualcuno ma non
 wanted:1SG go:INF to.the cinema with somebody but NEG
 sapevo con chi.
 knew:1SG with whom
 ‘I wanted to go to the movies with somebody but I didn’t know
 with who.’

Other arguments in this question-relative controversy are not particularly telling. The (un)availability of multiple *wh*-words cannot be used as a diagnostics, simply because Italian lacks multiple *wh*-questions in the first place. Similarly, cooccurrence and ordering restrictions holding between *wh*-words and topicalized/focalized elements used in §5.3.2 also do not shed any light on the issue. The reason is that focus fronting is impossible not only in (embedded) questions (cf. Rizzi 1997), but also in free relatives, (68a), and not surprisingly also in MECs, (68b).

- (68) *Italian* (Ivano Caponigro, p.c.)
 a. ?*Ti presento chi A CHOMSKY ho presentato
 you:CL present:1SG who to Chomsky have:1SG presented
 ‘I’ll introduce you to the person I introduced to Chomsky.’
 b. **Ho di che a CHOMSKY parlare, non a TE
 have:1SG of what to Chomsky talk:INF not to you
 ‘I have things to discuss with Chomsky, not with you.’

Another contrast that one could expect to hold between questions and MECs if the latter pattern with relatives is that *wh*-words in the former but not in the latter could be preceded by a topicalized expression. However, even though *wh*-words in MECs cannot be preceded by topics, as expected, (69a), *wh*-words in questions cannot do so either, (69b), a fact which seems to correlate with the observation in (66).²⁰

- (69) *Italian* (Ivano Caponigro, p.c.)
 a. **Ho, a Gianni, cosa regalare per Natale
 have:1SG to Gianni what donate:INF for Christmas
 ‘I have something to give Gianni for Christmas.’
 b. ??So, a Gianni, cosa regalare per Natale
 know:1SG to Gianni what donate:INF for Christmas
 ‘I know what to give Gianni for Christmas.’

In sum, though the evidence is somewhat inconclusive, the locality and sluicing facts suggest that *wh*-movement in Italian MECs is not syntactically identical to the one in questions. On the other hand, there is nothing that appears to prevent associating it with relative-operator movement. The relative-like

²⁰Even though there is a contrast in acceptability, Ivano Caponigro considers both examples rather bad and advises not to draw any significance from the contrast.

analysis also receives some cross-linguistic support, in the form of Hungarian a-wh-MECs and MECs that are complements to some dynamic predicates.

5.3.4 Conclusion

When it comes to wh-movement, MECs behave as syntactic chameleons. They utilize whatever wh-movement strategy is made available in a particular language. In §5.3.1, we saw that the wh-movement can be a “short” one, one that corresponds to short scrambling of indefinite pronouns—*indef-movement*, or the movement of lower wh-words in multiple interrogatives. On the other extreme are Hungarian a-wh-MECs, discussed in §5.3.2, MECs that have the morphosyntactic appearance of free relative clauses. Somewhere in the middle is the most common strategy—the interrogative-like strategy, on which the landing site for interrogative wh-movement is used. These findings seem to corroborate my overarching hypotheses, in particular that MECs are selected by a lexical rather than functional predicate and that wh-movement itself is free of any syntactic feature or criterial licensing. The task for future research is to determine why the interrogative strategy is cross-linguistically clearly the default one (with the notable exception of Italian) and why the Hungarian relative-like pattern is not more readily replicated in other languages.

5.4 Raising and control

In this section, I provide more arguments supporting the syntactic flexibility position. Taking the perspective from control and raising, I will show that various types of MECs are attested: raising MECs, obligatory control MECs, as well as non-obligatory control MECs. The choice in a particular language is partly predictable from the range of syntactic structures available for MECs in that language. This range is in turn primarily determined by the applicable wh-movement strategies, discussed in the preceding section. Thus, we can see a clear correlation between vP-level/restructuring MECs and raising MECs on the one hand, and FinP-level MECs and control MECs on the other. This matches the classical generalization that control constituents are bigger than raising constituents (see e.g. Chomsky and Lasnik 1993; Landau 2000; Wurmbrand 2001; Dotlačil 2004).

Four basic MEC patterns, schematized in (70), will be observed. In (70a), the MEC is of arbitrary category (vP or FinP) and is selected by an impersonal version of the MEC-selecting predicate BE. Its impersonality is structurally reflected by the absence of personal functional layers, in particular AgrSP. In such cases, the MEC contains a PRO with arbitrary reference. In (70b), the MEC is a vP selected by a personal version of the MEC-embedder BE. The functional structure (AgrSP) establishes a relation with the vP internal subject—leading to the valuation of case and phi features. The structure in (70c) represents the obligatory control case, where the MEC is a FinP and hosts

an obligatorily controlled PRO. This PRO is controlled by the closest available matrix argument, in particular the participant argument of the subpredicate AT. In the last case, (70d), the MEC is finite and hosts its own referential subject, which is either a *pro*, which can but need not be bound by a matrix argument, or it is a full lexical subject.

- (70) a. **Impersonal MEC**
 [_{BeP} BE [_{MEC} ... PRO_{arb} ...]]
 b. **Raising MEC**
 [_{AgrSP} AgrS_i [_{BeP} BE [_{MEC/vP} wh [_{vP} ... subject_i ...]]]]
 c. **Obligatorily control MEC**
 [_{AtP} subject_i AT [_{BeP} BE [_{MEC/FinP} wh [_{FinP} ... PRO_i ...]]]]
 d. **Finite MEC**
 [_{AtP} subject_i AT [_{BeP} BE [_{MEC/FinP} wh [_{FinP} ... subject_j/*pro*_{i/j} ...]]]]

In §5.4.4, I will show that this basic range of options is not enough to account for the behavior of Russian. I will argue that Russian MECs are special in that their control-like predicate is not (a part of) the matrix predicate, but rather an MEC-internal applicative head.

My assumptions about the syntax of control are minimal.²¹ I will assume that arbitrarily interpreted PRO is simply a covert free variable, which is in need of no syntactic licensing. Obligatorily controlled PRO, on the other hand, will be treated as an operator that binds the closest participant argument variable and that this operator needs certain functional structure to be licensed, in particular a defective T/AgrS head, i.e. a head that normally does not license nominative—the structural case of overt subjects (but see §5.4.2). The semantic account of control will be developed in §6.4, where I will defend the property/predicate analysis of control, based on MEC-specific evidence, over the proposition analysis (see Landau 2000 for discussion of the property vs. proposition controversy).

The rest of this section is organized as follows. In §5.4.1, I will investigate the properties of Czech restructuring MECs, coming to the conclusion that they are to be analyzed as raising MECs. In §5.4.2, I turn to another class of Czech MECs, namely non-restructuring (subjunctive and infinitival) MECs and show that they are control structures. The cooccurrence of both raising and control MECs within one language correlates with two possible landing sites for wh-movement (vP and FinP). I further show that non-restructuring infinitival MECs in other languages must also be analyzed as obligatory control structures. On the other hand, languages that lack the infinitive have subjunctive MECs which are neither raising nor control. Instead, they contain ordinary nominative-marked subjects (or a *pro*). This is shown in §5.4.3. The last section, §5.4.4, concentrates on a special obligatory control situation in Russian.

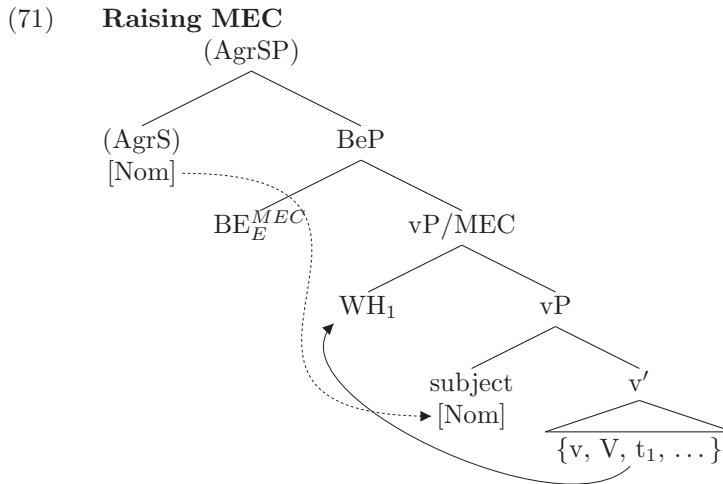
²¹For a recent technically full-fledged minimalist account of control, see especially Landau (2000) and his subsequent work.

§5.4.5 summarizes the findings.

5.4.1 Raising: Czech restructuring MECs

A number of scholars have suggested that MECs are raising structures, in particular Babby (2000) and Livitz (2010) for Russian, Lipták (2003) for Hungarian, and Ceplová (2007) for Czech. The argument has most clearly been given for Czech, on which I concentrate in this subsection. Hungarian, Slovenian, and possibly other languages might perhaps be assimilated to the present analysis of Czech.²² Russian will be discussed in §5.4.4.

The structure I propose for raising MECs is given in (71). The MEC is a vP and it gets selected by BE_E^{MEC} , which qualifies as a raising predicate. The subject is generated in the MEC and gets case-licensed by the matrix AgrS. Notice that this structure is obligatorily accompanied by the restructuring phenomenon of clitic climbing, discussed in §5.2. This is because clitics must attach between TP and FinP and since these projections are missing in the MEC, the clitic climbs out of it.²³



²²The structure proposed for Hungarian in §5.3.2 suggests that Hungarian MECs should be control structures, since they contain a TP/FinP. The analysis, in particular the presence/absence of TP/FinP, might be subject to reassessment if it were to be found out that Hungarian MECs display raising properties. I leave this issue open here.

²³I will use the following notational convention: a full line with an arrow denotes movement and a dotted line with an arrow denotes feature-valuation. See the examples below:

- (i) features (on) X value features (on) Y
 $[\dots X \dots \rightarrow Y \dots]$
 (i) X moved from the position Y
 $[\dots X \dots Y \dots]$

Before I move on to the argumentation showing that the above structure is really what characterizes (a class of) Czech MECs, I should point out that Czech has two variants of the MEC-embedding predicate BE_E^{MEC} : *mít* ‘have’ and *být* ‘be’. The former one is a truly raising predicate in that it can be associated with AgrSP and therefore can check the case-features of the embedded subject. The latter one is inherently impersonal, i.e. it lacks the AgrSP, and therefore cannot license overt (nominative) subjects.²⁴

- (72) a. AgrS+BE \leftrightarrow *mít* ‘have’
 b. BE \leftrightarrow *být* ‘be’

The discussion below will mostly concentrate on the raising predicate. The impersonal predicate will become significant in the discussion of Russian MECs (see §5.4.4).

Arguments for raising

Argument 1: Weather predicates One of the best ways to distinguish between raising and control predicates is to check whether the apparent subject of the matrix predicate can be non-referential. This is possible with raising predicates, but completely impossible with control predicates, which require referential subjects. The standard way to test this is to use so-called weather predicates, such as ‘rain’, or other predicates that have expletive (non-referential) nominative subjects, such as the Czech *stýskat se* ‘miss (somebody)’. The two examples below show clearly that Czech MECs can contain such predicates, suggesting strongly that the MEC-embedder *nemělo* ‘NEG:had’ is a raising predicate.

- (73) *Czech*
- a. Jaktože je mokro? Tady přece nemělo kdy
 how.come is wet here DISC.PART NEG:had:3SG when
 pršet.
 rain:INF
 ‘How come it’s wet? There’s no time when it could have rained here.’
- b. Nemělo se mu po kom stýskat.
 NEG:had:3SG CL.REFL him:CL.DAT after who miss:INF
 ‘There was nobody who he could be missing.’

Argument 2: Thematic restrictions The raising nature of *mít* ‘have’ is further corroborated by the fact that it imposes no semantic restrictions on the subject. In effect, the subject can also be inanimate, as shown in the following example.

²⁴In §5.4.2, I will show that *mít* ‘have’ can also spell out AgrS+AT+BE, i.e. the control version of the MEC-embedding predicate.

- (74) *Czech*
 Ten hrnek se neměl kdy rozbít.
 that cup CL.REFL NEG:had when break:INF
 ‘There was no time for the cup to break.’

Argument 3: Wh-subjects Czech allows MEC wh-words to take the role of subjects. Like any other subject of MECs, also the wh-subject is expected to enter into a case/agreement relation with the matrix AgrS. As shown in (75), this is indeed the case, since *kdo* ‘who’ is the nominative, a form related to finiteness, and the verb *neměl* ‘not had’ reflects the masculine feature of ‘who’ (rather than the default neuter, which would signal the lack of agreement).

- (75) *Czech*
 Neměl je tam kdo přivítat.
 NEG:had:MASC them:CL.ACC there who:NOM.MASC welcome:INF
 ‘There was nobody who could welcome them there.’

Moreover, the wh-subject is in complementary distribution with non-wh-subjects.

- (76) *Czech*
 *Hlavní organizátor je tam neměl
 main organizer:MASC them:CL.ACC there NEG:had:MASC
 kdo přivítat.
 who:NOM.MASC welcome:INF
 ‘The main organizer didn’t have anybody who could invite them there.’

Finally, the following example shows that the wh-subject can be inanimate, which suggests that it is thematically constrained only in the embedded clause.

- (77) *Czech*
 Jak přestalo pršet, už nám nemělo
 after stopped rain:INF already us NEG:had:3SG.NEUT
 co pokazit večer.
 what:NOM.NEUT spoil:INF evening
 ‘After it stopped raining, there was nothing anymore that could spoil our evening.’

Argument 4: Active/passive voice switch According to Postal (1974), there is a systematic difference between raising and control predicates with respect to the preservation of truth conditions under the switch between active and passive voice in the embedded clause. While this switch below a raising predicate preserves the truth conditions, the switch below a control predicate does not.

- (78) a. **Raising predicate**
 Mary is likely to kiss John. \Leftrightarrow John is likely to be kissed by Mary.

b. **Control predicate**

Mary is anxious to kiss John. \nleftrightarrow John is anxious to be kissed by Mary.

In (79a), *Marušku* ‘Mary:ACC’ is the direct object of *ukázat* ‘show’ and the verb is either the impersonal ‘be’ (*není* ‘is not’) or ‘have’ with an arbitrary reference expressed by third person plural. In either case, there is no thinkable thematic relation between the MEC-embedding predicate and the object of the embedded predicate. In (79b), on the other hand, *Maruška* ‘Mary:NOM’ is (apparently) the subject of ‘have’ and could therefore enter into a thematic relation with ‘have’, if it was a control predicate. This would lead to a “richer” interpretation of (79b). However, the two are truth-conditionally indistinguishable, supporting the claim that ‘have’ and ‘be’ are not control verbs.

(79) *Czech*

- a. Marušku není / nemají komu ukázat.
 Maruška:ACC NEG:be:IMPRS / NEG:have:3PL who:DAT show:INF
 ‘There is nobody to whom one can show Maruška.’
 \Leftrightarrow
- b. ?Maruška nemá být komu ukázána.
 Maruška NEG:has be:INF who:DAT shown:PASS.PART
 ‘There is nobody to whom Maruška can be shown.’

Notice that passivized verbs in MECs are somewhat less acceptable. However, the issue is orthogonal to the my present concern and therefore I leave it open.

Summary

In this subsection, I provided four arguments in favor treating Czech (restructuring) MECs as raising structures. The fact that Czech MECs are not isolated in this behavior is shown by the following Slovenian examples, exhibiting an impersonal predicate *biti žal* ‘feel sorry’, (80a), and a weather predicate *deževati* ‘rain’:

(80) *Slovenian* (Marko Hladnik, p.c.)

- a. Nima ti česa biti žal.
 NEG:have:3SG you:DAT what:GEN be sorry
 ‘There’s nothing you can feel sorry about.’
- b. Ni imelo kdaj deževati.
 NEG had:3SG.NEUT when rain:INF
 ‘There was no time when it could rain.’

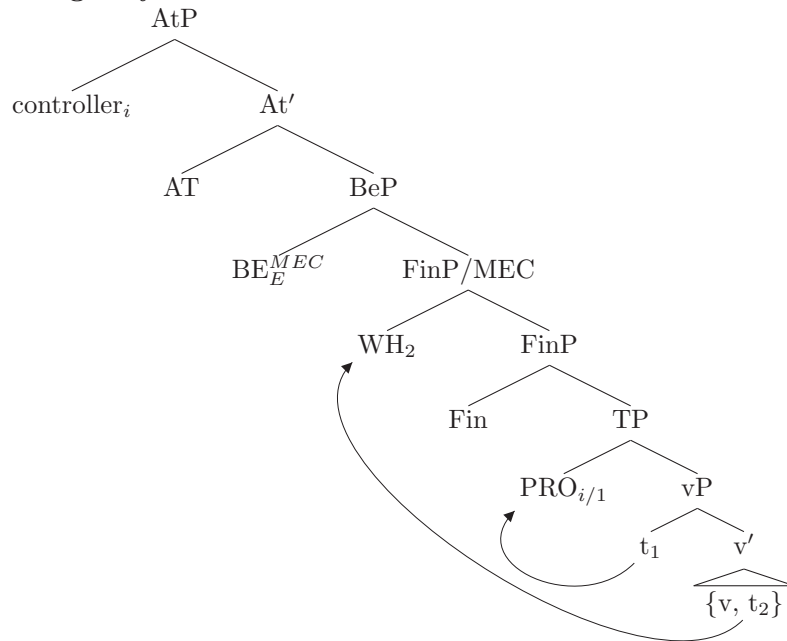
In the next subsection, I show that non-restructuring MECs display control properties.

5.4.2 Control: non-restructuring MECs (in Czech)

That MECs are obligatory control structures was most forcefully argued by Pancheva-Izvorski (2000) for Russian (and partly Bulgarian). I will revisit Pancheva-Izvorski's evidence from Russian in §5.4.4 and argue that Russian needs a special treatment. Bulgarian MECs will be argued in §5.4.3 to contain *pro* rather than PRO. In this subsection, I concentrate mainly on non-restructuring MECs in Czech, but at the end of the subsection, I provide examples from other languages that suggest that the obligatory control pattern is more widely attested.

The structure I propose for obligatory control MECs is given in (81). The MEC is a FinP and it gets selected by BE_E^{MEC} . This predicate itself has no control properties, as we saw above. Instead, the control property of the matrix predicate is introduced by a higher predicate, typically AT, whose participant argument becomes the controller. Notice that in this case, the verb *mít* 'have' corresponds to the possessive AT+BE (or, more precisely AgrS+AT+BE), rather than just to BE. The MEC itself contains an obligatorily controlled PRO, which is licensed by the syntactic Fin head.

(81) **Obligatory control MEC**



The type of MECs that are most clearly characterized by (81) are subjunctive MECs.²⁵ The subjunctive is a finite mood and finite structures are always

²⁵Czech belongs to the class of languages that have the option between the infinitive and subjunctive mood in MECs; see §2.2.3.

opaque for clitic extraction in Czech. Subjunctive MECs are no exception, as witnessed by (82). According to the assumptions introduced in §5.2.4, Fin is the head which is responsible for blocking clitic climbing. I also suggested that the subjunctive morpheme *by* occupies this head.

- (82) *Czech*
 Karel { * jí } nemá koho by { jí }
 Karel her:CL.DAT NEG:has who:ACC SBJ.3 her:CL.DAT
 představil.
 introduce:PAST.PART
 ‘There’s nobody Karel could introduce her to.’

Now, the question is why (82) should involve PRO rather than *pro*, given that the subjunctive is finite and finite verbs normally license nominative-marked elements, such as *pro*. The reason why I take this to be an obligatory control structure is the fact that the empty subject in the MEC is obligatorily referentially dependent on the matrix subject, as shown in (83).²⁶

- (83) *Czech*
 Karel_i neměl koho by { PRO_i / * *pro*_j / * Petr }
 Karel NEG:had who:ACC SBJ.3 PRO / *pro* / Petr
 pozval na večeri.
 invite:PAST.PART for dinner
 ‘Karel_i had nobody who he_i / he_j / Petr could invite for dinner.’

Let us now turn back to infinitival MECs. Though clitic climbing, as in (84a), is a strongly preferred option (and has been used in all previous examples), its absence is certainly acceptable. This is illustrated in (84b), where the clitic *jí* ‘her’ follows the wh-word and is therefore clearly located within the MEC.

- (84) *Czech*
 a. Karel jí nemá koho představit.
 Karel her:CL.DAT NEG:has who:ACC introduce:INF
 b. Karel nemá koho jí představit.
 Karel NEG:has who:ACC her:CL.DAT introduce:INF
 ‘There’s nobody Karel could introduce her to.’

Since the structural description of (84b) is not self-evident, I will provide some argumentation in order to firmly establish that this type of MECs is really to be analyzed as a FinP containing a PRO. On the face of it, there are three plausible structural descriptions for infinitival MECs without clitic climbing. They are given in (85) and differ in background assumptions concerning A-movement,

²⁶Control into finite structures is common in Balkan languages which have no infinitive (see Landau 2004 and the references cited therein). What is surprising is that control into finite MECs is observed for Czech and Hungarian, both of which do not have finite control otherwise, while there is no control into Balkan MECs, as will be discussed in §5.4.3.

clitic movement, and licit functional sequences.

- (85) a. [AtP Karel_i AT [BeP BE [MEC/FinP who [FinP –Fin [TP *clitics* PRO_i to invite]]]]]
 b. [AgrSP Karel₁ [BeP [MEC/vP who *clitics* t₁ to invite]]]
 c. [AtP Karel₁ AT [BeP BE [MEC/FinP who *clitics* [vP t₁ to invite]]]]

Under the first analysis, (85a), the MEC is structurally identified with subjunctive MECs, with the only difference that the infinitival MEC contains a covert –Fin head. The PRO gets obligatorily controlled by the matrix argument *Karel*. This analysis is related to the idea (e.g., Wurmbrand 2001) that the presence of higher functional projections entail the presence of lower functional projections, in this case the presence of FinP entails the presence of a defective TP, which syntactically licenses PRO.²⁷ It also relies on the independently needed assumption that wh-movement can target at least two positions in Czech infinitival MECs—FinP and vP. The analysis in (85b) is very close to the raising analysis of restructuring MECs devised in the preceding subsection. It unifies wh-movement in the two but relies on the non-uniformity of clitic movement, which must be able to target at least two positions: the edge of TP and the edge of vP. Notice that this assumption entails a relaxation of the highly constrained analysis of clitic movement presented in §5.2.4, under which clitics *always* move to the edge of TP. Finally, the structure in (85c) combines the elements of the two preceding ones. The matrix verb is a raising predicate as in the latter but the wh-movement and clitic movement target the FinP, as in the former. The analysis relies on the assumption that lower functional projections (TP in this case) can be missing even if higher projections (CP in this case) are present (e.g., Dotlačil 2004). This leads to absence of clitic climbing (blocked by FinP), but long distance agreement/A-movement to the closest AgrS/T, which is in the matrix.

The underlying assumptions made by the analyses above make different predictions with regard to the interaction between clitic climbing (CC) and long-distance agreement (LDA). There are four logical possibilities of combining these two restructuring phenomena:

- (86) a. [+LDA] [+CC]
 b. [–LDA] [–CC]
 c. [–LDA] [+CC]
 d. [+LDA] [–CC]

Assume that LDA that can take place only if the embedded T/AgrS is missing, i.e. in a situation where the embedded nominative subject must look for its licenser in the matrix clause. The assumptions underlying the analyses in (85b) and (85c) prohibit no combination of CC and LDA. On the other hand, the

²⁷Informally speaking, projections can only be removed from the top of the tree, an influential idea which goes back to Evers (1975) and which has been called the *tree-pruning hypothesis*.

assumption that the presence of a CP entails the presence of a TP/AgrSP, underlying the analysis in (85a), rules out (86d).

The set of examples in (87) puts these predictions to a test.²⁸ Concentrate on the bold-faced phenomena. The clitic *jim* ‘them’, which originates as the object of *dávat* ‘give’, either climbs, (87a)/(87c), or remains in the embedded clause, (87b)/(87d); the agreement relation between the matrix verb *doporučoval*- ‘recommend’ and the embedded object *lehk- strav*- ‘light food’ is either realized (‘recommend’ reflects the feminine gender and ‘light food’ is in nominative), (87a)/(87d), or is not (‘recommend’ is in the default neuter gender and ‘light food’ is in accusative), (87b)/(87c). It turns out that the pattern in (86d), exemplified in (87d), is indeed ruled out, i.e. long-distance agreement depends on clitic climbing, as predicted by (85a) but not by (85b) and (85c).

(87) *Czech*

- a. [+LDA] [+CC]
 Před operací se **jim** doporučovala dávat
 before operation REFL them:CL.DAT recommended:FEM give:INF
 lehká strava.
 light:NOM.FEM food:NOM.FEM
- b. [−LDA] [−CC]
 Před operací se doporučovalo dávat **jim**
 before operation REFL recommended:NEUT give:INF them:CL
 lehkou stravu.
 light:ACC.FEM food:ACC.FEM
- c. [−LDA] [+CC]
 Před operací se **jim** doporučovalo dávat
 before operation REFL them:CL recommended:NEUT give:INF
 lehkou stravu.
 light:ACC.FEM food:ACC.FEM
- d. [+LDA] [−CC]
 *Před operací se doporučovala dávat **jim**
 before operation REFL recommended:FEM give:INF them:CL
 lehká strava.
 light:NOM.FEM food:NOM.FEM
 ‘It was recommended to give them [say, to the patients] light food
 before the operation.’

In sum, general considerations about the nature of functional sequence and clitic movement, embodied in the test in (87), lead us to the conclusion that infinitival MECs without clitic climbing (nonrestructuring infinitival MECs) should be analyzed as in (85a). The alternative in (85c) violates the assumption

²⁸For independent reasons, I cannot test the predictions directly on MECs. This is because the matrix verbs either always (long-distance) agree (‘have’) or never do so (‘be’). In (87) I use an infinitival complement of the verb ‘recommend’, which gives rise to a comparable structural ambiguity.

that the presence of CP-projections entails the presence of a TP and (85b) is based on the problematic idea that clitic movement has flexible (or at least multiple possible) targets. This conclusion is welcome from the perspective of the general theory, as it forces us to adopt a set of more restrictive assumptions. At the same time, it strengthens the overarching hypothesis that MECs are not syntactically deterministic.

I conclude that both subjunctive MECs and nonrestructuring infinitival MECs are of the format in (81), repeated below in a bracketed form.

- (88) $[_{AtP} \text{ subject}_i \text{ AT } [_{BeP} \text{ BE } [_{MEC/FinP} \text{ wh } [_{FinP} \pm \text{Fin } [_{TP} \text{ clitics PRO}_i \text{ to invite}]]]]]$

The rest of this subsection is devoted to providing arguments for (88).

Arguments

Once again, I will go through the raising/control diagnostics. This time, the goal is to support the control side. The crucial examples are those of (a) subjunctive and (b) nonrestructuring infinitival MECs. For comparison, examples in (c) are canonical (restructuring) MECs.

Argument 1: Impersonal predicates Under the present analysis, the MEC-selecting predicate *mít* ‘have’ is a control verb, whose external argument obligatorily controls the MEC-internal PRO. Since this argument must be referential, it follows that there should be a ban on impersonal and weather predicates within the MEC, as they only support non-referential subjects. This expectation is borne out, as illustrated below. Notice that (89b) qualifies as a nonrestructuring infinitival MEC (and therefore a FinP) by not letting the clitics *se* and *mu* climb.

- (89) *Czech*
- a. *Včera nemělo po kom by se mu
yesterday NEG:had after who SBJ.3 CL.REFL him:CL.DAT
stýskalo.
miss
 - b. *Včera nemělo po kom se mu stýskat.
yesterday NEG:had after who CL.REFL him:CL.DAT miss:INF
 - c. Včera se mu nemělo po kom stýskat.
yesterday REFL him:CL.DAT NEG:had after who miss:INF
‘Yesterday, there was nobody who he could be missing.’

Argument 2: Thematic restrictions The control version of ‘have’ might differ from its raising kin in imposing an animateness restriction on its subject. This is indeed the case, as illustrated below. (90a) and (90b) do not tolerate the inanimate subject *ten hrnek* ‘that cup’, as opposed to the restructuring/raising structure in (90c).

(90) *Czech*

- a. #Včera ten hrnek neměl kdy by se
 yesterday that cup NEG:had when SBJ.3 CL.REFL
 rozbil.
 break:PAST.PART
- b. #Včera ten hrnek neměl kdy se rozbít.
 yesterday that cup NEG:had when CL.REFL break:INF
- c. Včera se ten hrnek neměl kdy rozbít.
 yesterday REFL that cup NEG:had when break:INF
 ‘Yesterday, there was no time for the cup to break.’

Argument 3: Overt embedded subject In raising MECs, the lexical subject is generated within the MEC. If it does not move in the course of the derivation, it is spelled out there as well (see (91c)). In subjunctive and nonrestructuring infinitival MECs, on the other hand, the lexical subject is generated in the matrix clause and there is no way for it to get into the MEC. We therefore expect there to be a ban on overt subjects within the MECs.

(91) *Czech*

- a. *Včera neměl s kým by si Karel promluvil.
 yesterday NEG:had with who SBJ.3 REFL Karel speak:PAST.PART
- b. *Včera neměl s kým si Karel promluvit.
 yesterday NEG:had with who REFL Karel speak:INF
- c. Včera si neměl s kým Karel promluvit.
 yesterday REFL NEG:had with who Karel speak:INF
 ‘Yesterday, Karel had nobody to speak with.’

Argument 4: Wh-subject Wh-subjects are predicted to be ruled out. The reason is that, as in the previous argument, wh-subjects must be generated within the MEC, a position reserved exclusively for a PRO. Interestingly, even though the CP structures are less acceptable than their canonical vP counterpart, they are not completely ungrammatical.

(92) *Czech*

- a. ?Včera neměl kdo by je tam
 yesterday NEG:had who:NOM SBJ them:CL.ACC there
 přivítal.
 welcome:PAST.PART
- b. ?Včera neměl kdo je tam přivítat.
 yesterday NEG:had who:NOM them:CL.ACC there welcome:INF
- c. Včera je tam neměl kdo přivítat.
 yesterday them:CL.ACC there who:NOM welcome:INF
 ‘There was nobody who could welcome them there yesterday.’

The relative acceptability of (92a) and (92b) is unexpected. In effect, the wh-subject is the only type of subject capable of replacing a PRO. That this “replacement” is real is further supported by the observation that the reference of the subject of the matrix (*Trautenberg*) and the embedded wh-subject (*kdo*) can be disjoint:²⁹

- (93) *Czech*
 Trautenberg neměl kdo by mu uklidil.
 Trautenberg NEG:had who:NOM SBJ.3 him:CL.DAT clean.up
 ‘Trautenberg had nobody who could clean up in his house.’

It is quite intriguing that Czech is not alone in this quirky situation. As it turns out, Hungarian exactly replicates the Czech pattern. Hungarian generally does not tolerate referentially disjoint subjects, independently of the embedded mood. This is demonstrated by the ungrammaticality of the first person infinitival form *küldenem* in (94a) and by the ungrammaticality of the overt subject *Anna* in (94b).

- (94) *Hungarian* (Lipták 2003:2/3)
 a. Péternek van kit { küldeni /* küldenem } a
 Peter:DAT be who:ACC send:INF.3SG / send:INF.1SG the
 postára.
 post.office.to
 ‘Peter has somebody who he/I can send to the post office.’
 b. Péter van (* Anna) kit küldjön a postára.
 Peter is Ann who:ACC send:SBJ.3SG the post.office.to
 ‘Peter has somebody who he/Anna can send to the post office.’

However, when it comes wh-subjects, the result is acceptable:

- (95) *Hungarian* (Anikó Lipták, p.c.)
 Nekem van ki elmenjen a postára.
 I:DAT be:IMPRS who:NOM go:SBJ.3SG the post.office.to
 ‘I have somebody who can go to the post office.’

These observations are most likely related to the pattern observed in §2.2.3 for Spanish, Portuguese, and some other languages. These languages make mandatory use of the infinitive in MECs and embedded subjects are obligatorily controlled; see (96a). The only situation when both these maxims can be violated is one with a wh-subject:

- (96) *Portuguese* (Adriana Cardoso, p.c.)
 a. Eu não tenho com quem { falar /* fale }.
 I NEG have with who talk:INF / talk:SBJ
 ‘I don’t have anyone to talk with.’

²⁹The example is adapted from a Czech children TV series *Krkonošské pohádky*.

- b. Eu não tenho quem { * fazer / faça } isto.
 I NEG have who do:INF / do:SBJ this
 ‘I do not have anyone who could do this.’

In sum, wh-subjects in Czech do not behave as expected and are not explained by the present analysis. Nevertheless, it turns out that this “misbehavior” is quite systematically replicated across many other unrelated languages. I will provide a systematic analysis of this phenomenon in §6.4 and will turn the problem into an argument for the property analysis of control. In the next part of this subsection, I will provide some more independent evidence for the vP/CP structural ambiguity.

More evidence

The presence of a FinP, diagnosed by the absence of clitic climbing, has other interesting consequences.

Argument 5: G(ivenness)-movement As a strongly discourse-configurational language, Czech partitions sentences into two areas, a “given area” and a “new area”, such that no new elements (marked by *F* subscripts) c-command given elements (marked by *G* subscripts).³⁰ The main predicate often appears on the border of the partition (cf. Kučerová 2007). As is obvious from the examples below, there is some freedom in the ordering of given elements (both (97B) and (97B′) are fine, as are (98B) and (98B′)), as long as no new element precedes (c-commands) a given element, as in the infelicitous (97B′′). There is no such freedom in the ordering of new elements: they must appear in their underlying, non-derived order. This is illustrated by the contrast between (98B)/(98B′) on the one hand and (98B′′) on the other. The underlying order verb-object must be respected.³¹

- (97) *Czech*
 A Kdo včera Karlovi telefonoval?
 who:NOM yesterday Karel:DAT called
 ‘Who called Karel yesterday?’
 B Včera_G Karlovi_G telefonovala_G Marie_F.
 yesterday Karel:DAT called Marie:NOM
 ‘Marie called Karel yesterday.’ *G* < *F*
 B′ Karlovi_G včera_G telefonovala_G Marie_F. *G* < *F*
 B′′#Karlovi_G telefonovala_G Marie_F včera_G. *F* < *G*
- (98) *Czech*
 A Co se včera stalo s Karlem?
 what REFL yesterday happened with Karel
 ‘What happened with Karel yesterday?’

³⁰I tentatively follow the givenness theory of information structure (Schwarzschild 1999; Sauerland 2005; Selkirk and Kratzer 2009).

³¹The verb *ujel* ‘left’ is unaccusative, which is why the object *vlak* ‘train’ is in nominative.

- B Včera_G Karlovi_G ujel_F vlak_F.
 yesterday Karel:DAT left train:NOM
 ‘Yesterday Karel missed the train.’ $V_F \prec O_F$
- B' Karlovi_G včera_G ujel_F vlak_F. $V_F \prec O_F$
- B''#Karlovi_G včera_G vlak_F ujel_F. $O_F \prec V_F$

As argued by Kučerová (2007), this partitioning is facilitated by what she calls G-movement, i.e. movement of given elements outside of the scope of new elements. This movement is very local, certainly clause-bound, and can even precede A-movement in the course of the derivation. In this respect, G-movement substantially differs from other information-structure related transformations, such as topicalization or focus fronting.³²

Let us now turn to the relevance of G-movement to the syntax of MECs. If the position of clitics really marks the clausal boundary, in accord with the present hypothesis, then we expect G-movement to never target any position that precedes clitics. As we see in (99), this prediction is borne out. In (99a), the clitic *ti* ‘you’ climbs and G-movement of the constituent *ze své zahrady* ‘from my garden’ can proceed outside of the MEC. In (99b), the clitic does not climb and G-movement targets an embedded position, accordingly. In (99c), the clitic climbs and G-movement remains local. And finally, (99d) shows that G-movement cannot proceed in the absence of clitic climbing.

- (99) *Czech*
 Byli u mě zloději a všechno z mé zahrady ukradli.
 were at me thieves and everything from my garden stole
 ‘There were thieves at my house and they stole everything from my garden.’
- a. Ted' už **ti** ze své zahrady_G nemám
 now already you:DAT from my:REFL garden NEG:have:1SG
 co nabídnout_F.
 what offer:INF
- b. Ted' už nemám co **ti** ze své
 now already NEG:have:1SG what you:DAT from my:REFL
 zahrady_G nabídnout_F.
 garden offer:INF
- c. ?Ted' už **ti** nemám co ze své
 now already you:DAT NEG:have:1SG what from my:REFL
 zahrady_G nabídnout_F.
 garden offer:INF

³²G-movement has no syntactically defined landing site, it is motivated by interface requirements, in particular by the principle called Maximize Presupposition (Heim 1991). For details of the proposal, see Kučerová (2007, 2008).

- d. *Ted' už ze své zahrady_G nemám co
 now already from my:REFL garden NEG:have:1SG what
 ti nabídnout_F.
 you:DAT offer:INF
 'Now there 's nothing anymore that I can offer you from my gar-
 den.'

A full understanding of what governs G-movement of given constituents within/out of MECs would require a detailed investigation of MECs' information structure properties. I leave this for another occasion. For now, let me just remark that MECs generally prefer to be as "small" as possible, so that any movement that *can* target a position outside the MEC generally does so. The reason for this might be that the existential quantification expressed by the MEC is often itself the focus of the utterance. If this is the case, any given constituent is predicted to move out of its scope.

Summary

I reconsidered Czech MECs and showed that they are not structurally uniform. Next to the most common raising (restructuring) MECs discussed in §5.4.1, there are two more types of non-restructuring MECs: subjunctive MECs and infinitival MECs that are opaque for clitic climbing and other types of non-contrastive extractions such as G-movement, called simply non-restructuring infinitival MECs. I argued that these are FinPs rather than vPs. In line with a restricted theory of functional sequence where the presence of a higher projection entails the presence of a lower projection, the TP structural layer is also present (FinP → TP). The presence of a TP has two related consequences. Firstly, the MEC-subject must be licensed within the embedded clause, which precludes a raising analysis of non-restructuring MECs. Secondly, the embedded subject must be a PRO, as the embedded T is "defective" and cannot license the case of a full lexical DP (or a *pro*). This consequence is somewhat unexpected for subjunctive MECs, as subjunctives behave in all respects as finite in other contexts. This problem has been left open (see footnote 26). Another issue is the one of wh-subjects. I observed that wh-subjects can exceptionally sidestep the use of a PRO and form thus the only type of lexical subject that can be licensed within a non-restructuring MEC. Though somewhat mysterious, this observation is not isolated, as the exact same pattern appears in Hungarian and parallel exceptional behavior of wh-subjects in MECs is observed for many other languages. See §6.4 for more discussion.

Before I turn to the discussion of finite MECs, I would like to provide some evidence that non-restructuring MECs in other languages behave in a way analogous to Czech.

Non-restructuring MECs in other languages

In §5.3, and in particular in §5.3.1, I observed that languages divide into two categories based on the (un)availability of short wh-movement. If a language

does not allow for short *wh*-movement, it is bound to move its *wh*-words to the left-periphery, in particular to the edge of FinP. MECs in these languages are then expected to be of the control rather than the raising type. That this is indeed the case, is witnessed by the ungrammaticality of weather predicates in MECs.

- (100) *Spanish* (Cintia Widmann, p.c.)
 ¿ Por que esta mojado? * No hubo cuando llover.
 for what is wet NEG had when rain:INF
 ‘Why is it wet? There was no time when it could rain.’

Now, the question is, do MECs in these languages exhibit obligatory or non-obligatory control? The following evidence suggests that the former is the case. Notice that the disjoint reading (ii) is systematically unavailable.

- (101) a. *Italian* (Ivano Caponigro, p.c.)
 Hai con che scrivere una lettera?
 have:2SG with what write:INF a letter
 (i) ‘Do you have anything you can write a letter with?’
 (ii) *‘Do you have anything I/one can write a letter with?’
 b. *Spanish* (Luis Vicente, p.c.)
 ¿ Tienes con qué escribir?
 have:2SG with what write:INF
 (i) ‘Do you have anything with which you can write?’
 (ii) ??‘Do you have anything with which I/one could write?’
 c. *Portuguese* (Adriana Cardoso, p.c.)
 Tens com o que escrever?
 have:2SG with the what write:INF
 (i) ‘Do you have anything with which you can write?’
 (ii) *‘Do you have anything with which I/one could write?’

Specifically, the type of obligatory control that MECs exhibit is exhaustive control (cf. Landau 2000). This is clear from the following example: the PRO must be singular (exhaustively controlled by its antecedent) and hence cannot serve as the subject of a predicate that requires semantically plural subjects:

- (102) *Portuguese* (Adriana Cardoso, p.c.)
 *O João ainda não tem onde se reunir.
 the J. still NEG has where CL.REFL gather:INF
 ‘Joao still doesn’t have any place where to gather.’ [e.g. an organizer of a demonstration]

It is also noticeable that truth-conditionally comparable headed relatives (or at least what appear to be headed relatives, cf. §6.5) do not exhibit obligatory control, which is obvious from the availability of the readings in (b). This contrast between MECs and headed relatives further supports the claim that

there is an important structural difference between the two.³³

- (103) a. *Italian* (Ivano Caponigro, p.c.)
 Hai qualcosa / nulla con cui scrivere una
 have:2SG something / anything with what:REL write:INF a
 lettera?
 letter
 (i) ‘Do you have anything you can write a letter with?’
 (ii) ‘Do you have anything one can write a letter with?’
 b. *Spanish* (Luis Vicente, p.c.)
 ¿Tienes algo con (lo) que escribir?
 have:2SG something with (the) what write:INF
 (i) ‘Do you have anything with which you can write?’
 (ii) ‘Do you have anything with which I could write?’
 c. *Portuguese* (Adriana Cardoso, p.c.)
 Tens alguma coisa com que escrever?
 have:2SG some thing with that write:INF
 (i) ‘Do you have anything with which you can write?’
 (ii) ‘Do you have anything with which I could write?’

In summary, even in languages that have no restructuring MECs, MECs are obligatory control structures.

5.4.3 Finite MECs: Balkan languages

There is a class of languages, roughly corresponding to the Balkan sprachbund, that lack the infinitive mood and which therefore rely on the subjunctive in their MECs.³⁴ Subjunctive is a finite mood, in principle capable of licensing overt subjects. Yet, as we saw in the preceding subsection, even subjects of subjunctive MECs can be obligatorily controlled. This holds for Czech and Hungarian, languages which also have infinitival MECs. Somewhat surprisingly, languages with no infinitives behave differently in that the MEC subject is referentially independent. The examples below illustrate this observation:

- (104) *Bulgarian*
 a. Pancheva-Izvorski (2000:26)
 Ima te s kakvo da ti pomognat.
 have:3SG they:NOM with what SBJ you:DAT help:3PL
 ‘There is something they can help you with.’

³³The contrast essentially boils down to the traditional distinction between complementation and adjunction (see e.g. Koster 1984, 1987:Ch5, or later Landau 2000, for its relevance for obligatory/optional control), since MECs are complements to the control predicate, while the relative clause is related to the control predicate only indirectly, via adjunction to a nominal head.

³⁴The exception is Romanian, which also has infinitival MECs; see §2.2.3.

- b. Kostadin Cholakov (p.c.)
 Namerih s kakvo da izčistiš poda.
 found:1SG with what SBJ clean:2SG floor
 ‘I found something with which you can clean the floor.’
- (105) *Greek* (Ourania Sinopoulou, p.c.)
 Den exo ti na foresi i Vassiliki sti jiorti
 NEG have:1SG what SBJ wear:3SG the Vasiliki at.the name.day
 tis.
 her:GEN
 ‘I don’t have anything that Vasiliki could wear on her name-day.’

One could wonder whether we witness a meaningful correlation: languages with both infinitival and subjunctive MECs (Czech, Hungarian) exhibit obligatory control into subjunctives and languages that only have subjunctive MECs exhibit no obligatory control in MECs (Bulgarian, Greek). Serbo-Croatian facts suggest that the answer is negative. It falls in the same category as Czech and Hungarian but still allows the subject to have a disjoint reference.

- (106) *Serbo-Croatian* (Jelena Prokić, p.c.)
 Imam čime da očistiš ruke.
 have:1SG what:INST SBJ clean:2SG hands
 ‘I have something with which you can clean your hands.’

Yet, as pointed out in §2.2.3, the optionality between the infinitive and the subjunctive might only be apparent due to the particular dialectal division. Infinitival MECs are associated with Croatian and subjunctive MECs with Serbian. If this dialectal difference is robust, one could expect Croatian to pattern with Czech or Spanish and Serbian with Greek or Bulgarian. My informant on this issue (Jelena Prokić) is Serbian and her judgement of (106) conforms to this hypothesis. Unfortunately, I have not been able to consult any Croatian speaker so far.

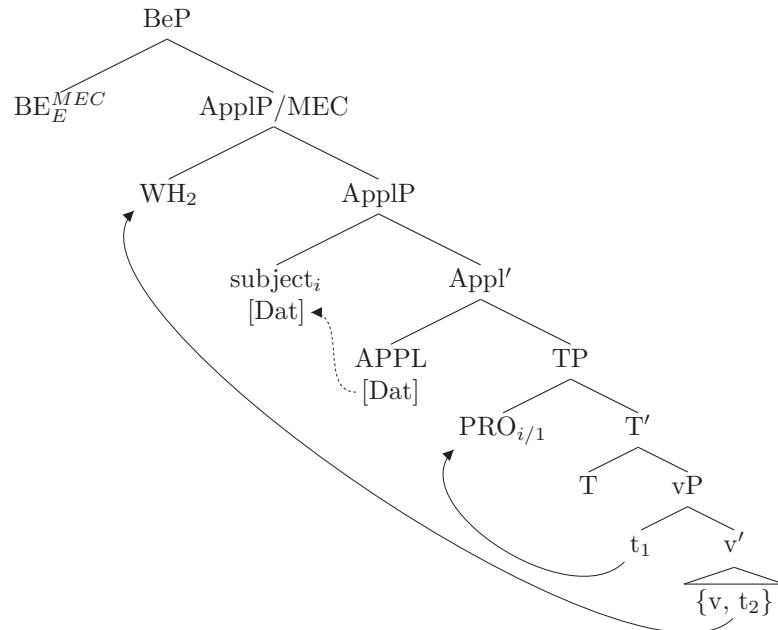
I conclude that in Balkan languages, in particular Bulgarian, Greek, and Serbian (possibly as opposed to Croatian), MECs are neither raising nor control structures. If empty, the embedded subject must be analyzed as a *pro* rather than PRO.

5.4.4 MEC-internal control: the case of Russian

A number of scholars have made claims about the raising/control nature of Russian MECs. Babby (2000) and Livitz (2010) assumed that MECs are raising structures, while Pancheva-Izvorski (2000) and Fleischer (2006) argued for a control analysis. In this subsection, I will go through the whole argumentation carefully and conclude that there is a good reason for this dilemma: Russian MECs exhibit properties of both control and raising. Their lexical subject is generated within the MEC (as in raising), but it is a subject of a control

predicate—an applicative head which obligatorily controls a PRO in its complement. This applicative head roughly corresponds to the English preposition *for* that appears in English possibility/purpose clauses (*The book is available **for** Dave to read*). In §6.4 I will hypothesize that this Russian-style structural analysis should actually apply more generally—to all obligatory control MECs. The analysis is sketched in (107). Notice that the applicative head is also responsible for dative-assignment (in Russian).³⁵

(107) **MEC-internal control**



I will first follow the argumentation path of Pancheva-Izvorski (2000), who provided a set of arguments in favor of the control analysis, i.e. the type of analysis devised in §5.4.2 for Czech and a number of other languages. After I show that her arguments are inconclusive, I turn to a number of additional arguments which bring the hypothesized ambivalence to surface.

³⁵ A more detailed analysis of this applicative head must be left aside here. However, preliminary considerations suggest that it is related to low applicatives (cf. Pytkänen 2002) rather than to high or “super-high” applicatives, as the structural position would suggest. The reason is that while low applicatives typically only impose animateness restrictions, (super-)high applicatives exhibit evaluative properties and/or speaker-orientedness (cf. Arsenijević to appear; Tsai 2010) which do not characterize the APPL assumed here.

Pancheva-Izvorski's arguments

Argument 1: Lack of agreement There is no ϕ -feature agreement between the subject and the matrix verb, which would be expected if the subject raised from the MEC to the matrix clause.

- (108) *Russian* (Pancheva-Izvorski 2000:64)
 Mne est' čto čitat'.
 me:DAT be:IMPRS what read:INF
 'I have something to read.'

This argument is relatively weak. The fact that the Russian matrix verb *est'* 'be' does not display agreement is a lexical idiosyncrasy, rather than an effect of a missing structural relation between the subject *mne* 'me' and the matrix T: *est'* 'be' is impersonal and hence cannot agree by definition. Also, a number of scholars (e.g. Lavine and Freidin 2002; Bailyn 2004) have argued that in Russian, the EPP on T can be satisfied even in the absence of agreement, such as in so-called adversity impersonal constructions:

- (109) *Russian* (Bailyn 2004:11)
 [TP Lodku₁ [T' oprokinulo₂+T [vP volnoj [vP t₂ t₁]]]].
 boat:ACC turn.over:IMPRS wave:INSTR
 'The boat was turned over by a wave.'

If these authors are right in claiming that raising (or A-movement in general) is independent of feature-checking, then Pancheva-Izvorski's argument has lost its force.

Argument 2: No impersonal predicates MECs in Russian do not support "weather predicates" such as *poxolodat'* 'become cold' in (110) or *dožd' idet* 'rain' in (111a) and impersonal predicates such as *xotet'sja* 'feel like/want' in (111b).

- (110) *Russian* (Aysa Arylova, p.c.)
 *Zdes' bylo nekogda poxolodat'.
 here was:IMPRS NEG:when become.cold
 'There was no time for it to become cold here.'
- (111) *Russian* (Pancheva-Izvorski 2000:65)
 a. *Est' kogda idti dožd' / doždju.
 be:IMPRS when go:INF rain:NOM / rain:DAT
 'There is a time such that it can rain then.'
 b. *Est' čto xotet'sja čtoby Ivan pročital.
 be:IMPRS what want:INF.REFL that:SBJ Ivan read
 'There is something that it would be nice for Ivan to read.'

According to Pancheva-Izvorski, this is because the embedded subject of MECs must be controlled and therefore must be a contentful PRO rather than just an expletive, as required by weather predicates and impersonals of the above type.

At first sight, this looks like a killer-argument against raising. However, there is an alternative explanation, which relies on an independent fact, namely that the matrix predicate is impersonal. Suppose that Russian has only nominative expletives. If this is the case, no Russian expletive can be licensed in a specifier of a T with which it cannot agree and which in turn cannot check the expletive's nominative case. The initial support for this view comes from modal verbs. Some modals in Russian assign nominative to the external arguments, with which they agree, such as *dolžno* 'must/have to' in (112a), others assign dative and are impersonal, such as *nado* 'have to' in (112b).

- (112) *Russian* (Aysa Arylova, p.c.)
- a. Maša dolžna vyigrat'.
 Maša:NOM must:FEM win:INF
 'Maša must/has to win.'
 - b. Maše nado vyigrat'.
 Maša:DAT must:IMPRS win:INF
 'Maša has to win.'

It turns out that only nominative-assigners are also raising predicates:

- (113) *Russian* (Aysa Arylova, p.c.)
- a. Zavtra dolžno poxolodat'.
 tomorrow must:NEUT become.cold
 'Tomorrow it [the weather] must/has to become cold.'
 - b. *Zavtra nado poxolodat'.
 tomorrow must:IMPRS become.cold
 'Tomorrow it [the weather] has to become cold.'

The contrast in (113) is readily explained if Russian only has nominative expletives. The type of explanation which posits that *dolžno* 'must/have to' is raising and *nado* 'have to' is control is stipulative: there is no principled reason why it should be so, since in other, related languages, such as Czech, a modal with an analogous (circumstantial/deontic) interpretation is raising:

- (114) *Czech*
- Zítřa se musí ochladit.
 tomorrow REFL must:3SG become.cold
 'Tomorrow it has to/must become cold.'

More evidence in favor of this analysis comes from Czech MECs. Czech MECs can be embedded under two predicates: *být* 'be' and *mít* 'have'. The former, like the Russian 'be', never agrees with the subject (i.e., it is impersonal) and the latter always agrees with the subject. In the example below, *nemám* 'I don't have' agrees with a first person *pro*. This is impossible with the verb 'be', as shown by the ungrammaticality of *nejsem* 'I am not'. 'Be' must appear in its

impersonal (formally 3rd person singular (neuter)) form *není* ‘there is not’.³⁶

(115) *Czech*

- a. Už nemám kam jít.
 already NEG:have:1SG where go:INF
 ‘There is nowhere for me to go.’
- b. Už { není /* nejsem } kam jít.
 already NEG:be:3SG / NEG:be:1SG where go:INF
 ‘There is nowhere (for me) to go.’

If, by hypothesis, Czech expletives must also be nominative, only ‘have’ is predicted to be capable of embedding impersonal predicates. As noted by Ceplová (2007:40), this prediction is borne out:³⁷

(116) *Czech*

- a. Jaktože je mokro? Tady přece { * nebylo /
 how.come is wet here DISC.PART NEG:was:3SG /
 nemělo } kdy pršet.
 NEG:had:3SG when rain:INF
 ‘How come it’s wet? There’s no time when it could have rained here.’
- b. { * Nebylo / nemělo } se mu po kom
 NEG:was:3SG / NEG:had:3SG REFL him:DAT after who
 stýskat.
 miss:INF
 ‘There was nobody who he could be missing.’

Notice that resorting to an explanation based on control is highly dubious in this case, as the atomic predicate BE, corresponding to the impersonal verb *být* ‘be’, generally supports no argument which could potentially control the embedded PRO. The control relation can therefore never be verified (or falsified). Now, it is possible that Russian MECs headed by the impersonal ‘be’ are just like their Czech cousins. In both languages, such MECs can never host an expletive, which must be nominative. The only difference between the two languages is that Russian has a way to license non-empty referential subjects, namely by assigning dative. Czech must use the matrix verb ‘have’ to accommodate overt subjects.

In sum, we saw that there is an alternative explanation of the fact that Russian MECs do not support weather and impersonal predicates: the assumption

³⁶Because in Czech there is no way to license subjects of infinitivals, MECs headed by ‘be’ always lack overt subjects. The subject is an arbitrarily interpreted PRO.

³⁷Notice that both ‘have’ in (116) and ‘be’ in (115) (and in general) are marked for 3rd person singular neuter. Even though these features are morphologically identical, they must have a different underlying source: because ‘have’ *always* agrees, its features must come from the agreement with an empty expletive; on the other hand, ‘be’ *never* agrees, so its features must be default.

that Russian (as well as Czech) expletives must be nominative.

Argument 3: Active/passive voice switch As for the active/passive voice switch, Pancheva-Izvorski (2000) provides an example only from Bulgarian MECs, in which the switch does not yield truth-conditionally equivalent statements. This is in turn indicative of control rather than raising.³⁸

(117) *Bulgarian* (Pancheva-Izvorski 2000:66)

- a. Imam na kogo da predstavja Ivan.
 have:1SG to whom SBJ introduce:1SG Ivan
 ‘There is someone available to me to introduce Ivan to.’
 \nleftrightarrow
- b. Ivan ima na kogo da bade predstaven ot men.
 Ivan has:3SG to whom SBJ be introduced by me
 ‘There is someone available to Ivan to be introduced by me.’

Unfortunately, it is impossible to test this effect in Russian. The reason is that Russian passive participles have to agree with subjects but at the same time they can only agree with nominatives (or: they only have nominative forms). Because the only potentially accessible subject is dative-marked, the participle has nothing to agree with and the resulting structure is ungrammatical. This is illustrated in (118a) for the passive *pokazan* ‘shown’. The pragmatically odd (118b) is the closest grammatical counterpart of (118a) available. It makes use of a related adjective *pokazany* ‘shown’, which, as opposed to passive participles, has a dative form. Unfortunately, it can only be construed as a property rather than as an event, which makes the comparison to the active voice impossible.³⁹

(118) *Russian* (Aysa Arylova, p.c.)

- a. *Ivanu est’ komu byt’ pokazan.
 Ivan:DAT be:IMPRS who:DAT be shown:PASS.PART.NOM.MASC
 ‘There is somebody that Ivan can be shown to.’
- b. #Ivanu est’ komu byt’ pokazany.
 Ivan:DAT be:IMPRS who:DAT be shown:ADJ.DAT.MASC
 ‘There is somebody such that Ivan can have the property of being/having been shown to that person.’

Thus, even though this argument argues against raising in Bulgarian, it is not applicable in Russian.

Argument 4: Simultaneous presence of matrix and embedded subjects It has been claimed that both matrix and embedded subject positions can be simultaneously filled with overt expressions in Russian. Pancheva-

³⁸In §5.4.3, I argued that Bulgarian MECs contain a *pro* rather than a PRO. Even under this analysis, the active/passive voice switch is predicted not to yield truth conditionally equivalent statements.

³⁹I am grateful to Aysa Arylova for making this issue clear to me.

Izvorski uses Rappaport's (1986) example to support the claim:

- (119) *Russian* (Rappaport 1986:22; Pancheva-Izvorski 2000:66)
 Nam est' komu robotat'.
 we:DAT be:IMPRS who:DAT work:INF
 'We have someone to work (for us).'

However, my informants (Aysa Arylova, Zhenya Markovskaya) claim that the above example is ungrammatical, certainly on the desired interpretation. It is very marginally acceptable if the sentence is interpreted as 'Somebody of us can work', in which case the putative matrix subject *nam* 'us' is construed as a domain restrictor of the wh-word *komu* 'who'. In that way, *komu* 'who' is the only real subject, *nam* 'us' simply being an agreeing modifier. The ungrammaticality of this type of examples is further confirmed by Rappaport himself, who gives the example in (120). Notice that there is no interfering interpretation for this example, as *mne* 'me' cannot be construed as a restrictor of *čto* 'what'.

- (120) *Russian* (Rappaport 1986:11)
 *Mne est' čto tebe sdelat'.
 me:DAT be:IMPRS what you:DAT do:INF
 'For me there is for you something to do.' (*intended reading*)

Interim conclusion We saw that all of Pancheva-Izvorski's arguments in favor of control and against raising in Russian MECs are inconclusive. Argument 1 turned out to be a non-argument. Argument 2 has a plausible alternative explanation. Argument 3 can be applied to Bulgarian, but not Russian. And finally, argument 4 is based on flawed data. In sum, the data are compatible with both the control and the raising analysis. It is obvious that more evidence is needed.

More evidence

In what follows, I give more arguments in the control vs. raising controversy. We will see that both sides get backed.

Argument 5: Thematic restrictions Control predicates differ from raising predicates in that they impose thematic restrictions on subjects. This is because subjects of control predicates sit in their theta-positions whereas subjects of raising predicates do not (raising predicates have no external theta-positions). Thus, (121b) is infelicitous with inanimate subjects.

- (121) a. The {worker / saw} started/seemed to cut the tree.
 b. The {worker /# saw} wanted/tried to cut the tree.

The following example shows that Russian MECs are constrained in exactly the same way:

- (122) *Russian* (Aysa Arylova, p.c.)
 { Kole /# Vetru } zdes' nečego razrušat'.
 Kolja:DAT / wind:DAT here NEG:what:GEN destroy:INF
 'Kolja / The wind has nothing more to destroy here.'

Though somewhat fragile, this seems to be the first argument unambiguously pointing to control.

Argument 6: Case The subject in Russian MECs is dative-marked. As pointed out by Babby (1998, 2000), dative is generally assigned by infinitives to external arguments. Such infinitives typically have a modal construal, whether there is an overt modal element (123a) or not (123b). The matrix existential verb, on the other hand, is incapable of assigning the dative. In such cases (e.g. in possessives), the subject has to be realized in an oblique case, in particular it is embedded in a PP (124).⁴⁰

- (123) *Russian*
 a. Aysa Arylova (p.c.)
 Nam nado / možno rabotat'.
 us:DAT obliged:PTCP / possible:PTCP work:INF
 'We have to / can work.'
 b. Babby (1998:23)
 Začem bylo Ivanu pytat'sja otravit' Ninu?
 why be:PAST Ivan:DAT try:INF poison:INF Nina:ACC
 'Why should Ivan have tried to poison Nina?'
- (124) *Russian* (Aysa Arylova, p.c.)
 { U nas /* Nam } est' problemy.
 at us:GEN / us:DAT be:IMPRS problems
 'We have problems.'

If this reasoning is correct, it shows that the dative of MEC subjects is assigned either by the infinitive or by some component of the infinitival clause. Under standard considerations of case-assignment, the subject must be either c-commanded by its case-assigner at some point in the derivation or at least be in a spec-head configuration with its case-assigner. Neither of these conditions are satisfied in the hypothesized control structure (125), while both are (or at least can be) in the underlying raising structure (126):

⁴⁰As Aysa Arylova (p.c.) informs me, there is one case where the impersonal *est'* 'be' appears to assign the dative, namely in age-telling constructions:

- (i) Mne est' 15 let.
 me:DAT be:IMPRS 15 years
 'I am 15 years old.'

However, there are two reasons to believe that *est'* 'be' in this construction is not comparable to the one in MECs. Firstly, it lacks an existential meaning, and secondly, it can only appear if it is emphatically/contrastively stressed (as in *I certainly AM fifteen years old*).

- With some stretching the control structure can go through, though, namely if one assumes that the case-assigning Inf head incorporates into the matrix predicate ‘be’ and thus reaches a position, in which it is in a relevant (spec-head) relation to the external argument.

- Let us now move to the last argument, which puts (127) in doubt.

(128) *Russian* (Aysa Arylova, p.c.)
 Nad etoj problemoj { * komu } bylo { komu } rabotat'.
 on that problem who:DAT be:PAST who:DAT work:INF
 'There is somebody to work on that problem.'

The two examples below demonstrate that the wh-subject *komu* ‘who’ in (128) has the relevant properties of standard MEC subjects. (129) shows that the wh-subject cannot be accompanied by another subject (see the example (120) and the discussion of Argument 4) and (130) shows that the subject must be animate and is therefore presumably in a thematic relation to a control predicate (see (122) and the discussion of Argument 5).

- (129) *Russian* (Aysa Arylova, p.c.)
 *Nad etoj problemoj Maše nekomu rabotat'.
 on that problem Maša:DAT NEG:who:DAT work:INF
 'Maša has nobody to work on that problem.'

- (130) *Russian* (Aysa Arylova, p.c.)
 #Bylo čemu osveščat' proliv.
 be:PAST what:DAT light:INF strait
 'There was something that could light the strait'

In sum, the wh-subject has the same properties as any other overt subject of MECs. Therefore, it is desirable that MEC subjects in general appear in the embedded clause at some point of the derivation. At which point? Given that a (wh-)lowering analysis is a last resort one, MEC subjects should be *base-generated* in the embedded clause.

Interim conclusion I added three more arguments to those of Pancheva-Izvorski's. The results are ambivalent. Argument 5 supports the matrix-subject (control) account. Argument 6 is inconclusive. Finally, Argument 7 provides a mixed picture, suggesting that the subject originates in the MEC but at the same time has properties of control predicate arguments.

Conclusion

I conclude that neither the standard control, nor the standard raising account can explain the Russian facts. Instead, the evidence points towards the hypothesis that Russian MECs represent a special kind of control structures in which the controller is MEC-internal. The analysis, introduced in (107), is repeated below in the bracketed form.

- (131) [BeP BE [MEC/AppIP WH [AppIP subject_i Appl [FinP ... PRO_i ...]]]]

This analysis makes correct predictions concerning the relevant observations made above. The MEC is predicted not to be able to contain impersonal and weather predicates (Argument 2). This is either ruled out by the restriction on the case of expletives, presented above, or by the fact that these predicates do not tolerate referential PRO subjects and hence cannot be controlled into. The thematic restrictions (Argument 5) are imposed on the DP subject by the Appl head and the case (Argument 6) can be assigned within the MEC, as desired, possibly by the Appl head itself. The fact that wh-subjects exhibit the thematic restrictions and surface with dative case (Argument 7) also seems to be accounted for. They can simply be generated in SpecAppIP, like any other subject, and still be in the scope of the MEC-embedding predicate.⁴¹ Finally, the structure correctly predicts that the embedded clause and the matrix clause cannot both have their independent dative subjects (Argument 4).

Before I conclude, I would like to point out an interesting prediction of the present analysis. Since the dative subject in Russian MECs originates within the MEC, the matrix predicate is simply BE (or, more precisely BE_E^{MEC}). This means that it should in principle be possible for the BeP to be selected by the predicate AT and thus create the complex stative predicate AT+BE

⁴¹I will come back to the issue of wh-subjects in Russian MECs in §6.4 and will show that not all problems are solved by this assumption.

(see §4.2.2), corresponding to the possessive predicate. Though it is impossible to distinguish the atomic BE from the complex AT+BE morphologically (both are spelled out as *est* ‘be:IMPRS’ in Russian), the presence of AT should be detectable by the use of a possessive subject, which takes the prepositional form ‘at DP:GEN’ in Russian. This subject, in turn, should be able to cooccur with the embedded dative subject. The example in (132) shows that this prediction is borne out. The possessive subject *u menja* ‘at me’ cooccurs with the embedded dative subject *tebe* ‘you’.

- (132) *Russian* (Aysa Arylova, p.c.)
 U menja est’ čem tebe počinit’ velociped.
 at me:GEN be:IMPRS what:INST you:DAT repair:INF bike
 ‘I have something with which you can repair the bike.’

This in turn seems to suggest that MECs are a proper subpart of what Livitz (2010) calls modal possessive constructions: “pure” MECs are MECs headed by the atomic BE and Livitz’s modal possessive constructions are MECs headed by AT+BE.⁴²

5.4.5 Summary

This section put forth yet another argument in favor of treating MECs as syntactically non-deterministic. In §5.4.1, restructuring MECs (a notion established in §5.2 and §5.3) were shown to correspond to raising MECs. This is because they are vPs and do not contain any functional structure that could license PRO. Nonrestructuring CPs, on the other hand, correspond either to control structures (§5.4.2), as found in Czech, Spanish, and many other languages, or to finite structures that are neither raising nor control (§5.4.3) and that contain an ordinary nominative-marked lexical subject. These appear in Bulgarian, Greek, and Serbian. The emerging and somewhat paradoxical generalization is that obligatory control subjunctive (i.e. finite) MECs exist only in languages that also have infinitival MECs (Czech and Hungarian). All other languages have ordinary finite MECs with lexical subjects. This generalization remains mysterious. The final subsection (§5.4.4) concentrated on the specific situation in Russian, where the control predicate—presumably a super-high applicative head—is generated within the MEC. I will come back to this idea in §6.4 and will hypothesize that the Russian pattern might in fact be more general. The reason why the pattern appears to be rare is that no other language with infinitival nonrestructuring MECs besides Russian licenses overt MEC-internal subjects.

⁴²But see Livitz (2010) for some potential counterarguments.

5.5 Sluicing

In this subsection, I will concentrate on sluicing and the way the empirical material discussed so far contributes to our knowledge of the conditions under which sluicing may or may not apply. Thanks to their multiply ambivalent nature (questions vs. relatives, CPs vs. vPs), MECs provide valuable testing grounds for theories of sluicing. Before I turn to the discussion of sluicing in MECs and its implications for the theory, I provide some general background on sluicing.

5.5.1 Background on sluicing

The phenomenon of sluicing was probably first described by Ross (1969). It is traditionally characterized as IP-ellipsis in constituent (matrix or embedded) *wh*-questions.

- (133) Lobeck (1995:54)
- a. – I'd like to leave now. – Why [IP ...]?
 - b. Even though Mary's not sure who [IP ...], she thinks someone interesting is speaking tonight.

Until recently, sluicing was believed to appear exclusively in *wh*-questions. The reason is that other types of IP-ellipses are clearly ruled out. To give a few examples, consider the ungrammaticality of IP-ellipsis in complement clauses (134a), relative clauses (134b), adjuncts (134c), or the ellipsis of IP-complements to some verbs (134d).

- (134) Lobeck (1995:§2.3.3)
- a. *Even though Mary hopes that [IP ...], she doubts that anyone interesting is speaking tonight.
 - b. *Someone wants to talk to Mary but the person who [IP ...] is too shy to approach her.
 - c. *John talked to Bill, but before [IP ...], Mary called.
 - d. *John appears to be smart and Mary also seems [IP ...].

The accounts were set up accordingly, in order to capture the question-only generalization. Lobeck (1995) constrained sluicing to IPs that are “licensed” and “identified”. These conditions were formulated in terms of proper government and in such a way that they picked out only IP complements to interrogative C-heads, whose SpecCP contained a *wh*-phrase. Merchant (2001) reformulated this story in minimalist terms. He proposes that sluicing (and ellipsis in general) has a syntactic source which he calls E-feature (“ellipsis feature”). In English, the presence of this feature on a C-head is licensed if the C head has the feature specification [+*wh*, +Q]. The E-feature is further interpretable at the interfaces, triggering the non-pronunciation of the complement at PF and its givenness (anaphoricity) at LF.

Van Craenenbroeck and Lipták (2006) were the first to claim that sluicing is not limited to *wh*-questions. In many languages, IPs asymmetrically *c*-commanded by focus-fronted constituents (*Katit* below) can also be elided.

- (135) *Hungarian* (Van Craenenbroeck and Lipták 2006:249)
 AZ A FIÚ hívta meg Esztert, aki KATIT [IP ...].
 that the boy invited PV Eszter:ACC REL:who Kati:ACC
 ‘The boy who invited Eszter was the one who invited Kati.’

Van Craenenbroeck and Lipták provide convincing evidence that the elided constituent in (135) and comparable examples is really an IP and not simply a VP, as assumed for comparable data in Polish by Szczegielniak (2004). Provided that their arguments are sound, Lobeck’s and Merchant’s generalization must be abandoned: sluicing targets not only complements of interrogative complementizers but also complements of heads whose specifiers host focused expressions. In order to capture this extended observation, Van Craenenbroeck and Lipták (2006:257) propose the following correlation:

- (136) **The *wh*/sluicing correlation**
 The syntactic features that the *E*-feature has to check in a certain language are identical to the strong features a *wh*-phrase has to check in a regular constituent question in that language.

While English *wh*-phrases need to check the feature set [+*wh*, +*Q*], Hungarian *wh*-phrases are less constrained and in that they only require to check a [+*Op*] feature. Van Craenenbroeck and Lipták argue that these features can be checked either in SpecFocP or in SpecDistP in Hungarian, yielding the result that not only *wh*-phrases but any phrases that can move to these positions can feed sluicing.

5.5.2 Sluicing in MECs

MECs are interesting for the study of sluicing for at least two reasons. On the one hand, they provide novel support for the *wh*/sluicing correlation of Van Craenenbroeck and Lipták (2006). On the other hand, they also question this correlation and, more seriously, they question the classical definition of sluicing as IP-ellipsis.

Van Craenenbroeck and Lipták (2006) predict that MECs will allow for sluicing just in case the *wh*-movement they perform mimics the one in interrogatives. The previous two subsections strongly suggest that this is indeed the case: the contrast between Hungarian *wh*-MECs and *a-wh*-MECs is particularly telling (see §5.3.2), but also MECs embedded under dynamic predicates and Italian MECs seem to point in the same direction (see §5.3.3). The facts are clear enough, so I am not going to repeat them here. What is particularly interesting about the Hungarian facts is that we are dealing with purely formal minimal pairs, since both types of MECs are truth-conditionally and “func-

tionally” indistinguishable. Yet, the availability of sluicing strictly follows the wh/sluicing correlation in (136).

The conclusion that I will draw from sluicing in restructuring MECs (see §5.2 and §5.4) are less satisfying for the current theoretical *status quo*. In fact, both basic tenets of theories of sluicing are put in danger. Firstly, the relevant type of sluicing is almost certainly not an IP-ellipsis. Secondly, sluicing fed by short wh-movement does not seem to track interrogative sluicing. I will use Czech for purposes of illustration but I believe that any other language that displays short wh-movement, as characterized in §5.3.1, could serve to support the same point.

Consider the example in (137). What is the identity of the elided constituent? In §5.4.1 and §5.4.2 we saw that Czech MECs are ambiguous between vPs and CPs. If the reduced MEC in (137) corresponds to a CP, there is no issue. If, on the other, it is a vP, problems for the theory of sluicing arise.

- (137) *Czech*
 Karel chtěl jít ven, ale neměl s kým.
 Karel wanted go:INF out but NEG:had with who
 ‘Karel wanted to go out but there was nobody to go out with.’

I argued that the hallmark of CP-hood is the absence of clitic climbing. If sluiced MECs like (137) are CPs, then clitics are expected not to be able to climb out of them, in which case they would be caught in the ellipsis site and could never surface. If, on the other hand, the wh-phrase can be preceded by clitics that unambiguously originate within the MEC, the sluiced MEC is clearly a vP. The facts appear to favor the former position. As witnessed by (138a), the clitic *ji* ‘her’ can either climb or stay in the MEC. However, if sluicing is applied, as in (138b), clitic climbing is ruled out.

- (138) *Czech*
 a. Karel *ji* chtěl pozvat, ale bohužel { *ji* }
 Karel her:CL wanted invite:INF but unfortunately her:CL
 neměl kam { *ji* } pozvat.
 NEG:had where her:CL invite:INF
 b. Karel *ji* chtěl pozvat, ale bohužel (* *ji*)
 Karel her:CL wanted invite:INF but unfortunately her:CL
 neměl kam.
 NEG:had where
 ‘Karel wanted to invite her but there was no place he could invite her to.’

From (138) it might seem that the battle is won by standard sluicing theories: because sluicing is impossible at the vP level in the first place, the only possible structural analysis of (138b) is a CP. The presence of a CP accounts for the impossibility of clitics to climb, which results in their necessary presence in the

ellipsis site. Unfortunately, drawing this conclusion is premature. There is an alternative explanation of the ungrammaticality of the clitic-climbing variant of (138b). It is well-known that ellipsis systematically leads to so called movement “bleeding”. As first observed by Lasnik (1999) for T-to-C movement in English, movement is prohibited if it targets an expression that would be elided if it didn’t move. If sluicing in English is IP ellipsis and if verbs undergo movement to C in questions, one would expect the remnant to be like the ungrammatical (139B).

- (139) A Dave invited somebody.
 B *[_{CP} Who [_{C'} did [_{IP} ...]]]?

Whatever the ultimate explanation of the above effect is (see e.g. Boeckx and Stjepanović 2001; Van Craenenbroeck and Lipták 2008), it is clear that the movement of the verb needs to be “bled”, i.e. must not take place in order to arrive at a grammatical result. The assumption that clitic movement is targeted by bleeding is strongly supported by the following observation. The second clause of (140a) displays classical VP-ellipsis. The clitic *ji* ‘her’ must also be targeted by the ellipsis, even though its climbing is obligatory in non-elliptical contexts, as shown by (140b).

- (140) *Czech*
 a. Měli *ji* ukazovat, ale bohužel (**ji*) nebudou [_{VP}
 should her show:INF but unfortunately (her:CL) NEG:will
 ...].
 ‘They were going to show her but unfortunately they won’t [show her].’
 b. Bohužel {*ji*} nebudou {**ji*} ukazovat.
 unfortunately her:CL NEG:will her:CL show
 ‘Unfortunately, they won’t show her.’

This example clearly shows that the impossibility for clitics to move out of sluiced MECs need not be due to their categorial status. The MECs could as well be vPs with clitic movement prohibited by bleeding.

There are two pieces of evidence that support the availability of sluicing at the vP level. In §5.4.2 I showed that whenever Czech MECs are CPs, the verb that selects them behaves as a control verb, consequently prohibiting the use of impersonal and weather predicates as the main MEC-predicate. The example (141) shows that MEC-sluicing is perfectly possible even with weather-predicates, strongly suggesting that the MEC is not a CP:

- (141) *Czech*
 Myslel jsem, že je tu mokro, protože pršelo, ale pak jsem
 thought be:1SG that is here wet because rained but then be:1SG
 si uvědomil, že nemělo kdy [vP ...].
 REFL realized that NEG:had when
 ‘I thought it was wet here because it rained but then I realized that
 there was no time to rain.’

Another piece of evidence comes from instances of sluicing where the remnant contains more than just the *wh*-word. For instance in Hungarian the landing site of *wh*-movement is located below the complementizer *hogy*, making it possible for the complementizer to survive sluicing.

- (142) *Hungarian* (Van Craenenbroeck and Lipták 2008:141)
 János meghívott egy lányt, de nem tudom hogy kit [IP ...]
 János invited a girl but NEG know:1SG that who
 ‘János invited a girl, but I don’t know who.’

This effect can be replicated for Czech MECs in which the *wh*-word moves in front of a non-verbal predicate such as *pyšný* ‘proud’ in (143) but not as high as the infinitival copula *být* ‘be’ associated with the predicate.

- (143) *Czech*
 Karel nemá být na co pyšný.
 Karel NEG:has be:INF on what proud
 ‘Karel has nothing to be proud of.’

Since the copula is base-generated in the position where it is pronounced, it is not targeted by bleeding and is therefore predicted to be contained in a sluicing remnant. As illustrated in (144), this prediction is borne out.

- (144) *Czech*
 Karel je hrozně pyšný, i když nemá být na co [AP ...].
 Karel is very proud even when NEG:has be:INF on what
 ‘Karel is very proud, even though he has nothing to be proud of.’

So far, I have shown that sluicing in restructuring MECs is an instance of vP-ellipsis, in some cases even AP-ellipsis. This conclusion clearly goes against the classical view of sluicing as IP-ellipsis. Yet, it might favor the more flexible approach of Van Craenenbroeck and Lipták (2006), under which sluicing in a language tracks the syntax of interrogative *wh*-movement in that language. Indeed, in §5.3.1 I argued that *wh*-movement in MECs should be identified with what I called short *wh*-movement (or indef-movement), which subsumes the movement of indefinite pronouns but also the low movement of *wh*-words in multiple interrogatives. If van Craenenbroeck and Lipták’s *wh*/sluicing correlation holds, it should be possible to show that sluicing in restructuring MECs is simply parasitic on sluicing in multiple interrogatives. However, proving this

turns out to be anything but straightforward. Let us take a run-of-the-mill example of a multiple interrogative in Czech, (145). According to the present assumptions (supported e.g. by Sturgeon 2007), the higher wh-word *komu* ‘who’ is hosted by one of the left peripheral CP-projections, while the lower wh-word *co* ‘what’ occupies the edge of a vP—by hypothesis a structural position which is identical to the one of wh-words in restructuring MECs.

- (145) *Czech*
 Nevím, [CP *komu* [TP *jsi* [vP *co* *dal*]]].
 NEG:know:1SG who:DAT be:2SG what:ACC gave
 ‘I don’t know what you gave to whom.’

If the low wh-movement in multiple interrogatives can feed sluicing, then one would expect (146a) to be grammatical. However, the only grammatical way to proceed with multiple-wh sluicing is for the wh-words to be the only expressions in the remnant, as in (146b).

- (146) *Czech*
 Víím, že *jsi* *každému* *něco* *dal*, ale
 know:1SG that be:2SG everybody:DAT something:ACC gave but
 nevím...
 NEG:know:1SG
 ‘I know that you gave something to everybody, but I don’t know...’
 a. *... *komu* *jsi* *co* [vP ...]
 who:DAT be:2SG what:ACC
 b. ... *komu* *co* [vP ...]
 who:DAT what:ACC
 ‘...who you gave what.’

Notice that the ungrammaticality of (146a) cannot be due to bleeding: the auxiliary *jsm* ‘be:1SG’ is base-generated where it is spelled out. What structure underlies the sluicing in (146b)? Arguably, it is the marginal (to my ears) structure (147), where both wh-words move to the CP-domain (see Meyer 2003 for discussion of this type of wh-questions in Czech).⁴³

- (147) *Czech*
 ??Nevím, [CP *komu* *co* [TP *jsi* *dal*]].
 NEG:know:1SG who:DAT what:ACC be:2SG gave
 ‘I don’t know what you gave to whom.’

Whatever the proper analysis of (146b), (146a) seems to show clearly that the low wh-movement in multiple interrogatives cannot feed sluicing. Together with the observation that wh-movement in restructuring MECs *can* feed sluicing, this poses a serious problem for the wh/sluicing correlation (136) of Van Crae-

⁴³An analogous observation is made by Van Craenenbroeck and Lipták (2009) for Hungarian and Romanian for multiple focus sluicing.

nenbroeck and Lipták (2006), which establishes that sluicing of non-interrogative phrases, among which the *wh*-words in MECs undoubtedly belong, always mimics the sluicing of corresponding interrogative phrases.

5.5.3 Discussion

In the present section I exploited the knowledge gained so far for an evaluation of a theory of sluicing. Two major tenets of the theory have been questioned. Firstly, I have shown that the structure elided under sluicing in restructuring MECs is a *vP* (or an *AP*) rather than an *IP*, as usually assumed. Secondly, sluicing in restructuring MECs is apparently not directly related to interrogative sluicing. Though the structural position of the *wh*-word is available in multiple interrogatives, it cannot feed sluicing.

On the face of it, there are two possible ways to deal with these facts. The first option is to deny that the kind of ellipsis in restructuring MECs is sluicing. After all, it clearly involves *vP*-ellipsis and moreover, it is unrelated to sluicing in interrogatives. On the other hand, it is obviously functionally related to standard interrogative sluicing and to *CP*-level sluicing in MECs, which *is* parasitic on interrogative sluicing and which is very common cross-linguistically. The second option is to endorse the present reasoning and consequently rebuild the theory of sluicing.⁴⁴

But what remains of a theory when both of its two basic tenets must be abandoned? This question brings us to the very issue which was recently raised by Van Craenenbroeck and Lipták (2009:§1), who start out their paper from the observation that “[t]he study of ellipsis in current generative grammar is still strongly—perhaps too—construction oriented.” Van Craenenbroeck and Lipták (2009) attempt to make a step away from this taxonomical approach to ellipsis by lifting the stipulation that sluicing is limited to *wh*-questions, by showing that also focus fronting can feed sluicing. However, even though their approach is arguably more general than the one promoted by their predecessors, Lobeck (1995) and Merchant (2001), construction-specificity still creeps into their account. Sluicing is not a type of ellipsis that is limited to interrogative syntax, yet, it is one that it is *constrained* by interrogative syntax. One has to wonder whether this is a step forward. The main question still remains: Why does interrogative syntax play a role in sluicing at all? Why is there an elliptical process that targets specifically interrogatives, be it directly (Lobeck, Merchant) or indirectly (van Craenenbroeck and Lipták)? It seems to me that an answer to this question will always be stipulative, esp. in a system like van Craenenbroeck and Lipták’s, where interrogative syntax does not form a natural class across languages (English uses *SpecCP*, Hungarian *SpecFocP*).

⁴⁴A third option, which is based on a weaker interpretation of the *wh*/sluicing correlation (136) than I have (possibly mistakenly) assumed, was suggested to me by Anikó Lipták (p.c.): Sluicing in restructuring MECs is licensed by interrogative-related features. The analogous sluicing in actual interrogatives, which is ungrammatical, as witnessed by the example (146a), is ruled out for independent reasons.

The conclusion arrived at in this section may well be taken as a stimulus to take a further, more decisive step away from construction-specificity: restructuring MECs display an elliptical process that suspiciously resembles sluicing and yet, lacks what have always been considered the distinctive features of sluicing. Ideally, what we call ellipsis should receive a more or less unified account, irrespective of the syntactic category targeted by it and the syntactic category of the remnant: the explanation should shift from syntax to the interfaces and plausibly be couched within Merchant's (2001) semantic conditions on the remnant (in terms of contrast) and the elided material (in terms of givenness). I leave further investigations into the properties of sluicing in MECs for future research.

5.6 Conclusion

I started this chapter by discussing two related hypotheses. According to the first hypothesis, lexical predicates, such as the MEC-embedding predicate BE, are less constrained in syntactic selection than functional heads, such as the Qu operator selecting questions or the D operator selecting free relatives. According to the second hypothesis, there are no specific syntactic constraints on wh-movement, such as wh-feature checking, and wh-movement therefore reduces to adjunction. The conjunction of these hypotheses raises the expectation that the syntax of MECs is much more flexible than related A-bar constructions.

In §5.3, I showed that the main determinant of possible syntactic sizes of MECs is the style of wh-movement which a particular language allows for. The basic distinction is drawn between languages that allow for short wh-movement, i.e. wh-movement to the edge of vP, and languages that do not. Only the former class of languages can form what I called restructuring MECs, i.e. MECs that exhibit restructuring phenomena such as clitic climbing. Languages of the latter class construct their MECs according to the interrogative pattern and less commonly according to the relative clause pattern, i.e. essentially as CPs. If any differences in syntactic behavior are observed between MECs and their corresponding interrogatives/relatives, they are predicted to boil down to the absence of the functional operator (Qu/D) in MECs. I presented evidence from Hungarian showing that this prediction is in fact borne out.

In §5.4, I developed the argument further, concentrating on the raising and control properties of MECs and MEC-embedding predicates. I showed that restructuring MECs naturally map to raising structures. This is because they do not contain the necessary functional structure to license PROs. Non-restructuring MECs, on the other hand, map to control structures. While obligatory control seems to be the default option, languages exhibiting non-obligatory control are also attested. Finally, I showed that Russian MECs represent a third type of control structure, one where the control predicate appears within the MEC.

The last section of the chapter, §5.5, is a brief discussion of the consequences

of the present findings for the theory of sluicing. While some well-established generalizations about sluicing were corroborated, others might need reconsideration.

CHAPTER 6

Issues of the syntax-semantics interface

In the preceding chapter, I laid out some overarching hypotheses concerning selection and *wh*-movement which naturally follow from the novel proposal put forth in Chapter 4. While exploring the predictions of these hypotheses I demonstrated that the internal syntax of MECs is more flexible than previously assumed. At the same time, I provided an extension of the syntactic typology of MECs sketched in Chapter 2, a typology enriched by theoretical insights and motivated by language-specific properties that are independent of MECs. The discussion in the present chapter is based on exploring various predictions and consequences of the event-extension analysis, as set up and developed in the previous two chapters. In particular, the dissociation of the base-generation position of the MEC from the position of a corresponding nominal (participant) argument makes interesting predictions concerning traditional problems of MECs such as matching effects, the impossibility for MECs to be targeted by passivization, or the necessity to strand the *wh*-word in MEC-topicalization. Substantial attention will also be devoted to the proper treatment of multiple *wh*-MECs and to the semantic formalization of subject-coreference relations (raising and control), as discussed in the preceding chapter.

The chapter is organized as follows. I start with establishing the state of the art in the study of MEC semantics (§6.1). I will characterize the existing types of semantic analyses, paying special attention to their explanatory potential. This is done by evaluating them with respect to a handful of basic empirical criteria—phenomena that any analysis should be able to account for. In §6.2, I put the event-extension analysis to the same scrutiny and show that it fares very well. The only remaining problem—multiple *wh*-MECs—is discussed at length in §6.3. After finding out what the actual truth conditions

of multiple wh-MECs are, I introduce a minor modification of the semantics of the MEC-embedding predicate BE, enabling it to select MECs of various semantic types—depending on the number of wh-words involved. In §6.4 I come back to the issue of MEC-subject identification, especially control. I will show that the puzzling observations about MEC wh-subjects made in the preceding chapter can be turned into an interesting argument in favor of the property (as opposed to propositional) analysis of control constituents. In particular, I will argue that PRO is to be construed in the same way as wh-words, i.e. as a lambda-operator. In §6.5, I turn to one of the specific components of the event-extension analysis—the backgrounding of the participant argument of BE. The antipassivization strategy proposed in §4.4, under which the participant argument position is removed from syntax, will be compared with an alternative strategy under which the position is not removed but rather filled with a (potentially empty) DP. I will suggest that both strategies might be needed to cover the whole set of empirical facts.

6.1 Semantics: state of the art

The preceding chapter was introduced by a section on the state of the art in the study of MECs' internal syntax. In this chapter, I get back to issues of MECs' semantics and syntax-semantics interface and that is why it might be useful to summarize and critically review previous research conducted in this field. In what follows, I go through all the existing semantic proposals and try to evaluate their explanatory potential. I use the observations made earlier (see Chapter 2 and throughout the literature, in particular observations relating to the scope, distribution, availability to host more than one wh-operator, and the discourse referential potential of MECs. Three basic analyses have been proposed: a quantificational analysis under which the MEC is an *existential generalized quantifier*, a non-quantificational analysis that treats the MEC as denoting a *property*, and another type of non-quantificational analysis, which considers the MEC to have a *propositional* semantics. I discuss the quantificational analyses in §6.1.1 and the non-quantificational analyses in §6.1.2. In §6.1.3 I summarize the results, concluding that the propositional analysis has the best, though not perfect empirical coverage.

6.1.1 Quantificational analyses

Three authors have argued that MECs are quantifiers: Pesetsky (1982), Rapaport (1986), and Grosu (2004). Unfortunately, none of the proposals is perfectly clear and fully worked out. In order to make them fit for evaluation, I supplement the analyses with explicit semantic proposals, despite the risk of misinterpreting them.

Pesetsky (1982)

The first semantically relevant proposal was made in Pesetsky (1982). Largely for syntactic reasons, Pesetsky treated MECs as existential generalized quantifiers that undergo quantifier raising at LF. His LF-analysis of the Russian MEC in (1) is given in (2) (where $CP \approx S'$ and $IP \approx S$):

- (1) *Russian*
 Ja kupil čto čitat'.
 I bought what:ACC read:ACC
 'I bought something to read.'
- (2) Pesetsky (1982:152)
-

Following May (1977), Pesetsky further assumes that the wh-word undergoes a conversion to an existential quantifier. He is not specific about the role of the descriptive content of the MEC (*PRO čitat'* 'PRO read'), but it is reasonable to assume that it further restricts the variable over which the wh-quantifier (node ①) quantifies. The matrix clause *ja kupil* 'I bought' (node ②) serves as the quantificational nucleus (the constant **sp** stands for 'speaker'). All in all, Pesetsky's discussion entails the semantics in (3), where ③ expresses the truth-conditions of (1).

- (3) ① $\rightsquigarrow \lambda P \exists x [(\mathbf{Read}(x) \wedge \mathbf{Thing}(x)) \wedge P(x)]$
 ② $\rightsquigarrow \lambda y [\mathbf{Bought}(\mathbf{sp}, y)]$
 ③ $\rightsquigarrow \exists x [(\mathbf{Read}(x) \wedge \mathbf{Thing}(x)) \wedge \mathbf{Bought}(\mathbf{sp}, x)]$

Pesetsky's main motivation to adopt a quantificational analysis for MECs has to do with selection. He argues that the trace left after quantifier raising has a nominal status and thus can satisfy the selectional restrictions of the matrix predicate. This allows him to use a CP syntax, corroborated by the affinity to questions (e.g. no matching effects), and capture the nominal distribution at the same time. Pesetsky further argues that the analysis correctly captures another distributional restriction, namely that MECs cannot occur in external argument positions, as a violation of the Empty Category Principle (ECP): the trace left after the QR of the MEC is not properly governed because (i) it is

not governed by V (being in a VP-external position) and (ii) it is not governed by the moved MEC due to a categorial mismatch (S' vs. NP). Unfortunately, this argument does not easily carry over to current theories, which no longer work with the notion of (proper) government.¹

The problems with this quantificational analysis are numerous. First of all, it vastly overgenerates, as it predicts MECs to be licensed in the direct object position of any verb that assigns accusative to its complement. As we saw in §2.2.1, MECs are licit only as objects of a very limited number of predicates. Relatedly, the analysis fails to capture the correlation between the existential construal of MECs with the existential nature of the selecting predicates. Turning to more semantic problems, the analysis makes a wrong prediction about the scope of MECs. Since the MEC quantifier raises, it is predicted to take scope in any position of the matrix clause (following May 1977). This is at odds with the observation (first made by Plann 1980) that MECs always take scope *below* any matrix scope-taking elements, such as negation or (other) quantifiers. In principle, the MEC cannot outscope the verb it is selected by, as discussed in §2.2.7.

Rappaport (1986)

It is relatively difficult to interpret Rappaport's (1986) account, partly for the use of terminology which is not very standard and which remains undefined in the paper. I would like to translate the proposal in more common terms, taking the risk of misinterpretation. Rappaport treats the matrix verb ('be' in particular) as the locus of the construction. It is a transitive predicate, taking the wh-word as its internal argument and the dative subject (see §5.4.4 for discussion) as its external argument. Thus, the wh-word, which Rappaport calls a "quantifier pronoun" and a "syntactic quantifier", originates in the matrix clause. The role of the infinitival clause is one of an obligatory modifier/adjunct of the wh-word. Rappaport goes on to say that the MEC is interpreted as "some/no *X* with property *Y* where', where the property *Y* is identified by the infinitival clause" (p. 26). This suggests that the infinitival clause *restricts* the wh-quantifier (i.e. modifies its restriction), rather than "modifying" it, exactly as in Pesetsky's account. In order to achieve interpretability, Rappaport would therefore also have to assume quantifier raising, inheriting all the problems of Pesetsky's account, from which it would be technically indistinguishable. This is a somewhat surprising finding, given that Rappaport discusses and dismisses Pesetsky's analysis.²

¹According to Pesetsky, the approach also explains why the Russian negative existential verb *net* 'there is not' only tolerates arguments in genitive (even though optionality with nominative would be expected). As far as I can tell, this argument also finds no clear correlate in current standard theories. I invite the interested reader to consult the original literature.

²Rappaport criticizes Pesetsky basically on the grounds of the label that Pesetsky uses for MECs, namely "infinitival free relatives", disregarding the details of his proposal.

Grosu (2004)

The quantificational analysis of MECs was recently revived by Grosu (2004).³ Following much previous work, Grosu assumes that MECs are syntactically CPs. Their quantificational force is argued to originate in a special type of C head. In particular, the C head of MECs bears the features $[-INDIC]$ and $[+GQ\exists]$.⁴ It is the latter feature (“existential generalized quantifier” feature) that is responsible for the existential construal of the whole MEC. The former feature (“non-indicative” feature) is in turn responsible for the non-indicative/modal nature of the MEC-internal predicate. The fact that two hallmark properties of MECs are introduced by a lexical stipulation makes Grosu’s analysis conceptually unattractive. Nevertheless, by adopting this kind of quantificational analysis, Grosu accounts for a new observation, namely that MECs cannot serve the function of predicates:

- (4) *Romanian* (Grosu 2004:428)
 *Săpunul ăsta este cu ce să te speli pe față.
 soap.the this is with what SBJ REFL.2SG wash on face
 ‘This piece of soap is something with which to wash your face.’

This fact has no straightforward explanation under the competing nonquantificational analysis, where MECs are treated as properties (i.e. expressions of type $\langle et \rangle$); see §6.1.2.

Unfortunately, Grosu provides no formally explicit semantic analysis, which complicates the proper evaluation of his proposal and its potential predictions. Yet, unlike Pesetsky and Rappaport, he is aware of the problems pointed out above and suggests tentative solutions. Concerning the limited distribution, Grosu assumes that the C head (or more precisely its $[+GQ\exists]$ feature) must enter into some sort of agreement or concord relation with the matrix predicate, which therefore must have an existential flavor. The fact that MECs take the narrowest scope is argued to be a consequence of the $[-INDIC]$ feature on the C head. How exactly this feature maps onto semantic scope of the whole CP remains obscure. A remaining problem that Grosu’s analysis faces are MECs with multiple wh-words. As opposed to Pesetsky (1982), Grosu (2004) was already very well aware of the fact that MECs in many languages are capable of hosting multiple wh-words. Nevertheless, there is no straightforward way of incorporating this insight into his analysis. The reason is that generalized quantifiers are by definition selective and cannot handle (i.e. bind) more than

³Apparently, Grosu constructed his analysis independently of Pesetsky (1982) and Rappaport (1986). He does not cite Pesetsky (though he must be aware of his contribution, as is clear from his previous papers), and does not seem to recognize the relevant aspects of Rappaport’s analysis.

⁴The latter feature could be seen as a modern reformulation of May’s (1977) conversion rule (adopted also by Pesetsky 1982), where a wh-word in an A-bar position converts into an existential quantifier.

one variable.⁵

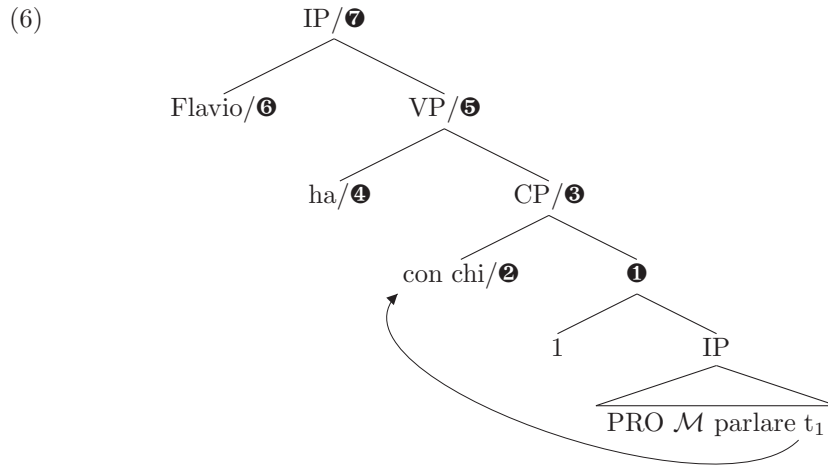
6.1.2 Non-quantificational analyses

There are two versions of the non-quantificational analysis: one that assigns the MEC the type of a property $\langle et \rangle$, and another that treats the MEC as a proposition $\langle st \rangle$. Both of these options have been explored in some detail and I discuss them in turn below.

Property-based analysis

The property analysis was first informally proposed by Grosu and Landman (1998) and then formalized by Caponigro (2001, 2003).⁶ The property analysis treats MECs essentially as “incomplete free relative clauses”, both syntactically and semantically. Syntactically, they are free relatives *minus* the D-head, i.e. essentially CPs and therefore almost indistinguishable from embedded wh-questions. Semantically, they are free relatives *minus* the semantics of the D-head, i.e. an *iota/sigma* operator. The tree below is adapted from Caponigro (2003) and illustrates the core syntactic aspects of the property-based analysis.

- (5) *Italian* (Caponigro 2003:98)
 Flavio ha con chi parlare.
 Flavio has with whom speak.
 ‘Flavio has somebody he can talk to.’



The semantic derivation corresponding to the tree above is given in (7). Notice that the MEC (node 3) is indistinguishable from an ordinary relative clause

⁵Alexander Grosu (p.c.) informs me that his intention was to deal with multiple wh-MECs by quantification over individual tuples. See §6.3 for more discussion.

⁶Izvorski (1998) also utilizes this analysis, at least in her formal treatment. Informally, she inclines to a propositional analysis, which is discussed below.

(under a standard analysis), as it denotes a property. The existential force originates in the matrix verb (node ④), which is treated as an unrestricted generalized quantifier. As its internal argument, it selects the property denoted by the MEC and states that there is at least one individual with that property (⑦). The identification of the embedded subject takes place via subject-control from *Flavio* (represented as the individual constant **f** (node ⑥)). The symbol \mathcal{M} stands for a modal operator, which, according to Caponigro, applies to the VP, before the subject enters the derivation.

- (7) ① $\rightsquigarrow \lambda x[\mathcal{M}\text{-}\mathbf{Speak.with}(y, x)]$
 ② $\rightsquigarrow \lambda P\lambda y[\mathbf{Human}(y) \wedge P(y)]$
 ③ $\rightsquigarrow \lambda x[\mathbf{Human}(x) \wedge \mathcal{M}\text{-}\mathbf{Speak.with}(y, x)]$
 ④ $\rightsquigarrow \lambda P\lambda y\exists z[P(z) \wedge \mathbf{Have}(y, z)]$
 ⑤ $\rightsquigarrow \lambda y\exists x[\mathbf{Human}(x) \wedge \mathcal{M}\text{-}\mathbf{Speak.with}(y, x) \wedge \mathbf{Have}(y, x)]$
 ⑥ $\rightsquigarrow \mathbf{f}$
 ⑦ $\rightsquigarrow \exists x[\mathbf{Human}(x) \wedge \mathcal{M}\text{-}\mathbf{Speak.with}(\mathbf{f}, x) \wedge \mathbf{Have}(\mathbf{f}, x)]$

The property-based analysis has a number of virtues, both conceptual and empirical. Its conceptual advantage is that the semantics neatly reflects the formal affinity to related structures, i.e. (free) relatives and questions (under some approaches). As opposed to the quantificational analysis, it derives the obligatory narrow scope of MECs: the MEC is forced to scope with the verb that it is selected by and any matrix scope-taking element is therefore correctly predicted to outscope the MEC. As for the distribution facts, it also fares remarkably well. Under this analysis, MECs can only be selected by predicates that take properties (rather than individual entities) as their internal arguments. Existential predicates like ‘be’ and ‘have’ can certainly be analyzed as such (following the tradition of Milsark 1974) and it is not difficult to imagine the analysis being extended to other predicates that can select MECs, such as ‘find’, ‘seek’, or ‘send’ (see §2.2.1), though no such analysis is offered by Caponigro. On the other hand, the external argument position is correctly predicted to be forbidden for MECs.

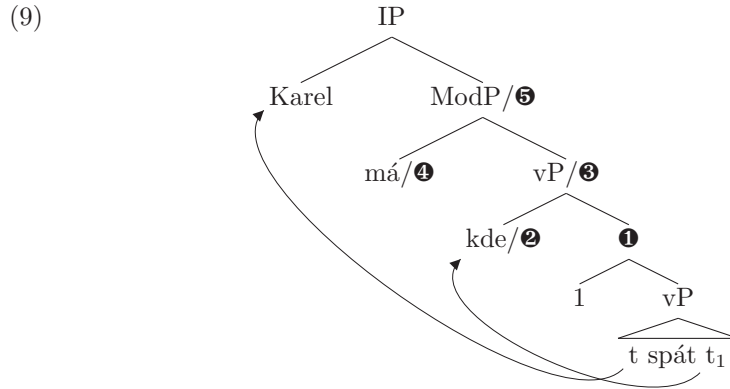
Despite the relatively neat coverage of the facts, there are still problems. The analysis needs to be further constrained with respect to the distribution in the internal argument position. The verbs that are traditionally thought of as capable of selecting property-type arguments form a proper superset of those that (cross-linguistically) select MECs, as it includes verbs like ‘need’ or ‘wear’ which do not license MECs. Another problematic distributional aspect is the ban on the predicate position, as predicates are property-type expressions *par excellence*. A potential solution to the latter problem might dwell in the fact that MECs, as opposed to ordinary predicates, contain a wh-word as an overt correlate of the variable to be bound. It has always been the intuition of scholars working on MECs that this variable requires “explicit” existential binding, which is not available in run-of-the-mill predications, where the property is simply assigned to an individual entity rather than being quantified over. The

last and arguably the most serious problem for the property analysis is one that is shared with the quantificational analysis: the existence of MECs with multiple wh-words. While it is possible to construct an MEC with more than one wh-word under this analysis, the result will be a more complex semantic type than just a property (for two wh-words it will be a two-place relation, i.e. $\langle e, et \rangle$), a type that cannot serve as input into the matrix existential predicate.

Proposition-based analysis

The proposition-based analysis was first introduced by Izvorski (1998) and Pancheva-Izvorski (2000), though only informally.⁷ The basic idea of this analysis is that MECs do not characterize or quantify over individuals (like in the property and quantificational analyses, respectively), but rather denote or characterize (depending on the particular analysis) propositions. The locus of the description of the individual is much smaller—the wh-word itself. Notice that this shift in perspective leads to no information loss, as the variable introduced by the wh-word is also restricted by the predication in which it originates. The first formal implementation of this type of analysis is given in Šimík (2009a), whose analysis I use here for illustration. MECs are assumed to be CPs (Pancheva-Izvorski) or vPs (Šimík; see Chapter 5) that are selected by a modal verb/auxiliary.

- (8) *Czech*
 Karel má kde spát.
 Karel has where sleep:INF
 ‘Karel has a place where he can sleep.’



⁷Pancheva-Izvorski says that “the existential construction provides and \exists -quantifier [used for] closing off the position left open by the interrogative syntax, **in an unselective fashion**.” (p. 62; my boldface) It is the claim about unselective binding, alongside with Pancheva-Izvorski’s syntax and her reference to Berman’s (1991) analysis of interrogatives that suggest that a proposition-based analysis is what she actually had in mind for MECs. Yet, formally, Pancheva-Izvorski’s analysis is more or less identical to Caponigro’s (2003) analysis.

The syntax in (9) maps to semantics as follows.⁸ The wh-word (node ❷) is assumed to denote a set of alternative individuals (following Kratzer and Shimoyama 2002). It combines (by some sort of alternative-friendly functional application) with the predicate created by movement (node ❶) and yields a set of propositions (node ❸)—one proposition per each individual in the wh-set. This set of propositions is then selected by a modal verb (node ❹), which states that it is possible that at least one proposition in that set is true (node ❺). As usual, the modal quantifies over a set of worlds (circumstantially) accessible from the evaluation world ($C(w)$). As argued by Pancheva-Izvorski (2000), the accessible worlds are those where the circumstances are identical to those in the evaluation world, i.e. we are dealing with so called circumstantial modality.

$$\begin{aligned}
 (10) \quad & \text{❶} \rightsquigarrow \lambda x \lambda w [\text{Sleep}(w)(\mathbf{k}, x)] \\
 & \text{❷} \rightsquigarrow \{x : \text{Place}(x)\} \\
 & \text{❸} \rightsquigarrow \{\lambda w [\text{Sleep}(w)(\mathbf{k}, [x : \text{Place}(x)])]\} \\
 & \text{❹} \rightsquigarrow \lambda \pi_{\{st\}} \lambda w \exists w' [w' \in C(w) \wedge \exists p \in \pi \wedge p(w') = 1] \\
 & \text{❺} \rightsquigarrow \lambda w \exists w' [w' \in C(w) \wedge \exists p \in \{\lambda w'' [\text{Sleep}(w'')(\mathbf{k}, [x : \text{Place}(x)])]\} \wedge \\
 & \quad p(w') = 1]
 \end{aligned}$$

Notice that under this implementation of the propositional analysis, the wh-word is not directly quantified over, its scope and force is determined by the reduction of the alternatives that it introduces, i.e. by the modal verb. In effect, the wh-word scopes together with the modal and is construed as an existential, since quantifying over propositions comes out as equivalent to quantifying over the corresponding individuals.⁹

$$(11) \quad \text{❺} \equiv \lambda w \exists w' [w' \in C(w) \wedge \exists x [\text{Sleep}(w')(\mathbf{k}, [x : \text{Place}(x)])]]$$

It turns out that this analysis goes quite a long way in accounting for the facts considered so far. First of all, unlike the quantificational analysis and the property analysis, the proposition-based analysis readily incorporates multiple wh-words in MECs. The reason is that any additional wh-word simply contributes a set of alternatives (or, an individual variable in Pancheva-Izvorski's account) and keeps the semantic type of the MEC intact. For illustration, the interpretation of (12) is given in (12a) and equivalently in (12b):

$$\begin{aligned}
 (12) \quad & \text{Bulgarian (Pancheva-Izvorski 2000:41)} \\
 & \text{Ima} \quad \text{koj} \quad \text{kâde} \quad \text{da} \quad \text{me} \quad \text{zavede.} \\
 & \text{have:3SG} \quad \text{who} \quad \text{where} \quad \text{SBJ} \quad \text{me} \quad \text{take:3SG} \\
 & \text{'I have someone to take me somewhere.'}
 \end{aligned}$$

⁸For simplicity, I assume that the subject *Karel* is interpreted in its base-position as an individual constant \mathbf{k} .

⁹In Pancheva-Izvorski's analysis the modal that selects the MEC quantifies over possible worlds only. The variable introduced by the wh-word is closed off at a higher level, by a syntactically represented existential quantifier over individuals.

- a. $\lambda w \exists w' \in C(w) \wedge \exists p \in \{\lambda w'' [\mathbf{Take}(w'')([x : \mathbf{Human}(x)], \mathbf{sp}, [y : \mathbf{Place}(y)])]\} \wedge p(w') = 1$
 \equiv
 b. $\lambda w \exists w' \in C(w) \wedge \exists x \exists y [\mathbf{Take}(w')([x : \mathbf{Human}(x)], \mathbf{sp}, [y : \mathbf{Place}(y)])]$

The analysis fares surprisingly well also with respect to distributional and scopal properties. Concerning the distribution, the MEC is predicted to appear as an object of a very limited set of predicates, namely those that can be analyzed as modals. The analysis therefore covers the core cases of embedding under predicates ‘be’ and ‘have’. Any external argument position as well as the predicate position are ruled out because of type-mismatch. Concerning the scope, the *wh*-word (because it is the *wh*-word, rather than the whole MEC, whose scopal properties are relevant under this analysis), scopes very low and can never outscope matrix quantifiers (at least under my analysis; Pancheva-Izvorski’s analysis is not that straightforward). In fact, in Šimík (2009a) I argue that this analysis correctly predicts one previously unobserved property of MECs, namely the fact that the individual variables associated with the *wh*-words fail to introduce discourse referents. This is illustrated in the example (13). Notice also that the English translation is perfectly acceptable, pointing to a difference between MECs and corresponding infinitival relative clauses.

- (13) *Slovenian* (Marko Hladnik, p.c.)
 a. Na srečo sem imel koga_i vprašati.
 luckily be:1SG had who ask
 ‘Luckily, I had somebody who I could ask.’
 b. #pro_i Dela na univerzi.
 he works at university
 ‘He works at the university.’

The reason for the failure of discourse referent introduction is that the *wh*-word introducing the variable is captured within the scope of the modal and the existence of the individual in the actual world is thus not guaranteed. In the non-propositional analyses discussed above, the modal takes a narrow scope and such referential opacity is therefore not predicted.

It seems that the propositional analysis has the best empirical coverage. Unfortunately, there is one aspect in which the analysis is too powerful: There is no straightforward way in which embedding predicates other than ‘be’ and ‘have’ can be incorporated into this analysis. It seems unlikely that a verb like ‘send’ could be analyzed as a modal selecting for a propositional argument. Thus, while the analysis could be used for languages that allow for no other predicates than ‘be’ and ‘have’ (Czech, Polish, Italian), it covers only a small subset of MECs from all other languages.

6.1.3 Summary

I reviewed the existing semantic analyses of MECs and evaluated them with respect to a number of properties, mainly scopal and distributional. The properties I considered were (i) the obligatory narrow scope with respect to matrix quantifiers, (ii) the impossibility to appear in external argument (EA) positions, (iii) the impossibility to appear in the predicative (PRED) position, (iv) a very limited distribution in the internal argument (IA) position, (v) the availability of multiple *wh*-words, (vi) the failure to introduce a discourse referent (DR). Table 6.1 summarizes the results of this evaluation. The symbols should be read as follows: ✓ corresponds to a correct prediction, ? is a potentially correct prediction but an unclear account, * is wrong prediction, ↑ is overgeneration, ↓ is undergeneration.¹⁰

Table 6.1: Semantic analyses of MECs

	Quantificational		Non-quantificational	
	Basic	Grosu	Property	Proposition
Narrow scope	*	?	✓	✓
No EA position	?	?	✓	✓
No PRED position	✓	✓	*	✓
IA position	↑	?	↑	↓
Multiple <i>wh</i> -words	*	*	*	✓
DR introduction	*	*	*	✓

The basic quantificational analysis (Pesetsky, Rappaport) has problems with capturing the narrow scope of MECs and massively overgenerates with respect to the distribution: MECs are predicted to be felicitous in many more positions (internal and external argument) than actually attested. Under Pesetsky's analysis, the ban on the EA position follows from the empty category principle, which, however, finds no straightforward correlate in current theories. In his version of the quantificational analysis, Grosu attempts to address these issues but his account is far from clear and sufficient. The non-quantificational property analysis correctly captures the narrow scope and the ban on external argument positions, however, it has no straightforward account of the ban on the predicative position. With respect to the internal argument position, it also overgenerates (though not so massively), as many verbs that are often considered to be property-selecting (e.g. intensional verbs like 'need') do not license MECs. Neither the quantificational analyses nor the property analysis have a clear handle on how to treat multiple *wh*-words in MECs and how to explain that MECs (or the *wh*-words in them) fail to introduce discourse referents. The non-quantificational propositional analysis is by far the most explanatory one. It makes correct predictions in all the empirical domains considered except for the distribution in the internal argument position, where it undergenerates.

¹⁰Table 6.1 will be extended in §6.2.5, after I discuss the basic predictions of the event-extension analysis.

My last remark concerns the problem of modality. The highly restricted modal flavor and force is certainly one of the core and most striking properties of MECs. Yet, none of the existing analyses offers a clear account of this MEC property. The only two studies that have paid attention to this problem are Pancheva-Izvorski (2000) and Šimík (2009a)—proponents of the propositional analysis. Both of these authors proposed solutions to the problem of the non-ambiguity of modal force. Unfortunately, these proposals are technical in nature and reduce to a redescription of the fact. Effectively, none of the existing analyses are adequate with respect to the problem of modality and either make no prediction at all or, based on a comparison with related constructions, overgenerate. For more discussion of the problem of modality and its reflection in the literature, see §4.1.2.

6.2 Basic predictions of the event-extension analysis

The preceding section provided a critical summary of the existing semantic proposals. I concluded that non-quantificational analyses are more descriptively adequate than quantificational analyses. Within the non-quantificational class, the propositional analysis appears to be superior to the property-based one, at least with respect to the selected set of criteria. In this section, I will use the same empirical criteria to evaluate the predictions of the event-extension analysis, as proposed in Chapter 4 and further developed in Chapter 5.

The event-extension analysis is of the non-quantificational property-type and consequently inherits its basic predictions. The desired ones are the obligatorily narrow scope of MECs, brought about by the fact that the quantificational force has its source in the matrix predicate, and the ban on the external argument position, which is caused by a type mismatch. These predictions are straightforward and will not be discussed any more. Of greater interest are the criteria where the property analysis has failed, in particular are the ban on the predicative position, the ban on certain internal argument positions, as well as the failure to introduce discourse referents and multiple *wh*-MECs. How does the event-extension analysis cope with these? Compared to previous property analyses, most notably the one of Caponigro (2003), the event-extension analysis is enriched by independently motivated assumptions which reduce the undesirable consequences and increase the explanatory power. Most importantly, the event-extension analysis is based on the idea that the MEC is not a run-of-the-mill argument of the matrix verb. Rather, it functions as that verb's event extension, which is furthermore weakened by a modal interpretation. As such, it is not simply of type $\langle e, t \rangle$, but rather of the more complex type $\langle s, \langle e, vt \rangle \rangle$, relating a world of evaluation with an event and an individual. It is this property of the analysis that makes the event-extension analysis superior to its basic property-based kin.

I discuss the problematic properties in turn. In §6.2.1, I show how the analysis accounts for the relevant distributional facts: the ban on the predicative position as well as the limited distribution in the (apparently) internal argument position. I also discuss the proper treatment of MECs embedded under intensional predicates like ‘look for’, as opposed to predicates like ‘want’. In §6.2.2 I briefly discuss the problem of modality, showing that as opposed to all the previous analyses, the event-extension analysis makes the right prediction concerning both modal force and flavor. The inability to introduce discourse referents is discussed in §6.2.3. We will see that the event-extension analysis patterns with the class of propositional analyses in this respect. Finally, in §6.2.4 I briefly mention the problem of multiple wh-MECs, which are not directly accounted for by the event-extension analysis. The evaluation of predictions is summarized and compared to previous analyses in §6.2.5.

6.2.1 Distribution

Consider first the ban on the predicative position, illustrated in (14), a fact that is problematic for the property analysis.

- (14) *Romanian* (Grosu 2004:428)
 *Săpunul ăsta este cu ce să te speli pe față.
 soap.the this is with what SBJ REFL.2SG wash on face
 ‘This piece of soap is something with which to wash your face.’

The event-extension analysis derives the ungrammaticality of (14). As opposed to ordinary predicates and Caponigro-style MECs, MECs in the event-extension analysis are of type $\langle s, \langle e, vt \rangle \rangle$. As such they can only function as event extensions of atomic event predicates. Even though the DP *săpunul ăsta* ‘this piece of soap’, denoting an individual (type e), is allowed to combine with the MEC by intensional function application, the result is not a proposition (type $\langle s, t \rangle$), but rather an event description (type $\langle s, vt \rangle$). The example in (14) therefore cannot be grammatical under the designated meaning. The reason why it cannot function as ordinary event descriptions, e.g. as an extension argument of an event predicate, is arguably its full-fledged sentential form.

Let us now turn to other distributional restrictions. In §6.1.2, I said that it comes as a surprise for the property analysis that MECs generally cannot appear in argument positions of predicates which have been argued to take property-type objects. Examples of these predicates include ‘look for’, but also ‘want’, and ‘resemble’. While the first predicate generally licenses MECs, the last two do not. Why?

Consider the predicate ‘look for’, a very common MEC-embedder. Notice first that looking for something does not guarantee that there is something or that one has something. If Dave looked for a pizza, we can draw no inferences about Dave having a pizza. Consequently, the sentence in (15) does not accommodate the possibility inference in (15b).

- (15) a. Dave looked for a mushroom pizza.
 b. Dave can eat a/the mushroom pizza.

Does this fact falsify the present theory? Not really. As has been previously argued, the predicate ‘look for (something)’ implies ‘finding (something)’ and therefore ‘having (something available)’. The problem is that the existence result is weakened by the condition that the thing looked for is actually found. The inference in (15b) should therefore be modified as in (16).

- (16) Dave can eat a/the mushroom pizza **if he found one**.

Traditionally, this issue is approached by evaluating the truth of the result state with respect to “successful-search worlds”. The semantics of the processual sub-predicate of ‘look for’ constructed along these lines is given in (17). Notice that the semantics is based on related MEC-embedding predicates such as ‘buy’, given in (52) in §4.3.3. It states that the process of looking for (something) extends to some subevent which exists in all possible worlds in which the search is successful ($S(w)$).

- (17) $\text{LOOK.FOR} \rightsquigarrow \lambda w_s \lambda E_{\langle s, vt \rangle} \lambda x_e \lambda e_v \exists e'_v [\text{Look.for}(w)(e') \wedge \theta(e') = x \wedge \forall w'_s \in S(w) : \exists e''_v [E(w')(e'') \wedge e = e' \rightarrow e'']]$

The predicate that LOOK.FOR selects for is either AT+BE or simply BE. Thus, the whole complex predicate ‘look for’ corresponds to LOOK.FOR+AT+BE or LOOK.FOR+BE. This leads to the entailment that the process of looking for (something) extends to a state of there being/having (something) such that it is conditioned by the successful search. For illustration, consider the following example.

- (18) *French* (adapted from Suñer 1983:385,fn10)
 Jean est en train de chercher pour qui travailler.
 he is currently of look.for:INF for whom work:INF
 ‘He is looking for somebody for whom he could work.’

The truth conditions of (18) are given in (19). The sentence is true in some world iff the event of looking for (somebody), initiated by Jean, extends to an event of there being somebody, though just in case the event of looking for (somebody) is successful, i.e. if somebody was found, which in turn extends to a potential event characterized by Jean’s working for the person that was found.

- (19) $\lambda w \exists e \exists e''' [\text{Look.for}(w)(e''') \wedge \theta(e''') = \mathbf{j} \wedge \forall w' \in S(w) : \exists e'''' [\exists e' \exists x [\text{Exist}(w')(e') \wedge \theta(e') = x \wedge \exists w'' \in C(w') : \exists e'' [\text{Work}(w'')(e'') \wedge \text{Ben}(e'') = x \wedge \text{Ag}(e'') = \mathbf{j}] \wedge e'''' = e' \rightarrow e''']] \wedge e = e''' \rightarrow e''''']$

Once the existence result state is allowed to be evaluated to some other worlds than the one with respect to which the higher sub-predicate is evaluated, we run the danger of overgenerating. As I reported in §2.2.1, no language allows

the embedding of MECs under intensional verbs like ‘want’ or ‘need’.

- (20) *Spanish* (Cintia Widmann, p.c.)
 *Juan quiere qué ponerse para la ceremonia.
 Juan wants what put.on:INF.REFL for the ceremony
 ‘Juan wants something to put on for the ceremony.’

Yet, these verbs have been analyzed in close parallel to the above analysis of ‘look for’ (see, e.g., Moltmann 1997 and the references cited therein), i.e. as modals containing a result state of there being/having something/someone, in this case conditioned by fulfilled desires (bouletic modality). Clearly, there must be some relevant difference between ‘look for’ on the one hand and ‘need’ and ‘want’ on the other, a difference that prevents the latter from embedding MECs. I would like to suggest, following Schwarz (2007), that the difference lies in the type of argument that the predicates select for.

It has been a matter of ongoing controversy whether the presently discussed intensional verbs, also called intensional transitive verbs, are to be analyzed as property- or proposition-embedding.¹¹ Under the property analysis, the LF of sentences like *I need a secretary* derives directly from the surface structure in that *a secretary* is represented as an NP/DP, and translates to an $\langle e, t \rangle$ type expression. Under the proposition analysis, the same expression *a secretary* corresponds to a more complex LF, namely *have a secretary*, which in turn translates to an $\langle s, t \rangle$ type expression. Some authors have argued that all intensional transitive verbs are to be analyzed as property-embedding (see mainly Zimmermann 1993, Van Geenhoven and McNally 2005, and the references cited therein), others have argued that all of them have to be analyzed as proposition-embedding (see mainly Larson et al. 1997). Recently, Schwarz (2007) provided some novel arguments that both analyses are necessary. In particular, he argues that ‘look for’ selects for properties and ‘need’ (and arguably ‘want’) select for propositions. Now, there is a relatively straightforward way in which Schwarz’s distinction carries over to the present event-based system. While the predicate ‘look for’ corresponds to a complex event expressing the extension from a process of looking for to the state of existence, the truth of which is relativized to the success of the search process, and the existence predicate accommodates a nominal argument, no such event structure is present in the representation of predicates like ‘want’ or ‘need’. Instead, these are represented simply as modals (possibly stative predicates) which select for proposition-type complements instead of event extensions. For this reason, they cannot incorporate the stative predicate BE (or AT+BE) and consequently cannot select MECs.

The last type of predicate which was problematic for the property analysis of MECs is the intensional predicate ‘resemble’. Under an analysis such as the one of Zimmermann (1993), the object of ‘resemble’ is of the property-type. Yet, this predicate is incapable of selecting MECs. Once again, the event-extension

¹¹Intensional verbs have also been argued to embed intensional generalized quantifiers, cf. Moltmann (1997). I leave this option aside.

analysis makes the right prediction, since it does not assume that MECs are of type $\langle e, t \rangle$ but rather of type $\langle s, \langle e, vt \rangle \rangle$. Notice also that the semantics of ‘resemble’ cannot be naturally modified in such a way that would enable it to select MEC-type objects. The reason is that it cannot possibly incorporate the existence result state.

In sum, I showed that the event-extension analysis successfully sidesteps all the problematic predictions of the property-type analysis, on which it is based. Thanks to its more complex semantic type, the MEC cannot function as a predicate, nor can it appear in the object position of verbs that have been argued to select property-type objects, such as ‘need’, ‘want’, or ‘resemble’. The reason why these intensional predicates cannot select MECs is that they fail to incorporate the existence result state, which is responsible for the availability inference. In this respect, they differ from the intensional predicate ‘look for’, which can be analyzed as involving the relevant result state, though relativized to a set of successful-search worlds.

6.2.2 Modality

The event-extension analysis makes use of the insight of Pancheva-Izvorski (2000) and Šimík (2009a), who argue that the source of modal quantification is not MEC-internal but rather MEC-external. In particular, it is incorporated in the selecting predicate. As opposed to the previous approaches, which more or less stipulate the properties of the modal quantifier, the present analysis attempts to motivate these properties by the assumption that the embedding predicates come with what I called the availability inference. This pragmatic inference gives rise to the grammaticalization of an argument position within the argument structure of the MEC-embedding predicate. A formalization of this idea was offered in Chapter 4. At this point, I provide an informal discussion showing that the approach makes the exact right prediction, concerning both modal force and flavor.

The force of the modality is existential, just like the force of the availability inference in (21a). Universal force is ruled out, since it is not supported by the availability inference, cf. (21b).

- (21) I have/bought a car.
 a. I *can* drive the car.
 b. #I *have to* drive the car.

If my analysis is on the right track, it is no longer necessary to adopt Pancheva-Izvorski’s (2000) *ad hoc* assumption that the existential quantifier which closes off the individual variable contributed by the *wh*-word somehow contributes its force to the modal quantifier which it *c*-commands. (How exactly this is to be achieved remains unclear.) Pancheva-Izvorski suggests that this “division of labor” provides evidence that the force and flavor of modality are two grammatically independent components of modal expressions, much in the spirit of

the classical work of Angelika Kratzer (1977, 1991). Having provided an alternative and principled solution to the existential-only problem, this argument of Pancheva-Izvorski's is somewhat weakened.

The flavor of the modality is circumstantial. Once again, I have argued that this property of MECs follows directly from the availability inference.¹² Notice that other or more complex flavors of modality are not inferred at all.

- (22) I have/bought a car.
- a. *In view of the circumstances* (including the fact that I have/bought a car), it is possible for me to drive the car. [circumstantial]
 - b. *#In view of my desires*, it is possible for me to drive the car. [bouletic]
 - c. *#In view of my obligations*, it is possible for me to drive the car. [deontic]
 - d. *#In view of my physical/mental dispositions*, it is possible for me to drive the car. [ability]

The prediction made by the event-extension approach is crucially based on the assumption that the modal quantifier is not located in the infinitival clause itself, as it is in infinitival questions or relatives (cf. Bhatt 2006), but rather in the matrix verb. First, this comes as a surprise, as one would never think of predicates like 'buy' or 'send' as modals. But this is precisely what the availability inference achieves—it adds a modal component to the result state of these predicates.

6.2.3 Discourse referent introduction

The assumption that the MEC is selected by a predicate with a modal quantifier has another welcome consequence: It accounts for the failure of MECs to introduce discourse referents, illustrated again in (23).

- (23) *Slovenian* (Marko Hladnik, p.c.)
- a. Na srečo sem imel koga_i vprašati.
luckily be:1SG had who ask
'Luckily, I had somebody who I could ask.'
 - b. #pro_i Dela na univerzi.
he works at university
'He works at the university.'

While in the ordinary property analysis, the property expressed by the MEC is evaluated with respect to the evaluation world, in my analysis, the MEC is evaluated with respect to the world introduced by the modal in the MEC-embedding predicate. Consequently, the properties that characterize the indi-

¹²See also Rubinstein (2007), who argues on independent grounds that modals operating over event predicates (or, more precisely, taking event-variables as arguments of their accessibility relations) can only take up circumstantial modal flavors. It is possible that the situation in MECs is just another instance of the general restriction proposed by Rubinstein.

vidual whose existence is asserted are not necessarily attributed to the individual in the evaluation world and hence the actual existence of the characterized individual is not guaranteed. This naturally translates to the discourse referent introduction failure. As already noted above, there is a considerable level of cross-linguistic and even cross-speaker variation in judging the acceptability of continuations like (23b). However, this is hardly surprising, given that referents can be relatively easily accommodated. As witnessed by (24), discourse anaphors seem to be able to pick out referents whose existence is negated in the immediately preceding discourse.¹³

- (24) I bought no biological carrots_{*i*}. They_{*i*} were too expensive.

It is generally assumed that (24) sounds felicitous thanks to the fact that the first sentence characterizes a situation in which the existence of biological carrots is relatively clearly implied. In particular, the event of buying implies the existence of a store and the reference to biological carrots, though a negative one, implies the existence of biological carrots in that store. It is this chain of pragmatically motivated reasoning that leads to the accommodation of a referent that *they* can pick out, i.e. the biological carrots that were in the store where I went shopping. In a similar fashion, a pronoun can refer to a referent that has seemingly been introduced by an MEC. Consider the discourse in (25), where the *pro* in (25c) clearly picks out the referent introduced by *Karel* in (25a). If the sentence in (25a) is not uttered, the MEC in (25b) creates the impression of having introduced a discourse referent. However, this is hard to prove, as the contents of (25a) can also be recovered/accommodated if a suitable context is available.

- (25) *Czech*
- a. Pak přišel **Karel**_{*i*}.
then came Karel
'Then Karel came.'
 - b. Měli jsme se konečně [MEC koho zeptat]_{?*i*}.
had be:1PL REFL finally who:ACC ask:INF
'Finally, we had somebody that we could ask.'
 - c. **pro**_{*i*} Řekl nám, že...
he told us that
'He told us that...'

I conclude that the referential opacity of MECs—a property emergent in my analysis—is desirable, as it can account for many speakers' intuitions concerning discourse referent introduction. The intuition of speakers who do allow for discourse referent introduction can be accounted for by assuming the process of referent accommodation, illustrated above.

¹³I am grateful to Alexander Grosu for making me aware of this kind of examples.

6.2.4 Multiple wh-MECs

The last undesirable prediction of the property analysis is that multiple wh-MECs should in principle not exist. As discussed in §2.2.2 and as illustrated below, this prediction is clearly wrong.

- (26) *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo küde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’

The reason why the property analysis cannot readily accommodate multiple wh-MECs is a type mismatch. According to the assumptions about the semantics of fronted wh-words introduced in §4.4.1 (adopted from Groenendijk and Stokhof 1984 and Heim and Kratzer 1998), according to which wh-words translate to lambda-operators, a double wh-MEC is of type $\langle e, et \rangle$, a type which is unfit for the selection by the matrix predicate. The situation in the event-extension analysis is not much different. There, the type of a double wh-MEC is of type $\langle s, \langle e, \langle e, vt \rangle \rangle \rangle$. Again, an expression of this type cannot be composed with the existence predicate BE due to type mismatch.

I come back to the problem of multiple wh-MECs in §6.3, where I propose a solution compatible with the event-extension analysis.

6.2.5 Summary

The following table is adapted from Table 6.1. It shows that the present analysis fares very well in comparison to any previous approaches, with the exception of the issue of multiple wh-MECs. The present analysis is virtually the first one to tackle the issue of modality in a more principled way, accounting for both its highly restricted flavor and force. All the previous analyses overgenerate in this respect, as they predict the modality in MECs to be no different from the modality in comparable infinitival constructions (infinitival questions or relatives), i.e. essentially context-dependent in both its flavor and force.

Table 6.2: Semantic analyses of MECs

	Quantificational		Non-quantificational		
	Basic	Grosu	Property	Propos.	Event-ex.
Narrow scope	*	?	✓	✓	✓
No EA position	?	?	✓	✓	✓
No PRED position	✓	✓	*	✓	✓
IA position	↑	?	↑	↓	✓
Multiple wh-words	*	*	*	✓	*
DR introduction	*	*	*	✓	✓
Modality	↑	↑	↑	↑	✓

In conclusion, the event-extension analysis clearly achieves the highest level of descriptive adequacy. Of the phenomena considered above, only multiple-wh MECs remain unaccounted for and therefore require more discussion. I turn to this problem now.

6.3 Multiple wh-MECs

The semantics of multiple wh-MECs is relatively poorly understood. One of the reasons for this is that they are notoriously difficult to paraphrase. That complicates not only their translation to languages that do not have them but also, and more importantly, the determination of their truth conditions. The reason why the meaning of multiple wh-MECs is difficult to grasp is that they appear to combine two characteristics that are normally mutually exclusive. On the one hand, they have a relative clause-like flavor and on the other hand, the two wh-operators appear to be in a more or less symmetric relation, the combination of which properties make multiple wh-MECs seem like genuine multiple relative (though not *correlative*) clauses.

The section is organized as follows. In §6.3.1, I discuss the paraphrases that have been used in the literature. I have been able to identify six types, all of which represent slightly different ways of dealing with the problem of multiple wh-MECs' "ineffability" in languages that do not have them. In §6.3.2, I evaluate the appropriateness of the paraphrases and thus determine the correct truth conditions of multiple wh-MECs. I conclude that all wh-words are to be treated as indefinites (and not e.g. quantifiers) and that their scope is neutralized with respect to each other, i.e. both are to be closed off by one and the same quantifier. In §6.3.4, I draw the reader's attention to the problem of (multiple) wh-movement and discuss the significance of multiple wh-MECs for the semantics of fronted vs. in-situ wh-words. Finally, §6.3.5 concludes this section.

6.3.1 Types of paraphrases

Table 6.3 summarizes the types of paraphrases that have been offered in the literature in an attempt to spell out the truth conditions of multiple wh-MECs. I supplement these informal paraphrases with formal logical representations. All of these paraphrases are translations of the multiple wh-MEC in (27).

- (27) *Czech*
 Mám kam s kým jít.
 have:1SG where:DIR with who go:INF

Table 6.3: Paraphrases and logical forms of multiple wh-MECs

Label	Paraphrase	Logical form
Relative clause paraphrase	‘There is some place where I can go with somebody.’	$\exists x[\Diamond \exists y[P(x, y)]]$
Modal+indefinites paraphrase	‘I can go somewhere with somebody.’	$\Diamond \exists x, y[P(x, y)]$
Distributive paraphrase	‘Every place is such that I can go there with somebody.’	$\forall x[\Diamond \exists y[P(x, y)]]$
Coordination paraphrase	‘There is a place where I can go and a person I can go there with.’	$\exists x[\Diamond P(x)] \wedge \exists y[\Diamond P(y)]$
Pair paraphrase	‘There is a place-person pair such that I can go to that place with that person.’	$\exists \langle x, y \rangle [\Diamond P(x, y)]$
Event paraphrase	‘There is a possible event of me going somewhere with somebody.’	$\Diamond \exists e[\exists x, y[P(e)(x, y)]]$

Before turning to an evaluation of these paraphrases and their respective logical forms, let me illustrate their particular instances in the literature and comment on the way they deal with the dual nature of multiple wh-MECs, hinted at above. Probably the most common paraphrase is the *relative clause paraphrase*. It is used for instance by Bošković (1998) and Pancheva-Izvorski (2000), whose examples are given in (28) and (29).

- (28) *Bulgarian* (Bošković 1998:8)
 ?Ima ko šta da ti proda
 has who what SBJ you sells
 ‘There is someone who can sell you something.’
- (29) *Bulgarian* (Pancheva-Izvorski 2000:41)
 Ima koj kade da me zavede.
 have:3SG who where SBJ me take:3SG
 ‘I have someone to take me somewhere.’

This paraphrase resolves the duality problem by treating only one of the wh-words as a relative operator, representing the other as a plain indefinite pronoun internal to the MEC. This comes at the cost of not capturing the intuitive symmetry between the two wh-words.

In the *modal+indefinites paraphrase*, used e.g. in Šimík (2009a), the matrix verb is reformulated simply as a circumstantial modal ‘can’ with the two wh-words corresponding to ordinary indefinite pronouns.

- (30) *Czech* (Šimík 2009a:196)
 Mám komu co dát.
 have:1SG who:DAT what:ACC give:INF
 ‘I can give something to someone.’

The purpose of this paraphrase is to capture the apparently symmetric nature of the two *wh*-words. On the other hand, the relative clause-like flavor is completely lost.

The *distributive paraphrase* is used exclusively by Hungarian scholars, in particular Lipták (2000, 2003) and Surányi (2005). They have argued that there is an asymmetry in the quantificational properties of the two *wh*-words. In particular, the hierarchically higher *wh*-word is assumed to be a distributive universal quantifier and the lower one an existentially construed indefinite. The paraphrase comes in two flavors—(31) and (32), which correspond to the relative clause paraphrase and the modal+indefinites paraphrase, respectively.

- (31) *Hungarian* (Lipták 2000:163)
 Van kinek mit adnom.
 be:IMPRS who:DAT what:ACC give:INF.1SG
 ‘There is something I can give to everyone.’
 $\forall x \in \text{man} \rightarrow \text{I can give something to } x$
- (32) *Hungarian* (Lipták 2003:10)
 Van kit kire bízni/bízzunk.
 is who:ACC who.to trust:INF/SUBJ.1PL
 ‘Everyone can be trusted to someone.’

The *coordination paraphrase* was used by Rudin (1986), the first scholar to observe the existence of multiple *wh*-MECs (to the best of my knowledge), and also by Pancheva-Izvorski (2000), though only in an example apparently constructed according to Rudin’s example.

- (33) *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo kŭde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’
- (34) *Russian* (Pancheva-Izvorski 2000:41)
 Tebe est’ kuda s kem pojti?
 you:DAT BE:PRES where with whom go:INF
 ‘Do you have somewhere to go and someone to go with?’

This paraphrase remains faithful to the relative clause-like nature of MECs, while not giving up the apparent symmetry between the two *wh*-words. Yet, this comes at the cost of adding extra structure, in particular the coordination.

Alexander Grosu has been using what we could call the *pair paraphrase*. He treats the two *wh*-words as a single pair of individuals, which gets subsequently relativized.

(35) Grosu (2004:417/418)

a. *Russian*

U nego est' kogo s kem poznamomit'.
 at him:GEN is who with whom introduce:INF
 'He has pairs of individuals $\langle a, b \rangle$ such that he can introduce a to b .'

b. *Serbo-Croatian*

Mi više nemamo kome šta da pošaljemo.
 we no.longer NEG:have who what SBJ send:1PL
 'We no longer have pairs of individuals $\langle a, b \rangle$ such that we can send a to b .'

c. *Hungarian*

Nincs kit kivel összepárosítanunk.
 is:NEG who:ACC who.with up.match:INF.1PL
 'We don't have pairs of individuals that we can match.'

Like the coordination paraphrase, also the pair paraphrase is interesting in that it attempts to reconcile the two mutually incompatible properties: the relative clause-like nature and the symmetry between the wh-words. Coming up with a formal account of this paraphrase would require an extra effort, though, in particular the switch from abstracting over two individual variables to abstracting over a single individual-pair variable.

The last type of paraphrase, used e.g. by Čeplová (2007), is what I call the *event paraphrase*. It formulates the meaning of the MEC not in terms of the variables introduced by the wh-words, but rather in terms of the event in which the variables are involved.

(36) *Czech* (Čeplová 2007:35)

[Context: Everyone has to keep introducing people to other people, but Josef refuses to continue and a friend is trying to defend him.]
 Josef už opravdu nemá koho komu představit.
 Josef already really NEG:have who:ACC who:DAT introduce:INF
 'Josef is done with all introductions.'

The event paraphrase represents yet another way of dealing with the multiple wh-MEC duality: it involves relativization, though this time of an event rather than individual variable, and the two wh-words, presumably quantified over by the existential closure, remain in a symmetric relation.

To the extent that these paraphrases are truth-conditionally distinguishable, one should ask which one of them is correct and whether there is a single correct paraphrase at all: perhaps MECs in different languages, or even different MEC tokens, are to be paraphrased (i.e. truth-conditionally characterized) differently. In what follows, I attempt to tackle this problem, arguing against the relative clause paraphrase and the distributive paraphrase, and in favor of the symmetric paraphrases.

6.3.2 Evaluating the paraphrases

First I discuss two of the six paraphrases that are “non-symmetrical”, i.e. where the individual wh-words are distinguishable in terms of their quantificational force, scope, or both. I show that these paraphrases, or rather their corresponding logical forms, are problematic and make wrong predictions. Then I turn to the class of symmetric paraphrases and show that they are compatible with the facts.

The distributive paraphrase

Among the six paraphrases above, the distributive one clearly stands out in that it attributes a different quantificational force to the two wh-words: the hierarchically higher wh-word is assigned universal force while the lower one an existential force. The relevant example is repeated below:

- (37) *Hungarian* (Lipták 2000:163)
 Van kinek mit adnom.
 be:IMPRS who:DAT what:ACC give:INF.1SG
 ‘There is something I can give to everyone.’

Lipták (2000), as well as Surányi (2005), explicitly claim that the interpretation (and in case of Surányi also syntactic structure) of (37) is equivalent to the interpretation of (38), given in logical terms in (39) (Surányi’s formulation).

- (38) *Hungarian* (Surányi 2005/Lipák 2000:163)
 Jánosnak van mindenkinek mit adnia.
 János:DAT be:IMPRS everyone:DAT what:ACC give:INF.3SG
 ‘John has something to give to everyone.’

- (39) $\forall y[\mathbf{Person}(y) \rightarrow \exists x[\mathbf{Thing}(x) \wedge \Diamond \mathbf{Give}(\mathbf{j}, y, x)]]$

However, as observed by Lipták (2000), the two types of sentences diverge in interpretation in case the matrix existential verb is negated. While the universal quantifier in (38) scopes below negation, see (40b), the universally interpreted wh-word in (37), Lipták claims, must scope above negation, see (40a).

- (40) *Hungarian*
- a. Lipták (2000:163)
 Nincs kinek mit adnom.
 be:NEG who:DAT what:ACC give:INF.1SG
 ‘There is nothing I could give to everyone of them.’
 $\forall x \in \mathbf{Human} \rightarrow \neg \exists y \in \mathbf{Thing} : \Diamond \mathbf{Give}(\mathbf{sp}, x, y)$
 - b. Lipták (2000:164)
 ?Nincs mindenkinek mit adnom.
 be:NEG everyone:DAT what:ACC give:INF.1SG
 ‘I cannot give something to all of them.’
 $\neg \forall x \in \mathbf{Human} \rightarrow \exists y \in \mathbf{Thing} : \Diamond \mathbf{Give}(\mathbf{sp}, x, y)$

The assumption that the *wh*-word takes scope over the matrix verb is suspicious for at least two reasons. Firstly, fronted *wh*-words are known to always take surface scope.¹⁴ Secondly, *wh*-words in MECs never scope higher than the MEC-embedder (see §2.2.7), making (40a) the only known exception. Interestingly, there is a way to arrive at the same truth-conditions without making the problematic assumption that the *wh*-word scopes above its embedder. One could simply assume that the *wh*-word *kinek* ‘who’ is a narrow scope existentially construed indefinite rather than a wide scope universal. Thanks to the general logical equivalence (41), (42) is truth-conditionally equivalent to (40a).

$$(41) \quad \forall x[\neg P(x)] \equiv \neg \exists x[P(x)]$$

- (42) *Hungarian*
 Nincs *kinek* *mit* *adnom.*
 be:NEG who:DAT what:ACC give:INF.1SG
 ‘There is nobody to whom I could give something.’
 $\neg \exists x \in \mathbf{Human} \exists y \in \mathbf{Thing} : \Diamond \mathbf{Give}(\mathbf{sp}, x, y)$

In fact, Surányi (2005) claims that multiple *wh*-MECs are ambiguous between the universal-existential reading (43a) and the double-existential reading (43b).

- (43) *Hungarian* (Surányi 2005)
 Végre *Jánosnak* *van* *kinek* *mit* *adnia*
 (finally) János:DAT be:IMPRS who:DAT what:ACC give:INF.3SG
 a. ‘Finally John has something to give to everyone.’
 b. ‘John has things to give to people.’

If (43b) is indeed a licit interpretation of the MEC in (43), it not only makes the interpretation in (42) expected, it raises even more doubts whether the universal reading actually exists. In order to test this, we need to use another scope taking element which would disambiguate the narrow-scope existential reading from the contested wide-scope universal reading. Placing an existentially construed indefinite pronoun in the subject position of the matrix verb seems like a good test. If the higher *wh*-word maps to a universal quantifier that outscopes matrix negation, it is expected to outscope a matrix (non-specific) indefinite

¹⁴This is especially clear in so-called Baker ambiguities (Baker 1968; also referred to as the *wh*-triangle phenomenon, cf. Dayal 1996), illustrated in (i): while the in situ *wh*-phrase *which book* can scope either in the embedded clause or in the matrix clause, giving rise to the ambiguity between (ia) and (ib), the fronted *wh*-word *where* can only scope in the embedded clause. Consequently, the readings in (ic) and (id) are ungrammatical.

- (i) Who remembers where Mary keeps which book?
 a. For which person *x*, *x* remembers where Mary keeps which book
 b. For which person *x* and which book *y*, *x* remembers where Mary keeps *y*
 c. *For which person *x* and which place *z*, *x* remembers which book Mary keeps at *z*
 d. *For which person *x*, which book *y*, and which place *z*, *x* remembers that Mary keeps *y* at *z*

and distribute over it. If, on the other hand, the *wh*-word is a narrow scope indefinite, it will never be able to scope in the matrix clause and distribute over another matrix indefinite. This test is presented in (44). The interpretation of (44a) clearly favors the narrow scope existential construal. The result is further supported by the infelicity of the continuation in (44b), which is expected if (44a) means (44a-i) but not if it means (44a-ii).

- (44) *Hungarian* (Anikó Lipták, p.c.)
- a. Valakinek nincs kinek mit adni
 someone:DAT NEG:is who:DAT what:ACC give:INF
 (i) ‘Some person *x* was such that *x* could not give things to any person *y*.’
 (ii) *‘Every person *y* was such that there was some person *x* such that *x* could not give things to *y*.’
- b. #... de van mit adni egy embernek.
 but is what:ACC give one person:DAT
 ... but *x* could give things to some person.’

The following example shows that the indefinite *valaki* ‘someone’ can be outscoped by the true universal *minden fiú* ‘every boy’. This reduces the potential worry that the wide-scope universal reading (44a-ii) is ruled out for some independent reason rather than by its complete absence.

- (45) *Hungarian* (Anikó Lipták, p.c.)
- Valakit meghívott minden fiú.
 someone:ACC invited every boy:NOM
 ‘Every boy invited someone.’

After a closer scrutiny of Hungarian multiple *wh*-MECs, we can uphold the generalization that *wh*-words in MECs never outscope matrix quantifiers. In conclusion, even if the distributive paraphrase reflects the intuition of native speakers of Hungarian (and supposedly for any other language), the distribution semantics is not a property of the *wh*-word, as claimed by Lipták (2000), but rather a property of an independent distributive operator located in a sequence of functional projections (cf. Koopman and Szabolcsi 2000). The crucial evidence showing this comes from scope: while the scope of distributivity located in quantificational DPs is limited only by quantifier raising, the scope of a DP-independent distributive operator is fixed by the functional sequence. We saw that the facts of Hungarian multiple *wh*-MECs match the latter pattern, i.e. the strictly local (embedded) scope. This conclusion is comforting with respect to the overall picture of quantification in MECs, as the generalization that *wh*-words are quantificationally fully dependent on the matrix verb can be upheld. Therefore, when it comes to quantificational force, the distributive paraphrase is no different from whichever other paraphrase turns out to be the right one.

The relative clause paraphrase

Let us now turn to the relative clause paraphrase. This paraphrase differs from the others in that it establishes an asymmetry between the two *wh*-words. This asymmetry is primarily scopal, in particular, the two *wh*-words scope independently of each other. Notice that in all the other paraphrases, leaving the distributive paraphrase aside, the scopal relation between the *wh*-words is “neutralized”, much like in unselective binding configurations (cf. Nishigauchi 1990). Admittedly, it is not immediately clear whether the difference between scopal asymmetry on the one hand and scope neutralization on the other is significant in any way. Notice that the three propositions ‘there is an individual *x* such that there is an individual *y* such that *x* can be introduced to *y*’ (\approx relative clause paraphrase), ‘there is a pair of individuals that can be introduced to each other’ (\approx pair paraphrase), and ‘there is an individual *x* and an individual *y* such that *x* can be introduced to *y*’ (\approx modal+indefinite paraphrase), are hardly truth-conditional distinguishable.

The only condition under which the two scopal properties could be torn apart is one involving an additional quantifier. This quantifier can take a scope *in between* the two existential quantifiers only if the scope between them is not neutralized. If such intermediate scope of an additional quantifier is possible, then the relative clause paraphrase is the right one, if it is not, then the neutralized scope paraphrases are favored. In order to test this, consider the following two scenarios. Scenario A involves an activist organization (say organization A) which receives funding only on the condition that they are active in every country of the EU, no matter what exactly they do where. As soon as there is a single country for which they have no agenda, the funding stops. In scenario B, the organization B receives funding only on the condition that there is at least one particular thing which they create awareness about in every country of the EU. As soon as this exhaustive coverage of the EU with one particular issue is not satisfied, they stop receiving funding. Now, the sentence in (46) could only be felicitously uttered by the boss of the organization A but not by the boss of the organization B.

- (46) *Czech*
 Organizaci jsem rozpustil, protože příští rok už by
 organization be:1SG dissolved because next year already would
 nebylo v každé zemi o čem koho přesvědčovat.
 NEG:be in every country about what who persuade:INF
 ‘I dissolved the organization because next year we wouldn’t be able to
 persuade somebody about something in every country.’
 A $\neg[\forall x[\mathbf{Country}(x) \rightarrow \exists y, z[\mathbf{Issue}(y) \wedge \mathbf{Official}(z) \wedge \text{we persuade } x \text{ about } y \text{ in } z]]]$
 B $*\neg[\exists y[\mathbf{Issue}(y) \wedge \forall x[\mathbf{Country}(x) \rightarrow \exists z[\mathbf{Official}(z) \wedge \text{we persuade } x \text{ about } y \text{ in } z]]]]]$

This example shows that the universal quantifier cannot scope in between the

two *wh*-words, even if such a scopal relation is made perfectly salient. The negative formulation of the example serves two purposes. Firstly, it facilitates a reading under which the universal quantifier scopes in the embedded clause and thus “forces” a potential scopal interaction with the *wh*-words, which have to scope in the embedded clause for independent reasons. Secondly, it creates a logical configuration where the specific reading (46B) can be false in a situation where the non-specific reading (46A) is true, or, more precisely, where the truth of the non-specific reading does not entail the truth of the specific reading.¹⁵ This is a solid argument against the relative clause paraphrase and in favor of the view under which both *wh*-words are quantified from a single existential source, leading to the scope neutralization.

The relative clause paraphrase also has problems accounting for the grammaticality of examples like (47). The reason is that *proč* ‘why’ would essentially have to be treated as an indefinite pronoun rather than a relative operator—a situation that never obtains in any other context and, to the best of my knowledge, even in any other language. (Notice that the relative ordering of the two *wh*-words—*kdo* ‘who’ and *proč* ‘why’—in no way affects the acceptability, a fact that may have to do with the lack of superiority effects in Czech.) The ungrammaticality of the bare *wh*-indefinite *proč* ‘why’ in Czech, in comparison to *co* ‘what’ or *komu* ‘who’, is illustrated in (48).

- (47) *Czech*
 Nemá si { kdo proč / proč kdo } stěžovat.
 NEG:has REFL who why / why who complain
 ‘Nobody has any reason to complain.’
- (48) *Czech*
 a. Přijde-li co komu vhod, smí si to odnést
 come-COND what:ACC who:DAT handy may REFL it take
 domů.
 home
 ‘If anything comes handy to anybody, he can take it home.’
 b. *Přijde-li co proč na špatnou adresu, musí se to
 come-COND what:ACC why to wrong address must REFL it
 poslat zpátky.
 send back
 ‘If anything comes to a wrong address for any reason, it must be sent back.’

In conclusion, the relative clause paraphrase, or, more precisely, the logical representation associated with it, does not hold up at closer scrutiny. I discussed two issues that are problematic. The relative clause paraphrase predicts that the

¹⁵In affirmative contexts non-specific readings of indefinites with respect to universal quantifiers entail their specific counterparts, which makes it impossible to construct a *bona fide* example where the former would be true without also the latter being true. I am grateful to Ivano Caponigro (p.c.) for making me aware of this entailment issue.

two (or more) wh-words in multiple wh-MECs scope independently. I provided some evidence supporting the opposite view, namely that the scope of the wh-words is *neutralized*. The second problematic prediction is that the lower wh-word is an indefinite pronoun rather than a (relative) operator. I proved this to be false by showing that even wh-words like ‘why’ can occur in the lower-wh-position, despite the fact that the word for ‘why’ can never function as an indefinite.

Symmetric paraphrases

The above discussion left us with four remaining paraphrases: the modal plus indefinites paraphrase, the pair paraphrase, the coordination paraphrase, and the event paraphrase. All of them share two essential characteristics: they assign both wh-words an existential construal and the scope of the two wh-words is neutralized. For this reason, I call them *symmetric*—they have both symmetric scope and force. In light of the arguments given above, I take this to be a desirable property.

How can we decide which one of the four remaining paraphrases/logical forms is the correct one? Notice first that all the semantic representations appear to entail one another. The only aspect in which they differ is the relative scope of the quantification over individuals and worlds. However, this difference is only apparent—what determines the scope of the individual variable with respect to the world variable is not the position of the quantifier but rather the world variable with respect to which the *restrictor* of the individual variable is interpreted. Thus, if my overall analysis is on the right track, even the pair-paraphrase where the quantification over individuals scopes over the modal, is such that the restrictors of the individual variables involved in the pair are interpreted with respect to the worlds introduced by the modal. The equivalences are stated schematically in (49).

(49)	$\Diamond \exists x, y [P(x, y)]$	modal+indefinites paraphrase
	\Leftrightarrow	
	$\exists x [\Diamond P(x)(y)] \wedge \exists y [\Diamond P(x)(y)]$	coordination paraphrase
	\Leftrightarrow	
	$\exists \langle x, y \rangle [\Diamond P(x, y)]$	pair paraphrase
	\Leftrightarrow	
	$\Diamond \exists e [\exists x, y [P(e)(x, y)]]$	event paraphrase

Suppose that x is a ‘human’, y is a ‘thing’, and P is the relation ‘read’. Then, in prose, ‘someone can read something’ iff ‘there is someone who can read (something) and there is something that he can read’ iff ‘there is a pair of someone and something such that he can read it’ iff ‘it is a possible event that someone reads something’.

The truth-conditional equivalence, if real, leaves the choice among the four paraphrases upon criteria that are independent of semantics. Below, I turn to developing an account that requires a minimal modification to the overall

account of MECs argued for here.

6.3.3 Multiple wh-MECs in the event-extension account

Why exactly are multiple wh-MECs problematic for the event-extension account? The problem lies essentially in a type-mismatch. The sub-predicate that selects the MEC, i.e. BE, is specified to select an expression of type $\langle s, \langle e, vt \rangle \rangle$, an intensional relation between individuals and events. When the MEC involves more than one wh-word, its type is necessarily different—each wh-word raises the arity of the relation by one. For instance, a double wh-MEC is of type $\langle s, \langle e, \langle e, vt \rangle \rangle \rangle$ —an intensional relation between two individuals and an event. The goal is therefore to define BE in such a way that it can select for MECs of different types.

As a starting point, let me repeat the semantics of the MEC-selecting BE (i.e. BE_E^{MEC} ; I simply write BE for parsimony).

$$(50) \quad BE \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda e_v \exists e'_v \exists x_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] \quad = (59) \text{ in } \S 4.4.2$$

Modifying the semantics of BE for the purpose of selecting double wh-MECs requires fixing a number of things in the representation above. First of all, as already mentioned, the argument Q , standing for the MEC, must be of a more complex type— $\langle s, \langle e, \langle e, vt \rangle \rangle \rangle$ rather than $\langle s, \langle e, vt \rangle \rangle$. Secondly, the existential quantifier over individuals must be allowed quantify over two individual variables and, last but not least, the theta-role associated with the event predicate **Be** must be allowed to be attributed to more than one variable. After these modifications, we arrive at the following lexical entry:

$$(51) \quad BE_{double} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, \langle e, vt \rangle \rangle \rangle} \lambda e_v \exists e'_v \exists x_e, y_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \theta(e') = y \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(y)(e'') \wedge e = e' \rightarrow e'']] \quad (\text{to be modified})$$

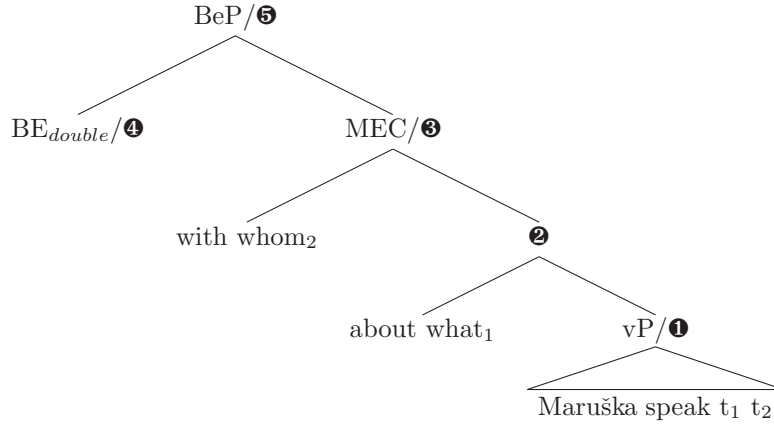
Unfortunately, (51) cannot be correct. The reason is that the part of the formula that identifies both individual variables with the theta-role of the event **Be**, i.e. $\theta(e') = x \wedge \theta(e') = y$, has an unwanted consequence, namely the entailment $x = y$. This is obviously wrong: the two variables introduced by the wh-words never corefer. In order to fix this problem, we have to reconsider the notion of “theta-roles” (expressions $\theta(e)$). So far, I have assumed that they are of type e . In order to make things work, we have to assume that they are of type $\langle e, t \rangle$, i.e. they are properties of individuals. Consider the modified version of (51), where $\theta(e') = x$ is replaced by $x \in \theta(e')$ (and similarly for y).¹⁶

¹⁶The property status of $\theta(e)$ should be generalized and used across the board. For expository reasons, though, I will use it only for the purpose of multiple wh-MECs. In all other cases, I stick to the convention used so far, i.e. that $\theta(e)$ is in the domain of entities.

$$(52) \quad \text{BE}_{double} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, \langle e, vt \rangle \rangle \rangle} \lambda e_v \exists e'_v \exists x_e, y_e [\mathbf{Exist}(w)(e') \wedge x \in \theta(e') \wedge y \in \theta(e') \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(y)(e'') \wedge e = e' \rightarrow e'']]$$

Let us illustrate how (52) works. Consider the example below. (I use the modal+indefinites paraphrase for expository reasons. What will become crucial now are the truth conditions formally expressed below.)

- (53) *Czech*
 Maruška má s kým o čem mluvit.
 Maruška has with whom about what speak:INF
 ‘Maruška can speak to somebody about something.’



The semantics of (53) is computed as follows. The structure before wh-movement (node ①) is a full description of the embedded event which corresponds to a vP (see the discussion in Chapter 5). Once again, I simplify and for expository reasons treat the complex event of speaking as a single event specified by “theta roles” **Ag**(*e*), **With**(*e*), and **About**(*e*). In accordance with the background assumptions given in §4.4.1, wh-words map to lambda operators and contribute variable restrictions—**Thing** and **Human**. The MEC (node ③) denotes an intensional relation between two individuals—corresponding to the two wh-words—and an event of speaking. The structure is selected by **BE**_{double} (node ④), which asserts the existence of some objects that correspond to the variables introduced by the wh-words.

$$\begin{aligned}
 (54) \quad \textcircled{1} &\rightsquigarrow \lambda w \lambda e [\mathbf{Speak}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{m} \wedge \mathbf{With}(e) = x \wedge \mathbf{About}(e) = y] \\
 \textcircled{2} &\rightsquigarrow \lambda w \lambda y \lambda e [\mathbf{Speak}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{m} \wedge \mathbf{With}(e) = x \wedge \mathbf{About}(e) = y[\mathbf{Thing}(y)]] \\
 \textcircled{3} &\rightsquigarrow \lambda w \lambda x \lambda y \lambda e [\mathbf{Speak}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{m} \wedge \mathbf{With}(e) = x[\mathbf{Human}(x)] \wedge \mathbf{About}(e) = y[\mathbf{Thing}(y)]] \\
 \textcircled{4} &\rightsquigarrow \lambda w \lambda Q \lambda e \exists e' \exists x, y [\mathbf{Exist}(w)(e') \wedge x \in \theta(e') \wedge y \in \theta(e') \wedge \exists w' \in C(w) : \exists e'' [\mathbf{Q}(w')(x)(y)(e'') \wedge e = e' \rightarrow e'']] = (52)
 \end{aligned}$$

$$\begin{aligned}
\mathfrak{S} &\rightsquigarrow \lambda w \lambda e \exists e' \exists x, y [\mathbf{Exist}(w)(e') \wedge x \in \theta(e') \wedge y \in \theta(e') \wedge \exists w' \in C(w) : \\
&\quad \exists e'' [[\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = x[\mathbf{Human}(x)] \wedge \\
&\quad \mathbf{About}(e'') = y[\mathbf{Thing}(y)]] \wedge e = e' \rightarrow e''] \\
\mathfrak{S}' &\rightsquigarrow \lambda w \exists e \exists e' \exists x, y [\mathbf{Exist}(w)(e') \wedge x \in \theta(e') \wedge y \in \theta(e') \wedge \exists w' \in C(w) : \\
&\quad \exists e'' [[\mathbf{Speak}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = x[\mathbf{Human}(x)] \wedge \\
&\quad \mathbf{About}(e'') = y[\mathbf{Thing}(y)]] \wedge e = e' \rightarrow e'']
\end{aligned}$$

Node \mathfrak{S}' represents the truth conditions of (53). The sentence is true in w iff there is a complex event e which corresponds to the extension of e' to e'' and there are two individuals x and y such that x and y are in the state e' of being existent in w and it is possible (given that the circumstances are as in w) that Maruška speaks with x about y .

We arrived at an intuitively appealing analysis of MECs with two wh-words. The semantics is constructed in full concord with the overall event-extension approach as well as with the desirable symmetric paraphrases of multiple wh-MECs—both wh-words have the same scope and the same force. The only remaining problem is to generalize the lexical entry of BE so that it can take MECs with an arbitrary number of wh-words and thus avoid the unpleasant ambiguity between BE, BE_{double}, BE_{triple}, etc. In order to do this, we have to allow BE to take any expression from the following union of domains: $D_{\langle s, \langle e, vt \rangle \rangle} \cup D_{\langle s, \langle e, \langle e, vt \rangle \rangle} \cup D_{\langle s, \langle e, \langle e, \langle e, vt \rangle \rangle \rangle} \cup \dots$. How can we define this potentially infinite union of domains? A simple way to achieve this is to define complex types in terms of function application. Suppose that there is a function f in our type theory that is defined as follows:¹⁷

$$(55) \quad \text{If } \sigma \text{ and } \tau \text{ are types, then } f(\sigma)(\tau) = \langle \sigma, \tau \rangle \text{ (also a type).}$$

The definition above relies on the old insight that sets can be defined in terms of their characteristic functions (see Heim and Kratzer 1998 for an accessible discussion and references). Now, we need to add the recursive step, producing arbitrarily complex types.¹⁸

$$\begin{aligned}
(56) \quad &\text{For any natural number } n \geq 2 \\
&\text{a. } f_1(\sigma)(\tau) = \langle \sigma, \tau \rangle \\
&\text{b. } f_n(\sigma)(\tau) = \langle \sigma, f_{n-1}(\sigma)(\tau) \rangle
\end{aligned}$$

Now, this definition allows us to characterize the type of MECs generally as follows:

$$\begin{aligned}
(57) \quad &\langle s, f_n(e)(\langle v, t \rangle) \rangle \\
&\text{(for any natural number } n, \text{ corresponding to the number of fronted} \\
&\text{wh-words)}
\end{aligned}$$

In order to see that (57) indeed characterizes the correct type, consider the

¹⁷I am very grateful to Jorge Tendeiro for his helpful suggestions.

¹⁸See Chierchia (1988) for an analogous recursive definition of semantic types.

following equation, deriving the type of MEC with three fronted wh-words (so that $n = 3$):

$$\begin{aligned}
 (58) \quad & \langle s, f_3(e)(\langle v, t \rangle) \rangle \\
 &= \langle s, \langle e, f_2(e)(\langle v, t \rangle) \rangle \rangle && \text{by (56b)} \\
 &= \langle s, \langle e, \langle e, f_1(e)(\langle v, t \rangle) \rangle \rangle \rangle && \text{by (56b)} \\
 &= \langle s, \langle e, \langle e, \langle e, \langle v, t \rangle \rangle \rangle \rangle && \text{by (56a)}
 \end{aligned}$$

With this simple function-based definition of types, we can provide the general semantics of BE. The variable n ranges over all natural numbers and its value is determined by the number of wh-words in the MEC selected by BE. The number n determines the type of Q —the variable standing for the MEC—as well as the number of variables that BE existentially closes. All of the variables are assigned the theta-property of BE, i.e. being existent, and all of them are applied to Q .

$$\begin{aligned}
 (59) \quad & \text{For any natural number } n \text{ such that } n \text{ equals the number of wh-words} \\
 & \text{in the MEC} \\
 & \text{BE}_n \rightsquigarrow \lambda w_s \lambda Q_{\langle s, f_n(e)(vt) \rangle} \lambda e_v \exists e'_v \exists x_1, \dots, x_n [\mathbf{Exist}(w)(e') \wedge x_1 \in \theta(e') \wedge \\
 & \dots \wedge x_n \in \theta(e') \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x_1, \dots, x_n)(e'') \wedge e = e' \rightarrow e'']]
 \end{aligned}$$

In summary, I showed that the semantics of the MEC-selecting predicate BE can be generalized and it is therefore possible to avoid stipulating a whole range of minimally ambiguous predicates, specified for selecting MECs with a particular number of wh-words.

6.3.4 (Multiple) wh-movement

In §2.2.2 I observed that multiple wh-MECs are only possible in multiple wh-fronting languages. The relevant contrast is repeated below:

- (60) a. *Bulgarian* (Rudin 1986:193)
 Imaš li s kogo kŭde da otideš?
 have:2SG Q with who where that go:2SG
 ‘Do you have somewhere to go and someone to go with?’
- b. *Spanish* (Cintia Widmann, p.c.)
 *Todavía tengo con quién hablar sobre qué.
 still have:1SG with who speak:INF about what
 ‘I still have somebody with whom I can speak about something.’

As I argued earlier Šimík (see 2009a), the multiple wh-MEC generalization should not be stated over language-types but rather over multiple wh-movement as such. Consider the following observations. Czech multiple wh-interrogatives are typically formed by multiple wh-movement, as in (61a), however, single wh-movement is also an option, as in (61b) (given that certain discourse conditions are satisfied; see Šimík to appear).

- (61) *Czech* (adapted from Šimík 2009a:192)
- a. Řekni mi, **komu** jsi s **čím** pomohl.
tell me who be:2SG with what helped
 - b. Řekni mi, **komu** jsi pomohl s **čím**.
tell me who be:2SG helped with what
'Tell me who you helped with what.'

Despite this optionality of movement in multiple *wh*-interrogatives, multiple *wh*-MECs can only be formed by multiple *wh*-movement.¹⁹

- (62) *Czech*
- a. Nemám **komu** s **čím** pomoci.
NEG:have:1SG who with what help:INF
 - b. *Nemám **komu** pomoci s **čím**.
NEG:have:1SG who help with what
'I can't help anybody with anything (because there's nobody and nothing).'

The most favorable generalization is therefore that *wh*-words in MECs are only licensed if they undergo *wh*-movement. Under this view, the prohibition on multiple *wh*-MECs in Spanish and other languages is merely a subcase of the general prohibition on *wh*-in situ in MECs. How can this generalization be explained? Throughout, I have assumed that *wh*-words map to lambdas, following Groenendijk and Stokhof (1984) and Heim and Kratzer (1998). The generalization gives us an opportunity to strengthen the assumption and say that only *moved* *wh*-words map to lambdas (contra Groenendijk and Stokhof 1984). If that is the case, then *wh*-words that remain in situ will not have an effect on the semantic type of the MEC and the variables that they introduce would not be interpreted as belonging to the set of existent objects. Notice that if this reasoning is correct, it constitutes an argument against covert *wh*-movement (see Huang 1982), favoring alternative ways of interpreting *wh*-in situ, such as unselective binding (Pesetsky 1987).

6.3.5 Conclusion

In this subsection, I discussed multiple *wh*-MECs in detail. I started out by trying to determine their correct truth conditions. I showed that of the many different existing paraphrases of multiple *wh*-MECs (and their corresponding truth conditions) only the *symmetric* ones can be correct, i.e. paraphrases which attribute the two (or more) *wh*-words identical scope (immediately below the selecting predicate) as well as identical force (existential). In line with this insight, I developed a simple account of multiple *wh*-MECs within the event-extension semantics. I demonstrated that only a minimal change is needed—a

¹⁹The example in (62b) is grammatical only if the in situ *wh*-phrase *s čím* 'with what' is interpreted as interrogative—giving rise to an echo-question reading.

modified lexical entry of the MEC-selecting predicate BE, which can be defined generally so that it can select MECs with any number of wh-words. The fact that not all languages can form multiple wh-MECs is explained by the assumption that only fronted wh-words can function as lambda abstractors.

In the rest of the thesis, I will only deal with single wh-MECs and will therefore stick to the original lexical entry of BE. The reader should keep in mind that I do this only for the sake of notational simplicity.

6.4 Control in MECs

In §5.4 I showed that three types of empty MEC subjects should be distinguished. Some MECs contain a trace after subject raising, others contain a PRO, and yet others a *pro*. In this section, I look more into the issue of obligatory control in MECs. I develop the idea put forth in §4.3.3 where I argued for a specific way of identifying the reference of participants within a complex event structure. The basic idea was that some atomic event predicates do not select standard event extensions, i.e. expressions of type $\langle s, vt \rangle$, but rather event extensions with an unsaturated participant argument position, i.e. expressions of type $\langle s, \langle e, vt \rangle \rangle$. Such predicates then identify the reference of the missing argument with the reference of their own participant argument. The general semantic format of such predicates is given in (63) for some arbitrary predicate PRED. Notice that the extension argument of PRED, corresponding to Q , has an unsaturated participant argument slot. The variable that corresponds to the participant argument, i.e. x , is bound by the participant argument of PRED itself.

$$(63) \quad \text{PRED} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_s \lambda e_v \exists e' [\mathbf{Pred}(w)(e') \wedge \theta(e) = x \wedge \exists e'' [Q(w)(x)(e'') \wedge e = e' \rightarrow e'']]$$

I argued that predicates of this type include the MEC-embedding BE, as well as predicates like BUY, which characterize processes leading to possessive result states and which make it possible to interpret sentences like *Dave bought a book* just like *Dave bought himself a book*. In this section, I build on this simple idea, rooted in so called property analyses of control (Williams 1980; Chierchia 1984, 1989a), and extend it for the purpose of reference identification under control.²⁰ I will propose that an expression can be of the relevant type $(\langle s, \langle e, vt \rangle \rangle)$ not only by virtue of not having its argument position saturated, but also by opening the argument slot at a higher level, by operator movement. The operator responsible for this process corresponds to PRO.

²⁰The competing view of control, the so called propositional analysis, goes back at least to Chomsky (1981) and holds that control constituents are of propositional type, PRO is an individual variable, and control itself is a syntactically constrained relation of binding (cf. Koster 1984) or, in some approaches, movement (Hornstein 1999).

- (64) LF: $[_{\text{PredP}} \text{ARG} [_{\text{Pred}'} \text{Pred} [_{\text{XP}} \text{PRO}_1 [_{\text{YP}} \dots t_1 \dots]]]]$
 Sem: $x \qquad x = y \qquad \lambda y \qquad y$

The main challenge in devising the property-based system of control in MECs is that MECs themselves are of the same semantic type as control constituents, i.e. $\langle s, \langle e, vt \rangle \rangle$. This semantics accommodates reference sharing between the (matrix) argument of BE and the (embedded) argument that corresponds to the wh-word. It is immediately clear that establishing another reference-sharing relation at the edge of MEC is not trivial: the MEC would have to have two individual argument slots open and therefore be of type $\langle s, \langle e, \langle e, vt \rangle \rangle \rangle$. A similar assumption was made by Chierchia (1989b) in his analysis of control in purpose clauses—a problem which is intimately related to the problem of control in MECs, since the two constructions belong to the same type—the possibility clause (see Chapter 4 and esp. §4.5). However, dealing with double abstracts leads to non-trivial complications in the reference-sharing system. Moreover, in §6.3 I argued that this semantic type corresponds to MECs with two wh-words. As it stands, the system would predict that a sentence like ‘John has where PRO to sleep’ would be interpreted as ‘John has some place and some person such that that person can sleep in that place’, obviously a wrong interpretation. In order to meet this challenge, I will propose that the control relation is established MEC-internally, before wh-movement even takes place. The control predicate responsible for this is the applicative head postulated in §5.4.4 for Russian MECs. I will argue that the presence of this head in MECs can be generalized, at least for MECs selected by stative predicates.

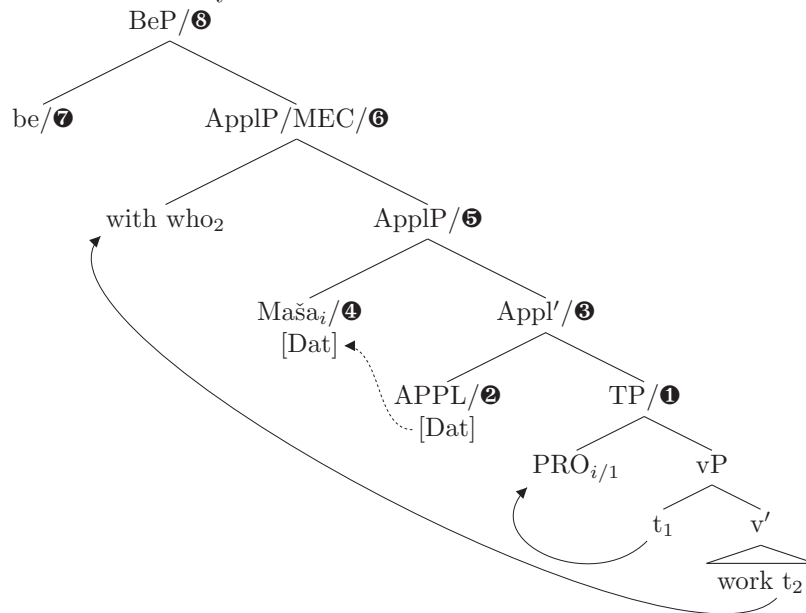
The rest of this section is organized as follows. In §6.4.1, I devise an analysis of control in Russian MECs, called MEC-internal control, and propose that it should be applied more generally. In §6.4.2, I turn to one of the puzzling observations made in this thesis, namely that subjects that are wh-words are the only subjects that are capable of replacing an obligatorily controlled PRO. I will argue that the relevant observation and generalization receives an elegant explanation within the present assumptions about control and fronted wh-word semantics. §6.4.3 is a brief note on interpreting raising MECs and §6.4.4 concludes the section.

6.4.1 MEC-internal control

In §5.4.4 I concluded that Russian MECs exhibit a special pattern of control in that the controller appears to be within the MEC itself rather than external to it. An example and the proposed syntactic representation are given in (65). The PRO moves to the edge of the TP (possibly to SpecTP), where it is formally licensed by the defective (infinitival) T, and the whole TP is selected by an applicative head. The participant argument of this head is assigned dative and controls the embedded subject. After that wh-movement takes place and the whole structure is selected by the MEC-embedding BE_E^{MEC} (simplified as BE henceforth). The way the subject *Maše* gets into the matrix is by raising (not

illustrated in the tree below).

- (65) *Russian*
 Maše est' s kem rabotat'.
 Maša:DAT be:IMPRS with who work:INF
 'There's somebody that Maša can work with.'



The applicative head postulated here looks rather special since it selects for a TP rather than for a VP or vP, as usually assumed (cf. Pylkkänen 2002). The present proposal concerning the applicative nature of the head should therefore be taken as tentative. What seems to support it, though, is the fact that Russian purpose clauses (“rationale clauses” in the terminology of Faraci 1974; see §4.3.1) can accommodate a dative constituent, the function of which resembles the one of the MEC dative subject: it has a comparable semantic import, including the obligatory control relation. Consider the following example and the dative-marked *mne* ‘me’.

- (66) *Russian* (Jung 2008:284)
 On prišel čtoby mne ne obedat' odnoj.
 he came in.order me:DAT NEG eat:INF alone:DAT
 ‘He came so that I would not have dinner alone.’

What is the exact semantic role of APPL in MECs? What is the type of its complement and how is the control relation established? I would like to propose that APPL expresses benefactive semantics, i.e. the stative event predicate **Ben**. (The semantics can also be malefactive, which is an alternative that I abstract away from for simplicity.) As usual, apart from the event variable, this

predicate introduces a participant argument slot. The participant that fills in this slot is then interpreted as somebody who is in the state of benefitting. What this person benefits from is the existence state expressed by the selecting predicate. The MEC further elaborates on this benefactive state by specifying the “manner” of benefitting (for instance, in (65), Maša can benefit from the existence of some x by working with x). At the same time, the participant argument of APPL functions as a controller of the embedded subject. As the tree in (65) illustrates, the access to the embedded subject is achieved by the movement of PRO, which is construed as a lambda operator binding the subject variable. This implements the pattern of control proposed above. Nevertheless, the question arises how APPL gets access to the embedded event variable, given that the complement is a TP, a structure that typically maps to expressions that characterize worlds rather than events. I ignored this problem in Chapter 4, since the categorial status of the MEC was not at issue yet. Since I have nothing insightful to say about this problem, I will somewhat stipulatively assume that the event variable can undergo quantifier (existential) disclosure, a mechanism introduced by Dekker (1993) for the purpose of indefinite DPs bound by adverbial quantifiers. It is possible that the assumed existential disclosure of the event variable is in fact facilitated by the APPL head.²¹ If this proves to be a tenable hypothesis, we could further assume that the APPL head comes about as a part of MEC-embedding predicates more generally, e.g. the Russian MEC-embedding *est’* ‘be’ is not just a lexicalization of BE, but rather BE+APPL. MEC-embedding predicates would thus come with an in-built functional head which facilitates the absorption of the event extension argument—by disclosing the embedded event variable.

The lexical entry of APPL is given in (67). In accordance with the present proposal about control predicates, APPL relates an evaluation world w with the relation Q , which corresponds to the control constituent, an individual x , APPL’s participant argument, and an event e such that there is an event e' that denotes a state of x ’s benefitting and e equals the extension of e' to some e'' which is characterized by $Q(w)(x)$. Notice that the saturation of Q ’s individual argument by x —participant argument of APPL—corresponds to the desired control relation.

$$(67) \quad \text{APPL} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda e_v \exists e'_v [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [Q(w)(x)(e'') \wedge e = e' \rightarrow e'']]$$

The partial semantic computation of the truth conditions of (66) is given in (68). The control constituent (node ❶) has an open individual argument slot binding the subject of the MEC, thanks to the fact that PRO is construed as a lambda-operator. It is fed into the control predicate APPL (node ❷),

²¹See also Rivero and Sheppard (2003), who propose to adopt the mechanism of existential disclosure in a context rather similar to the present one: right below a functional head that introduces a dative argument. Whether this is accidental or not is a question that I leave for future research.

which identifies the reference of the embedded subject with the reference of its participant argument, namely *Maša* (node ④). After the *wh*-movement takes place and the fronted *wh*-word binds its trace, the structure (node ⑤) is selected by the familiar MEC-embedding predicate BE (node ⑦).

$$\begin{aligned}
 (68) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Work}(w)(e) \wedge \mathbf{Ag}(e) = x \wedge \mathbf{With}(e) = y] \\
 & \textcircled{2} \rightsquigarrow \lambda w \lambda Q \lambda x \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [Q(w)(x)(e'') \wedge e = e' \rightarrow e''] \\
 & \hspace{15em} = (67) \\
 & \textcircled{3} \rightsquigarrow \lambda w \lambda x \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [[\mathbf{Work}(w)(e'') \wedge \mathbf{Ag}(e'') = x \wedge \mathbf{With}(e'') = y] \wedge e = e' \rightarrow e''] \\
 & \textcircled{4} \rightsquigarrow \mathbf{m} \\
 & \textcircled{5} \rightsquigarrow \lambda w \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = \mathbf{m} \wedge \exists e'' [[\mathbf{Work}(w)(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = y] \wedge e = e' \rightarrow e''] \\
 & \textcircled{6} \rightsquigarrow \lambda w \lambda y \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = \mathbf{m} \wedge \exists e'' [[\mathbf{Work}(w)(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = y [\mathbf{Thing}(w)(y)]] \wedge e = e' \rightarrow e''] \\
 & \textcircled{7} \rightsquigarrow \lambda w \lambda Q \lambda e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' \\
 & \hspace{15em} [Q(w')(z)(e''') \wedge e = e''' \rightarrow e''']] = (59) \text{ in } \S 4.4.2 \\
 & \textcircled{8} \rightsquigarrow \lambda w \lambda e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' \\
 & \hspace{15em} [[\mathbf{Ben}(w')(e') \wedge \theta(e') = \mathbf{m} \wedge \exists e'' [[\mathbf{Work}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = z [\mathbf{Thing}(w')(z)]] \wedge e'''' = e' \rightarrow e''] \wedge e = e''' \rightarrow e''']] \\
 & \textcircled{8'} \rightsquigarrow \lambda w \exists e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' \\
 & \hspace{15em} [[\mathbf{Ben}(w')(e') \wedge \theta(e') = \mathbf{m} \wedge \exists e'' [[\mathbf{Work}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{m} \wedge \mathbf{With}(e'') = z [\mathbf{Thing}(w')(z)]] \wedge e'''' = e' \rightarrow e''] \wedge e = e''' \rightarrow e''']]
 \end{aligned}$$

The node ⑧' (derived from ⑧ by existentially closing *e*) represents the final truth conditions. The sentence in (65) is true iff there is some *x* such that the existence of *x* leads to Maša's state of benefitting, which state in turn extends to Maša's working with *x*. The realization of the state of benefitting and the activity of working are not actual facts but rather just circumstantial possibilities, whose truth is conditioned by the existence of *x* (among other contextually determined circumstances).

Let us now move on to cases of control in which the existence of the applicative head does not receive clear empirical support. These cases include virtually all other types of control MECs, i.e. MECs in Spanish, Portuguese, etc. (see §5.4.2), as well as Russian MECs selected by dynamic predicates such as 'buy', which display no overt applicative argument. Two examples are given below:

- (69) a. *Spanish*
Pablo tiene con qué escribir.
Pablo has with what write:INF
'Pablo has something with which he can write.'
- b. *Russian*
Maša kupila čem pisat'.
Maša bought what:INST write:INF
'Maša bought something with which she can write.'

So far, I analyzed the predicate ‘have’ as AT+BE and ‘buy’ as BUY+(AT)+BE. I assumed that the controller of the MEC-subject is the participant argument of AT (or BUY). Under this assumption, the PRO would have to move to the edge of BeP, in order to be accessible to the putative control predicate. However, this is at odds with the assumption that PRO needs licensing by an infinitival T head, since there is no such T head at the edge BeP. PRO would therefore remain unlicensed. A possible way out of this problem is to adopt the speculation introduced above concerning the general incorporation of APPL into MEC-embedding predicates (modulo raising MECs; cf. §6.4.3). Under this modified view, ‘have’ would correspond to (AT)+BE+APPL and ‘buy’ to BUY+(AT)+BE+APPL. The PRO would move to the edge of TP and the variable bound by it would be referentially identified with the participant argument of APPL, just like proposed above for Russian. On that assumption, the Spanish example in (69a) would receive the structural analysis in (70), where the subject *Pablo* (previously assumed to be generated in SpecAtP) is generated in SpecApplP, picks up the beneficiary semantics, and is subsequently formally licensed in the matrix.

- (70) [_{AgrSP} Pablo₁ [_{BeP} BE [_{ApplP} with what [_{ApplP} t_{1/i} APPL [_{TP} PRO_i write]]]]]

The situation with dynamic predicates is slightly more intricate, since the argument of APPL might still be needed to be referentially identified with the argument of AT or BUY. It is not immediately clear how this should be done, since these atomic predicates do not have direct access to ApplP. I leave this issue aside for the moment, also because I have not clarified yet what the empirical facts are. Do arguments of dynamic predicates like ‘buy’ actually (whether they are in SpecAtP or SpecBuyP) obligatorily control the MEC subject? Or is the situation one of non-obligatory control? This issue will have to be kept for future investigation.²²

6.4.2 The quirky behavior of wh-subjects

In this subsection, I will provide an argument in favor of treating PRO as a lambda and, by extension, treating obligatory control constituents as properties rather than propositions. The argument is drawn from an observation made in §2.2.3 and discussed again in §5.4.2. The observation is that in languages in which MECs exhibit obligatory control wh-subjects are the only types of MEC-subjects that can be overt and, at the same time, referentially disjoint from the matrix subject. Consider an example from Hungarian:

²²Preliminary research, conducted shortly after the submission of this thesis (Šimík 2010), reveals that arguments of dynamic predicates generally do not obligatorily control the embedded empty subject. Moreover, Roumyana Pancheva (p.c.) informed me that embedded subjects of non-obligatory control MECs (in Bulgarian) do not seem to exhibit animateness restrictions, suggesting a complete absence of the APPL head in the relevant structures.

(71) *Hungarian* (Anikó Lipták, p.c.)

- a. Nekem van ki elmenjen a postára.
 I:DAT be:IMPRS who:NOM go:SBJ.3SG the post.office.to
 'I have somebody who can go to the post office.'
- b. Péter van (* Anna) kit küldjön a postára.
 Péter is (Anna) whom send:SBJ.3SG the post.office.to
 'Peter_i has someone who {he_i/*Anna} can send to the post office.'

In some languages, e.g. Portuguese and Spanish, the use of *wh*-subjects is accompanied by an exceptional use of the subjunctive mood, as illustrated by (72a), and contrasted with (72b). Notice that other types of subjects are incapable of triggering the use of the subjunctive, (72c).

(72) *Spanish* (Cintia Widmann, p.c.)

- a. No tengo quién me { ayude /* ayudar }.
 NEG have:1SG who me:DAT help:SBJ.3SG / help:INF
 'I don't have anyone who can/will help me.'
- b. Esa familia no tiene de qué { vivir /* viva }.
 that family NEG have:3SG of what live:INF / live:SBJ.3SG
 'That family has nothing to live of.'
- c. *No tengo qué leer.
 NEG have:1SG what read:SBJ.2SG
 'I don't have anything for you to read.'

This observation, valid in too many languages for it to be accidental, can be characterized by the following generalization:

(73) **The *wh*/PRO generalization**

PRO in MECs is in complementary distribution with *wh*-subjects

That is, the subject position of obligatory control MECs is either filled with PRO or with a *wh*-subject. Every other subject is strictly ruled out. This generalization receives a natural explanation under two assumptions: (a) PRO and *wh*-subjects are indistinguishable at LF, (b) no other type of expression (referential expressions, quantifiers) is like PRO or *wh*-subjects (at LF). Now, let us verify that these two conditions are indeed satisfied under the present set of assumptions. In §4.4.1), I argued that *wh*-words map to lambda-operators. In case *wh*-words are in the subject position, it follows that they are lambdas that bind the closest argument position, i.e. the subject position. This semantic mapping is exactly what I just proposed for PRO, as well. The differences between the two are three: (i) *wh*-words are overt, (ii) they introduce variable restrictions, and (iii) they might have different formal licensing requirements (cf. the Spanish case in (72)). However, these differences need not concern us here. The overtiness of an expression is something that LF cannot see, anyway. The variable restriction is not a property of the fronted *wh*-word, but rather of the trace/copy that it binds. And finally, formal licensing is a matter of narrow

syntax, not LF. This means that the condition (a) is satisfied. How about the condition (b)? Is there any other expression that could be of the same LF type as PRO or wh-subjects? The answer is negative. All other fronted constituents are categorematic, i.e. they are assigned a type and combine with their complement by function application. This holds of quantifiers, as well as topicalized or focalized constituents. In general, after such a constituent is applied to its sister, the property is transformed to a proposition. And according to the present proposal, propositions are unfit for the selection by control predicates.

It is a virtue of the property type analysis of control constituents that it can unify the semantics of wh-words and PRO, to the exclusion of any other type of expression, as it captures the generalization in (73). Notice that the propositional analysis of control constituents fails to capture this wh/PRO generalization. I take this to be a rather strong argument in favor of the property type analysis of control, as well as the syncategorematic treatment of wh-words.

Let us now move on to the semantics of MECs with wh-subjects. As it turns out, the analysis proposed thus far cannot be mechanically applied to this type of MECs. The reason is that, unlike in the standard instances with PRO, the reference of the variable bound by the wh-subject cannot be identified with the reference of the participant argument of APPL. If that was the case, then (72a), repeated in (74), would have the unattested interpretation in (74a), rather than the one in (74b). Arguably, the interpretation in (74a) is blocked by Heim's (1982) novelty condition on indefinites, which prohibits indefinite pronouns to pick out previously introduced referents, or alternatively by condition C (if wh-words qualify as R-expressions under the present account).²³

- (74) *Spanish*
 No tengo quién me ayude.
 NEG have:1SG who me:DAT help:SBJ.3SG
 a. *‘I don’t have anyone such that the person can benefit from helping me.’
 b. ‘I don’t have anyone such that I can benefit if that person helps me.’

²³Tarald Taraldsen (p.c.) drew my attention to another wh-subject phenomenon, illustrated in (i).

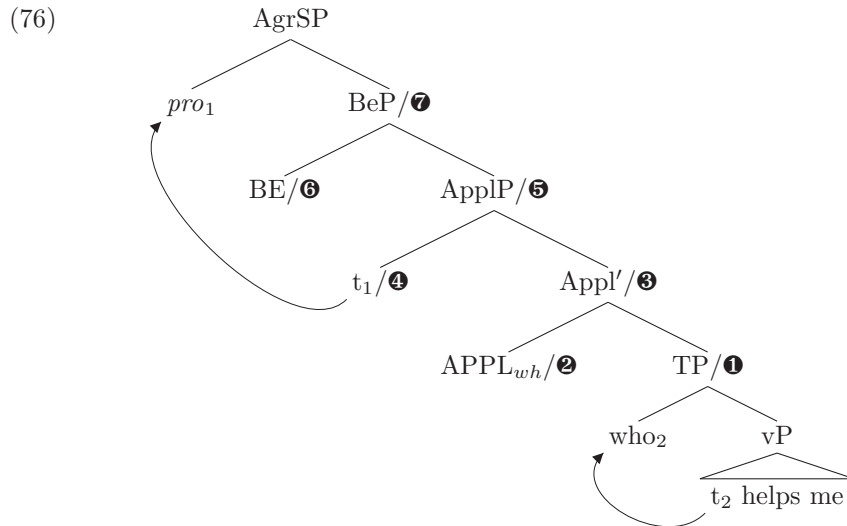
- (i) *Spanish* (Bosque and Moreno 1984:164)
 a. No sabemos quiénes ir a París.
 NEG know:1PL who:PL go:INF to Paris
 ‘We don’t know who of us should go to Paris.’
 b. *No sé quién ir a París.
 NEG know:1SG who go:INF to Paris
 ‘I don’t know who could/should go to Paris.’

As witnessed by the contrast above, the condition on the wh-subject in this case is exactly reverse from the one observed in MECs: in order for the wh-subject to be licensed, its reference has to be *included* in the reference of the matrix subject. A detailed comparison between this phenomenon and the wh/PRO generalization will have to wait for another occasion.

This means that the semantics of APPL, given in (67), has to be modified for the purpose of selecting complements with *wh*-words rather than PRO. I propose the modification in (75), where APPL_{wh} is just like APPL except that it has one more argument slot— λy , which binds the variable introduced by the *wh*-word and thus helps the *wh*-word “percolate” to the maximal projection ApplP, where it can be exploited by BE. In this way, the variable bound by the *wh*-word “goes intact” through the semantics of APPL. APPL’s participant role is instead assigned to an independent argument (x), which corresponds to the first person singular *pro* in (74).

$$(75) \quad \text{APPL}_{wh} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda x_e \lambda y_e \lambda e_v \exists e'_v [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e''_v [Q(w)(y)(e'') \wedge e = e' \rightarrow e'']]$$

The example in (74) receives the following representation:



The semantic computation proceeds as follows. The *wh*-word is generated in the highest argument position of the MEC, i.e. as the agent of helping. It raises to the edge of TP where it maps to a lambda-operator. Its trace contributes a variable restriction. Notice that in order for the *wh*-word to be formally (case) licensed, the mood must be finite, i.e. subjunctive. This is in accordance with the observation discussed above, namely that *wh*-subjects in Spanish represent the only one type of subject which elicit the use of the subjunctive. The *wh*-clause (node 1) is selected by the specialized head APPL_{wh} (node 2), which introduces its participant argument (node 4), but does not identify its reference with the reference of the *wh*-bound variable. The variable bound by the *wh*-word remains lambda-bound even at the level of ApplP thanks to APPL_{wh} ’s additional argument slot λy . The result (node 5) is fed into BE (node 6).

$$(77) \quad \mathbf{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Help}(w)(e) \wedge \mathbf{Ag}(e) = x [\mathbf{Human}(w)(x)] \wedge \mathbf{Th}(e) = \mathbf{sp}]$$

$$\begin{aligned}
\textcircled{2} &\rightsquigarrow \lambda w \lambda Q \lambda x \lambda y \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [Q(w)(y)(e'') \wedge e = e' \rightarrow e'']] = (75) \\
\textcircled{3} &\rightsquigarrow \lambda w \lambda x \lambda y \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = x \wedge \exists e'' [\mathbf{Help}(w)(e'') \wedge \mathbf{Ag}(e'') = y [\mathbf{Human}(w)(y)] \wedge \mathbf{Th}(e'') = \mathbf{sp}] \wedge e = e' \rightarrow e''] \\
\textcircled{4} &\rightsquigarrow \mathbf{sp} \\
\textcircled{5} &\rightsquigarrow \lambda w \lambda y \lambda e \exists e' [\mathbf{Ben}(w)(e') \wedge \theta(e') = \mathbf{sp} \wedge \exists e'' [\mathbf{Help}(w)(e'') \wedge \mathbf{Ag}(e'') = y [\mathbf{Human}(w)(y)] \wedge \mathbf{Th}(e'') = \mathbf{sp}] \wedge e = e' \rightarrow e''] \\
\textcircled{6} &\rightsquigarrow \lambda w \lambda Q \lambda e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' [Q(w')(z)(e''') \wedge e = e''' \rightarrow e''']] = (59) \text{ in } \S 4.4.2 \\
\textcircled{7} &\rightsquigarrow \lambda w \lambda e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' [\mathbf{Ben}(w')(e') \wedge \theta(e') = \mathbf{sp} \wedge \exists e'' [\mathbf{Help}(w')(e'') \wedge \mathbf{Ag}(e'') = z [\mathbf{Human}(w')(z)] \wedge \mathbf{Th}(e'') = \mathbf{sp}] \wedge e'''' = e' \rightarrow e''] \wedge e = e''' \rightarrow e''']] \\
\textcircled{7}' &\rightsquigarrow \lambda w \exists e \exists e''' \exists z [\mathbf{Exist}(w)(e''') \wedge \theta(e''') = z \wedge \exists w' \in C(w) : \exists e'''' [\mathbf{Ben}(w')(e') \wedge \theta(e') = \mathbf{sp} \wedge \exists e'' [\mathbf{Help}(w')(e'') \wedge \mathbf{Ag}(e'') = z [\mathbf{Human}(w')(z)] \wedge \mathbf{Th}(e'') = \mathbf{sp}] \wedge e'''' = e' \rightarrow e''] \wedge e = e''' \rightarrow e''']]
\end{aligned}$$

The final truth conditions are given in $\textcircled{7}$. They match (74b) rather than (74a), as desired. The sentence is true iff the speaker can profit from the existence of some z such that z can help the speaker.

Let us now consider the case of Russian MECs with wh-subjects. The situation in Russian is special in that there is no way to formally license two overt disjoint subjects. While Spanish, by exceptionally allowing the subjunctive, can license both the wh-subject and the matrix subject by nominative-marking, no such option exists in Russian, since Russian MEC-embedding BE is intrinsically impersonal and cannot license any overt subjects. The only overt-subject licenser is the head that assigns the dative, i.e. arguably APPL.²⁴ It seems that this situation has three possible outcomes, schematically illustrated in (78). The first option, (78a), is that Russian does not allow wh-subjects at all, whether above or below APPL. The second option, (78b), is that in the presence of the wh-subject, no other subject is allowed, be it covert or overt. In that case, the wh-subject is generated as the participant of APPL. The third option, (78c), is that in the presence of the wh-subject, no *overt* subject is allowed.

- (78) a. $*[\text{BeP BE } [\text{ApplP } \{\text{wh-subj}\}] [\text{ApplP subj APPL } [\text{TP } \{\text{wh-subj}\}] \dots]]]$
b. $[\text{BeP BE } [\text{ApplP wh-subj APPL } [\text{TP } \dots]]]$
c. $[\text{BeP BE } [\text{ApplP PRO}_{arb} \text{ APPL } [\text{TP wh-subj } \dots]]]$

Already from §5.4.4 we know that perhaps the most sensible outcome—the complete prohibition on wh-subjects—does not correspond to facts. Which one of the other two options is realized? *Prima facie*, (78c) appears to be disfavored

²⁴The exception is a situation where BE is supplemented with AT, in which case the matrix subject can be realized by a prepositional phrase. However, this situation is incomparable with the presently discussed one, since prepositional subjects in Russian do not obligatorily control the embedded subject. See the discussion in the conclusion of §5.4.4.

as it relies on the postulation of an empty category, probably an arbitrarily interpreted PRO.²⁵ However, if wh-subjects in MECs are really close relatives of PRO, as assumed and argued here, (78c) is preferred over (78b). In order to decide between the two, we can use the test applied to (74) for Spanish: if the referent introduced by the wh-subject is interpreted as the participant of APPL, i.e. the benefactive, then (78b) is correct. If not, then (78c) seems inevitable. The following test shows that the latter is the case and hence, (78c) is correct.²⁶

- (79) *Russian* (Aysa Arylova, p.c.)
 Nad etoj problemoj bylo komu rabotat'.
 on that problem be:PAST who:DAT work:INF
 a. *‘There is somebody such that he can benefit from his own existence by working on that problem.’
 b. ‘There is somebody such that somebody (else) can benefit from his existence by his working on that problem.’

This finding further supports the present theory under which wh-subjects in MECs correspond to PRO, which is in turn analyzed as a lambda binding the closest argument variable.

Before I wrap up this subsection, one reservation with respect to the present analysis of Russian wh-subject MECs should be mentioned. In §5.4.4, I observed that wh-subjects bear a significant formal resemblance to their non-wh counterparts. In particular, wh-subjects are dative-marked and they must be animate. The latter fact is repeated below:

- (80) *Russian* (Aysa Arylova, p.c.)
 #Bylo čemu osveščat' proliv.
 be:PAST what:DAT light:INF strait
 ‘There was something that could light the strait.’

Throughout this subsection, I have assumed that the dative case as well as the animacy restriction has its source in the applicative head. However, now I propose that the wh-subject is not in the same position as its non-wh counterparts, i.e. it is *not* in SpecApplP. There are two possible ways of resolving this paradox. One option is that it points to a (potentially fundamental) flaw in the present reasoning. The other option is to assume that the wh-subject in fact does get formally licensed by APPL, without actually entering into a thematic relation with it. The structural closeness suggests that the latter solution could be tenable (the wh-subject appears at the edge of the phrase which is selected by APPL). I leave this problem open and assume that it is not a significant

²⁵Notice that I assume that arbitrarily interpreted PRO is a default argument-filling mechanism that is in need of no formal licensing (cf. §5.4).

²⁶Lena Karvovskaya (p.c.) correctly points out that (79a) *can* have the reading that the person benefits from his/her own existence. What is important, however, is that this reading is accidental, it is not a part of the entailment.

one, until proved otherwise.

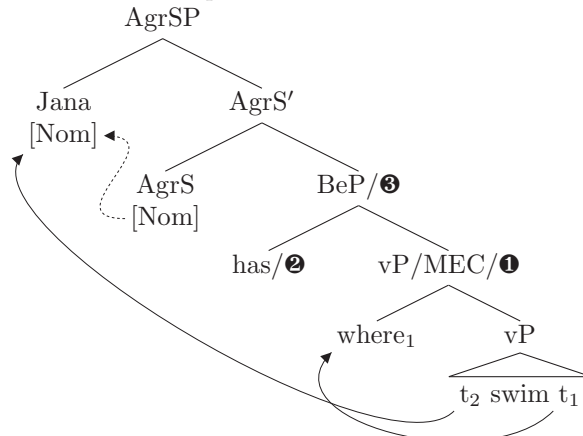
Interim summary

In this subsection, I discussed the puzzling phenomenon of *wh*-subjects in MECs, first observed in §2.2.3. I argued that the present theory in fact makes a correct prediction about their behavior, as it derives the *wh*/PRO generalization (73), which states that *wh*-subjects and PRO in MECs are in complementary distribution. The generalization is derived by the conjunction of two assumptions about the made in the present thesis, namely that *wh*-words, as well as the obligatorily controlled PRO are syncategorematic expressions, which map to logical lambdas. This construal makes *wh*-subjects and PRO indistinguishable at the relevant level of representation.

6.4.3 A note on raising MECs

In §5.4.1, I argued that raising MECs are to be analyzed as vPs. Since there is no evidence that the subject of raising MECs is thematically constrained in any way, there is no reason to postulate the APPL head. An example of a raising MEC, along with its proposed structure is given in (81) (irrelevant projections are omitted).

- (81) Jana má kde plavat.
 Jana has where swim:INF
 ‘There is some place where Jana can swim.’



The interpretation of raising MECs is fairly straightforward. The subject *Jana* is interpreted in situ, in SpecvP. Its movement to AgrSP is optional and meaningless. As opposed to control MECs, it seems reasonable to assume that the event variable is not existentially closed, nor otherwise quantified. It is therefore freely available for BE to use. After the *wh*-movement, which proceeds completely standardly (within the present account where *wh*-movement reduces to adjunction), the MEC (node ①) denotes a possibility clause, i.e. an expression of type $\langle s, \langle e, vt \rangle \rangle$. The MEC is selected by BE, as usual.

$$\begin{aligned}
(82) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Swim}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{j} \wedge \mathbf{Place}(e) = x] \\
& \textcircled{2} \rightsquigarrow \lambda w \lambda Q \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' \\
& \quad [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] = (59) \text{ in } \S 4.4.2 \\
& \textcircled{3} \rightsquigarrow \lambda w \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' \\
& \quad [[\mathbf{Swim}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{j} \wedge \mathbf{Place}(e'') = x] \wedge e = e' \rightarrow e'']] \\
& \textcircled{3}' \rightsquigarrow \lambda w \exists e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e'' \\
& \quad [[\mathbf{Swim}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{j} \wedge \mathbf{Place}(e'') = x] \wedge e = e' \rightarrow e'']]
\end{aligned}$$

The final truth conditions of (81) are in $\textcircled{3}'$. The sentence is true iff there is some place such that its existence leads to the possibility to realize an event of swimming in that place such that Jana is active in that event.

Wh-subjects in raising MECs are also non-problematic. Since there is no PRO, wh-subjects do not compete for binding the highest argument variable with any other element and MECs with wh-subjects are therefore run-of-the-mill raising MECs. The only difference between MECs with wh-subjects and other types of MECs is that the wh-subject cannot raise out of the MEC and its case feature must be valued at a distance.

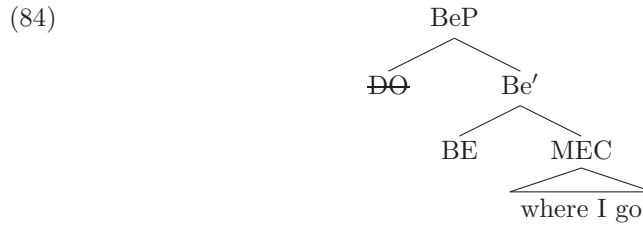
6.4.4 Conclusion

This section was devoted to formalizing the control relation between the matrix subject and the embedded MEC subject. I argued that control in MECs can be captured by the system of sharing argument reference within complex events, developed in §4.3.3. I argued that complications in the reference-sharing system that arise in analyses like Chierchia's (1989b) due to the double-abstract nature of MECs (or, more generally, possibility clauses), can be avoided if one takes seriously the observations about Russian MECs made in §5.4.4. In particular, what Russian seems to suggest is that the controller of the MEC subject is not located MEC-externally, but rather MEC-internally. I argued that the control predicate is an applicative head APPL. This head functions as a sort of bridge between the MEC and the matrix context: by incorporating into the MEC-embedding BE, it mediates the embedded event-structure and the matrix event structure. This is why the participant argument of APPL can be formally licensed in the matrix clause, which in turn creates the impression that it is base-generated MEC-externally. I also discussed the issue of wh-subjects and the fact that they are in complementary distribution with the obligatory controlled PRO. I argued that this phenomenon, called here the wh/PRO generalization, receives a natural explanation under the present assumptions of control and fronted wh-word semantics. Finally, I briefly discussed the issue of raising MECs and showed that the computation of their truth conditions is straightforward.

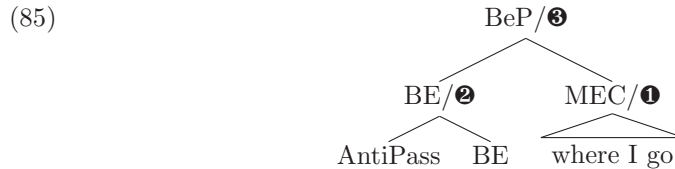
6.5 BE and its participant argument

So far, I have attributed the headlessness of MECs to the reduction of the participant argument position from the argument structure of the MEC-selecting existence predicate BE. The situation is schematically represented in (84)—for concreteness the simplified structure of (83). For clarity, I represent the argument position reduction by a strikeout.

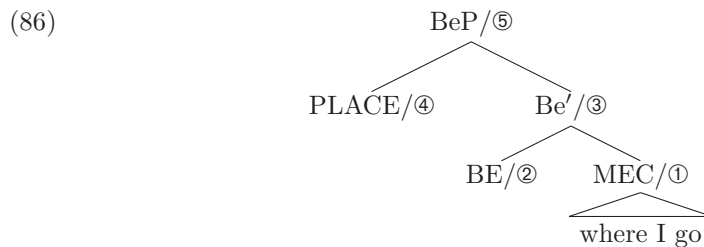
- (83) *Russian*
 Mne est' kuda idti.
 me:DAT be:IMPRS where go:INF
 'There's a place where I can go.'



I argued that the argument reduction takes place by applying a sort of antipassive morpheme, designated here as ANTIPAS. This morpheme applies directly to the predicate BE, as standardly assumed for arity-changing operators, so that the representation in (84) should in fact be (85).



Now, I would like to suggest that there is an alternative analysis, in which the direct object position is filled by an empty nominal, PLACE in this case (and THING or PERSON in other cases), as in (86). For convenience, I will refer to (85) as the *antipassive analysis* and to (86) as the *empty-object analysis*.



Notice that (86) is fundamentally different from the original empty-NP analyses, such as the one of Plann (1980) (see §5.1.1 for discussion). Plann treated the empty NP as the *head* of the MEC, which led to a number of problems, including the ones of locality and coordination: unlike run-of-the-mill headed relative clauses, MECs are transparent for extraction and do not tolerate coordination with NPs. Under the alternative analysis in (86), however, no such problems arise. The empty nominal is *not* the head of the MEC: it occupies an entirely different argument slot and the MEC remains a clause, categorially speaking. Given the fact that the problems of the headed analysis can be sidestepped, the empty-object analysis in (86) is at least as plausible as the antipassive analysis in (85)—both are equally stipulative in that they depend on postulating an empty category (the arity-reducing ANTIPAS and the empty nominal PLACE, respectively).²⁷ The question therefore is: Is there any empirical ground that favors one analysis over the other?

Before I move to empirical arguments, let me spell out the truth conditions of (85) and (86), in order to show that the two cannot be distinguished semantically. The lexical entries of the two types of predicates are given below. The antipassive analysis uses the familiar predicate BE, as designed above for MECs. I relabel it as BE-ANTIPAS for clarity. The empty-object analysis, on the other hand, utilizes the non-reduced BE, call it BE-PART. The participant argument slot of BE-PART is to be filled by an intensional property P —corresponding to an indefinite NP. The reason why the argument is a property/indefinite is that MECs must eventually be interpreted as narrow scope existentials and the variable introduced by the argument must therefore be existentially closed by the BE, which would not be possible if the argument was an individual (see also footnote 27).

$$(87) \quad \text{BE-ANTIPAS} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda e_v \exists e'_v \exists x_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] \quad = (59) \text{ in } \S 4.4.2$$

$$(88) \quad \text{BE-PART} \rightsquigarrow \lambda w_s \lambda Q_{\langle s, \langle e, vt \rangle \rangle} \lambda P_{\langle s, et \rangle} \lambda e_v \exists e'_v \exists x_e [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge P(w)(x) \wedge \exists w' \in C(w) : \exists e''_v [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']]$$

The derivation of the truth conditions of (85) and (86) is given in (89) and (90) respectively. In order to save some space, I ignore the semantic derivation internal to the MEC (see §4.4.2 for the full version), as it is identical in the two analyses and therefore immaterial for the present discussion. I invite the reader to pay attention mainly to the composition of node ③ and ④ in (90)—a step that is missing in the derivation (89). In this step, the empty indefinite PLACE, represented as an intensional property, is introduced into the structure and the variable it introduces is identified with the participant argument of the

²⁷There is one reservation with respect to the empty-nominal analysis, which has to do with the existential quantification. So far, I have assumed that the existential quantification is an epiphenomenon of the antipassivization. In the empty-object analysis, the existential quantification (and the corresponding indefiniteness of the participant argument) must be stipulated, in order to capture the facts. I put this reservation aside for the moment.

predicate BE-PART.

$$\begin{aligned}
 (89) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Go}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{sp} \wedge \mathbf{Goal}(e) = x[\mathbf{Place}(w)(x)]] \\
 & \textcircled{2} \rightsquigarrow \lambda w \lambda Q \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] = (87) \\
 & \textcircled{3} \rightsquigarrow \lambda w \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [[\mathbf{Go}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{sp} \wedge \mathbf{Goal}(e'') = x[\mathbf{Place}(w')(x)]] \wedge \\
 & \quad e = e' \rightarrow e'']] \\
 (90) \quad & \textcircled{1} \rightsquigarrow \lambda w \lambda x \lambda e [\mathbf{Go}(w)(e) \wedge \mathbf{Ag}(e) = \mathbf{sp} \wedge \mathbf{Goal}(e) = x[\mathbf{Place}(w)(x)]] \\
 & \textcircled{2} \rightsquigarrow \lambda w \lambda Q \lambda P \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge P(w)(x) \wedge \exists w' \in \\
 & \quad C(w) : \exists e'' [Q(w')(x)(e'') \wedge e = e' \rightarrow e'']] = (88) \\
 & \textcircled{3} \rightsquigarrow \lambda w \lambda P \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge P(w)(x) \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [[\mathbf{Go}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{sp} \wedge \mathbf{Goal}(e'') = x[\mathbf{Place}(w')(x)]] \wedge \\
 & \quad e = e' \rightarrow e'']] \\
 & \textcircled{4} \rightsquigarrow \lambda w \lambda x [\mathbf{Place}(w)(x)] \\
 & \textcircled{5} \rightsquigarrow \lambda w \lambda e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \mathbf{Place}(w)(x) \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [[\mathbf{Go}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{sp} \wedge \mathbf{Goal}(e'') = x[\mathbf{Place}(w')(x)]] \wedge \\
 & \quad e = e' \rightarrow e'']]
 \end{aligned}$$

After existentially closing off the event variable, we arrive at the following two propositions: (91) expressing the truth conditions of (85) and (92) of (86). In prose, (85) is true in w iff there is a complex event e which corresponds to the extension of the state e' of being existent into the event e'' of going and there is some x such that x is in the state e' in w and it is possible (given that the circumstances are as in w) that I participate in the event e'' of going to some place x . Similarly, (86) is true in w iff there is a complex event e which corresponds to the extension of the state e' of being existent into the event e'' of going and there is some place x in w such that x is in the state e' in w and it is possible (given that the circumstances are as in w) that I participate in the event e'' of going to the place x .

$$\begin{aligned}
 (91) \quad & \textcircled{3}' \rightsquigarrow \lambda w \exists e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w) : \\
 & \quad \exists e'' [[\mathbf{Go}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{sp} \wedge \mathbf{Goal}(e'') = x[\mathbf{Place}(w')(x)]] \wedge \\
 & \quad e = e' \rightarrow e'']] \\
 (92) \quad & \textcircled{5}' \rightsquigarrow \lambda w \exists e \exists e' \exists x [\mathbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \mathbf{Place}(w)(x) \wedge \exists w' \in \\
 & \quad C(w) : \exists e'' [[\mathbf{Go}(w')(e'') \wedge \mathbf{Ag}(e'') = \mathbf{sp} \wedge \mathbf{Goal}(e'') = \\
 & \quad x[\mathbf{Place}(w')(x)]] \wedge e = e' \rightarrow e'']]
 \end{aligned}$$

Now, notice that the only difference between (91) and (92) is the level to which the variable x , corresponding to the direct object, is restricted. In (91), it is sufficient if x is a ‘place’ in w' , i.e. in some of the worlds circumstantially accessible from w in which ‘I go to x ’ is true. In (92), on the other hand, x must be a ‘place’ in both w and w' . Thus, the truth conditions (92)—the empty-object analysis—are slightly more difficult to satisfy than the ones of (91). However, it is not clear to me whether this small difference is empirically

relevant at all. To the extent that it is not, the two sets of truth conditions are identical.

If the semantics is practically indistinguishable, the question remains: Which of the two analyses is superior? It turns out that there are a number of empirical and conceptual arguments for both positions. I start with a convincing argument in favor of the empty-object analysis. In §6.5.1, I show that what was treated in Plann (1980) as headed infinitival relatives, should in fact be treated as MECs with an overtly filled participant argument position of BE. The idea is that if overt NPs can fill the position, covert ones can, too. In §6.5.2, I show that a similar situation is attested in Czech. In particular, Czech can fill the participant argument position of BE with an overt weak quantificational determiner. In §6.5.3, I discuss once more the phenomenon of matching effects, pointing out that previous theories of MECs have neglected a problematic aspect of the lack of matching effects in MECs. I will suggest that the empty-object analysis provides an interesting solution to this problem. In §6.5.4, I discuss the problem of MECs as targets of passivization. In the baseline event-extension analysis, passivization is predicted not to be possible, which is indeed true for some languages (Spanish). Yet, in other languages (Russian), passivization is available, though only in a limited manner. I will show that the empty-object analysis once again provides an interesting solution to the observed pattern. In §6.5.5, I discuss a conceptual argument in favor of the empty-object analysis, drawn from the fact that many MECs exhibit polarity sensitivity. The last subsection, §6.5.6, turns to the problem of apparent MEC-modification. While in the antipassive version of the event-extension analysis, modification of MECs should be prohibited due to type-mismatch, the empty-object analysis allows for modification, by virtue of the presence of the weak NP participant. I will show that both analyses might be needed. Finally, §6.5.7 concludes the section.

6.5.1 Apparent headed relatives in Spanish

An indirect argument in favor of the empty-object analysis of MECs comes from Spanish infinitival headed relatives (IHR). As briefly pointed out in §5.1.1, Plann (1980) demonstrates that to some extent IHRs in Spanish resemble MECs.²⁸ The most striking resemblances are the following two.

Just like MECs, IHRs in Spanish are highly restricted in distribution. The example in (93a) shows that IHRs are acceptable under verbs like *tener* ‘have’ or *encontrar* ‘find’, but are ruled out from the subject position, (93b), or from the object position of non-MEC-selecting verbs (not illustrated by Plann).

²⁸In fact, this only holds of cases of direct object relativization, relativization of other positions (PPs) is not affected. I have no explanation for this and will continue discussing only the relevant type of IHRs—those that behave like MECs.

(93) *Spanish* (Plann 1980:128)

- a. Ana no { tiene / pudo encontrar} ningún libro que leer.
 Ana NEG has / could find any:NCI book that read:INF
 ‘Ana {doesn’t have / couldn’t find} any book to read.’
- b. Un libro (* que leer) ha llegado por correo.
 a book that read has arrived by mail
 ‘A book (to read) has arrived by mail.’

Secondly, Spanish IHRs must be interpreted as non-specific indefinites, as in (94a). Consequently, definite heads, (94b), and specific indefinite heads, (94c), are not allowed.

(94) *Spanish* (Plann 1980)

- a. Ana no tiene ningún abrigo que ponerse.
 Ana NEG has any:NCI coat that put.on:REFL
 ‘Ana doesn’t have any coat to put on.’
- b. *Ana no tiene el abrigo que ponerse.
 Ana NEG has the coat that put.on:REFL
 ‘Ana doesn’t have the coat to put on.’
- c. Luis Vicente (p.c.)
 *No tengo algo de que hablar?
 NEG have:1SG something:PPI of what speak:INF
 ‘I don’t have something (particular) about which I could speak.’

Notice that all these facts are quite mysterious under an analysis like Plann’s (1980), where the NP is a head of the infinitival relative; it is unclear why modification by a relative clause should impose any restrictions on NPs at all. The situation is different if the empty-object analysis considered here is adopted. Suppose that what appears to be the relative head in the examples above is in fact the participant argument of BE which is for some reason capable of having an overt exponent. What properties is it expected to have? First of all, it must be non-referential, i.e. it must denote a property rather than an individual, since using the latter would lead to a type-clash. This directly accounts for the ungrammaticality of (94b) and (94c), since both definites and specific indefinites are of type *e*. Now, if the putative IHR structures above are indeed MECs coupled with overt participant arguments, then they are expected to have the distribution of ordinary MECs. In structural terms, they can only appear as extension arguments of the availability predicate BE. Thus, the pattern in (93) is also predicted.

Now, if the indefinite NPs above are indeed arguments of BE rather than heads of the infinitival relatives, their presence is predicted to have no effect whatsoever on the transparency of the MEC/infinitival relative: the structure should remain transparent for extraction. This prediction is borne out, as already pointed out in §5.1.1. The relevant examples are given below.

(95) *Spanish* (Luis Vicente, Paula Menéndez-Benito, p.c.)

- a. ¿ Con quién ya no tienes (un sitio) dónde ir?
 with whom already NEG have:2SG (a place) where go:INF
 ‘Which person is such that there is no longer a place where you
 could go with that person?’
- b. ¿ Con quién ya no tienes (ningún libro) de qué
 with whom already NEG have:2SG (any:NCI book) of what
 hablar?
 speak:INF
 ‘Which person is such that there is no longer any book that you
 can speak about with that person?’

Another striking prediction of the MEC-based analysis of these apparent infinitival relatives concerns modality. From the literature on English (see esp. Bhatt 2006 and the references cited therein) we know that the semantics of infinitival relatives (as well as questions) is underspecified as for the force and flavor of their modality (though see Hackl and Nissenbaum 2003, who argue that there is at least one structural factor restricting it, namely the quantificational/determiner force of the RC head). This is also the case in Spanish infinitival relatives, which are ambiguous between possibility (96a) and necessity (96b) readings.

(96) *Spanish* (Luis Vicente, p.c.)

- Ya no tengo ningún sitio dónde ir.
 already NEG have:1SG any:NPI place where go:INF
- a. ‘I no longer have a place where I could go.’
 b. ‘I no longer have a place where I have to go.’

Under the present assumptions, the reading in (96a) can be derived according to the lines of the empty-object flavor of the event-extension analysis of MECs, in which case the NP *ningún sitio* ‘any place’ and the “relative clause” (in fact the MEC, or a kind of the possibility clause (PC)) *dónde ir* ‘where to go’ both occupy an argument position of its own. This structural analysis is not available to the necessity reading in (96b), which presumably requires a true relative clause structure (as usually assumed for English). For clarity, the two structural descriptions are given below:

- (97) a. [_{BeP} ningún sitio [_{Be'} tengo [_{PC} dónde ir]]] = (96a)
 b. [_{BeP} tengo [_{DP} ningún sitio [_{RC} dónde ir]]] = (96b)

Now, notice that the infinitival clause in (96) is transparent for extraction under the possibility reading (96a), but it is an island (in particular a complex NP island) under the necessity reading (96b). This means that sentences like those in (95) can only have the possibility reading, but not the necessity reading. This prediction is indeed borne out:

- (98) *Spanish* (Luis Vicente, p.c.)
 ¿ Con quién ya no tienes ningún sitio dónde ir?
 with whom already NEG have:2SG any:NPI place where go:INF
 a. ‘Which person is such that there is no longer a place where you
 could go with that person?’
 b. *‘Which person is such that there is no longer a place where you
 have to go with that person?’

In conclusion, Plann’s insightful observations about the analogy of IHRs and MECs, together with the fact that IHRs are transparent for extraction, constitute quite a strong argument in favor of treating Spanish IHRs (or at least the type discussed above) as MECs with the object position of BE occupied by an overt indefinite NP. If this reasoning is correct, we have an argument that the empty-object analysis of MECs must exist for independent reasons and cannot therefore be a priori ruled out for ordinary MECs.

In what follows, I discuss a number of observations as well as conceptual arguments that are relevant for the issue of the potential empty participant argument in MECs.

6.5.2 Overt quantificational determiners in Czech MECs

The phenomenon that I would like to discuss in this subsection was already hinted at in §2.2.6. It concerns a special type of MECs in Czech in which the MEC is apparently headed by a weak quantificational determiner such as *moc* ‘much’, *hodně* ‘a lot’, *tolik* ‘so much’, etc. Three examples are given below; the quantificational determiners are boldfaced.

- (99) *Czech*
 a. Máme si toho o literatuře **hodně** co říct.
 have:1PL REFL that:GEN about literature a.lot say:INF
 ‘We have so much to speak about when it comes to literature.’
 b. Nemáme se tady **moc** na koho obrátit.
 NEG:have:1PL REFL here much on who turn:INF
 ‘There aren’t many people here that we could turn to.’
 c. Nemám se už **tolik(*a)** čeho
 NEG:have:1sg REFL already so.much:ACC(GEN) what:GEN
 bát.
 fear:INF
 ‘There is not so much that I could be afraid of anymore.’

There is no clear way of incorporating such quantificational determiners in the antipassive analysis. The empty-object analysis, on the other hand, offers a rather straightforward view of these examples: the determiner can be treated as a cardinality modifier of the empty nominal generated in the participant argument position of BE. There is evidence that seems to support this view. The

first piece of evidence is given by the case form of *tolik* ‘so.much’ in (99c). The form of the determiner is different in structural cases (nominative, accusative) and in and oblique cases (e.g. genitive): *tolik* vs. *tolika*. In (99c), the determiner must appear in the structural case, suggesting that it cannot be treated as a modifier of the genitive-marker wh-word *čeho* ‘what’. At the same time, the determiner does not behave as a head of the MEC, since the MEC remains transparent for extraction. This is illustrated in all examples in (99), since the reflexive clitics (*si* in (99a) and *se* in (99b,c)) were base-generated in the MEC and climbed into the matrix (see §5.2 for a discussion of clitic climbing out of MECs). The example below shows the same for A-bar extraction:

- (100) *Czech*
 O kom₁ si₂ už nemáte moc co říct t₂ t₁?
 about who REFL already NEG:have:2PL much what say:INF
 ‘Who is such that you there is no longer much that you can speak
 about that person?’

Interestingly, in the presence of the quantificational determiner, the modification, discussed in the preceding subsection, is grammatical:

- (101) V ledničce už není moc co jíst.
 in fridge already NEG:be:IMPRS what eat
 ‘There isn’t much to eat in the fridge anymore.’

In sum, Czech MECs with quantificational determiners provide evidence in favor of the empty-object analysis of MECs. Similarly to Spanish, also Czech seems to be able to fill in the participant argument position with an overt expression, though not with a full NP. The exact phenomenon requires more investigation.

Before I conclude this subsection, let me repeat an interesting observation made in §2.2.6. In some cases, basically limited to MECs with the wh-word ‘what’, MECs with quantificational determiners can lead to a universal modal force. The relevant example is repeated below:

- (102) *Czech*
 Máš dost co dělat, chceš-li přijít včas.
 have:2SG a.lot what do:INF want:2SG-COND come:INF in time
 ‘There’s a lot you have to/*can do if you want to come in time.’

This state of affairs is certainly not predicted by the present analysis, no matter if the antipassive or the empty-object analysis is chosen. Unfortunately, I will have to leave this problem aside for the moment. I hope to come back to it in future research.

6.5.3 Matching effects

Another argument that I would like to discuss relates to matching effects. MECs have always been viewed in opposition to free relatives in that their *wh*-words are not subject to case- or category-licensing from the matrix clause (see Suñer 1983 for the first detailed discussion of matching effects in MECs; see also §5.1.1). Since Grosu (1987), the standard account of the contrast in matching effects between FRs and MECs has been that the former but not the latter are headed by an empty nominal category. Matching effects are then assumed to be an overt reflection of licensing that empty category. Since MECs involve no empty nominal head in the first place, no matching effects are expected.

While the fact that MECs (or their *wh*-words) need no case from the external context is well-known and has been richly discussed, the mirror image of this problem has never been considered. In particular, how is it possible that MEC-embedding verbs, or more precisely the functional structure associated with them, can go without assigning the accusative case? In the standard minimalist case theory, the functional head responsible for case-assignment is also in need of having its uninterpretable *phi*-features checked. Notice that this constitutes a problem for all the previous theories of MECs: if MECs are incapable of “absorbing” case, then they should also be incapable of checking the uninterpretable *phi*-features of the case-assigning head and the derivation should crash. Unless something more is said or some different case theory is adopted, this problem should be added to the stack of unresolved issues of all of the previous theories (see Table 6.1 in §6.1.3).

How about the present analysis? Especially the empty-object flavor of the analysis has a particularly elegant solution to this problem: the mutual *phi*-case relation between the functional case-assigning head and the object can be established in a completely normal fashion, while the MEC, not being in the canonical object position at all (in addition to not being of the right syntactic category), remains unaffected by this relation, which also immediately explains the lack of case-matching effects. For clarity, I illustrate the relevant contrast between the traditional analyses and the event-extension analysis (or more precisely its empty-object flavor) below. What counts as direct object in the respective analyses is underlined. Checking is designated by the dotted line and a strikeouts of the relevant features.

- (103) a. *Traditional analyses*: *Phi* on *v* remains unchecked
 [_{vP} v[**Phi**(!)] [_{BeP} BE [_{MEC}(_{vP}/CP) ...]]]
 b. *Event-extension analysis (empty-object flavor)*: *Phi* on *v* checked
 by the empty object
 [_{vP} v[**Phi**] [_{BeP} NP[**Case**] BE [_{MEC}(_{vP}/CP) ...]]]
 ▲.....▲

How about the antipassive version of the analysis? It certainly shares the virtue of having a non-stipulative explanation of the lack of matching effects. How exactly the case-*phi* problem is resolved depends on the formal consequences of

the application of the argument-reducing antipassive morpheme—does it only reduce the argument position or also the case-assigner associated with it? If the latter is true, then the antipassive analysis is as good as the empty-object analysis: there is no case-phi relation whatsoever. If the former is true, then the analysis has the same problem as all the previous analyses—the case-phi relation fails to be established due to the absence of a suitable argument.

6.5.4 Passivization

The process of passivization is known to be intimately related to the direct object position.²⁹ In the present system, this position corresponds to the participant argument position of BE, at least in predicates which can be passivized (basically dynamic predicates). From this perspective, the event-extension analysis, regardless of its flavor, correctly predicts that an MEC should never become the target of passivization. The reason is that it is not generated in the proper participant position. That passivization of MECs is degraded was first observed by Plann (1980) for Spanish:

- (104) *Spanish* (Plann 1980:126)
 *A quien consultar no fue encontrado por Julia.
 A who consult:INF NEG was found by Julia
 ‘No one to consult was found by Julia.’

However, as illustrated in (105a), passivization of MEC-selecting verbs is not completely ruled out, provided that the MEC itself remains in situ. If it moves, as in (104) or (105b), the result is ungrammatical.

- (105) *Russian* (Aysa Arylova, p.c.; adapted from Pesetsky 1982:154)
 a. Bylo kupleno čem zakusit’.
 was bought what:INSTR eat.after.drinking.vodka:INF
 b. *Čem zakusit’ bylo kupleno.
 what:INSTR eat.after.drinking.vodka:INF was bought
 ‘Something to eat after drinking vodka was bought.’

The question is what constituent the passivization in (105a) targets and, by extension, what constituent is responsible for licensing the phi-features on T. As the present theory predicts and the examples in (105b) and (104) confirm, it cannot be the MEC itself. Firstly, it does not appear in the appropriate syntactic position and secondly, it does not possess the right features, i.e. phi-features. Once again, the empty-object analysis has a straightforward answer—it is the empty indefinite object that feeds the passivization.

²⁹I am setting aside the English-type passivization of indirect objects (*John was given a book*) and of prepositional objects (*The bed was slept in*). To the best of my knowledge, these passivization patterns are not available in most of the languages relevant for our discussion.

- Under the antipassive analysis, there is no object whatsoever and passivization should therefore be ruled out across the board. A potential way out for the antipassive analysis is resorting to the German-style passivization, illustrated in (107a), which requires no direct (accusative) object to be present in the structure, which is shown by (107b), the active counterpart of (107a).

- In this case, an empty expletive subject steps in to guarantee the licensing of the finite T. However, this strategy does not seem to be available in Russian, as shown by (108).

- Thus, there seems to be no straightforward way of fixing the wrong prediction of the antipassive analysis that passivization of MEC-selecting verbs should never be possible. The empty-object analysis clearly fares better from this perspective.

6.5.5 Polarity sensitivity

As already pointed out in §2.2.2, speakers of various languages report that some MECs sound better when in a downward entailing context, typically under direct negation. The unacceptability of some MECs in upward entailing contexts ranges from slight degradation to complete ungrammaticality, as illustrated below for Slovenian and Spanish, respectively.

- (109) a. *Slovenian* (Marko Hladnik, p.c.)
 Danes { nimam /? imam} kdaj pisati diplome/o.
 today NEG:have / have when write:INF thesis:GEN/ACC
 ‘Today I don’t have time to write my thesis.’

- b. *Spanish* (Plann 1980:123/124)
 *?(No) tenemos a quien dirigirnos.
 NEG have:1PL A who turn:INF.REFL
 ‘We have noone/someone to turn to.’

An important aspect of the polarity sensitivity is its selectivity with respect to the type of wh-word involved. As discussed in §2.2.2, wh-words usually cluster in three groups: (i) those that form acceptable MECs in any context, (ii) those that form MECs in downward entailing contexts, and (iii) those that do not form MECs. The membership of wh-words in these groups is completely language-specific and appears to be idiosyncratic. Very few scholars have attempted to make sense of this puzzling non-uniform behavior. I am only aware of the suggestion of Kondrashova (2008), who proposes to rationalize the difference between wh-words that fall into group (i) and (ii) on the one hand and (iii) on the other in terms of a restriction on the existential quantification over the variables that the wh-words introduce. In particular, she suggests that only wh-words introducing *individual* variables can be quantified over by BE. Concerning the difference between groups (i) and (ii), the only suggestion I am aware of is the one of Agouraki (2005), who suggests that the polarity sensitivity is a property of an empty nominal heading the MEC. Indeed, it seems more reasonable to locate polarity sensitivity in indefinite pronouns than in bare wh-words, which have very few inherent properties to begin with. Therefore, also in this respect, the empty-object analysis appears to fare slightly better when compared to the antipassive analysis: it provides an indefinite, which, one could argue, can be an NPI and hence the locus of what appears to be the polarity sensitivity of MECs or wh-words in them.

6.5.6 Modification

In §2.2.1, I observed that languages differ in the availability of what appears to be MEC-modification. The original example comes from Izvorski (1998) and is repeated in (110). In this example, the phrase *dežuren po tova vreme* ‘on duty at this time’ appears to modify the MEC *koj da ti pomogne* ‘who can help you’.

- (110) a. *Bulgarian* (Izvorski 1998:163)
 Edva-li ima koj da ti pomogne dežuren po tova
 hardly have who SBJ you:DAT help on.duty at this
 vreme.
 time
 ‘There is hardly anyone who can help you who is on duty at this time.’

Similar examples were reported to be acceptable in other languages, such as French or Spanish.

- (111) a. *French* (Thomas 2008a:7/8)
 Il y a de quoi manger dans le frigo.
 it LOC have:3SG of what eat:INF in the fridge
 ‘There is something that one can eat in the fridge.’
 b. *Spanish* (Cintia Widmann, p.c.)
 En la heladera tengo qué comer.
 in the fridge have:1SG what eat:INF
 ‘There is something to eat in the fridge.’

How are these examples to be analyzed? Clearly, the baseline event-extension analysis proposed in Chapter 4 will have a hard time accounting for the phenomenon of MEC-modification. The reason is that MECs are of the wrong semantic type. They would have to be of type $\langle e, t \rangle$ (or $\langle s, et \rangle$ in intensional systems) in order to be modifiable. Again, the empty-object analysis fares much better in this respect than the baseline antipassive analysis. The reason is that it provides a nominal argument, which is of type $\langle s, et \rangle$, and therefore can be easily modified. Notice that the truth conditions match the intuitions of the speakers: ‘there is [something such that it is in the fridge] and I can eat it.’

Interestingly, as already observed in §2.2.1, not all languages allow for such modification. See the two examples below, which correspond to (110) and (111), respectively. (112a) has two readings, neither of which is the one that Izvorski reports for (111a): either the putative small clause predicate *ve službě* ‘on duty’ is construed as a modifier of the predicate *pomocť ti* ‘help you’ or as a depictive related to *ti* ‘you’, the object of ‘help’. Similarly, (112b) only has the absurd reading under which *v ledniče* ‘in the fridge’ modifies the predicate *jíst* ‘eat (something)’.

- (112) *Czech*
 a. Sotva ti má kdo pomocť ted’ ve službě.
 hardly you:DAT has who:NOM help:INF now on duty
 ‘There is hardly anyone who can [help you on duty].’
 ‘There is hardly anyone who can help you while you’re on duty at this time.’
 *‘There is hardly anyone who can help you who is on duty at this time.’
 b. Mám v ledniče co jíst.
 have:1SG in fridge what eat:INF
 ‘There is something that I can eat while sitting in the fridge.’
 *‘There is something in the fridge that I can eat.’

This pattern is replicated in some other languages, too, as illustrated by the following Slovenian and Polish examples.

- (113) a. *Slovenian* (Marko Hladnik, p.c.)
 Imam kaj jesti v hladilniku.
 have:1SG what eat:INF in fridge
 ‘There is something that I can eat while sitting in the fridge.’
 *‘There is something in the fridge that I can eat.’
- b. *Polish* (Krzysztof Migdalski, p.c.)
 Mam co jeść w lodówce.
 have:1SG what eat:INF in fridge
 ‘There is something that I can eat while sitting in the fridge.’
 *‘There is something in the fridge that I can eat.’

These facts in turn suggest that also the antipassive analysis is needed. In case of Czech, Slovenian, and other languages, it makes the correct prediction: there is no indefinite NP or another property-denoting expression in these constructions which could be modified. The only possible modification is one of the event expressed by the MEC, which gives rise to the pragmatically odd meaning, under which the sentences in (112b) and (113) are true if the event of eating takes place in the fridge.

6.5.7 Conclusion

I started this section by showing that there is an alternative structural description of MECs, which is minimally different from the one introduced in Chapter 4. While in the original proposal, the participant argument position of the MEC-embedding predicate BE is completely removed, thus accounting for the absence of any nominal “heading” the MEC, the alternative proposal has it that the argument position is available and is filled with a covert indefinite NP argument. After showing that these two alternatives, called here the antipassive analysis and the empty-object analysis, respectively, are truth-conditionally indistinguishable, I turned to a detailed discussion of a number of phenomena in order to determine which of the alternatives is preferable. Even though most of the arguments were indirect, they seem to have confirmed that the empty-object analysis is independently needed, at least for cases in which the participant argument position is overtly filled (in which case it is really an “object analysis”). On the other hand, there are also arguments suggesting that the antipassive analysis had better not be abandoned altogether. In summary, both of the two minimally different variants of the event-extension analysis are needed and therefore should co-exist, side by side. It remains to be determined whether the value of the “empty-object parameter” is fixed once and for all for a particular language or whether both values should be freely available to languages. The evidence tentatively suggests the latter. For instance Czech generally follows the antipassive pattern, but as shown in §6.5.2, it allows, somewhat exceptionally, for the empty-object pattern as well, just in case the object position is filled by a weak quantificational determiner.

Allowing the co-existence of the two argument structure patterns might

at first seem like a significant weakening of the initial position, taken up in Chapter 4, and a consequent loss of predictive power. On the other hand, one could argue that this flexibility in fact follows from the general approach to the existence predicate BE taken in this thesis. I have argued that the existence predicate is a “real” predicate in the sense that it has argument structure of its own. It is well-known that the argument structure properties of various predicates are subject to a good deal of variation, which might but need not be morphologically marked. Among the processes affecting argument are passivization (*The book was read*), medio-passivization (*The book reads well*), argument drop (*I read*), argument incorporation, or anti-passivization. It is therefore not surprising that one finds more flavors of the existence predicate BE as well. The discussion in this section has further extended the argument structure typology of the existence predicate BE. The types can be classified according to three parameters considered so far: (i) the presence/absence of the direct object (participant argument) position ($\pm\text{DO}$), corresponding to whether BE is anti-passivized, (ii) the presence/absence of the indefiniteness requirement imposed on that object ($\pm\text{IR}$), corresponding to the semantic type of the direct object required by BE (property vs. individual), and (iii) the presence/absence of the extension argument position, accommodating the possibility clause ($\pm\text{PC}$), either in the form of the so-called “purpose clause”, or the MEC. Various combinations of the parameter values give rise to at least six types of existence predicates: (114a) represents a predicate that states the existence of individuals, imposing no indefiniteness restriction on its argument (which is of type *e*, accordingly); (114b) is the classical English-type existential, which requires an indefinite argument (type $\langle e, t \rangle$); (114c) is the predicate that is used to select English “purpose clauses” (see §4.3.1 for discussion); (114d) is a version of the same predicate, which, in addition, imposes an indefiniteness requirement on its object (see §6.5.1). Finally, (114e) and (114f) are the types that represent the canonical “headless” MECs, where the the object (the participant argument) is missing due to some sort of “emptiness” requirement (the empty-object analysis discussed in this section), or where it is removed from the structure by the antipassive morpheme (the antipassive analysis).

- (114) a. **+DO, -DR, -PC** (e.g. Czech)
 $[\text{BeP ARG BE}]$
 b. **+DO, +DE, -PC** (e.g. English)
 $[\text{BeP ARG-indef BE}]$
 c. **+DO, -DE, +PC** (e.g. English)
 $[\text{BeP ARG } [\text{Be'} \text{ BE } [\text{PC} \dots]]]$
 d. **+DO, +DE, +PC** (e.g. Spanish)
 $[\text{BeP ARG-indef } [\text{Be'} \text{ BE } [\text{PC/MEC} \dots]]]$
 e. **+DO, +DE, +PC** (e.g. Spanish)
 $[\text{BeP ARG-empty } [\text{Be'} \text{ BE } [\text{MEC} \dots]]]$
 f. **-DO, +DE, +PC** (e.g. Czech)
 $[\text{BeP BE } [\text{MEC} \dots]]$

Clearly, the typological picture of the argument structure of BE that I have just offered raises more questions than it provides answers: What determines the presence or absence of various argument structure patterns in particular languages? Are more patterns (i.e. other combinations of the three parameters than the six listed above) attested? If not, why? For instance, why should the putative empty object in MECs (pattern (114e)) have to be indefinite? (In other words, why are there no definite MECs?—a question that does not arise in the antipassive pattern (114f), where the reduction of the argument position leads to the existential quantification over the variable that corresponds to the argument; see §4.4.) Whether the answers to these and similar questions can be systematically predicted or whether they will have to be stipulated in terms of lexical accidents remains to be determined in future research.

6.6 Summary

This chapter was devoted to a further exploration of the predictions and consequences of the event-extension analysis. I hope to have shown that its explanatory potential is very good. As opposed to previous analyses, it accounts for all the properties that have been considered essential for MECs, including their very limited distribution and modality. This comparison was carried out in §6.1 and §6.2. The only phenomenon not accounted for by the analysis as it was designed in Chapter 4 is the phenomenon of MECs with multiple wh-words. In §6.3 I showed that this shortcoming can be fixed quite easily without the loss of generality. A semantic elaboration of the syntactic discussion in §5.4, i.e. the discussion of raising and in particular control, was provided in §6.4. The challenge for the theory of control presented by MECs was first discussed by Chierchia (1989b) for purpose clauses. The problem is that MECs (and possibility clauses in general) generally contain two gaps whose reference needs to be identified with arguments in the matrix. Instead of introducing complications into the argument-sharing system proposed in §4.3.3, I used the Russian evidence put forth in §5.4.4 and argued that control in MECs takes place even before the MEC itself is complete. In that way, the problem of dealing with two gaps at the same time is avoided. The last section, §6.5, concentrated on the problem of the participant argument of the MEC-embedding BE. I relativized the original proposal according to which the argument slot is completely removed from the argument structure of the verb and hypothesized that it is present and filled with an empty nominal. The evidence put forth in that section supports an ambivalent position—both empty objects and gaps in the argument structure might be needed in order to account for the facts.

CHAPTER 7

Conclusion

In this dissertation, I provided a thorough cross-linguistic investigation of the typology, syntax, and semantics of modal existential wh-constructions (MECs), illustrated in (1).

- (1) *Czech*
Mám se na koho spolehnout.
have:1SG REFL on who:ACC rely:INF
‘I have somebody to rely on.’

The main thesis of the dissertation comes in two parts. Firstly, all MECs are selected by one and the same predicate—one that expresses the state of existence (in the physical world, in somebody’s view, etc.). This means that the selecting existence predicate (BE) is to become a part of the definition of MECs. Secondly and somewhat counterintuitively, MECs are not ordinary objects of this predicate. Rather, they function as event extensions of the state denoted by that predicate, i.e. clauses that characterize the possibility for an event to take place brought about by the existence of some individual. Accordingly, I call this analysis of MECs an *event-extension analysis*. The relation between the object of BE (its participant argument) and its MEC extension is mediated by the wh-word in MECs. The syntactic category of the MEC itself is subject to (cross-linguistic and intra-linguistic) variation, ranging from predicative categories (vP) to clausal categories (FinP).

- (2) $[_{\text{BeP}} \text{ participant}_i [_{\text{Be}'} \text{ BE } [_{\text{MEC(vP/FinP)}} \text{ wh}_i \dots]]]$

The main prediction of the first claim has to do with the highly limited syntactic distribution of MECs: they are only licensed as extensions of the atomic

existence predicate BE or any complex predicate that involves the existence predicate as its result state. The second claim makes a prediction about the highly limited modal force and flavor of MECs: they can only express the modality of circumstantial possibility. In non-technical terms, the existence of some object infers the possibility (and not necessity) to do something with that object. Moreover, the possibility is restricted primarily by the existence of some object, which is a circumstance of the world (and not, for instance, by somebody's knowledge or by some law).

I further showed that the nature of MECs, as revealed by the event-extension analysis, provides an important insight into a number of more general aspects of the theory of syntax and semantics. Most notably, I pronounced and supported hypotheses concerning the syntax and semantics of existential predicates, *wh*-constructions and *wh*-fronting, and control.

Firstly, I argued that existential quantification in existential constructions should originate in a lexical predicate expressing the state of existence, rather than from a functional head. This hypothesis received support from the assumption that the existential predicate that selects MECs can be subject to argument structure manipulations, such as an argument structure extension and/or reduction, something that is unexpected under the functional treatment of existential heads.

Secondly, I argued that the process of *wh*-fronting is much freer than typically assumed. *Wh*-movement is not feature driven (it reduces to adjunction) and its target position is constrained primarily by the designated syntactic position of functional heads exploiting the operator-variable dependency that the *wh*-movement creates. The syntactic underspecification of *wh*-fronting correlates with the impoverished semantics of fronted *wh*-words—they simply map to logical lambda-operators.

Last but not least, the behavior of empty subjects in MECs provides a novel argument in favor of the property analysis (as opposed to the propositional analysis) of obligatory control constituents. The reason is that in MECs, *wh*-subjects are the only subjects that are capable of replacing the obligatorily controlled PRO. If control constituents map to properties, then PRO can be construed as a lambda-operator, which in turn matches the presently assumed interpretation of *wh*-words. These assumptions naturally lead to the explanation of the generalization that *wh*-subjects are in complementary distribution with PRO in MECs.

In the rest of the conclusion, I first provide a chapter-by-chapter summary of the dissertation and then discuss some possible directions for future research.

Chapter-by-chapter summary

1 Introduction In the introduction, I first provided a heuristic definition of MECs. I defined them as constructions with three main ingredients: (i) they contain a *wh*-operator-variable dependency, (ii) they involve a modal meaning, and (iii) they are interpreted as weak existential nominals. After providing

an overview of the issues to be discussed and the claims to be made about them, I introduced the core proposal of the thesis: the event-extension analysis. The rest of the introduction was devoted to the description of the theoretical framework in which the investigation would be couched: generative syntax and truth-conditional semantics. Along with describing the framework, I introduced the notational conventions that would be used throughout the thesis. The introduction is concluded with a note on how to read the dissertation.

2 Universals and the typology of MECs The study of MECs has suffered from the insufficiency of descriptive depth and breadth. The second chapter was designed to partly alleviate the insufficiency. I first provided an extensive list of languages in which MECs exist. Apart from the language families for which the existence of MECs had been registered in the mainstream literature, i.e. Romance, Slavic, Finno-Ugric, Semitic, Greek, Albanian, and to a certain extent Germanic, I provided examples from Baltic languages and Basque. The core of the second chapter involved a fairly detailed description of morphological, syntactic, and semantic aspects of MECs in various languages. The data discussed come from the existing literature on MECs as well as from native speakers interviewed by me with the help of a questionnaire and/or by personal communication. The empirical investigation yields a new set of absolute and implicational universals as well as solid tendencies. The universals are: MECs appear in the internal argument position of a subset of verbs whose lexical meaning supports an existential closure of their object (and nowhere else); MECs take narrow scope with respect to other scope-taking elements; MECs' modality is one of circumstantial possibility; MECs display no matching effects. The tendencies are: MECs tend to use bare (interrogative) *wh*-words; MECs tend to use *wh*-pronouns (as opposed to complex *wh*-phrases); MECs tend to be as syntactically transparent as corresponding interrogatives (or more); MECs tend to allow sluicing; MECs tend to have a subject (typically empty) that is referentially identical to a matrix argument (if there is one). The implicational universals are: If a language allows MECs to be embedded under dynamic predicates, it allows MECs to be embedded under stative predicates; iff a language has multiple *wh*-fronting, it has multiple *wh*-MECs; if a language has the infinitive mood, it uses it in its MECs (otherwise, it uses the subjunctive or its functional equivalent); if a language disallows its MECs to utilize a *wh*-word on a particular point in the hierarchy {what, who, where} \succ {when, how} \succ why, it disallows any *wh*-word that appears lower on the hierarchy.

3 The position of MECs among related constructions The previous inquiry into the nature of MECs has often taken a construction-based comparative approach. Consequently, there have been attempts to reduce MECs to some other constructional type, in particular free relative clauses, headed relative clauses, or embedded *wh*-questions. The goal of the third chapter was to prove that all these reduction attempts are doomed to fail. I took a logical approach to build up this proof. I devised a simple logic of constructions, based on the notion of constructional sub/supertype, defined in structural (syntac-

tic) terms. After providing fairly uncontroversial structural descriptions of the three constructions to which MECs have been assimilated, I showed that none of them can possibly characterize MECs.

4 An event-extension analysis of MECs The fourth chapter was a careful exposition of the core proposal of the thesis—the event-extension analysis. After showing that none of the existing analyses accounts for two crucial properties of MECs—their limited distribution and modality, I turned to characterizing the properties of the predicate *available*, which clearly demonstrates some of the core properties of the existential MEC-selecting predicate. I showed that in its full argument structure potential, it expresses a three-place relation, relating two individuals by a possessive-like relation and an event in which these two individuals can take part. The next part of the chapter extended the discussion to other predicates which can be characterized as involving the same type of argument structure as the predicate *available*—what I called availability (and later MEC-embedding) predicates. These predicates include the existence predicate *be*, the possessive predicate *have*, as well as a small class of other predicate such as *buy*, *bring*, *send*, *arrive*, etc. Like *available*, also these predicates can optionally select for a clausal argument which was called the purpose clause in previous literature (e.g. *I bought a rack to hang coats on*). I continued to argue that both MECs and purpose clauses are to be subsumed under a common kind of clause, which I called the *possibility clause*, as it expresses a possibility which is brought about by the existence of some object. The formal implementation of the proposal was couched in a version of Neo-Davidsonian event semantics, where complex predicates (i.e. predicates expressing relations rather than properties, including stative predicates like the possessive *have*) are to be decomposed into a series of atomic predicates which characterize individuals, coupled with atomic events in which they take part, and possibly other events that they can be extended by, giving rise to complex events. In the case of the the existence predicate BE, I argued that whenever it is extended by an MEC, it has an impoverished argument structure, having lost its participant argument (the bearer of the state of existence) by a process akin to antipassivization. The last proposal introduced in this chapter concerned the semantics of fronted wh-words. I argued that they are to be analyzed as syncategorematic expressions, corresponding at LF to logical lambda-operators.

5 The internal syntax of MECs I started the fifth chapter by introducing two overarching hypotheses that are in accordance with the theory of MECs proposed in the previous chapter. One hypothesis was that wh-fronting is not feature-driven and as such can target any syntactic projection, unless it violates some independent constraint of the universal or language-specific grammar. I argued that the only reason why wh-fronting has been considered as feature-driven dwells in the syntax-semantic properties of the operators that exploit the established wh-operator-variable dependency. The other hypothesis had to do with the syntactic placement (or selectional) restrictions imposed on lexical predicates on the one hand and on functional (purely logical) operators on the

(3) a. [BeP BE [_{vP}-MEC ...]] raising MEC
 b. [BeP BE [_{CP}-MEC ...]] obligatory control/non-control MEC

6 Issues of the syntax-semantics interface The sixth chapter was devoted to fine-tuning the event-extension analysis and to exploring some of its further predictions. I started with evaluating the predictions of previous semantic accounts of MECs (one that treats MECs as a generalized existential quantifier, and two non-quantificational accounts—a property-based account and a propositional account) and comparing them to the predictions of the event-extension account. I showed that my account fares the best. The investigation continued by discussing MECs containing multiple *wh*-words, which present the only big problem of the event-extension analysis. After establishing the exact truth conditions of multiple *wh*-MECs, showing that the multiple *wh*-words are in a symmetric relation, scope-wise and quantificational force-wise, I proposed a novel way of dealing with them without losing the generality of the original account. In particular, I argued that the semantic type of BE's extension argument, filled by the MEC, can be defined in a flexible way, making it possible to select MECs of various semantic types, corresponding to the varying number of *wh*-words. The next section was devoted to the discussion of MECs that exhibit obligatory control. The challenge presented by the fact that MECs, just like purpose clauses, are generally two-gap structures, where both gaps need to be referentially identified with a matrix argument, was tackled by the assumption, supported by evidence from Russian, that the control relation is established MEC-internally. This assumption was couched in a general theory of control, under which control constituents are properties, PRO corresponds to an empty operator, and the control relation itself is a lexical property of the control predicate. The final section of the sixth chapter was devoted to discussing an alternative to one of the core proposals. I argued that besides

antipassivizing the MEC-embedding existence predicate, it is also tenable and in many respects desirable to assume that the argument of the existence predicate is actually present, either in a covert and in some languages even overt form.

Directions for future research

The goal of this dissertation was to provide a formally solid and empirically well grounded theory of modal existential *wh*-constructions. Due to the complexity of the matter, it was inevitable that some issues be left open for future research. One class of such issues concerns problems specific for the event-extension analysis. Probably the most pressing question is how exactly the introduction of the event extension argument in the argument structure of BE, accommodating the MEC-embedding, relates to the reduction of the participant argument slot. In the last section of the last chapter, §6.5, I showed the participant argument slot need not always be removed. Nevertheless, even if it is not, the argument position must be filled with an indefinite, retaining the quantifier nature of BE. Why should this be so? Where does the tendency to remove or at least referentially background the participant argument come from? And why are so called purpose clauses—the constructional sisters of MECs (see §4.3.1 and §4.5)—different in this respect? As I see it, finding well-motivated answers to these questions is a prerequisite for a full understanding of the nature of MECs.

The second class of open issues concerns MEC universals, tendencies, and universal implications which have virtually not been touched upon in the present dissertation, apart from registering them in §2.3. Two of these issues concern the *wh*-operator used in MECs (see §2.2.2). Despite the fact that MECs in the absolute majority of languages make use of interrogative operators, this is not necessarily the case, as witnessed by Hungarian and possibly Italian (see §5.3.2). Finding an answer to this question might tell us more about the difference in the syntactico-semantic nature of interrogative and relative operators. The other *wh*-related issue is the one of complexity. I noted that the majority of speakers of various languages find complex *wh*-phrases (i.e. *wh*-determiners plus NPs versus *wh*-pronouns) in MECs degraded. The event-extension account provides no clue to why this should be the case. Given that the availability of complex *wh*-operators in MECs might be context-sensitive, I believe that more empirical evidence is needed. It should also be explored how this MEC-restriction is related to the comparable restriction in free relative clauses. The last issues related to the observed universals concern the MEC grammatical mood (see §2.2.3). Even though the event-extension analysis provides a clear answer to why the mood should be of the dependent kind (i.e. the infinitive or the subjunctive), more reasoning is needed to substantiate the overwhelming preference for the infinitive over any other mood. Another problem is the use of the indicative, accompanied by a different sort of modality than circumstantial possibility. Since the event-extension analysis makes a very strong prediction about the force and flavor of MEC modality (something that I still consider to

be a desirable property of the analysis), generic or habitual MECs, found in Italian and Lithuanian, are predicted not to exist at all. In order to strengthen the present conclusions, these types of indicative MEC-like structures should ideally be shown to be fundamentally different from genuine MECs.

The last class of open issues concerns the high level of cross-linguistic and speaker variation. The variation affects a whole range of properties—the general availability and polarity sensitivity of *wh*-words, the use of grammatical mood, the type of empty subject, the introduction of discourse referents, the availability of MEC modifiers, and, last but not least, the range of embedding predicates. All these issues need a separate treatment and would ideally require detailed studies of MECs in particular languages. It should be determined to what extent the variation is reducible to general properties of languages and to what extent we are facing lexical idiosyncrasy. I believe that the present account of MECs provides a formal description which is detailed enough in order to enable a meaningful study of a good deal of this variation. For instance, the variation in embedders can be dealt with in terms of the (un)availability of the incorporation of BE as a result state into dynamic predicates. The introduction of discourse referents and MEC modification, on the other hand, might be associated with the availability of empty participant arguments of BE, in line with the discussion in §6.5.

Appendices

APPENDIX A

Annotated bibliography

This appendix serves summarize the existing literature on MECs. I try to provide as complete an overview as possible. Therefore, besides publications or manuscripts (henceforth “studies”) that deal with MECs in some detail, I include studies which are not specifically on that topic and which contain even just a single example of the MEC. This enables one to trace the development of the discussion of MECs in a wider context. I also include studies which I could not read myself, sometimes for reasons of unavailability, other times because they are written in a language I do not understand. If such a study is included, I notify the source in which it is cited and, if possible, include a small description of that study based on that source. In order to distinguish between these types of studies, I use three kinds of citation notations: studies which deal specifically with MECs and which I have read are printed in boldface, studies where MECs are not in the center of attention and which I have read are printed ordinarily, and studies which I have not read are printed in brackets.

The Appendix organizes the references in three sections. In §A.1, I provide brief descriptions of the studies based on the language(s) that they deal with, the label they give to MECs, the analysis that they propose, and the (then) novel observations about MECs that they make. For studies that I have not read, I notify the source(s) in which they were cited and on which I base my description (if there is one available). The references are ordered chronologically, from the oldest to the newest. In §A.2, I organize the references according to the language(s) that they deal with. This can be useful for readers who want to trace the discussion and examples of MECs in a particular language. The languages are ordered alphabetically. In §A.3, I provide a typology of MEC analyses and link them to their respective proponents. The typology abstracts

away from many analytical details, concentrating on the syntactic and semantic category of MECs. The first two sections of this Appendix are exhaustive in that they contain all the references I have been able to trace, while the third section is selective and refers only to studies which contain a more or less explicit analysis.

A.1 Chronological ordering

This section contains an exhaustive chronologically ordered overview of the literature on MECs. Boldfaced references correspond to studies that deal with MECs in some detail (and that I have read), ordinary references correspond to studies in which the topic of MECs is marginal, and bracketed references are those that I have not read.

(Bello 1847)

- *Languages*: Spanish
- *Observations*: Wh-words in MECs are either stressed or unstressed. Stressed wh-words correspond to interrogative pronouns and the unstressed to relative pronouns. The unstressed ones express ‘arbitrary’, ‘unspecified’ reference. objects/times/manners/etc.
- *Cited by*: Plann (1980)

(Ramsey 1894)

- see Ramsey (1956)

Zubatý (1922)

- *Languages*: Czech
- *Label*: rozvažovací (deliberativní) otázky [deliberative questions]
- *Analysis*: MECs are treated as embedded wh-questions. In contrast to standard embedded questions, however, MECs are assumed to be amalgamated with the matrix clause.
- *Observations*: Clitic climbing is possible out of MECs in Czech but not out of embedded questions.
- *Cited by*: Rappaport (1986)

(Peškovskij 1934)

- *Languages*: Russian

- *Observations:* Negated MECs in Russian can be formed in two ways, either [BE neg+wh] or [neg+BE wh].

- *Cited by:* Ružička (1994)

(Holthusen 1953)

- *Languages:* Russian
- *Cited by:* Rappaport (1986)

(Ramsey 1956)

- *Languages:* Spanish
- *Observations:* Wh-words in MECs can (under some conditions?) be stressed/written with an accent, i.e. they can be like interrogatives pronouns.
- *Cited by:* Plann (1980: Ch. V)

(Galkina-Fedoruk 1958)

- *Languages:* Russian
- *Analysis:* The wh-word in MECs analyzed as an indefinite pronoun.
- *Cited by:* Rappaport (1986)

(Šaxmatov 1963)

- *Languages:* Russian
- *Analysis:* The Russian neg-wh formation in MECs is a modal predicate (e.g. like *nado* ‘necessary’).
- *Cited by:* Rappaport (1986)

(Mirowicz 1964)

- *Languages:* Russian, Polish
- *Cited by:* Rappaport (1986)

(Georgieva 1971)

- *Languages:* Russian
- *Cited by:* Rappaport (1986)

(Mrázek 1972)

- *Languages:* Russian (and probably other Slavic languages)
- *Cited by:* Chvany (1975); Ružička (1994)

Chvany (1975:62)

- *Languages:* Russian
- *Analysis:* The MEC is a VP and gets selected by an existential predicate—BE. Concerning the Russian neg-wh formation: The existential predicate is incorporated in the negation marker; if *bylo* ‘was’ appears together with the neg-wh formation, it is analyzed as a Tense marker rather than the existential predicate itself; the neg-wh formation is syntactic, not post-syntactic.
- *Observations:* The negation in neg-wh formations does not license negative concord items.
- *Quote:* “The grammar of these constructions is highly mysterious.” (62)

(Plann 1975)

- *Languages:* Spanish
- *Analysis:* MECs are NPs.
- *Cited by:* Plann (1980)

(Garde 1976)

- *Languages:* Russian
- *Analysis:* MECs have the syntax of embedded questions and correspondingly, the wh-word is an interrogative pronoun. Concerning the neg-wh formation: The existential predicate is incorporated in the negation marker; the formation is syntactic and is enabled by an erasure of the clausal boundary (restructuring).
- *Cited by:* Rappaport (1986); Ružička (1994); Pancheva-Izvorski (2000)

(Hirschbühler 1976)

- *Languages:* French
- *Cited by:* Hirschbühler (1978)

(Isačenko 1976)

- *Languages*: Russian
- *Analysis*: *ne wh* is a modal predicate like *nado*; this explains the infinitive, as well as the dative subject.
- *Cited by*: Rappaport (1986)

(Obenauer 1977)

- *Languages*: French
- *Analysis*: He assumes MECs to be infinitival counterparts to free relative clauses.
- *Cited by*: Hirschbühler (1978:176,fn14)

(van Riemsdijk 1978)

- *Languages*: Spanish
- *Analysis*: An analysis based on the [NP to VP] filter of Chomsky and Lasnik (1977). Details are unclear.
- *Cited by*: Hirschbühler (1978)

Hirschbühler (1978:176,fn14)

- *Languages*: French
- *Analysis*: Hirschbühler looks at MECs embedded under ‘find’ and argues for an infinitival embedded question analysis.

Hirschbühler (1978:218ff,§7.8)

- *Languages*: French, Spanish
- *Label*: Infinitival free relatives
- *Analysis*: Hirschbühler follows Van Riemsdijk (1978), of whom he provides no clear account, though. Even though he follows the infinitival free relative analytical path, he points out that MECs are distinct enough from standard free relatives for them not to “threaten” the analyses of standard free relatives.

Plann (1980: III.B, IV, V (123–162))

- *Languages*: Spanish

- *Analysis:* MECs are treated as modifiers of empty nominals, i.e. essentially as infinitival headed relative clauses.
- *Observations:* Plann makes a number of valuable insights. She notices the limited distribution of MECs (ban on subject position, ban on passivization), the limited class of embedding predicates, the polarity sensitivity of some MECs (in particular MECs with *quien* ‘who’), the fact that MECs take narrow scope, an observation she attributes to Bello (1847). She also notices a number of close parallelisms with infinitival headed relatives.

Hirschbühler and Rivero (1981)

- *Languages:* Catalan, French
- *Label:* Infinitival relatives
- *Analysis:* No clear analysis is provided.

(Penchev 1981)

- *Languages:* Bulgarian
- *Analysis:* Wh-words treated as indefinite pronouns.
- *Cited by:* Rudin (1986:158)

Pesetsky (1982:149–157)

- *Languages:* Russian
- *Label:* Infinitival free relatives
- *Analysis:* Syntactically, MECs are argued to be of category S' , i.e. “bare” CPs, structurally equivalent to embedded questions (an idea usually attributed to Grosu 1987). Semantically, they are treated as generalized quantifiers which have to undergo quantifier raising. The analysis is supposed to explain a number of previously observed facts, e.g. the fact that there are no matching effects (S' is not subject to the Case filter), or the restrictions in distribution (the trace left after MECs’ QR cannot be licensed by its antecedent, as it is not an NP, and must therefore rely on a proper (verbal) governor).
- *Observations:* MECs can only be embedded under verbs that assign structural case (*zaxvatit'* ‘seize’ assigning ACC is good, *ovladat'* ‘seize’ assigning INSTR is bad). MECs do not show matching effects. MECs can appear in argument positions of passives (‘was bought’) and unaccusatives (‘appear’).

Suñer (1983)

- *Languages*: Spanish, (Catalan, French)
- *Label*: Infinitival free relatives
- *Analysis*: Suñer mainly concentrates on the problem of matching effects. MECs are treated as A [−tense] counterpart of [+tense] free relatives. FRs (i.e. both standard FRs and MECs) are analyzed as S' (S plus COMP), i.e. CPs, selected by a silent *pro*. This *pro* needs licensing via agreement. In standard FRs, it gets licensed by Case-matching with the wh-phrase in COMP. In MECs, it gets licensed by the embedded INFL. The embedded INFL is accessible by the INFL accessibility hypothesis, which assumes that INFL is the head of S' (CP). The non-specificity of MECs is attributed to the fact that MECs are in the infinitive/subjunctive mood. It has been independently observed that the mood of (headed) relative clauses affects the scope of the head of the RC.

(Palmaitis 1984)

- *Languages*: Lithuanian
- *Cited by*: Kalėdaitė (2008)

(Browne 1986)

- *Languages*: Serbo-Croatian
- *Analysis*: The wh-word is argued to belong to a mixed indefinite-interrogative category.
- *Cited by*: Pancheva-Izvorski (2000:42)

Rudin (1986: Chapter 6)

- *Languages*: Bulgarian
- *Label*: Indefinite construction (INDEF)
- *Analysis*: MECs are treated as “bare” CPs. The wh-word is assumed to be an indefinite which, nevertheless, undergoes obligatory wh-movement. The matrix existential verb has a double subcategorization pattern: [__NP, __CP], so it can select both NPs and CPs (i.e. MECs).
- *Observations*: Rudin makes three novel observations: MECs allow for sluicing; MECs can contain multiple wh-words; wh-movement in multiple wh-MECs displays superiority effects (in Bulgarian).

Rappaport (1986)

- *Languages:* Russian
- *Label:* BKI-construction (BE + K-word + Infinitive); K-word corresponds to wh-word
- *Analysis:* BE is a two-place predicate, which takes a dative constituent as its external argument and a wh-pronoun as its internal argument. There is a tension between the syntactic and the semantic representation of the wh-word, which he calls a “syntactic quantifier”. Syntactically, the wh-word originates in the infinitival constituent; semantically, the infinitival constituent behaves as an argument of the wh-word, which it modifies. The neg-wh formations are argued to be stored in the lexicon, i.e. they are “negative syntactic quantifiers”.

Grosu (1987)

- *Languages:* Spanish, Romanian
- *Label:* Non-indicative/future-oriented free relatives (explicitly trying to avoid Suñer’s 1983 term “infinitival free relatives”)
- *Analysis:* Grosu adopts the analysis of Pesetsky (1982), i.e. he treats them as bare S’ and as quantifiers that undergo quantifier raising.
- *Observations:* Grosu notices the existence of subjunctive MECs (until then, only infinitival MECs had been considered). (Heavy) pied-piping is observed to be possible in (Romanian) MECs as opposed to free relatives.

(Nozsicska 1987)

- *Languages:* Russian
- *Cited by:* Ružička (1994)

(Besters-Dilger 1988)

- *Languages:* Russian, Polish
- *Mentioned by:* Joanna Błaszczak (p.c.)

(Apresjan and Iomdin 1989)

- *Languages:* Russian
- *Analysis:* Concerning the neg-wh formations: The negation marker *ne* is a negative form of the existential BE. The neg-wh items are called “syntactic agglomerates”. The authors have a dependency analysis: BE (whether negative or affirmative) sits on the top and dominates the copula, which in turn dominates the embedded infinitive and the wh-word (the two are sisters) and finally the infinitive dominates the dative subject (which is claimed to be agentive, for some reason).

- *Cited by:* Avgustinova (2003)

(Yoon 1989)

- *Languages:* Russian
- *Cited by:* Babby (2000)

(Móia 1992)

- *Languages:* Portuguese
- *Cited by:* Caponigro (2001)

(Ramos-Santacruz 1994)

- *Languages:* Spanish
- *Label:* Nonspecific free relatives
- *Analysis:* MECs are clauses headed by a ‘yet unidentified empty category’.
- *Cited by:* Caponigro (2003)

Růžička (1994)

- *Languages:* Russian, (Czech, Slovak)
- *Label:* Free relatives
- *Analysis:* MECs are treated as relative clauses headed by an empty DP. Semantically, MECs are implications of (im)possibility of the existence of an event. Russian neg-wh formations are formed syntactically, by negation-lowering.

Grosu (1994:137–143)

- *Languages:* Spanish, Romanian, Modern Hebrew
- *Label:* Irrealis free relatives
- *Analysis:* MECs are considered to be bare CPs, syntactically, and suggested to be (related to) amount relatives, semantically.
- *Observation:* MECs do not stack (a property in common with amount relatives).

(Peres and Móia 1995)

- *Languages:* Portuguese

- *Mentioned by:* Adriana Cardoso (p.c.)

Ambrasas (1997)

- *Languages:* Lithuanian
- *Analysis:* Only description.
- *Cited by:* Gärtner (2009)

Izvorski (1998)

- *Languages:* Russian, Bulgarian, Greek
- *Label:* Non-indicative wh-complements of possessive and existential predicates
- *Analysis:* MECs treated as embedded questions, syntactically. The semantic analysis is inconsistent. Informally, Izvorski follows Heim (1982) and Berman (1991) and assumes that MECs are open propositions ($\langle s, t \rangle$ -type expressions). Formally, Izvorski treats MECs as properties ($\langle e, t \rangle$ -type expressions). Her formal analysis is identical to Caponigro's (2003).
- *Observations:* MECs can be modified by stage-level but not individual-level predicates.

Grosu and Landman (1998:155–158)

- *Languages:* Romanian
- *Label:* Irrealis free relatives
- *Analysis:* MECs are treated as CPs, syntactically, and as properties, semantically. The authors summarize the evidence in favor of treating MECs as interrogatives (syntactically): lack of matching effects; availability of (heavy) pied-piping; existence of multiple wh-MECs; transparency for extraction; distribution (definiteness effects).

Bošković (1998)

- *Languages:* Bulgarian
- *Analysis:* MECs treated on a par with embedded questions (Bošković follows Izvorski 1998).

Pancheva-Izvorski (2000: Chapter 2)

- *Languages:* Russian, Hebrew, Italian, Serbo-Croatian, Old Spanish, Greek, Bulgarian

- *Label:* Wh-existential constructions
- *Analysis:* Syntactically, MECs are treated as CPs (as embedded questions), selected by a modal predicate, which (in some languages) incorporates into a higher existential head and creates the verb ‘have’, much like in Freeze (1992) and Kayne (1993), except that its lower part is not semantically possessive but rather modal; the existential part of the verb lends the modal its existential force. No compositional account of this syntax is provided. Semantically, the analysis is inconsistent, a problem that carries over from Izvorski (1998). Informally, Pancheva-Izvorski follows Heim (1982) and Berman (1991) and assumes that MECs are open propositions ($\langle s, t \rangle$ -type expressions). Formally, Izvorski treats MECs as properties ($\langle e, t \rangle$ -type expressions). Her formal analysis is identical to Caponigro’s (2003).

Babby (2000)

- *Languages:* Russian
- *Label:* Infinitival existential sentences
- *Analysis:* MECs are treated as bare CPs, but an explicit relation to questions (as well as free relatives) is denied. The dative subject is generated in the MEC, from where it can A-move to the matrix syntactic context (a hint of restructuring). Neg-wh formations are formed post-syntactically (at morphology/PF). The negation marker in neg-wh formations is called a “dependent existential predicate” (dependent in the sense that it can only be used in combination with the wh-word and potentially one or two more words).
- *Observations:* In Russian, ‘what’ in MECs can be in genitive even under accusative-assigning prepositions and without (matrix) negation.

(Kalėdaitė 2000)

- *Languages:* Lithuanian
- *Label:* BKB-construction
- *Analysis:* MECs treated as “language-specific existential structure[s]”, which are “syntactic synonym[s] of the existential type ‘proper’.” (citation from the English abstract)

Lipták (2000)

- *Languages:* Hungarian
- *Label:* Infinitival relatives

- *Analysis:* Lipták is mainly concerned with multiple wh-MECs. She follows Rudin (1988) and claims that the higher wh is adjoined to the lower one, rather than sitting in another functional projection (such as QP or DistP), as often claimed for corresponding multiple wh-questions. The adjoined wh-phrase is claimed to have a universal meaning.

Caponigro (2001)

- *Languages:* Italian, Spanish, Portuguese, French, Romanian, Russian, Serbo-Croatian, Bulgarian, Hungarian, Greek, Hebrew, Yiddish,
- *Label:* Indefinite free relatives
- *Analysis:* MECs are claimed to be Jacobsonian (1995) free relatives (and at the same time embedded questions) before type-lowering, i.e. CPs denoting a singleton set containing the maximal entity that satisfies the given predicate. The matrix verb existentially closes this set.

de Vries (2002:Chapter 2, §6.3)

- *Languages:* Romanian
- *Label:* Irrealis free relatives.
- *Analysis:* MECs are placed in a typology of free relative constructions. The analysis of Grosu and Landman (1998) is adopted.

Grosu (2002)

- *Languages:* Romanian, French
- *Label:* Modal existential clausal constructions

Kalėdaitė (2002)

- *Languages:* Lithuanian
- *Cited by:* Kalėdaitė (2008)

Lipták (2003)

- *Languages:* Hungarian
- *Label:* Modal existential wh-constructions
- *Analysis:* Lipták argues that MECs in Hungarian can be both “bare” CP/IP/TopP and relatives with covert NP heads. This difference correlates with the type of wh-operator used. The former use interrogative wh-words, the latter use relative wh-words, i.e. wh-words prefixed by *a*—a morpheme homophonous with the definite determiner.

- *Observations:* Lipták makes a number of valuable language-specific observations about Hungarian. She observes that it is impossible to topicalize the whole MEC.

Avgustinova (2003)

- *Languages:* Russian
- *Analysis:* Avgustinova devises an HPSG analysis of MECs. She treats them as being in one clause with the matrix verb. The matrix verb BE maps to an existential predicate that takes the MEC and the dative subject as arguments (much like in Rappaport 1986). The neg-wh formation is considered to be a “syntactic agglomerate” (following Apresjan and Iomdin 1989), which means that it is a *syntactically* formed *lexical item*, where being “lexical” means having (HPSG) lexical properties, such as argument structure.
- *Observations:* Avgustinova makes two novel observations: given the lexical material of the MEC and of the matrix verb, any word-order permutation is acceptable (in Russian), variation being subject to information structure constraints; the dative subject of MECs can co-occur with *u*+genitive (possessive) subject.

Agouraki (2003)

- *Languages:* Greek
- *Label:* Irrealis free relatives
- *Analysis:* She deals with MECs only marginally, the focus of her investigation being what she calls future wh-clauses in DP positions.

Caponigro (2003: Chapter 3)

- *Languages:* Hebrew, Italian, Yiddish, New York English, European and Mexican Spanish, Catalan, European and Brazilian Portuguese, French, Romanian, Russian, Polish, Bulgarian, Serbo-Croatian, Macedonian, Modern Greek, Albanian, Hungarian, Estonian, Finnish, Moroccan Arabic
- *Label:* Existential free relatives
- *Analysis:* Syntactically, MECs are treated as “bare” CPs, i.e. as interrogatives. Semantically, they denote properties, i.e. the type of expression which, in the case of standard free relatives, feeds into the maximalizing/definite operator.
- *Observations:* There is a construction closely related to MECs, which appears in the indicative mood (treated by Caponigro as a subcase of MECs). The indicative cannot have an episodic interpretation, it is modal, generic, or habitual. The overlapping properties with MECs are their indefiniteness and the lack of matching effects.

Caponigro (2004)

- *Languages*: Hebrew, Italian
- *Analysis*: see Caponigro (2003)
- *Observations*: MECs cannot be quantified over by adverbs of quantification.

Grosu (2004)

- *Languages*: Russian, Polish, French, Greek, Albanian, Bulgarian, Macedonian, Spanish, Hebrew, Serbo-Croatian, Classical Arabic, Hungarian
- *Label*: Modal existential wh-constructions
- *Analysis*: MECs are treated as CPs, syntactically, and as generalized quantifiers, semantically. MECs are quantifiers by virtue of having a specialized C-head, which has two features: an existential generalized quantifier feature and a non-indicative feature. The matrix predicate only plays a licensing role (it is not a quantifier itself).
- *Observations*: MECs are bad as predicates, whether in predicative or attributive positions; the MEC-internal event can be construed (in Romanian) as temporally back-shifted with respect to the matrix temporal interval ('could have' interpretation); multiple wh-MECs are only possible with multiple wh-fronting.

Lenertová (2004)

- *Languages*: Czech
- *Analysis*: Lenertová suggests that the wh-word is an indefinite rather than an interrogative wh-operator.

Agouraki (2005)

- *Languages*: Greek
- *Label*: Irrealis free relatives
- *Analysis*: Syntactically, MECs are claimed to be indefinite DPs. Semantically, it is suggested that they could be construed as intensional properties.

Surányi (2005)

- *Languages*: Hungarian
- *Label*: Modal existential wh-constructions

- *Analysis:* The wh-word raises to the matrix position, lower than Focus; he calls the position SpecPredP (following É. Kiss 2003), and assumes it to be a “verbal modifier” position—the position occupied by non-referential incorporated nominals, secondary predicates, etc. The free variable of the wh-indefinite is unselectively bound by the existential quantifier (implicit) in the existential predicate. The reason why the existential predicate is pronounced before the wh-word is that it moves to Foc. Multiple wh-MECs are structurally and semantically ambiguous: either both wh-words move to SpecPredP, in which case they are both existential, or one of them moves to SpecDistP, in which case it has universal force.
- *Observations:* The wh-word/MEC does not introduce discourse referents (not illustrated).

Fleischer (2006)

- *Languages:* Russian
- *Label:* Infinitival existential sentences
- *Analysis:* Fleischer is mainly concerned with the identification of the subject of MECs. He argues (contra Babby 2000) that the dative subject is generated in the matrix clause and controls a PRO in the MEC.

Ceplová (2007)

- *Languages:* Czech
- *Label:* Wh-existential constructions
- *Analysis:* MECs are suggested to be vPs, rather than CPs. The matrix verb is a raising verb.
- *Observations:* A range of language-specific observations about Czech MECs are made.

Thomas (2008a,b)

- *Languages:* French
- *Label:* Modal existential wh-constructions
- *Analysis:* MECs treated as “bare” CPs, no commitment is made with respect to the interrogatives vs. relative issue. Thomas is mainly concerned with the French-specific fact that wh-words in direct object positions cannot participate in MEC formation. direct object wh-words are claimed to be impossible and alternative strategies are used (most notably *de quoi* instead of *quoi/que*); this is assumed to somehow fall out from the French restriction on non-pied-piped wh-words in relative clauses (they get deleted and only the complementizer is realized); it is suggested that à might be the MEC-complementizer in contexts without wh-words

- *Observations:* French MECs cannot be formed by wh-fronting direct objects. Inanimate wh-objects *quoi/que* ‘what’ must be replaced by the suppletive form *de quoi* ‘of what’.

Kondrashova (2008)

- *Languages:* Russian
- *Label:* Existential dative-infinitive structures
- *Analysis:* It is suggested that MECs are vPs rather than CPs. The neg-wh formation is treated as consisting of a negative existential quantifier and a syntactically incorporated wh-word.
- *Observations:* There cannot be more than one neg-wh formation per MEC.

Kalėdaitė (2008)

- *Languages:* Lithuanian
- *Label:* BKI-construction (following Rappaport 1986)
- *Analysis:* The paper is mainly descriptive.

Šimík (2008a)

- *Languages:* Czech
- *Label:* Modal existential wh-constructions
- *Analysis:* Syntactically, MECs are treated as vPs. Semantically, as properties.

Šimík (2009a)

- *Languages:* Czech, Russian, Serbo-Croatian
- *Label:* Modal existential wh-constructions
- *Analysis:* Syntactically, MECs are treated as vPs. Wh-words in MECs are argued to be Hamblin indefinites, i.e. set-denoting expressions. The whole MEC has a denotation of a set of propositions and the matrix verb that selects them is treated as a Hamblin quantifier: selecting the set of propositions and returning a proposition.
- *Observation:* MECs do not introduce discourse referents. Wh-words in MECs cannot undergo successive-cyclic movement.

Kondrashova and Šimík (to appear)

- *Languages:* Russian
- *Analysis:* The authors provide a complex analysis of Russian MEC-types, esp. the difference between canonical MECs and MECs involving the neg-wh formations. It is argued that the main parameter distinguishing Russian MECs is the selectivity of the matrix quantifier. The selective (i.e. determiner-like) quantifier gives rise to neg-wh MECs and the unselective quantifier gives rise to canonical MECs.
- *Observations:* MECs with neg-wh formations do not license more than one wh-word.

Livitz (2010)

- *Languages:* Russian, (Hungarian, Romanian)
- *Label:* Modal existential constructions (and modal possessive constructions)
- *Analysis:* Livitz argues for a further division within the MECs. Standard MECs are analyzed as bare CPs, selected by an existential predicate. Modal possessive constructions (MPCs), on the other hand, are analyzed as light-headed relative clauses which are generated as internal arguments of a possessive small clause, which is in turn selected by an existential predicate. The motivation that comes from distinguishing MPCs from MECs comes from the fact that Russian allows for two types of subjects: dative subjects (MECs) and prepositional genitive subjects (MPCs).
- A number of novel observations distinguishing MECs from MPCs.

A.2 Language ordering

This section contains an exhaustive overview of the literature on MECs, ordered according to the language(s) it deals with. Boldfaced references correspond to studies that deal with MECs in the particular languages in some detail (and that I have read), ordinary references correspond to studies in which the topic of MECs in the particular language is marginal, and bracketed references are those that I have not read.

Albanian

- Caponigro (2003: Chapter 3), Grosu (2004)

Arabic (Classical)

- Grosu (2004)

Bulgarian

- (Penchev 1981), **Rudin (1986: Chapter 6)**, Izvorski (1998), Bošković (1998), Pancheva-Izvorski (2000: Chapter 2), Caponigro (2001), Caponigro (2003: Chapter 3), Grosu (2004)

Catalan

- Hirschbühler and Rivero (1981), Suñer (1983), Caponigro (2003: Chapter 3)

Czech

- **Zubatý (1922)**, Růžička (1994), **Ceplová (2007)**, **Šimík (2008a, 2009a)**

English (New York)

- Caponigro (2003: Chapter 3)

Estonian

- Caponigro (2003: Chapter 3)

Finnish

- Caponigro (2003: Chapter 3)

French

- (Hirschbühler 1976), (Obenauer 1977), **Hirschbühler (1978: 176,fn14; 218ff,§7.8)**, Hirschbühler and Rivero (1981), **Suñer (1983)**, Caponigro (2001), Grosu (2002), Caponigro (2003: Chapter 3), Grosu (2004), **Thomas (2008a; 2008b)**

Greek

- Izvorski (1998), Pancheva-Izvorski (2000: Chapter 2), Caponigro (2001), Caponigro (2003: Chapter 3), Agouraki (2003), **Agouraki (2005)**, Grosu (2004)

Hebrew (Modern)

- Grosu (1994:137–143), Pancheva-Izvorski (2000: Chapter 2), Caponigro (2001), Caponigro (2003: Chapter 3), Caponigro (2004), Grosu (2004)

Hungarian

- Lipták (2000), **Lipták (2003)**, Caponigro (2003: Chapter 3), Grosu (2004), **Surányi (2005)**

Italian

- Pancheva-Izvorski (2000: Chapter 2), **Caponigro (2001)**, **Caponigro (2003: Chapter 3)**, **Caponigro (2004)**

Lithuanian

- (Palmaitis 1984), Ambrazas (1997), (Kalėdaitė 2000, 2002), **Kalėdaitė (2008)**

Macedonian

- Caponigro (2003: Chapter 3), Grosu (2004)

Moroccan Arabic

- Caponigro (2003: Chapter 3)

Polish

- (Mirowicz 1964), (Besters-Dilger 1988), Caponigro (2003: Chapter 3), Grosu (2004)

Portuguese

- (Móia 1992), (Peres and Móia 1995)

Romanian

- **Grosu (1987)**, **Grosu (1994:137–143)**, **Grosu and Landman (1998: 155–158)**, Caponigro (2001), Grosu (2002), Caponigro (2003: Chapter 3)

Russian

- (Peškovskij 1934), (Holthusen 1953), (Galkina-Fedoruk 1958), (Šaxmatov 1963), (Mirowicz 1964), (Georgieva 1971), (Mrázek 1972), Chvany (1975: 62), (Isačenko 1976), (Garde 1976), **Pesetsky (1982:149–157)**, **Rappaport (1986)**, (Nozsicska 1987), (Besters-Dilger 1988), (Apresjan and Iomdin 1989), (Yoon 1989), **Růžička (1994)**, Pancheva-Izvorski (2000: Chapter 2), **Babby (2000)**, Caponigro (2001), **Avgustinova (2003)**, Caponigro (2003: Chapter 3), Grosu (2004), Fleischer (2006), **Kondrashova (2008)**, Šimík (2009a), **Kondrashova and Šimík (to appear)**, **Livitz (2010)**

Serbo-Croatian

- (Browne 1986), Pancheva-Izvorski (2000: Chapter 2), Caponigro (2001), Caponigro (2003: Chapter 3), Grosu (2004), Šimík (2009a)

Slovak

- Ružička (1994)

Spanish

- (Bello 1847), (Ramsey 1894, 1956), (Plann 1975), (Van Riemsdijk 1978), **Plann (1980: III.B, IV, V (123–162))**, **Suñer (1983)**, **Grosu (1987)**, (Ramos-Santacruz 1994), Grosu (1994:137–143), Izvorski (1998), Caponigro (2001), Caponigro (2003: Chapter 3), Grosu (2004)

Spanish (Old)

- Pancheva-Izvorski (2000: Chapter 2)

Yiddish

- Caponigro (2001), Caponigro (2003: Chapter 3)

A.3 Types of analysis

This section is a non-exhaustive overview of the literature on MECs, organized according to the type of syntactic and semantic analyses proposed. It contains only studies that deal with MECs in some detail and make theoretically relevant claims. Like in the preceding sections, references in brackets refer to studies that I have not read but that are more or less reliably reported on in other literature. This section is divided into two subsections, one summarizing the literature according to the syntactic analysis assumed (§A.3.1) and the other according to the semantic analysis (§A.3.2). Naturally, some references occur in both subsections. The reader should bear in mind that the present section only provides an overview, not a thorough description of the analyses proposed. For a critical review of existing analyses, I refer the reader to the two state-of-the-art sections, §5.1 for syntax and §6.1 for semantics.

A.3.1 Syntactic analyses

There are three main types of syntactic analyses, which differ mainly in terms of the internal syntax proposed for MECs. As regards the external syntax of MECs, i.e. MECs' distribution, virtually all existing analyses (with the exception of the present thesis) have assumed that MECs correspond to their corresponding weak argument DPs.

NP/DP analysis*Characterization*

- MECs are treated as CPs headed by or adjoined to some phonologically empty nominal category. Particular analyses differ in their assumptions about the kind of category involved, ranging from *pro*, NP, D, or a full-fledged DP.
- Under this analysis, MECs resemble free or headed relative clauses.

Proponents

- (Plann 1975), (Obenauer 1977), (Van Riemsdijk 1978), Hirschbühler (1978), Plann (1980), Suñer (1983), Rappaport (1986), Růžicka (1994), Lipták (2003), Agouraki (2005), Livitz (2010)

CP analysis*Characterization*

- MECs are treated as “bare” CPs, i.e. CPs that are directly selected by the matrix verb.
- Under this analysis, MECs resemble embedded wh-questions.

Proponents

- Zubatý (1922), (Garde 1976), Pesetsky (1982), Rudin (1986), Grosu (1987, 1994), Grosu and Landman (1998), Izvorski (1998), Pancheva-Izvorski (2000), Babby (2000), Caponigro (2001, 2003, 2004), Lipták (2003), Grosu (2004), Thomas (2008a,b), Livitz (2010)

VP analysis*Characterization*

- MECs are treated as VPs or vPs.
- Under this analysis, MECs resemble infinitives selected by restructuring verbs.

Proponents

- Chvany (1975), Avgustinova (2003), Surányi (2005), Ceplová (2007), Kondrashova (2008), Šimík (2008a, 2009a), Kondrashova and Šimík (to appear)

A.3.2 Semantic analyses

Quantificational analysis

Characterization

- MECs are treated as generalized quantifiers, i.e. expressions of type $\langle et, t \rangle$, and as such are subject to quantifier raising.
- Under this analysis, MECs resemble (strong) quantificational DPs.

Proponents

- Pesetsky (1982), Rappaport (1986), Grosu (2004)

Property analysis

Characterization

- MECs are treated as properties/predicates, i.e. expressions of type $\langle e, t \rangle$, by virtue of the left peripheral wh-operator. Their apparent quantificational force comes from the matrix verb.
- Under this analysis, MECs resemble predicative NPs and relative clauses.

Proponents

- Grosu (1994), Grosu and Landman (1998), Caponigro (2001, 2003, 2004), Izvorski (1998), Pancheva-Izvorski (2000), Agouraki (2005), Šimík (2008a)¹

Propositional analysis

Characterization

- MECs are treated as open propositions, i.e. expressions of type t (or $\langle s, t \rangle$), which are “open” by virtue of the presence of an unbound variable in the form of the wh-word. A notational variant of this analysis holds that MECs denote a set of propositions. The apparent quantificational force comes from the matrix verb.
- Under this analysis, MECs resemble embedded questions as analyzed by Hamblin (1973) or Berman (1991).

Proponents

- Izvorski (1998), Pancheva-Izvorski (2000), Surányi (2005), Šimík (2009a), Kondrashova and Šimík (to appear)²

¹Grosu (1994) suggests that MECs belong to the class of “amount relatives” (cf. Carlson 1977), however, no explicit semantic analysis is provided. In Izvorski (1998) and Pancheva-Izvorski (2000), there is a discrepancy between the informal and the formal part of the analysis. Informally (in words), (Pancheva-)Izvorski argues for an open proposition analysis, but formally provides a property analysis.

²There is a discrepancy between the informal and the formal part of (Pancheva-)Izvorski’s analysis. Informally (in words), she argues for an open proposition analysis, but formally provides a property analysis.

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Samenvatting in het Nederlands

In dit proefschrift presenteer ik een grondige crosslinguïstische studie van de typologie, syntaxis en semantiek van modale existentiële wh-constructies (MEC's), zoals in (1):

- (1) *Tsjechisch*
Mám se na koho spolehnout.
heb:1SG REFL op wie:ACC vertrouwen:INF
'Ik heb iemand op wie ik kan vertrouwen.'

De belangrijkste these van dit proefschrift bestaat uit twee delen. Ten eerste, alle MEC's worden geselecteerd door een en hetzelfde predicaat – een predicaat dat de toestand van bestaan (in de fysieke wereld, in iemands beleving, etc.) uitdrukt. Dat betekent dat het selecterende bestaanspredicaat (het existentiële BE) onderdeel moet zijn van de definitie van MEC's. Ten tweede, en enigszins contra-intuïtief, MEC's zijn geen gewone objecten van dit predicaat; zij fungeren als *event*-extensies van de toestand die het predicaat denoteert, d.w.z. het zijn deelzinnen die de mogelijkheid karakteriseren dat een gebeurtenis plaatsvindt als gevolg van het bestaan van een bepaald individu. Dienovereenkomstig noem ik deze analyse van MEC's een *event-extensie analyse*. De relatie tussen het object van BE (z'n participant-argument) en z'n MEC-extensie wordt tot stand gebracht middels het wh-woord in MEC's. De syntactische categorie van de MEC zelf is onderhavig aan crosslinguïstische en taalinterne diversiteit, variërend van predicaten (vP) tot clausale functies (FinP); zie (2):

- (2) $[_{\text{BeP}} \text{ participant}_i [_{\text{Be}'} \text{ BE } [_{\text{MEC(vP/FinP)}} \text{ wh}_i \dots]]]$

De belangrijkste voorspelling van de eerste stelling heeft te maken met de zeer beperkte syntactische distributie van MEC's: ze worden alleen gelicentieerd als extensie van het atomaire bestaanspredicaat BE of van complexe predicaten die het bestaanspredicaat als resulterende toestand hebben.

De tweede stelling doet een voorspelling over de zeer beperkte opties in de soort modaliteit van MEC's: ze kunnen alleen een lezing uitdrukken die met een Engelse term omschreven kan worden als *circumstantial possibility*, oftewel 'mogelijkheid door omstandigheden'. In niet-technische termen: het bestaan van een bepaald object suggereert de mogelijkheid (maar niet de noodzaak) om iets met dat object te doen. Die mogelijkheid hangt bovendien voornamelijk af van het daadwerkelijk bestaan van een bepaald object (hetgeen een omstandigheid in de wereld is, en niet, bijvoorbeeld, afhankelijk is van wetten of iemands kennis).

Daarnaast toon ik aan dat de aard van MEC's, zoals onthuld in de *event*-extensie analyse, inzicht verschaft in een aantal meer algemene aspecten van de theorie van de syntaxis en semantiek. Ik stel daartoe hypothesen op over de syntaxis en semantiek van existentiële constructies, wh-constructies, wh-fronting en controle.

In de eerste plaats beargumenteer ik dat existentiële kwantificatie in existentiële constructies voortkomt uit een lexicaal predicaat dat de toestand van bestaan uitdrukt, in plaats van uit een functioneel hoofd. Deze hypothese wordt ondersteund door het idee dat het existentiële predicaat dat de MEC selecteert, manipulaties aan de argumentstructuur kan ondergaan, zoals reductie of uitbreiding van het aantal argumenten. Dit is onverwacht binnen een functionele benadering van existentiële hoofden.

In de tweede plaats beargumenteer ik dat wh-fronting veel vrijer is dan gewoonlijk wordt aangenomen. Wh-verplaatsing wordt niet zozeer aangedreven door de noodzaak kenmerken te licentiëren; het komt eerder neer op een vorm van adjunctie. De landingspositie wordt voornamelijk beperkt door de syntactische positie van functionele hoofden, gebruikmakend van de afhankelijkheid tussen operator en variabele die wh-verplaatsing creëert. De syntactische onderspecificatie van wh-fronting correleert met de verarmde semantiek van wh-woorden – die corresponderen simpelweg met logische lambda-operatoren.

De kenmerken van lege subjecten in MEC's bieden ten slotte een nieuw argument voor de analyse dat verplichtecontroleconstituenten eigenschappen zijn wat betreft hun semantische categorie (en tegen de analyse dat het om proposities zou gaan). Het argument hiervoor is dat wh-subjecten de enige subjecten zijn die de verplicht gecontroleerde PRO kunnen vervangen in een MEC. Als controleconstituenten corresponderen met eigenschappen, dan kan PRO worden opgevat als een lambda-operator, hetgeen past bij de interpretatie van wh-woorden die hier wordt aangenomen. Deze aannames leiden op een natuurlijke manier tot een verklaring voor de generalisatie dat wh-subjecten in MEC's in complementaire distributie zijn met PRO.

In de rest van deze samenvatting geef ik een overzicht van elk hoofdstuk van het proefschrift.

Samenvatting per hoofdstuk

1 Inleiding De inleiding begint met een heuristische definitie van MEC's. Ik definieer MEC's als constructies met drie hoofdingrediënten: (i) ze bevatten een afhankelijkheid tussen een wh-operator en een variabele, (ii) ze hebben een modale betekenis, en (iii) ze worden geïnterpreteerd als zwakke existentiële nominale uitdrukkingen. Na het geven van een overzicht van de kwesties die aan de orde komen en de beweringen die daarover zullen worden gedaan, introduceer ik de kern van dit proefschrift: de *event*-extensie analyse. De rest van de inleiding biedt een beschrijving van het theoretisch kader waarop deze studie gestoeld is, de generatieve syntaxis en de waarheidsconditionele semantiek. Bij de beschrijving van het theoretisch kader worden ook de notatieconventies weergegeven die in dit proefschrift worden gehanteerd. De inleiding wordt afgesloten met een leeswijzer.

2 Universalia en de typologie van MEC's De studie naar MEC's tot dusver heeft te lijden onder een gebrek aan descriptieve breedte zowel als diepte. Het tweede hoofdstuk is bedoeld om dit gebrek deels op te heffen. Het begint daartoe met een uitgebreide lijst van talen waarin MEC's voorkomen. Naast voorbeelden uit de taalfamilies waarvan het bestaan van MEC's in de gangbare literatuur is opgemerkt, zoals de Romaanse, Slavische, Finoegrische en Semitische talen, het Grieks en Albanees, en in mindere mate de Germaanse talen, geef ik ook voorbeelden uit de Baltische talen en het Baskisch. De kern van hoofdstuk 2 is een vrij gedetailleerde beschrijving van de morfologische, syntactische en semantische aspecten van MEC's in verscheidene talen. De data die ik bespreek zijn afkomstig uit de bestaande literatuur over MEC's en van moedertaalsprekers die ik met een vragenlijst of in een persoonlijk gesprek heb ondervraagd. Deze empirische studie levert een nieuwe verzameling van absolute en implicatieve universalia op, naast een aantal sterke tendensen. De universalia zijn: MEC's komen voor op de positie van het intern argument van een deel van de werkwoorden waarvan de lexicale betekenis existentieel closure van het object toestaat (en verder nergens); MEC's hebben altijd klein bereik (scope) ten opzichte van andere kwantificatiele uitdrukkingen; de modaliteit van MEC's is circumstantial possibility; MEC's vertonen geen matching-effecten. De tendensen zijn: MEC's gebruiken over het algemeen kale (interrogatieve) wh-woorden; MEC's zijn over het algemeen net zo transparant als de overeenkomstige interrogatieven (of transparanter); MEC's laten over het algemeen sluicing toe; MEC's hebben over het algemeen een subject (meestal leeg) dat referentieel identiek is aan een argument in de matrix (als dat er is). De implicatieve universalia zijn: als in een taal MEC's kunnen worden ingebed onder een dynamisch predicaat, dan kunnen MEC's in die taal worden ingebed onder een statief predicaat; een taal heeft MEC's met meerdere wh-woorden alleen in het geval dat het ook fronting van meerdere wh-woorden toestaat; als een taal de modus infinitivus heeft, gebruikt het infinitieven in MEC's (in andere gevallen wordt de subjunctief of een functioneel equivalent daarvan gebruikt); als een taal geen MEC's heeft met een bepaald wh-woord

in de hiërarchie van $\{wat, wie, waar\} \succ \{wanneer, hoe\} \succ waarom$, dan heeft het ook geen MEC's met wh-woorden die lager in de hiërarchie staan.

3 De positie van MEC's ten opzichte van gerelateerde constructies In eerder onderzoek naar de aard van MEC's is vooral een constructie-vergelijkende aanpak gehanteerd. Als gevolg daarvan zijn er verscheidene pogingen geweest om MEC's te reduceren tot een ander soort constructie, in het bijzonder vrije relatiefzinnen, relatiefzinnen met een zichtbaar hoofd (antecedent), of ingebedde wh-vragen. Het doel van het derde hoofdstuk is te laten zien dat dergelijke pogingen tot mislukken zijn gedoemd. Ik bewijs dit met een logische methode. Als eerste stel ik een simpele logica van constructies op, gebaseerd op het begrip constructioneel sub-/supertype, gedefinieerd in structurele (syntactische) termen. Uitgaande van tamelijk algemeen aanvaarde analyses van de drie constructies waartoe MEC's in de literatuur zijn gerekend, toon ik dan aan dat geen van de drie een correcte karakterisering kan zijn van MEC's.

4 Een event-extensie analyse van MEC's Het vierde hoofdstuk is een zorgvuldige uiteenzetting van de kern van dit proefschrift: de *event*-extensie analyse. Ik beargumenteer eerst dat geen van de bestaande analyses twee cruciale eigenschappen van MEC's kan verklaren – de beperkte distributie en modaliteit – en geef daarna een karakterisering van de eigenschappen van het predicaat *available* ('beschikbaar'), dat duidelijk een aantal kerneigenschappen uitdrukt van het existentiële MEC-selecterende predicaat. Ik laat zien dat dit, in zijn meest volledige argumentstructuur, een drieplaatsige relatie uitdrukt, waarbij twee individuen die onderling in een possessief-achtig verband staan, participeren in een zeker *event*. Het volgende deel van het hoofdstuk breidt de discussie uit naar andere predicaten met eenzelfde soort argumentstructuur als *available*, die ik eerst *availability*-predicaten en later MEC-inbeddende predicaten noem. Deze klasse omvat het bestaanspredicaat *zijn*, het bezitspredicaat *hebben* en enkele andere predicaten zoals *kopen*, *brengen/halen*, *sturen*, *arriveren* etc. Net als *available* kunnen deze predicaten een zinsargument selecteren. Dit zinsargument staat in eerdere literatuur bekend als doelaanduidende zin (een zogenaamde *purpose clause*, bijvoorbeeld *Ik heb een kapstok gekocht om jassen aan op te hangen*). Vervolgens beargumenteer ik dat zowel MEC's als doelaanduidende zinnen moeten worden gerekend tot hetzelfde zinstype, dat ik *possibility clause* noem, omdat het de mogelijkheid uitdrukt die tot stand wordt gebracht door het bestaan van een bepaald object. De formele implementatie van dit voorstel maakt gebruik van een versie van de neo-Davidsoniaanse *event*-semantiek, waarbij complexe predicaten (d.w.z. predicaten die een relatie uitdrukken in plaats van een eigenschap, o.a. statieve predicaten zoals het possessieve *hebben*) gedecomposeerd worden in een serie atomaire predicaten die individuen karakteriseren, gecombineerd met atomaire *events* waaraan die kunnen deelnemen, en mogelijk nog andere, uitbreidende *events*. Voor het bestaanspredicaat BE beargumenteer ik dat als het wordt uitgebreid met een MEC, het een verarmde argumentstructuur heeft, doordat het z'n participant-argument (de drager van de toestand van bestaan) verliest in een proces dat

lijkt op antipassivisatie. Het laatste voorstel in dit hoofdstuk heeft betrekking op de semantiek van vooropgeplaatste wh-woorden. Ik beargumenteer dat deze geanalyseerd moeten worden als syncategorematische uitdrukkingen, wat op LF correspondeert met logische lambda-operatoren.

5 De interne syntaxis van MEC's Ik begin het vijfde hoofdstuk met twee overkoepelende hypothesen die overeenstemmen met de theorie van MEC's die in het voorgaande hoofdstuk is voorgesteld. Eén hypothese is dat wh-fronting niet gedreven wordt door de noodzaak om kenmerken te licentiëren. Daarom kan wh-verplaatsing in principe naar iedere positie zijn, zolang het geen (andere) regels van de universele of taalspecifieke grammatica schendt. Ik betoog dat de enige reden om wh-fronting te analyseren in termen van kenmerk-licentiëring, ligt in de syntactische en semantische eigenschappen van de operatoren die gebruik maken van de ontstane afhankelijkheid tussen wh-operator en variabele. De tweede hypothese heeft te maken met de syntactische plaatsingsrestricties (of selectierestricties) die van toepassing zijn op lexicale predicaten aan de ene kant en op functionele (zuiver logische) operatoren aan de andere kant. Waar de eerstgenoemde redelijk flexibel zijn in hun syntactische selectie, vertonen de laatstgenoemde strakke beperkingen. Aangezien MEC's worden geselecteerd door een lexicaal predicaat (het bestaanspredicaat), voorspellen we dat hun syntactische omvang flexibel is. Deze voorspelling wordt in de rest van het hoofdstuk getoetst. Na een bespreking van de literatuur over de syntaxis van MEC's, toon ik aan dat de structuur van MEC's non-deterministisch is, precies zoals mijn hypothesen voorspellen. In tegenstelling tot conclusies in eerder werk, toon ik aan dat MEC's net per se CP's zijn. Als de restricties op verplaatsing in een bepaalde taal korte wh-verplaatsing (verplaatsing naar de rand van vP) toestaan, dan heeft die taal ook vP-MEC's. Verder toon ik aan dat er bij MEC's verschillende patronen zijn in de manier waarop de referentiële identificatie van het MEC-subject plaatsvindt. Er zijn *raising*-MEC's, controle-MEC's en ook MEC's met een referentieel onafhankelijk subject. De syntaxis van de basistypes MEC's is te zien in (3):

- (3) a. $[_{\text{BeP}} \text{ BE } [_{\text{vP-MEC}} \dots]]$ *raising-MEC*
 b. $[_{\text{BeP}} \text{ BE } [_{\text{CP-MEC}} \dots]]$ *verplichtecontrole-/niet-verplichtecontrole-MEC*

Ten slotte bespreek ik het belang van de studie naar MEC's voor de syntaxis van sluicing. Ik laat zien dat de eigenschappen van sluicing in MEC's op enkele belangrijke punten incompatibel zijn met redelijk gangbare benaderingen van sluicing.

6 Kwesties met betrekking tot het syntaxis-semantiek-interface In het zesde hoofdstuk werk ik de kleinere details van de *event*-extensie analyse uit en verken ik verdere voorspellingen die uit de analyse volgen. Ik begin met een evaluatie van de voorspellingen van eerdere semantische verklaringen van MEC's (één die MEC's beschouwt als gegeneraliseerde existentiële kwantoren, en twee non-kwantificatiele verklaringen – een benadering in termen van het-

zij eigenschappen hetzij proposities), en een vergelijking van die verklaringen met de voorspellingen van de *event*-extensie analyse. Ik toon aan dat die in het voordeel van mijn analyse uitvalt. De studie gaat verder met een bespreking van MEC's met meerdere wh-woorden, die het enige grote probleem voor mijn analyse vormen. Na de precieze waarheidscondities voor MEC's met meerdere wh-woorden te hebben opgesteld, waarmee ik aantoon dat de wh-woorden zowel in hun bereik als in hun kwantificatiekracht in een symmetrische relatie tot elkaar staan, stel ik een nieuwe analyse voor MEC's met meerdere wh-woorden voor, die niet ten koste gaat van de merites van de oorspronkelijke analyse. Om precies te zijn, ik beargumenteer dat het semantische type van het extensie-argument van BE, dat door de MEC wordt gevuld, flexibel kan worden gedefinieerd, wat het mogelijk maakt om MEC's van verschillende semantische types te selecteren, overeenkomstig het aantal wh-woorden. De volgende paragraaf gaat over MEC's die verplicht gecontroleerd worden. Deze vormen een uitdaging in die zin dat MEC's, net als doelaanduidende zinnen, in het algemeen zinnen zijn met twee gaten, en beide gaten moeten referentieel geïdentificeerd worden door een argument van de matrix. Dit raadsel kan worden opgelost door aan te nemen dat de controle relatie binnen de MEC zelf tot stand komt. Deze hypothese, die wordt ondersteund door data uit het Russisch, is gestoeld op een algemene theorie over controle die vooronderstelt dat controleconstituenten eigenschappen zijn, PRO een lege operator, en de controle relatie zelf een lexicale eigenschap van het controlepredicaat. In de rest van het hoofdstuk bespreek ik een alternatief voor een van de kernvoorstellen van dit proefschrift, namelijk het idee dat het MEC-inbeddende bestaanspredicaat antipassivisatie ondergaat. Ik betoog dat het verdedigbaar en in sommige opzichten zelfs wenselijk is om aan te nemen dat het nominale argument van het bestaanspredicaat daadwerkelijk aanwezig is – meestal in coverte vorm, maar in enkele talen kan het zelfs overt gerealiseerd worden.

7 Conclusie Het laatste hoofdstuk sluit het proefschrift af. Het bestaat uit een korte samenvatting van het kernvoorstel, een samenvatting per hoofdstuk, en een overzicht van kwesties die in het proefschrift open zijn gelaten en die in toekomstig onderzoek aan de orde gesteld zullen moeten worden.

Curriculum Vitae

Radek Šimík was born on 12th January 1982 in Kyjov, Czechoslovakia. From 2000 to 2006 he studied Czech philology and English philology at Palacký University in Olomouc, Czech Republic, where he received his master's degree (magistr) with a thesis on the morphosyntax of relative constructions in Czech. He was a visiting student at Potsdam University (2004) and at Leipzig University (2006). From 2006 to 2010 he worked on his PhD project at the Center for Language and Cognition in Groningen (CLCG). In 2009 he spent a semester at the University of Massachusetts in Amherst as a visiting scholar. This dissertation is the result of his PhD research.