

Martin Salzmann

Reconstruction and Resumption in Indirect A'-dependencies. On the Syntax of Prolepsis and Relativization in (Swiss) German and beyond

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to my mother

Preface

This book has a long history. The first crucial observation goes back to a tutorial I gave at the University of Zurich around 2000 when we noticed that there was a matching effect in Swiss German resumptive relativization. At that time this was just a curious (but surprisingly clear) fact whose theoretical implications I wouldn't be able to grasp until much later. I returned to relative clauses during my time as a PhD student at the University of Leiden. After finishing the first year without having found a PhD topic and starting to feel a bit uncomfortable, I fortunately recalled the observation I had made on matching in resumption back as an MA student and started working on Swiss German relatives. Over time, further aspects of relativization came into focus, including what I termed resumptive prolepsis (a term that so far has had, well, moderate success) and finally reconstruction effects more generally. To my big surprise, what had started out as work on isolated puzzles suddenly formed a (largely) coherent story about aspects of relativization in (Swiss) German. The thesis appeared as Salzmann (2006a). Mastering the challenging topics and finishing the thesis on time would not have been possible without the stimulating environment provided by the Leiden University Centre for Linguistics. I am particularly indebted to my supervisors Lisa Cheng and Johan Rooryck whose input greatly shaped and advanced my ideas and who helped me become a proper theoretical linguist. Their support and supervision was exceptional and exemplary. I still happily (and nostalgically) recall the numberless inspiring discussions we had. In addition, I was lucky to be part of a socially as well as intellectually extremely vivid department. Working door to door with people you could always discuss your pressing syntax problems with was a great privilege. The dynamic linguistic community in the Netherlands and the national graduate school of linguistics (LOT), finally, provided further welcome opportunities to interact with exciting syntacticians from all over the world.

Several of the topics addressed in my 2006 book were inspired by Henk van Riemsdijk's work, who was also the external reviewer of my dissertation. I have enormously profited from his vast knowledge of syntax as well as his incredibly subtle insights into the grammar of Swiss German. He has always been very generous in sharing his time and ideas with me – way beyond the call of duty – and it was also Henk, who offered me to publish my dissertation in revised form in the SGG series. I am immensely grateful for his support over these many years, and I am sure that his work will continue to be a rich source of inspiration for the rest of my career.

Since my life became somewhat unsteady after my PhD with many different jobs in different places, the plan to revise the dissertation had to be postponed.

It was only after I came to the University of Leipzig with the perspective of finally spending several years at the same place that I managed to return to relative clauses. However, since so many years had passed, simply updating my 2006-dissertation was not a realistic option. The field had advanced significantly in the meantime, and the literature on relative clauses had grown at such a fast pace that it quickly became clear that large parts of the book would have to be completely new. An important motivation to finally tackle the book was exciting joint work with Doreen Georgi on Case attraction that started around 2013 and provided the fresh ideas that one needs when returning to a topic one has already spent so much energy and time on. While the phenomena discussed in this book are still largely the same as in 2006, my theoretical perspective on them has been refined and significantly developed in several areas; furthermore, the book has become empirically richer. This is most visible in chapters two, three, and five. The first draft of the book was mainly written in 2015, partly in Leipzig, and partly in Paris, where I spent the academic year 2015/2016. Not having to teach for an entire year was surely instrumental in allowing me to write a first version within relatively little time. After positive evaluation, I completed the final manuscript in the winter semester 2016/2017 in Leipzig. Being part of Gereon Müller's vibrant group is one of the most exquisite intellectual privileges our field has to offer, and the many incredibly sharp people around me have crucially pushed me to develop more formal and explicit analyses.

Since this book partly discusses phenomena that had not been addressed in much detail before and generally involve a high degree of complexity and subtlety, it was crucial to be able to rely on a large number of patient informants whose help is hereby gratefully acknowledged: Boban Arsenijević, Barbara Bächli, Silvio Bär, Janneke ter Beek, Hans den Besten, Anne Breitbarth, Hans Broekhuis, Kathrin Büchler, Petrea Bürgin, Martin Businger, Liesbeth De Clerk, Jeroen van Craenenbroeck, Peter Gallmann, Berit Gehrke, Martin Graf, Beatrice Hartmann, Jutta Hartmann, Andreas Henrici, Maja Hermann, Holger Hopp, Riny Huybregts, Irene Jacobi, Katarina Klein, Alies MacLean, Marjo van Koppen, Joost Kremers, Roland Litscher, Michael Mente, Nataša Milićević, Heinz Moser, Marlys Moser, Franziska Näf-Vosnjak, Roland Pfau, Mika Poss, Christian Rapold, Hilke Reckmann, Mirjam Rigterink, Didier Ruedin, Etienne Ruedin, Marianne Ruedin, Michel Ruedin, Claudia Schmellentin, Manuela Schönenberger, Eric Schoorlemmer, Charlotte Schweri, Guido Seiler, Roman Sigg, Benjamin Stückelberger, Rafael Suter, Mark de Vries, Ton van der Wouden, Kathrin Würth, Martina Würth, Lukas Zaugg, Silvia Zaugg-Coretti, Hedde Zeijlstra, Tobias Zimmermann, Regula Zimmermann-Etter, Hans-Jürg Zollinger, Serena Zweimüller.

Different versions of parts of this work were presented at the following occasions: At the GGS in Mannheim (2004), at the TABU-dag in Groningen (2004),

at the Bilbao-Deusto Conference in Linguistics in Bilbao (2004), at the Tage der Schweizer Linguistik in Bern (2004), at the first Syntax Aio Meeting in Leiden (2004), at CONSOLE 13 in Tromsø (2004), at the TIN-dag in Utrecht (2005), at GLOW 28 in Geneva (2005), at the GGS in Tübingen (2005), at CGSW 20 in Tilburg (2005), at the second Syntax Aio Meeting in Utrecht (2005), at the TIN-dag in Utrecht (2006), at the Workshop on Formal Approaches to Variation in Syntax in York (2007), at the GGS in Constance (2007), at the Workshop on Short Wh-Words in Constance (2007), at the University of Geneva (2007), at the Workshop on Descriptive and Explanatory Adequacy in Leiden (2008), at the University of Leipzig (2008), at the TIN-dag in Utrecht (2009), at the University of Göttingen (2010), at the Resumptive Pronoun Workshop in Jerusalem (2012), at the University of Leipzig (2013 and 2014), at the EGG Summer School in Debrecen (2014), at CGSW 29 in York (2014), at the University College London (2015), at the Workshop on Obligatoriness at TbiLLC in Tbilisi (2015), at the Syntax and Semantics Colloquium in Paris (2015), at the Séminaire LaGraM at Paris 8 (2016), and at GLOW 39 in Göttingen (2016).

I thank the audiences at these occasions, in particular: Klaus Abels, David Adger, Elena Anagnostopoulou, Sjeff Barbiers, Rajesh Bhatt, Ellen Brandner, Joan Bresnan, Hans Broekhuis, Jeroen van Craenenbroeck, Berthold Crysmann, Marcel den Dikken, Jürg Fleischer, Hans-Martin Gärtner, Erich Groat, Eric Haeberli, Fabian Heck, Anke Himmelreich, Daniel Hole, Riny Huybregts, Ray Jackendoff, Idan Landau, Winnie Lechner, Marika Lekakou, Lanko Marušič, Tom McFadden, Gereon Müller, Andrew Murphy, Ad Neeleman, Andrew Nevins, Genoveva Puskas, Henk van Riemsdijk, Guido Seiler, Ivy Sichel, Ur Shlonsky, Wolfgang Sternefeld, Ralf Vogel, Mark de Vries, Philipp Weisser, and Jan-Wouter Zwart.

I also thank the anonymous reviewer for his insightful comments on the first version of this book.

For help with Swiss German data, I am particularly grateful to Martin Graf and Christoph Landolt from the Idiotikon, who answered all my questions with great patience and in remarkable detail.

I am further indebted to the De Gruyter team: to Lara Wysong and Emily Farrell for their support and for not giving up on me and, once the book finally materialized, to Antje-Kristin Mayr for her patient help in the publication process.

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Leipzig, March 2017

Contents

Preface — VII

1 Introduction — 1

2 The syntax of relativization — 6

- 2.1 Relative clauses – basic facts — 8
 - 2.1.1 Definition — 8
 - 2.1.2 Typological parameters of variation — 10
- 2.2 Analyses of relative clauses — 34
 - 2.2.1 The connectivity problem — 35
 - 2.2.2 The modification problem — 40
- 2.3 The head raising analysis — 55
 - 2.3.1 Arguments for head raising — 56
 - 2.3.2 Vergnaud (1974) — 76
 - 2.3.3 Kayne (1994) — 77
 - 2.3.4 Bianchi (1999, 2000) — 96
 - 2.3.5 de Vries (2002) — 103
 - 2.3.6 Bhatt (2002) — 106
 - 2.3.7 Henderson (2007) — 110
 - 2.3.8 Donati and Cecchetto (2011), Cecchetto and Donati (2015) — 119
 - 2.3.9 Raising and uniform derivations — 126
 - 2.3.10 Intermediate summary: the raising analysis – pros and cons — 132
- 2.4 The matching analysis — 134
 - 2.4.1 Motivation: non-reconstruction — 134
 - 2.4.2 The matching analysis and reconstruction — 144
 - 2.4.3 One or two structures for relativization? — 144
- 2.5 In favor of the matching analysis — 146
 - 2.5.1 General advantages — 146
 - 2.5.2 Different types of relative clauses and uniform derivations — 147
 - 2.5.3 Reconstruction — 150
 - 2.5.4 Intermediate summary: the matching analysis — 174
- 2.6 Summary — 176

- 3 **The syntax of resumption — 180**
 - 3.1 Movement or base-generation? — 182
 - 3.1.1 Two types of resumption languages — 182
 - 3.1.2 Further movement diagnostics — 190
 - 3.1.3 Movement approaches — 207
 - 3.2 Distribution of gaps and resumptives — 227
 - 3.2.1 Resumptives in different A'-constructions — 227
 - 3.2.2 Accessibility hierarchy — 233
 - 3.2.3 Optionality vs. complementary distribution — 247
 - 3.2.4 Resumptives, semantic types and adjuncts — 253
 - 3.2.5 The resumptive pronoun parameter — 254
 - 3.3 Summary — 255

- 4 **Prolepsis – an alternative to long A'-movement — 258**
 - 4.1 Long A'-movement in German — 258
 - 4.2 A first hypothesis: base-generation + anaphoric binding — 262
 - 4.2.1 Arguments for a base-position in the matrix clause — 263
 - 4.2.2 Arguments for an anaphoric dependency — 267
 - 4.3 Evidence against argumenthood + anaphoric binding — 271
 - 4.3.1 Absence of lexical restrictions — 272
 - 4.3.2 Obligatoriness of the coreferential element — 277
 - 4.3.3 Evidence for the presence of an A'-dependency — 278
 - 4.3.4 In favor of resumption — 284
 - 4.4 Analysis: predication and ellipsis — 292
 - 4.4.1 The CP-complement as a predicate — 293
 - 4.4.2 Selective reconstruction by means of ellipsis — 296
 - 4.4.3 Scope — 307
 - 4.4.4 The necessity of resumption — 312
 - 4.4.5 Restricting prolepsis — 316
 - 4.5 Possible extensions — 318
 - 4.5.1 Prolepsis in other languages — 318
 - 4.5.2 Similar constructions — 320
 - 4.6 Summary — 333

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|-------|--|
| 5 | Swiss German relative clauses — 335 |
| 5.1 | Basic facts — 336 |
| 5.1.1 | The general form of relative clauses in Swiss German — 336 |
| 5.1.2 | Further empirical details — 343 |
| 5.2 | Movement diagnostics — 351 |
| 5.2.1 | Locality — 351 |
| 5.2.2 | Strong crossover effects — 355 |
| 5.2.3 | Reconstruction effects — 357 |
| 5.2.4 | In favor of base-generation — 375 |
| 5.3 | Matching effects — 383 |
| 5.4 | Local relativization: resumption as a last resort — 389 |
| 5.4.1 | Asymmetries between local and long-distance relativization — 389 |
| 5.4.2 | The distribution of resumptives — 390 |
| 5.4.3 | The syntax of local relativization: summary — 439 |
| 5.5 | Long-distance relativization: an instance of prolepsis — 444 |
| 5.5.1 | Long relativization as aboutness relativization — 444 |
| 5.5.2 | Further arguments for a prolepsis reanalysis — 446 |
| 5.5.3 | Implementing prolepsis in Swiss German — 449 |
| 5.6 | Summary — 457 |
| 6 | Conclusion — 459 |
| | Bibliography — 465 |
| | Index — 491 |

1 Introduction

The paradigmatic case of an A' -dependency involves a dislocated constituent in a clause-initial position and a gap that it is related to:¹

- (1) What₁ did John do ___₁?

In current syntactic theory such as the Minimalist Program (Chomsky 1995 et seq.) but also in many of its predecessors, such dependencies are interpreted in terms of movement, more precisely, in terms of Internal Merge: The constituent undergoing the fronting operation is base-generated in the position where it is thematically interpreted and displaced in the course of the derivation, usually by means of Copy and Merge (cf. e.g., Nunes 2004), which, given successive-cyclic movement, may apply several times before the final landing site is reached. If displacement targets a position characteristic of operators or discourse-relevant elements, it establishes an A' -dependency between the fronted constituent and the position where it originates from. A' -dependencies as in (1) are direct because the copy in the final landing site is a copy of (a copy of) the constituent that was originally merged together with the predicate (the direct dependency is particularly obvious under a multi-dominance approach to movement, cf., e.g., Abels 2012, where a single syntactic object is simultaneously linked to several positions in the tree).

The topic of this monograph are syntactic dependencies that have the semantics of A' -dependencies but where it is less clear how the antecedent is related to the position where it is thematically interpreted. A first possible candidate are relative clauses as in (2):

- (2) the book which John read ___

It can be shown quite easily that the relative pronoun *which* entertains a direct A' -dependency with the gap (it is subject to locality constraints and bears the θ -role and the Case assigned by the verb in the relative clause). However, the head noun (*the*) *book* is also thematically related to the gap; furthermore, reconstruction effects as in (3), where a reflexive inside the external head is bound by an R-expression inside the relative clause, suggest that the head noun actually originates in the position of the gap (given that anaphor binding requires c-command):

¹ In what follows, alphabetical subscripts indicate binding/coreference relationships, while numerical subscripts are used to indicate movement relationships. In case the nature of the link between the antecedent and the gap is not a priori clear, I usually omit the coindexation and just indicate the gap.

- (3) the picture of himself_i that John_i likes __ best

Since the relative pronoun is directly related to the gap, it seems obvious that the relationship between the external head and the gap can only be indirect. However, this traditional view has been challenged in the last twenty years by proponents of the so-called head raising analysis (HRA) (Kayne 1994), where the external head of the relative clause originates inside the relative clause and is moved to its surface position in the course of the derivation; it has been argued that a reanalysis of relative clauses in terms of a direct A'-dependency is not only feasible but also provides superior results in certain areas (especially in the domain of reconstruction effects). In other words, whether an A'-dependency is direct or indirect cannot be read off the surface but requires meticulous investigation.

Another type of A'-dependency for which both direct and indirect analyses have been proposed are those involving resumption, as in the Swiss German resumptive relative shown in (4):²

- (4) Das isch de Maa, won i von em es Buech überchoo ha.
 this be.3SG the man C I from he.DAT a book receive.PTCP have.1SG
 'This is the man that I got a book from.' *Swiss German*

Obviously, the head noun is thematically related to the pronoun *em* inside the relative clause so that there is a non-local dependency. Under an indirect dependency, the resumptive is bound by an operator, while in proposals arguing for a direct dependency, the resumptive is treated as the spell-out of a trace or as part of a clitic-doubling structure. The challenge posed by resumptive dependencies is that they often show mixed behavior with respect to movement diagnostics: While in many languages they are not sensitive to the locality constraints characteristic of movement, they do show connectivity effects such as reconstruction: i.e., the head noun is not only thematically related to the resumptive pronoun, it also seems to be interpreted in the position of the pronoun, as shown by the example in (5) illustrating reconstruction for Principle A:

² The glosses of examples provided by the author follow the Leipzig glossing rules, available at <http://www.eva.mpg.de/lingua/resources/glossing-rules.php>. Glosses from other sources have been adapted only moderately.

- (5) S Spiegelbild vo siich_i, wo mi de Peter_i mit em hät wele
 the reflection of self C me the Peter with it have.3SG want.INF
 verzaubere, hät mi nöd beidrukt.
 enchant.INF have.3SG me not impress.PTCP
 ‘The reflection of himself_i that Peter_i wanted to enchant me with did not
 impress me.’ *Swiss German*

A construction that is even more challenging is a form of prolepsis that is found as an alternative to long A'-dependencies in German and Dutch (and several other languages), especially as an alternative to long-distance relativization. In this construction the relative pronoun, which is governed by a preposition not selected by the matrix verb, is thematically related to a coreferential pronoun inside the complement clause:

- (6) ein Maler, von dem ich glaube, dass Maria ihn mag
 a painter of who.DAT I think.1SG that Mary him like.3SG
 ‘a painter of whom I think that Mary likes him’ *Standard German*

As in the previous constructions, a direct A'-dependency seems unlikely, not the least because the relativized constituent in the matrix clause (a PP) does not match the subcategorization requirements of the embedded verb. However, even in this construction, we find evidence for an A'-dependency in the form of reconstruction effects; (7) illustrates the reconstruction of an idiomatic NP (note that lit. ‘swing a speech’ = ‘give a speech’):

- (7) Die Rede, von der ich denke, dass er sie geschwungen
 the speech of which.DAT I think.1SG that he it swing.PTCP
 hat, wird niemanden überzeugt haben.
 have.3SG be.FUT.3SG no.one.DAT convince.PTCP have.INF
 ‘The speech of which I think that he gave it will not have convinced any-
 body.’ *Standard German*

What these constructions all have in common is thus that they display conflicting evidence with regard to the nature of the A'-dependency they involve.

I will argue in this monograph that the seemingly contradictory properties of these constructions can only be reconciled by means of an indirect A'-dependency. A crucial component of the analyses will be ellipsis. Importantly, ellipsis is a means to make the content of the antecedent available in positions from where a direct movement relationship cannot be established. Furthermore, since ellipsis is subject to an identity criterion different from movement/copying, it can accom-

moderate certain mismatches which I will show to be prominent in these indirect dependencies.

This book is organized as follows: Chapter 2 addresses the syntax of relative clauses. On the one hand, this chapter serves to introduce the phenomenon including the major typological parameters of variation which will become relevant in later chapters. On the other hand, it provides a new analysis of restrictive head-external relative clauses: Against the trend of the last twenty years, I will argue in favor of a new version of the matching analysis (MA) and against the predominant head raising analysis, on both conceptual and empirical grounds. First, I will show that the raising analysis is still confronted with several serious problems that concern either rather fundamental syntactic principles (such as the Activity Condition or the Condition on Extraction Domains) or very basic syntactic notions such as constituency. Although some of these have been known at least since Borsley (1997), few of them have been addressed successfully; rather, it seems that the effort needed to make the raising analysis compatible with many of these rather simple facts is an indication that it is on the wrong track. Second, the matching analysis not only avoids all these problems, it can also be shown to provide a uniform account of the intricate reconstruction pattern found in restrictive relatives, while the raising analysis systematically fails to capture a subset of the data.

In chapter 3, I will provide the necessary background about the syntax of resumption. I will discuss in detail whether resumption should be analyzed in terms of movement or base-generation and argue that island-insensitive resumption is best modeled by means of base-generation. I will also address the distribution of resumptives on the noun phrase accessibility hierarchy and investigate whether resumption should be understood as a last resort or as a basic possibility of the grammatical system.

In chapter 4, I turn to resumptive-based prolepsis in Standard German as in (6). This construction is particularly challenging because it is much more complex than it initially may seem. While at first one may be tempted to treat the relationship between antecedent and pronoun as purely anaphoric, upon closer inspection, it becomes clear that the relationship bears several of the hallmarks of an A' -dependency. This dependency will be shown to be doubly indirect, involving several ellipsis operations and predication in the complement clause. Resumption, which is analyzed as base-generation, is shown to play a crucial role in the licensing of the construction.

Chapter 5 addresses relativization in Swiss German. Headed restrictive relatives are particularly interesting in this variety because the distribution of gaps and resumptives produces a rare and theoretically challenging pattern: While in local relativization gaps and resumptives are in complementary distribution, with gaps for subjects and direct objects and resumptives for oblique relations,

long-distance relativization requires resumptives across the board. Furthermore, dative resumptives are subject to a matching effect in local but not in long-distance relativization. I will argue that the properties of long-distance relativization can be understood if it is reanalyzed in terms of prolepsis, along the lines of the Standard German construction discussed in chapter four. The direct-structural-/oblique split in local relativization will be argued to follow from obligatory Case attraction. The complementary distribution, finally, results from a general preference of the language (a parameter setting) for movement over base-generation in the satisfaction of A' -related features. Chapter 6 concludes.

Since chapters 2 and 3 contain a lot of background material, the reader who is exhaustively familiar with the theoretical literature on relative clauses and resumption may choose to focus on section 2.5 as well as chapters 4 and 5, where I develop my own proposals. In the rest of this book, I presuppose a mainstream version of the Minimalist Program (Chomsky 1995 et seq.); while certain aspects of my analysis require specific assumptions (such as the properties of Agree and Case-checking and the mechanisms regulating the interpretation of chains), I try to keep the discussion as neutral as possible in those areas where different implementations are conceivable.

2 The syntax of relativization

Relative clauses are a very popular object of theoretical linguistic inquiry. There are two major reasons for this. First, consider the following sentence:¹

- (1) This is the woman (that) Peter kissed.

The relative clause consists of the head noun (HN, called *domain noun* in Keenan 1985: 142) (*the*) *woman* and the relative clause (RC) (*that*) *Peter kissed* which modifies it. The sentence in (1) can be roughly paraphrased as in (2):

- (2) ≈ This is x=woman such that Peter kissed x.

This implies that the constituent *the woman* is related to both *saw* and *kissed*, i.e., it somehow functions as the object of both verbs, although in the case of *kissed*, we only find a gap. This double role played by the head noun will be called the *connectivity problem*. There are two main possibilities how the link can be established: The gap can either be the result of a silent pronoun (*pro*) roughly equivalent to 'her' that is identified by the antecedent *the woman*:

- (3) This is [the woman]_i (that) Peter kissed **pro**_i.

Under an alternative implementation of this idea, a full instance of *the woman* occurs inside the RC and is deleted under identity with the antecedent:

- (4) This is [the woman]_i (that) Peter kissed ~~the woman~~_i.

The second possibility consists in linking the two positions by means of movement. This could involve movement of an empty element that is subsequently linked to/bound by the head noun:

- (5) This is [the woman]_i ec_{1i} (that) Peter kissed ___₁.

The empty element would thus essentially function like a relative pronoun:

- (6) This is [the woman]_i whom_{1i} (that) Peter kissed ___₁.

¹ This introduction as well as sections 2.1 and 2.2 of this chapter heavily draw on the following sources: Downing (1978), Lehmann (1984, 1986), Keenan (1985), Alexiadou et al. (2000), Bianchi (2002a,b), de Vries (2002), Bhatt (2005), Andrews (2007), and Bhatt (2015). For a typology of relative clauses in European languages, see Murelli (2011). See also de Vries (2013) for a bibliography of work on relative clauses.

While the relative clause is attached to the HN in all three cases, the resulting semantics are different. This raises the obvious question of how head noun and relative clause are combined. There are two aspects to consider: First, at what structural level is the RC attached: at the N(P)- or at the D(P)-level? Second, is the RC an adjunct or a complement? As we will see, practically all combinatorial possibilities have been proposed over the years. Another factor that is crucial for the interpretation of restrictive, non-restrictive and amount relatives is the position where the head noun is interpreted, viz., inside or outside the relative clause. This is thus an aspect where connectivity and mode of attachment potentially interact.

The literature on relative clauses of the last 60 years within Generative Grammar can largely be seen as a response to the challenges posed by the connectivity problem and the modification problem. And despite the many insights gained over the years, the solutions to both problems are still highly controversial.

This chapter has a double function. On the one hand, it provides an overview of the major empirical and theoretical aspects surrounding the syntax of relative clauses that will be relevant for the rest of this book. On the other, it provides an analysis of restrictive relative clauses based on a new version of the so-called matching analysis (MA) and shows that it is superior to both the raising analysis, which is arguably the currently most widely adopted theory, and previous versions of the matching analysis. Concretely, in section one, I will discuss definitions of relative clauses and present a descriptive typology of relative constructions and relativization strategies. Section two addresses both the connectivity and the modification problem. Section three discusses the head raising analysis in detail and points out its major weaknesses. Section four introduces the matching analysis before, in section five, I present my own analysis of restrictive relatives based on a new version of the matching analysis.

2.1 Relative clauses – basic facts

2.1.1 Definition

Before turning to the properties of relative clauses, it is instructive to have a brief look at possible definitions of relative clauses. As a first step, one might think of a definition as in (11):

- (11) Relative Clause – definition 1
a clausal constituent of the noun phrase

This definition is insufficient because it fails to distinguish relative clauses from complement clauses to nouns as in (12):

(12) I heard the claim that John was asleep.

What is clearly missing in the definition is the double role of the head noun mentioned above. The following definition addresses this:

(13) Relative Clause – definition 2 (Andrews 2007: 206)
a subordinate clause which delimits the reference of an NP by specifying the role of the referent of that NP in the situation described by the RC

The definition is partially syntactic (subordination) and partially semantic (for a similar definition, see Lehmann 1986: 664). Note that the NP whose reference is delimited need not necessarily be an NP external to the RC. Rather, the NP can also be inside the RC as in so-called head-internal relative clauses (IHRC), where there is no head noun external to the relative clause (Cole 1987: 277, see section 2.1.2.1 for details):

(14) [Nuna bestya-ta ranti-shqa-n] alli bestya-m ka-rqo-n.
man horse-ACC buy-PFV-3 good horse-EVD be-PST-3
'The horse that the man bought was a good horse.' *Ancash Quechua*

However, the definition presupposes set intersection, which fails for appositive relatives as in (9-b) above and amount relatives as in (10).² Similarly, it does not obviously include free relatives (FRCs) (see van Riemsdijk 2006 for a recent overview):³

(15) I eat what you cook.

FRCs do not have an overt nominal head, and it is contested whether they have a head at all (note that they are sometimes called *headless*). Furthermore, their semantics has been argued to be maximalizing (cf. Grosu & Landman 1998), i.e.,

² Note that, while restrictive relatives and amount relatives are property denoting, viz., of type $\langle e,t \rangle$ and $\langle d,t \rangle$, respectively, appositives are often analyzed as being proposition-denoting, cf., e.g., del Gobbo (2007).

³ A variant of FRCs are so-called light-headed or false free relatives, which are similar to FRCs with respect to meaning and the form of the RC but in addition have an overt pronominal head as in (i):

(i) He who betrays me shall suffer in eternity.

they usually receive a definite or universal interpretation and thus do not obviously restrict the reference of an NP.⁴

Consequently, a slightly more flexible definition is needed, along the following defining properties, which are taken from de Vries (2002: 14–15):

- (16) Relative clause – definition 3
- a. RCs are subordinated
 - b. An RC is connected to surrounding material by a pivot constituent (i.e., a constituent semantically shared by the matrix clause and the RC)
 - c. The theta-role and the syntactic role of the pivot inside the RC are in principle independent of its roles outside the relative (but see sections 5.3 and 5.4.2.3 below on the matching effect and Case attraction)

This definition will be sufficient to cover the types of RCs discussed in this book (for instance, in restrictive RCs, the external head is the pivot; in FRCs, the relative pronoun is the pivot etc.).

With this definition in place, we can now turn to fundamental typological parameters of variation.

2.1.2 Typological parameters of variation

The major typological parameters of variation in the domain of relative clauses are the following:

- The structural relationship between the head noun and the RC
- The marking of the function of the head noun inside the RC
- The functions which the relativized NP can have inside the RC

I will discuss these parameters, which are partially interrelated, in quite some detail because they will play an important role throughout the book. The first two parameters describe the typological variation space relevant for the connectivity and the modification problem. The extent to which a theory of relative clauses manages to capture the major typological types will be important for its success. A significant part of this chapter will therefore be devoted to this question. The second and third parameter will reveal that the resumptive pronoun strategy should

⁴ The definition also fails for so-called correlatives, to be discussed in section 2.1.2.1.2, which, like free relatives, have maximalizing semantics and are usually interpreted as quantificational expressions, see Srivastav (1991).

be set apart from other relativization strategies because of its significantly superior performance on the accessibility hierarchy. This fact will figure prominently in chapters three through five.

2.1.2.1 The structural relationship head noun – relative clause

While in familiar languages like English the RC occurs adjacent to the head noun and follows it, we find other possibilities crosslinguistically which can be captured along the following two subparameters:

- Location of the RC inside the clause: embedded vs. adjoined
- Location of the head noun: outside or inside the RC

The first subparameter distinguishes between relative clauses which (together with the head noun) occupy a regular slot in the main clause (embedded) and relative clauses which occur at the periphery of the main clause.

2.1.2.1.1 Embedded relative clauses

Embedded relative clauses are found, e.g., in English or German. They function as subordinate clauses to the head noun and form a constituent with it (as shown by the fact that they are fronted with the HN under passivization):

- (17) a. I saw [the man who Mary likes] in the park. →
 b. [The man who Mary likes]₁ was seen ___₁ in the park.

Embedded relative clauses can be postnominal as in English or prenominal, as, e.g., in Turkish (cf. Andrews 2007: 234):⁵

- (18) [Halil-in öldür-düğ-ü] adam
 Halil-GEN kill-NMLZ-3SG.POSS man
 ‘the man whom Halil killed’ *Turkish*

Prenominal RCs are frequently nominalized (see Wu 2011: 596–608); the verb form is thus often non-finite, shows reduced tense/aspect/mood-distinctions, the external argument (and sometimes other arguments as well) appears in non-nominative forms such as genitive, and the agreement on the non-finite verb is nominal (i.e., possessor agreement) as in (18). Prenominal RCs lack relative pro-

⁵ See Wu (2011) for a recent typological study where several prominent generalizations about prenominal RCs are shown to be either incorrect or not to reveal intrinsic properties of prenominal RCs. The important general finding of this work is that prenominal relatives are much less different from postnominal RCs than assumed in the previous literature.

nouns and are predominantly found in head-final languages (such as Japanese, Korean, Navajo, and many more); for a list of languages with different word orders that have prenominal RCs, see Wu (2011: 611–612).

The position of the determiner w.r.t. the RC and the head noun shows a great deal of variation in embedded RCs (see de Vries 2002: 63):

- D + N + RC: (English, German etc.)
- N + D + RC: (Urhobo, Albanian)
- N + RC + D: (Yoruba, Indonesian)
- D + RC + N: (German: participial RCs, Tigre, Yurok)
- RC + D + N: (Korean, Abkhaz)
- RC + N + D: (Basque, Ijo)

So far we have only looked at externally headed RCs, i.e., relative clauses where the head noun is located outside the RC. In so-called internally headed/head-internal relative clauses (IHRC), on the other hand, there is no visible external head noun.⁶ Instead, the head noun surfaces inside the RC, usually in the position corresponding to its function. Quite often there is no special marking of the head noun, which leads to ambiguity (Comrie 1989: 146, see also Keenan 1985: 163):

- (19) [Kan kwitsa-man kwintu-ta willa-shka]-ka llapa sumaj-mi
 you girl-to story-ACC tell-NMLZ-TOP very pretty-VAL
 ‘The girl to whom you told the story is very pretty.’ or
 ‘The story that you told to the girl is very pretty.’ *Imbabura Quechua*

The ambiguity can be resolved in some languages by movement of the internal head; in the following example from Sema, the internal head *timi* ‘person’ can optionally be fronted to the left edge of the RC, see Bhatt (2015: 714):

- (20) default IO DO order: ambiguity – IO fronted: ambiguity disappears
- a. [nɔŋɔ timi yesi (pewo) tsi]-ke-u-ye iɔŋɔ khuʃuwo
 you-ERG person letter ACC give-NMLZ-DEF-NOM very tall/long
 ‘The person you gave the letter to is very tall.’
 ‘The letter you gave to the person is very long.’
- b. [**timi** nɔŋɔ yesi (pewo) tsi]-ke-u-ye iɔŋɔ khuʃuwo
 person you-ERG letter ACC give-NMLZ-DEF-NOM very tall/long
 ‘The person you gave the letter to is very tall.’ *Sema* (Sino-Tibetan)

⁶ See Grosu (2012) for a recent overview. Needless to say, in the formal analysis, one may still come to the conclusion that there actually is an external head present, at least at the level of LF, see, e.g., Cole (1987).

Interestingly, in some languages, movement of the head is only partial, targeting a position below the left edge of the RC, see Basilico (1996: 501–502, 522–523) on Digueño, Cocopa, Koyukon, and Mooré. An alternative disambiguation strategy is found in Bambara (Mande, Niger-Congo), where the head of the RC is marked by the postposition *min* (see Bird 1968: 46; a similar strategy is found in Mooré, see Basilico 1996: 523):

- (21) a. n ye so ye
 I PST house see
 ‘I saw the house.’
 b. tyè be [n ye **so** **mìn** ye] dyo
 man PRS I PST house REL see build
 ‘the man builds the house that I saw.’ *Bambara*

Embedded head-internal relatives are often called *circumnominal*. They are most frequent in SOV languages (Keenan 1985: 163) but also occur in SVO and VSO languages according to de Vries (2002: 36, 408). Circumnominal RCs neither have relative pronouns nor resumptives, see de Vries (2002: 136).⁷ They usually have the (external) distribution of NPs and thus often appear with determiners and case-marking/adpositions, as shown in (20) above and by the following example from Tibetan (Keenan 1985: 161):

- (22) [[Peemε thep khii-pa] **the**] nee yin.
 Peem.ERG book.ABS carry.PTCP the.ABS I.GEN be
 ‘The book Peem carried is mine.’ *Tibetan*

In many but not all languages with head-internal RCs, the internal head is subject to an indefiniteness restriction, as shown by the following example from Mizo (exceptions to the indefiniteness requirement are Japanese and Quechua), see Bhatt (2015: 713):

⁷ There is a type of RC in Latin that could be analyzed as head-internal with a fronted relative pronoun since the head noun bears the Case assigned RC-internally (accusative) rather than nominative, i.e., the matrix Case (Pompei 2011: 512):

- (i) populo ut placerent quas fecisset fabulas
 people.DAT so.that please.SBJV.3PL which.PL.ACC compose.3SG.PQPF.SBJV play.PL.ACC
 ‘that the plays he should compose might please the public’ *Latin*

Alternatively, such examples could also be analyzed as involving *tractio inversa*, i.e., inverse attraction, where the case of the relative pronoun is passed onto the head noun. However, this is less likely in the present case because the head noun does not precede the RC as is usually the case in attraction configurations. For further RCs in Latin that precede the head noun, see section 2.3.4.1.2; for Case attraction, see section 5.4.2.3.

- (23) Zova-n [Zovi-n lekhabu (*cu) a-lei] kha a-chiar-an
 Zova-ERG Zovi-ERG book the 3SG-buy DET 3SG-read-FUT
 ‘Zova read the book Zovi bought.’ *Mizo* (Sino-Tibetan)

There are also differences concerning the encoding of the internal head. While it receives the regular case-marking in some languages, in others it crucially does not, see Bhatt (2015: 713).

Note finally (cf. Bhatt 2015: 713) that the difference between internally headed RCs and free RCs is not always clear; the presence of a relative phrase/pronoun is usually a good indicator for a free relative clause, but in the absence of such elements, the distinction remains somewhat elusive.

2.1.2.1.2 Adjoined relative clauses

Contrary to embedded RCs, adjoined RCs are adjoined to the main clause and therefore occur in a peripheral position. They can be internally or externally headed. An example for externally headed adjoined RCs are extraposed RCs in English:⁸

- (24) I met the man yesterday [who Claudia wants to marry].

Head-internal adjoined RCs are found, e.g., in Warlpiri (Andrews 2007: 216); in the following example, the RC is preposed, i.e., left-peripheral to the main clause:

- (25) [Nyuntulu-rlu kutja-npa **wawirri** pantu-rnu] ngatjulu-rlu kapi-rna
 you-ERG REL-2SG kangaroo spear-PST I-ERG FUT-1SG
 purra-mi.
 cook-NPST
 ‘I will cook the kangaroo that you speared.’ *Warlpiri*

Preposed adjoined relative clauses are a hallmark of so-called correlative constructions where there is a dislocated RC at the left periphery of the clause and a resum-

⁸ The fact that adjoined RCs are discontinuous from the head noun raises the obvious question about how they are related syntactically, i.e., whether they are generated together and separated in syntax by movement or whether they are generated separately and linked by other means. The presentation in the text is intended to be neutral as the issue is far from trivial, and different solutions may be appropriate for different types/languages. Note especially that the presence of an embedded variant (as in English) or the lack thereof is not necessarily indicative of the underlying structure. For the correlatives discussed below, cf., e.g., Bhatt (2003).

ing element in the main clause (usually a demonstrative pronoun) referring to the head noun. Schematically, the structure looks as follows:⁹

(26) [CORCP ... RelP_i ...] [TP ... Dem_i ...]

An example is the following correlative RC from Hindi (Srivastav 1991: 647):

(27) [S_{rel} jo kharīi hai] [S_{main} vo laṛkīi lambīi hai]
 REL standing.F be.PRS.SG DEM girl.F tall.F be.PRS.SG
 ‘The girl who is standing is tall.’ (lit.: Who is standing, that girl is tall.)

Correlatives are most frequently found in verb-final languages (Keenan 1985: 164) but not exclusively so (cf. Hungarian); they exist in the following languages (and probably in more): in most Indo-Aryan languages, in the major Dravidian languages, in Hittite, Raman, Hungarian, Warlpiri, Medieval Russian, Old English, and South Slavic (Bulgarian, Macedonian, Serbo-Croatian). See Lipták (2009) for a recent overview.

At least at first sight, such RCs seem to be related to the following variants where the RC is either embedded (postnominal) or extraposed (Srivastav 1991: 642):

(28) a. vo laṛkīi [S_{rel} jo kharīi hai] lambīi hai.
 DEM girl.F REL standing.F be.PRS.SG tall.F be.PRS.SG
 ‘The girl who is standing is tall.’ embedded (postnominal)
 b. vo laṛkīi lambīi hai [S_{rel} jo kharīi hai].
 DEM girl.F tall.F be.PRS.SG REL standing.F be.PRS.SG
 ‘The girl who is standing is tall.’ right-adjoined (extraposed)

However, as shown in Srivastav (1991: 647–651), left-adjoined correlatives differ from the other two in crucial respects: First, in left-adjoined RCs, the head noun may surface either in the main clause (as in (27)), inside the RC or in both, illustrated schematically in (29):

(29) a. [CORCP ... Rel ...] [TP ... Dem-XP_i ...]
 b. [CORCP ... Rel-XP_i ...] [TP ... Dem_i ...]
 c. [CORCP ... Rel-XP_i ...] [TP ... Dem-XP_i ...]

⁹ The Warlpiri example in (25) is arguably correlative as well, but this is disguised by the fact that the language allows for zero anaphora; a variant with a resuming demonstrative in the main clause is possible as well, see Hale (1976: 79, 91) and Keenan (1985: 166).

Here is an example where the head surfaces in both (Srivastav 1991: 647):¹⁰

- (30) [S_{rel} jo laṛkii khaṛii hai] [S_{main} vo laṛkii lambii hai].
 REL girl.F standing.F be.PRS.SG DEM girl.F tall.F be.PRS.SG
 ‘The girl who is standing is tall.’ *Hindi*

Postnominal and extraposed RCs, however, do not allow for the patterns in (29-b-c), i.e., with an internal head or with two heads (Srivastav 1991: 647).¹¹ Second, left-adjoined RCs require the main-clause NP to contain a demonstrative, while there is no such restriction in postnominal and extraposed RCs. Third, only left-adjoined RCs allow for multiple relativization (in fact they are the only type of RC that allows for this):

- (31) [S_{rel} jis laṛkii-ne; jis laṛke-ko; dekhaa] us-ne; us-ko; passand
 REL girl-ERG REL boy-ACC see.PFV DEM-ERG DEM-ACC like
 kiyaa.
 do.PFV
 ‘For girl x, boy y, such that x saw y, x liked y.’ (Lit: Which girl saw which boy, that girl liked that boy) *Hindi*

It is for these reasons that the term *correlative* is usually restricted to left-adjoined RCs. Correlative clauses resemble free relatives in that they involve movement of the relative phrase to the left-periphery and (unlike externally headed RCs) cannot be stacked (for semantic similarities, see Bhatt 2015: 716). They differ from them in that correlatives typically appear in adjoined positions, while free relatives usually occupy argument positions.^{12, 13}

10 See Hale (1976: 92) for the existence of this type of doubling in Warlpiri.

11 According to Bhatt (2015: 712), some varieties of Hindi-Urdu allow internal heads in postnominal RCs if they are light-headed, i.e., occur with a pronominal/demonstrative head. Furthermore, there are also varieties that do allow two heads in extraposed RCs; see below on double-headed RCs.

12 As pointed out in Keenan (1985: 165), correlatives are sometimes hard to distinguish from dislocated head-internal RCs; possible diagnostics are the CP-status of correlatives vs. the DP-status of IHRCs and the presence of a moved relative phrase in the former but not the latter.

13 Cinque (2009) argues that correlatives should not be considered a separate relative clause type because there does not seem to be a single language where correlatives are the only type of RC available; rather, they usually co-occur with embedded postnominal or extraposed relatives (Indo-Aryan languages, Slavic languages, Warlpiri, etc.), with pronominal relatives (Dravidian languages, Sinhala, etc.) or with head-internal relatives (Bambara, Wappo, etc.). He suggests instead that correlatives should be subsumed under left-dislocated elements; indeed, left-dislocated RCs can be of various types, e.g., postnominal, pronominal and head-internal; correl-

2.1.2.1.3 Double-headed relative clauses

Interestingly, there are also languages where RCs have both an external and an internal head. According to Cinque (2011), such RCs occur both in OV languages with prenominal/internally-headed RCs (in Papuan, Niger-Congo, Tibeto-Burman, Northwest Caucasian and Altaic language families) as well as in OV/VO-languages with postnominal RCs (in Papuan, Austronesian, Chadic, Pama-Nyungan and Indo-European families):

- (32) a. [Peemε **coqtsee** waa-la kurka thii-pe] **coqtse** the
 Peem.ERG table.GEN under-DAT cross.ABS write-PTCP table the.ABS
 na noo-qi yin.
 I.ABS buy-PRS be
 ‘I will buy the table under which Peem made a cross.’
Tibetan, Keenan (1985: 152)
- b. Esha ofa ebrekirk(a) em-eg [**mar** [noga ofon ekok odu
 from s/he stubborn IRR-hear thing REL 3SG.POSS father tell
mar] éra.
 thing NEG
 ‘The reason is [that] he is stubborn not hearing (obeying) what his
 father tells (him).’ *Moskona (Papuan)*, Cinque (2011: 78)

Instances of this type can also be found in more familiar languages such as Italian or Latin (the following example additionally involves extraposition), see, e.g., Keenan (1985: 153) and Cinque (2011: 79) (for more Latin examples, see Rubenbauer & Hofmann 1989: 289, Pompei 2011: 510, ex. 120):

- (33) **Loci** natura erat haec quem
 ground.M.SG.GEN nature.F.SG.NOM was this.F.SG.NOM who.M.SG.ACC
locum nostri delegerant.
 ground.M.SG.ACC our(men) choose.PQPF.3PL
 ‘The nature of the ground which our men had chosen was this.’ *Latin*

At least at first sight, the Hindi-example in (30) would instantiate double-headedness in adjoined/preposed RCs/correlatives and the following example would be

atives are then simply dislocated free relatives (which Cinque reanalyzes as having a silent DP head so that left-dislocated RCs are invariably DPs). He also provides evidence that correlatives are not intrinsically incompatible with appositive RCs, thereby removing another property that is frequently thought to set correlatives apart from other types of RCs.

the right-adjoined/extraposd equivalent (which is acceptable only in some varieties of Hindi, see Bhatt 2015: 712):¹⁴

- (34) %mujhe vo **aadmii** accha: nahĩ: lag-ta: [S_{rel} jo **aadmii**
 I.DAT that man like NEG seem-IPFV.M.SG REL man
 Sita-ko pasand hai]
 Sita-DAT like be.PRS.SG
 ‘I don’t like the man who Sita likes.’ *Hindi*

However, as described in Cinque (2011), the type in (32) has properties that clearly sets it apart from regular RCs including correlatives: The head nouns are usually very general, rather classifier-like, and in many instances the two heads differ from each other, the internal head being more specific than the external one (Cinque 2011: 68):

- (35) [[**iyare** gamo khereja bogi-n-o] **rumu**] na-momof-a
 old.man join.SS work DUR.do.3SG.NF-TR-CONN person my-uncle-PRED
 ‘The old man who is joining the work is my uncle.’ *Kombai (Papuan)*

Since no such restrictions have been reported for the Hindi types, the two arguably need to be distinguished. So far thus, it remains open whether double-headedness of the type described in Cinque (2011) is also attested in adjoined RCs; furthermore, it remains to be investigated if double-headedness of the Hindi-type is found in other (typologically unrelated) languages. So far, true double-headedness (not being restricted to classifier-like heads) seems to be extremely rare.

A different type of double-headedness is instantiated by examples like the following where the internal head is more general than the external head; it is predominantly found in non-restrictive relatives, see Bhatt (2015: 712) (the phenomenon is also attested in Serbo-Croatian, cf. Keenan 1985: 153, Dutch, cf. de Vries 2002: 189, and Latin, cf. Rubenbauer & Hofmann 1989: 289, 2b, Pompei 2011: 511, ex. 121):¹⁵

- (36) I read the New Yorker yesterday, [**which magazine** is one of the finest in the country].

¹⁴ Cinque (2011: 80) lists another type of double-headed RC from Hindi where the left-adjoined correlative has an external head in addition to the internal one so that one is actually dealing with a triple head-construction. The grammatical status of this type seems to be marginal, though:

i. [vo laṛkii [S_{rel} jo laṛkii khaṛii hai] [S_{main} vo laṛkii lambii hai].
 DEM girl.F REL girl.F standing.F be.PRS.SG DEM girl.F tall.F be.PRS.SG
 ‘The girl who is standing, that girl is tall.’ *Hindi*

¹⁵ Double-headed RCs are also attested in child language, see Cinque (2011).

If we cross-classify the two sub-parameters characterizing the position of the RC w.r.t. the head noun and the location of the head noun itself, we obtain the following types (cf. Lehmann 1986: 666):

| | <i>adjoined</i> | <i>embedded</i> |
|----------------------|-----------------|------------------------|
| <i>head-internal</i> | preposed | circumnominal |
| <i>head-external</i> | postposed | adnominal (pre-/post-) |

Note that languages frequently have several types. For instance, German and English have both adnominal (postnominal) and postposed (= extraposed) RCs. In Warlpiri, RCs can be preposed or postposed. Hindi has preposed (correlatives), postposed and adnominal (postnominal) RCs. In Turkish, RCs can be adnominal (prenominal and postnominal) and postposed/extraposed. Tibetan, Quechua, and Navajo have both prenominal and circumnominal RCs (Keenan 1985) etc.

The table in (37) suggests that adjoined preposed RCs are always head-internal. As shown by the Hindi-example in (27), this is not generally correct. Interestingly, while left-adjoined RCs are usually internally headed, right-adjoined RCs seem to be restricted to external heads (abstracting away from the double-headed cases in (33) and (34)), a fact which to my knowledge has not received much attention in the literature.¹⁶

So far, the different semantic types of RCs (appositive, restrictive, maximalizing) have been ignored. While it is uncontested that all three types can be found in postnominal RCs, other types of RCs are often claimed to be restricted in their semantics. For instance, appositive RCs are often argued to be incompatible with prenominal, circumnominal or correlative RCs (e.g., de Vries 2002: 29). However, recent work has shown that this is not quite correct. Part of the problem is that the distinct prosody found in appositives in English and similar languages is necessarily absent in prenominal RCs. Still, appositive RCs can be found in such languages, see Bhatt (2015: 743) for references (see also Cinque 2008b for arguments that there are two types of appositive RCs that differ in their integration). Prenominal RCs are therefore compatible with all three semantic types. Furthermore, Cinque

¹⁶ There is an obvious reason that comes to mind: Without any representation of the head in the main clause, the thematic (and selectional) requirements of the matrix verb/predicate are violated. While in circumnominal RCs the entire RC fills a slot of the matrix predicate, an extraposed RC could only do so if it were derived from an embedded circumnominal variant (or if there were a cataphoric element in the matrix clause). It is not clear, however, why this should be ruled out on a principled basis, perhaps apart from the fact that circumnominal RCs are restricted to SOV languages some of which may disallow extraposition/postverbal objects.

In (39), the RelP agrees in phi-features with the head noun; the accusative Case it bears indicates that the head noun functions as the direct object inside the RC. Languages differ in whether they use a pronoun that is restricted to RCs (such as, e.g., *kotorij* in Russian) or whether they use a pronoun that is also employed in the formation of other constructions such as *wh*-questions (cf., e.g., English *who/which*). The distinction between a relative pronoun and a (relative) complementizer introducing the RC may not always be obvious, especially in morphologically impoverished languages (such as, e.g., English). A reliable diagnostic that sets the two apart is pied-piping, which is only possible with pronouns:

(40) This is the book [{about which/*about that} I spoke]

Relative pronouns can be found in postnominal, postposed and preposed/correlative RCs but not in circumnominal and prenominal RCs.

In the resumptive pronoun strategy, a pronoun occurs in the position corresponding to the function of the head noun (cf. Shlonsky 1992: 444):

(41) ha-ʔiš še raʔiti ʔoto
 the-man that saw.1SG him
 ‘the man that I saw’ *Hebrew*

Resumptives are often claimed to be very rare in prenominal RCs (cf. Keenan 1985: 149), but as shown in Wu (2011: 592–595), this is not quite correct: They are found in Semitic languages such as Amharic, quite generally in Chinese languages, and in some Caucasian languages. Unsurprisingly, they do not occur in circumnominal RCs according to de Vries (2002: 38).

Many languages employ more than one strategy to indicate the function of the head noun. For instance, English employs both the gap- and the relative pronoun-strategy. Hebrew, on the other hand, uses both gap and resumptive relatives.

In addition to marking or non-marking the position where the head noun is thematically interpreted, some languages have additional means to indicate the function of the HN. In Turkish, where the function inside the RC is mostly marked by gaps, there are two different participial strategies: One is used for the relativization of subjects (and of elements contained within the subject), while the other one is used for non-subjects (the facts are actually somewhat more complex, see Underhill 1972: 88–90 and Andrews 2007: 233–234):¹⁷

¹⁷ Another example where the type of verb form indicates which position is relativized can be found in Tundra Nenets: Participial forms are used for subjects, direct objects, and possessors, while different non-finite forms are used in the relativization of obliques, see Ackerman & Nikolaeva (2013: 103–109).

- (42) a. [mekteb-e gid-**en**] oğlan SU
 school-DAT go-SBJ.REL boy
 ‘the boy who goes to school’
- b. [Halil-in öldür-**düğ**-ü] adam non-SU
 Halil-GEN kill-NMLZ-3SG.POSS man
 ‘the man whom Halil killed’ *Turkish*

As we will see in the next subsection, the strategies differ in the extent to which they can relativize the various conceivable functions the head noun may have within the RC. The coexistence of two strategies within the same language is related to this fact.

2.1.2.3 Noun phrase accessibility

There is a crucial asymmetry concerning the two roles of the head noun/pivot: While its main-clause function is unrestricted, the roles inside the RC are often restricted. This insight is formulated in the Noun Phrase accessibility hierarchy (NPAH) (SU = subject, DO = direct object, IO = indirect object, OBL = oblique, GEN = possessor, OCOMP = object of comparison):¹⁸

- (43) Noun Phrase accessibility hierarchy (Keenan & Comrie 1977)
 SU > DO > IO > OBL > GEN > OCOMP

The hierarchy, which is taken to be universal, is to be interpreted as follows: The higher the function, the more likely it is to be relativizable (= accessible to relativization). Note that the hierarchy does not imply that all languages have to distinguish all these functions. In some, two or more functions may be treated the same. For instance, OCOMP in Hindi is treated like OBL. There are three constraints associated with the hierarchy which define conditions that any grammar of a natural language must meet:

- (44) Hierarchy constraints (Keenan & Comrie 1977: 67)
- a. A language must be able to relativize subjects
 - b. Any RC-forming strategy must apply to a continuous segment of the AH
 - c. Strategies that apply at one point of the hierarchy may in principle cease to apply at any lower point

¹⁸ See Keenan & Comrie (1977) and Andrews (2007: 226–227) for discussion of how to apply functions like SU or DO crosslinguistically. On ergative languages, see also Otsuka (2006)

Importantly, generalizations concerning relativizability must be formulated with respect to relativization *strategies*. The term *strategy* encompasses both the positional type (postnominal, prenominal, and head-internal) and whether the function of the head noun inside the RC is unequivocally marked by means of case-marked relative pronouns/resumptive pronouns (so-called case-coding strategies) or not (so-called non-case-coding strategies; note that relative pronouns and resumptives are thus lumped together).

The first constraint essentially establishes the fact that languages must have relativization; furthermore, it implies that there are no languages which can only relativize DOs or only OBLs. The second constraint implies that adjacent positions may be treated the same (and often will) but crucially that skipping of positions is not possible. For instance, if a strategy applies to SUs and IOs, it must also apply to DOs. As a special case, a given strategy may apply to one position only (cf., e.g., the participial strategy in German discussed below). Importantly, this constraint applies to a given *strategy* and not to the entire hierarchy (Keenan & Comrie 1977: 68–69): For instance, the fact that a language can relativize SU by strategy A and OBL by strategy B does not imply that it can relativize the functions in between. While languages can usually relativize a continuous segment of the hierarchy, nothing rules out gaps on the hierarchy (i.e., non-relativizable positions) as long as different strategies are involved. For instance, in Toba Batak, Subjects can be relativized by strategy A, and IOs, OBLs, and GENs can be relativized by strategy B, but DOs cannot be relativized by any strategy. The same goes for Javanese (SU with strategy A, GEN with strategy B, nothing in between) and Minangkabau (SU with strategy A and OBL and GEN with strategy B). According to the third constraint, any position on the hierarchy is a potential cut-off point for a given strategy; this justifies the distinction between the positions on the hierarchy. Keenan & Comrie (1977: 69–74) provide empirical evidence for each of the positions on the hierarchy. Note that RC-strategies need not be in complementary distribution. In many languages, they can overlap in parts of the hierarchy. For instance, Irish can use both gap and resumptive relatives in the relativization of matrix DOs (McCloskey 1990: 205–206):

- (45) a. an fear a bhuaíl tú —
 the man aL struck you
 ‘the man that you struck’
 b. an fear ar bhuaíl tú é
 the man aN struck you him
 ‘the man that you struck’

Irish

The languages generally differ significantly in the number of positions they can relativize. In some languages, only very few functions can be relativized. For instance, in Malagasy, Dyrbal, and Tagalog only the SU can be relativized; in Luganda, only SU and DO can be relativized. In all these languages, lower functions can be relativized after being promoted to subject or object (by means of applicative, antipassive or some other voice-related operation). In other languages, e.g. Hebrew, just about any function can be relativized. What is most crucial in the present context is that the performance on the accessibility hierarchy is related to the RC-strategy. As a first step, it can be observed that the different relativization strategies tend to be distributed differently over the hierarchy, i.e., they tend to cover different parts of the hierarchy. For instance, resumptive pronouns are more frequent in lower positions of the hierarchy, while gaps tend to prevail in the highest positions. The following table illustrates the distribution of strategies over the subject and instrumental function, based on the sample used in the World Atlas of Language Structures (WALS), see Comrie & Kuteva (2005):^{19,20}

(46)

| | SU | INST |
|------------------|-----|------|
| relative pronoun | 12 | 13 |
| head-internal | 24 | 14 |
| resumption | 5 | 20 |
| gap | 125 | 55 |
| impossible | 0 | 10 |

The obvious question that arises is what these findings imply for syntactic theory. Ideally, the NPAH and the associated constraints should not be theoretical primitives but rather should follow from independent principles. The hierarchy as such surely is not restricted to relativization, but rather is a manifestation of a more general hierarchy, viz., the grammatical function hierarchy (GFH), which regulates behavioral patterns other than relativization such as reflexivization, causatives, control constructions etc. The GFH can be reinterpreted in structural terms in that

¹⁹ Murelli (2011) argues that in non-standard European languages, the relativization strategies are distributed more evenly, with gap relatives reaching further down the hierarchy and resumptive pronouns occurring in very high positions like SU and DO. The two different empirical situations to some extent correspond to two different theoretical perspectives on resumption, one where resumption is understood as a last resort and is thus expected in lower inaccessible positions and one where resumption is simply an option of the language and is thus in principle expected in all functions. This issue will be addressed in some detail in section 3.2.2 below.

²⁰ The numbers indicate how many languages of the sample employ a given strategy. The fact that the total figures for instrumental is much lower is probably due to the fact that information about the relativization of instrumentals is lacking in many sources or that instrumentals cannot be relativized at all.

functions higher on the hierarchy generally occupy structural positions which are more accessible for syntactic operations. Accessibility involves both structural prominence – the subject is the highest argument that is introduced into the structure and thus closest to probes in the left periphery – and the lack of embedding, which sets apart SU and DO from all the lower positions: Those tend to involve additional structure, i.e., a PP or, in the case of possessives, a DP-layer which in turn constitute separate domains (phases/islands, see the next subsection) that put limits on extraction (oblique Cases are often taken to involve more structure than structural cases such as a KP- or PP-layer, see, e.g., Bayer et al. 2001 and the discussion in sections 3.2.2.1 and 5.4.2.2 below). That RC-strategies apply to a continuous segment of the hierarchy is little surprising because adjacent positions are often encoded in similar ways; this is most obvious when looking at IO, OBL, and GEN which are often rendered as PPs. Conversely, the fact that any point on the hierarchy can be a cut-off point can be related to the fact that there is crosslinguistic variation in the encoding of some of these functions (e.g., whether a relation such as IO is a DP or a PP).

That the hierarchy and the associated constraints are the way they are is thus unsurprising from the perspective of grammatical theory. The more interesting question is whether the distribution of the various strategies on the hierarchy as in the table in (46) can be related to independent factors as well. I will argue below that this is indeed the case, but before doing so, it is important to address one prominent proposal in the literature which relates relative clause type, relativization strategy, and performance on the NPAH: Lehmann (1986: 672–677):

Lehmann argues that the crucial property linking these domains is the degree of nominalization of an RC, which describes a scale ranging from fully finite subordination without any degree of nominalization to extremely reduced RCs consisting of little more than an adjective. Nominalization correlates with RC-type: As pointed out above, prenominal RCs have a strong tendency towards nominalization, while adjoined RCs generally show the lowest degree of nominalization. Circumnominal RCs are usually only weakly nominalized: They may be headed by determiners or nominalization affixes but show little internal reduction. Postnominal RCs finally usually do not show much nominalization either. The link between nominalization and positional/RC-type is to be understood as follows: An RC is more likely to be nominalized the closer its position corresponds to that of an attributive modifier (viz., an adjective). This can, e.g., be illustrated by participial relatives in German, which occupy the same prenominal position as attributive adjectives and show the external inflection of an adjective (the same holds for many other languages, cf., e.g., the Finnish data in Andrews 2007: 211–212):

- (47) a. der in seinem Büro arbeitende Mann
 the.M.SG.NOM in his office work.PTCP.M.SG.NOM man.M.SG.NOM
 ‘the man working in his office’
- b. der alte Mann
 the.M.SG.NOM old.M.SG.NOM man.M.SG.NOM
 ‘the old man’
- Standard German*

Nominalization has two consequences according to Lehmann: First, the more nominalized an RC is, the worse its achievement on the NPAH. Second, the more nominalized an RCs is, the less likely it is to allow for pronominal representatives of the head in the relativized position, viz., resumptive pronouns. The first consequence results from the fact that nominalized structures often have reduced valency and therefore can express fewer syntactic functions than finite forms. Given that nominalized structures typically have a reduced set of verbal projections, there may also not be enough functional structure to express peripheral/adjunct relations. As a consequence, it is expected that strongly nominalized RCs will not be able to relativize many functions on the NPAH. This can be seen most clearly in participial relatives which in many languages can only relativize the subject (active participles relativizing external arguments and subjects of unaccusatives as in (47), passive participles relativizing transitive objects and subjects of unaccusatives). This holds for participial relatives in Hindi, English, German, Russian, and many more.

As for the second generalization, given that increasing nominalization assimilates a verbal form to an attributive modifier and given that attributive modifiers generally do not use pronouns to link themselves to the head noun they modify, one expects the frequency of resumptives to decrease with increasing nominalization. The likelihood of pronouns in nominalized RCs is further reduced by their positional type: Being pronominal, using pronominal representatives would instantiate backwards anaphora, while pronouns in postnominal (and extraposed) RCs instantiate standard forward anaphora.²¹ Given that languages with RCs involving resumptives generally perform better on the AH than languages where RCs are based on gaps (see below), this further contributes to the low performance of nominalized RCs.

While Lehmann himself stresses that these are tendencies rather than strong implications (for instance, Japanese employs pronominal RCs but still can relativize just about any syntactic function), the findings in Wu (2011: 596–611) raise

²¹ Since correlatives contain relative pronouns inside the adjoined RC, they also seem to instantiate backwards anaphora. However, they are crucially different in that there is a resuming (anaphoric) demonstrative in the main clause.

principled concerns about Lehmann's proposal: First, the relationship between prenominal RCs and nominalization does not point towards an intrinsic property of prenominal RCs but rather owes to the fact that languages with prenominal RCs generally use non-finite subordination. There seem to be no languages which use non-finite forms in prenominal RCs but finite forms in other areas of subordination. In other words, the link between the prenominal RC-type and nominalization should be considered a side-effect, and since postnominal RCs can also be nominalized, it is unclear whether anything meaningful can be said about the relationship between the position of the RC vis-a-vis the head noun and nominalization.²² Wu also points out that prenominal RCs perform better on the NPAH than is frequently claimed: The range of accessible positions is often no less restricted than in English (see also Bhatt 2015: 722–723, who shows that in languages like Turkish or Marathi participial RCs can relativize lower functions on the hierarchy, including embedded functions). The two languages in Wu's sample that have prenominal RCs and where relativization is indeed very restricted are genetically related: They are Austronesian, where relativization is generally restricted to subjects. Finally, as pointed out above, resumptives are more frequent in prenominal RCs than frequently claimed (Wu 2011: 592–595). Furthermore, the absence of RelpPs may simply reflect a genetic trait (most languages with relative pronouns are Indo-European).

I believe that, while not generally correct for prenominal RCs, Lehmann's proposals can be applied to *reduced relatives* such as, e.g., the German participial RCs above or non-finite relatives in English:

(48) A man [working for John] visited us yesterday.

Reduced relatives indeed often involve non-finite forms that do not allow the projection of all arguments and have less functional structure than unreduced RCs. This will indeed limited the performance of these RCs on the NPAH.²³ Moreover, since reduced RCs are similar to attributive modifiers, they are less likely to use pronominal representatives (cf. **the book which written by John*); as will be shown below, the use of relative pronouns or resumptives increases the performance on the AH; their absence in reduced relatives contributes to their restricted coverage of the AH. So crucially, one has to distinguish nominalization from reduction.

²² There is one rather clear relationship between positional type and nominalization, though, in that adjoined RCs are generally not nominalized. Rather, they constitute full clausal structures (viz., CPs).

²³ The strong limitations w.r.t. the NPAH in reduced relatives may also be due to the fact that a different relativization strategy is employed: As argued in Bhatt (2015: 722), instead of A' -movement, reduced/participial RCs may involve short movement of PRO.

There can be nominalization in RCs without much impact on the structure, especially if nominalization only affects external properties of RCs (which link it to the head noun such as the adjectival inflection in (47)) or the Case/agreement of the subjects; in such cases, there can still be a full vP present (thus instantiating a mixed category) so that one does not expect radical restrictions on relativization. Finally, while the connection between positional type and nominalization is less strong than conjectured in Lehmann, there is a connection between positional type and reduction: Reduction tends to be limited to embedded RCs, while adjoined relatives are usually not reduced, involving full clausal structures (i.e., CPs). Compare in this regard the ungrammatical extraposition of the reduced RC in (48):

- (49) A man visited us yesterday {*working for John/✓ who was working for John}.

2.1.2.4 Relative clause strategy and the NPAH

Let us now come back to the different RC-strategies and their distribution over the various functions on the accessibility hierarchy.²⁴ The small table in (46) already contains some suggestive information: First, the gap-strategy is more likely in high functions than in low functions. Second, the relative pronoun-strategy seems to have an equal distribution over the hierarchy, while resumptives are much more likely to be used for lower functions. The hierarchy itself does not provide any explicit answers why this should be so. To address this, the original hierarchy by Keenan & Comrie (1977) has been modified in a number of works. Lehmann (1984: 219), Lehmann (1986: 668) proposed two important additions: First, he proposes separate hierarchies for adverbial and adnominal (= DP-internal) relations (because crosslinguistically, adnominal functions can occupy different positions with respect to the adverbial functions). Second, the adverbial hierarchy contains the category of adjunct:

- (50) a. SU/ABS > DO/ERG > IO > other complements > adjuncts
 b. Poss/GEN > OComp > prepositional attributes (*a building, the dwellings in which ...*)

The inclusion of the category of adjunct helps explain part of the pattern of gap-relatives: The lower functions of Keenan & Comrie (1977) often involve adjuncts.

²⁴ I will abstract away from head-internal relatives here as they will not play a prominent part in chapters three through five where resumption and the accessibility hierarchy are discussed in detail.

Relativization of such functions with gaps raises problems for recoverability. Another reason why lower functions often resist relativization by means of gaps is due to the fact that such oblique relations are often rendered as PPs. Relativization by means of gaps implies preposition stranding, which is, however typologically rare (restricted to Germanic languages according to van Riemsdijk 1978). The fact that RCs with RelPs or resumptives are more likely to relativize lower functions than the gap strategy is unsurprising in this light: Non-argumental relations can be recovered more easily and preposition stranding can be avoided if pronominal representatives are present. In the case of relative pronouns, this is related to the possibility of pied-piping. As shown by the following pair from German, pied-piping allows for the relativization of a PP-relation (while P-stranding is impossible with regular relative pronouns):

- (51) Das ist der Mann, [mit dem]₁ ich __₁
 This be.3SG the.M.SG.NOM man.M.SG.NOM, with who.M.SG.DAT I
 sprach / *dem₁ ich mit __₁ sprach
 speak.PST.1SG who.M.SG.DAT I with speak.PST.1SG
 ‘This is the man with whom I spoke.’ *Standard German*

There is reason to believe, however, that the effect that PPs have on relativizability can be subsumed under a more general principle: PPs constitute islands for extraction so that gap relativization would incur a locality violation. The relevance of islands for accessibility was prominently discussed in Stahlke (1976), Cole et al. (1977), and Maxwell (1979). Stahlke and Cole et al. proposed extended accessibility hierarchies including the classical islands discovered in Ross (1967) (cf. also Lehmann 1984: 218–219 for a distinction between different types of islands):

- (52) Stahlke:
 SU > DO > IO > OBL > GEN > OC > CoordNP > ComplNP
- (53) Cole et al.:
 SU > DO > IO > OBL > GEN > OC > SentSU > ComplNP > CoordNP > CoordVP/S

It is well-known that in many languages islands constitute barriers for extraction. For example, English relativization cannot reach into relative clauses, i.e., is constrained by the Complex NP-constraint (islands henceforth appear in angled brackets):

- (54) a. *the chair [which₁ Mary killed < the teacher who liked __₁ >]
 b. *the chair [Op₁ that Mary killed < the teacher who liked __₁ >]

Crucially, as shown in (54), this holds for both relatives involving the gap strategy and those using relative pronouns. The reason for extending the hierarchy by means of islands is that relativization with resumptive pronouns can usually reach into all islands. Here is an example from Hebrew involving relativization into a complex NP island (from Givón 1979: 35):

- (55) ze ha ish she raiti ⟨ et ha kēlev she nasháx **oto** ⟩
 this the man that see.PST.1SG ACC the dog that bit him
 lit.: ‘This is the man that I saw the dog that bit him.’ *Hebrew*

While the RelP and the resumptive strategy were lumped together as case coding strategies in Keenan & Comrie (1977), Maxwell (1979: 364–366) argues convincingly that given the different behavior in island contexts, they must be treated as separate relativization strategies. From a modern perspective, the obvious explanation for the asymmetry is that, while the gap and the RelP strategy involve movement, resumption does not. Resumption is thus assimilated to (anaphoric) binding relations which are similarly insensitive to locality:

- (56) Every boy_i hates ⟨ the dog that bit him_i yesterday ⟩.

This implies that a large part of the hierarchy can be explained in terms of locality constraints on displacement. Locality constraints such as the Left Branch Condition (LBC) also account for the fact that the gap strategy often fails for DP-internal positions; in English, for instance, pied-piping is necessary to relativize possessors:

- (57) a. *the man [I saw __’s sister]
 b. the man [whose sister I saw]

Pied-piping quite generally provides a possibility to circumvent island violations, especially in languages where so-called massive pied-piping is possible. The following English example involves an appositive relative clause relativizing into a (position deeply embedded within a) subject (see Heck 2008: 10):

- (58) This half-literate good-for-nothing, [_{DP} the absurdity of wanting to marry **whom**]₁ __₁ is eclipsed only by your aunt’s desire that the wedding should happen, ...

Since the entire island containing the relative pronoun is moved, no locality violation obtains. The achievement on the AH of the Rel-Pro strategy thus largely depends on the limits of pied-piping, where there are significant crosslinguistic

differences. In most cases, pied-piping will be more restricted than the resumptive strategy so that the latter performs better on the AH.

Given the locality-centered perspective adopted here, crosslinguistic differences in the achievement of the gap-strategy on the AH will have to be related to crosslinguistic differences in locality. A prominent example is Japanese which allows relativization into Complex NP Islands by means of gaps.

Note that the various positions in the extended hierarchies listed above and their relative ranking have to be taken with caution as they are taken from relatively old sources based on rather small samples. Whether a universal ordering can be established or whether language-specific hierarchies need to be posited is still an open question. But what is crucial for what follows is that there is a fundamental distinction between the resumptive pronoun strategy on the one hand and the gap/RelP strategy on the other. This distinction will play a crucial role in the analysis of resumption phenomena in chapter three through five.^{25, 26}

2.1.2.5 Marking a clause as relative: the left periphery

In many languages, relative clauses contain special markers that indicate the clause type. Swiss German, for instance, has a particle *wo* (homophonous with

²⁵ In some languages, resumption is not insensitive to locality, see the overview in section 3.1.1 below. This does not invalidate the distinction between the three relativization strategies; rather, it suggests that two types of resumptive strategies have to be recognized.

Given such a perspective, the arguments against the transformational (= locality-based) approach advanced in Cole et al. (1977) vanish.

The same goes for the fact that in some languages (e.g., Japanese) the gap strategy can reach into islands. This does not invalidate the locality perspective on the accessibility hierarchy but rather suggests that locality constraints may differ crosslinguistically.

²⁶ Hawkins (1999, 2004, 2014) argues that both the accessibility hierarchy as such as well as the uneven distribution of relativization strategies over the hierarchy follow from processing complexity: The hierarchy correlates with the size of the filler gap domain, i.e., the lower on the hierarchy, the larger the domain and thus the associated processing complexity. Consequently, gaps become less likely in lower positions. Resumptive pronouns on the other hand are argued to facilitate processing. They are thus expected to occur in positions where processing becomes difficult, viz., in lower positions. Conversely, in positions very high on the hierarchy, resumptives are disfavored because of economy of expression, i.e., since there are no processing difficulties, the more economical form, viz., the gap, is preferred over the resumptive.

While one can motivate the universal tendencies with such processing principles, they do not readily account for the crosslinguistic variation in the cut-off points on the hierarchy and the fact that some languages have grammatical resumption, while others do not. In other words, while the processing principles may hold across languages, explicit language-particular conventions (i.e., grammatical rules) are necessary to account for the observed variation.

the *wh*-adverb meaning ‘where’), located in the C-position, that only occurs in relative clauses (it appears with a linking *-n* before vowel-initial clitics):

- (59) s Chuchichäschтли, **won** i i de Ikea gchaufft ha
 the kitchen cupboard C I in the Ikea buy.PTCP have.1SG
 ‘the kitchen cupboard I bought at Ikea’ *Swiss German*

In Basque, a special suffix is attached to the entire RC, see Keenan & Comrie (1977: 72):

- (60) [emakume-a-ri liburu-a eman dio-**n**] gizon-a
 woman-DEF-DAT book-DEF give AUX-REL man-DEF
 ‘the man who gave the book to the woman’ *Basque*

Sometimes, as, e.g., in Swahili (cf. Riedel 2009: 172), these particles agree with the HN (in this case, in noun class; such relativizers are often called *linkers*, the agreement is often referred to as ‘*wh*-agreement’):

- (61) ki-tabu a-li-**cho**-ki-soma Ali
 7-book 1SM-PST-7.REL-7OM-read Ali
 ‘the book which Ali read’ *Swahili*

Linkers can be distinguished from relative pronouns in that they do not indicate the function of the head noun inside the RC; furthermore, as can be seen in (61) (cf. the suffix *-ki*), they are compatible with resumptive pronouns, while relative pronouns only rarely co-occur with resumptives (see section 3.2.1). Finally, there is no pied-piping with linkers. Special relativization markers seem to be found in all types of RCs; next to the prenominal and postnominal RCs above, see, for instance, *kutja* in the adjoined RC in Warlpiri in (25) above or the head-internal RCs in Navajo in Andrews (2007: 212) (cf. also de Vries 2002: 174). In many languages, RCs feature particles that are generally used for attribution, cf., e.g., Chinese *de*.

On the other hand, many languages use complementizers that are found in other areas of subordination (cf. English *that*). There are languages where several elements occur in the left periphery. In many Southern German dialects, for instance, the relative pronoun co-occurs with the relative particle, cf. Bayer (1984: 213):

- (62) die Frau **dera** **wo** da Xaver a Bussl g’gem hod
 the woman who.DAT REL the Xaver a kiss give.PTCP have.3SG
 ‘the woman who Xaver kissed’ *Bavarian*

The combination of relative pronoun plus the generic complementizer is found in Dutch dialects, cf. Zwart (2000). Some languages, e.g., Slovene and Icelandic, provide evidence for a more complex left periphery where two head positions have to be assumed, one for the relative marker and one for the declarative complementizer, see Boef (2012a: 131) (more data of this type can be found in Bianchi 1999: 182, 189 and Zwart 2000):

- (63) a. človek, [_{CP1} **ki** [_{CP2} (**da**) pride]]
 the.man C_{rel} that is.coming
 ‘the man who is coming’ *Slovene*
- b. manninn [_{CP1} **sem** [_{CP2} (**að**) kom hingað]]
 the.man C_{rel} that came here
 ‘the man that came here’ *Icelandic*

Evidence for several specifier positions in relative clauses comes from languages where the head noun can be separated from the relative pronoun by topics as, e.g., in Hungarian, see Bianchi (1999: 192):

- (64) a könyv, **Janos** amit említett
 the book John which mentioned
 ‘the book which Janos mentioned’ *Hungarian*

More evidence for a complex left periphery will be discussed in section 2.3.4.1.2 below.

Finally, there is also the possibility of zero marking as in English *the man I saw*, where the subordinate status of the RC is not indicated. Zero marking is particularly frequent in non-finite relativization (but there are exceptions, cf. Wu 2011: 585). See de Vries (2002) for a detailed overview of relative elements in the left periphery and Murelli (2011: 99) for an overview of the combinatorial possibilities in European languages.

2.1.2.6 Typological parameters of variation: summary

This section has shown that languages differ quite drastically in how they form relative clauses – at least on the surface. This concerns both the structural relationship between the head noun and the RC and the way the function of the head noun is marked inside the RC. Importantly, it seems to be mainly the relativization strategy that affects a language’s performance on the accessibility hierarchy.

These issues will play an important role throughout this book: First, the variation space described in table (46) shows the full extent of the challenge posed by the connectivity (and, possibly, the modification) problem: The prospects of a

theory of relative clauses also crucially depend on its success in dealing with the massive crosslinguistic variation in that area, a point that will be addressed in this chapter in sections 2.3.1.1, 2.3.9, and 2.5.2. Second, the performance of the resumptive pronoun strategy on the accessibility hierarchy will be prominently discussed in chapter three through five, especially with respect to island-sensitivity but also with respect to the fine-grained crosslinguistic differences in the actual distribution on the accessibility hierarchy.

2.2 Analyses of relative clauses

Before discussing the major analyses of relative clauses in detail in sections 2.3 and 2.4, I will briefly recapitulate the two fundamental challenges posed by relative clauses, viz., the connectivity problem and the modification problem:

(65) Connectivity problem

How can the double role of the head noun be captured?

Concretely, what is the grammatical nature of the link between the surface position of the head noun and the position inside the RC to which it is related? Which roles do relative elements, viz., pronouns, particles, and resumptives play? How is the Case of the head noun, the matrix determiner, and the relative pronoun licensed?

(66) Modification problem:

How is the RC related to the modified phrase?

Concretely, is the RC attached at the N(P)- or at the D(P)-level? Furthermore, is the RC a complement or an adjunct? Finally, a theory of relative clauses should also provide an answer to the following questions:

- Is the syntax of restrictive, maximalizing, and appositive relative clauses similar?
- How are the main types of relativization (correlative, circumnominal, adnominal, and postposed) related?

In what follows, I will mainly focus on the connectivity problem and the modification problem as most of the data in this book will involve restrictive head-external relative clauses. Other relativization types will be discussed to the extent that they relate to the connectivity/modification problem, see sections 2.3.1.1, 2.3.9 and 2.5.2.

In this section, I will approach the two problems in more general terms before discussing concrete implementations of theories of relative clauses in later

sections of this chapter. Even though there is a wealth of literature on this topic, the brief overview in this section will show that some of the most fundamental questions are still unresolved.

2.2.1 The connectivity problem

In the introductory subsection, I sketched two general possibilities to solve the connectivity problem that obtains in a sentence like (67) where the head noun *the woman* is both the object of the matrix predicate as well as the object of *kiss*:

(67) I like the woman (that) Peter kissed.

2.2.1.1 Non-local deletion/binding

The first is a non-local solution: The gap position is occupied either by a silent pronoun that is identified by the head noun or by a full instance of the external head which is deleted under identity with the head noun.²⁷

- (68) a. I like [the woman]_i (that) Peter kissed **pro**_i.
 b. I like [the woman]_i (that) Peter kissed ~~the woman~~_i.

The earliest generative approaches (e.g., Chomsky 1957) involved deletion under identity. For relativization there was a construction-specific transformational rule that combined two independent syntactic objects: A noun phrase and a declarative clause. There were conditions on identity, substitution rules (the relative pronoun is substituted for the full NP) and movement rules. The sentence in (69-b) would be derived from (69-a), cf. Partee (2005):

- (69) a. input: The professor resigned. I liked the professor.
 b. output: The professor that I liked resigned.

The structural description would look as follows (note that a variable can correspond to a string of in principle arbitrary complexity, and it can also be zero):

- (70) S1: X – NP – Y S2: W – NP – Z
 1 2 3 4 5 6

²⁷ To be precise, in many implementations of the *pro*-solution, the pronoun is replaced by a trace that is co-indexed with the head noun.

Concretely, 1 and 6 would be zero, 2 corresponds to *the professor*, 3 corresponds to *resigned*, 4 is *I liked*, and 5 is *the professor*. The correct result obtains under the condition in (71-a) and the structural change in (71-b)

- (71) a. Condition: $2=5$
 b. Structural Change: $1 + 2 + \textit{which/who/that} + 4 + 6 + 3$

Deletion under identity was given up because it turned out that the identity conditions were difficult if not impossible to state once certain quantifiers are involved. Consider the following example:

- (72) No fish that John caught was happy.

Given the deletion account, the sentence would have to be derived from the following two sentences:

- (73) a. No fish was happy.
 b. John caught no fish.

It is utterly unclear how the meaning of (72) could be derived from (73): Crucially, (72) does not mean that John caught no fish. As we will see below, however, the idea that deletion under identity is at the heart of the connectivity problem has been revived in the matching analysis, where deletion crucially only involves the NP-complement of the relative operator/pronoun.

The solution based on a silent pronoun (as, e.g., proposed in Bresnan & Grimshaw 1978 for free relatives) has also been rejected for languages like English. First, postulating silent pronouns in a non-pro-drop language seems implausible. Second, if the entire head noun is identified with the pronoun, the same semantic problems as in (73) obtain. Third, as shown in Chomsky (1977), the relationship between the antecedent and the gap shows the hallmarks of A'-dependencies: Like *wh*-movement, it is not only unbounded, cf. (74), it is also sensitive to locality constraints (concretely, the Complex Noun Phrase Constraint (CNPC)), cf. (75):

- (74) a. This is the woman *who/that/∅* John thinks that Mary knows that Peter kissed __.
 b. [Which woman]₁ does John think that Mary knows that Peter kissed __₁?
 (75) a. *This is the woman *who/that/∅* John killed < the man who kissed __ >.
 b. *[Which woman]₁ did John kill < the man who kissed __₁ >?

A deletion account has to stipulate that deletion of *pro* is sensitive to the same locality constraints as movement. Since this is not only far from obvious but also implies an unnecessary complication of the grammar, non-local *pro*-deletion has been given up for relative clauses involving just gaps or fronted relative pronouns plus gaps. However, for languages that employ the resumptive pronoun strategy in relative clauses, a non-local binding approach is an obvious possibility, especially if resumption is not island-sensitive. In fact, to capture reconstruction effects under base-generation, non-local deletion will also be a viable option, see sections 3.1.1.2 and 3.1.3.5 for detailed discussion.

2.2.1.2 Movement

The second possibility to solve the connectivity problem is based on movement. This is the classical device in generative grammar to model situations where a constituent behaves as if it occupied two distinct positions. Furthermore, it receives independent support from the locality facts in (75-a). However, at least in this naïve form, this cannot be correct. First, such a movement relationship would violate well-established fundamental principles of syntax (which are only seldom called into question): In our base-line example, *the woman* would be assigned two θ -roles, in violation of the Theta-Criterion:

- (76) THETA-CRITERION (Chomsky 1981)
- i. Arguments must receive a θ -role
 - ii. Arguments may receive no more than one θ -role

Similarly, Movement from the embedded object position to the matrix object position would imply that the DP enters Agree-relationships with two Case-assigners, in violation of the Activity Condition:

- (77) ACTIVITY CONDITION (Chomsky 2000)
- Only DPs with unvalued Case-features are visible for Case-Agree

Third, movement of the DP makes wrong predictions with respect to scope. Consider the following example:

- (78) I saw every woman Peter kissed.

Crucially, this sentence does not imply that Peter kissed every woman. Rather, the quantifier *every* has scope over *woman* as well as the relative clause, quantifying over the set of women whom Peter kissed (this is essentially the same problem as in (72)). The conclusion that can be drawn from (78) and which can be found in all

current analyses of relative clauses is that the external determiner is never directly linked to a position inside the relative clause (but see below on predication).

For languages with externally headed RCs like English, the analysis of RCs has been heavily influenced by the relative pronoun variant available in many European languages. Instead of postulating a full NP within the RC that is later replaced by a relative pronoun, the relative pronoun is present from the beginning. The link between head noun and gap then becomes indirect: it is mediated by the relative pronoun.

(79) I like [the woman] whom₁ (that) Peter kissed __₁.

Since *that*-relatives show the same behavior with respect to locality as relatives with a RelP, cf. (75), they essentially receive the same analysis. While earlier analyses posited deletion of the relative pronoun, since the 80ies, deletion has been replaced by the null operator hypothesis (but see Pesetsky 1998 and Broekhuis & Dekkers 2000 for recent accounts in terms of deletion):

(80) a. I like [the woman] ~~whom~~_T (that) Peter kissed __₁.
 b. I like [the woman] Op₁ (that) Peter kissed __₁.

What remains to be explained is how the head noun and the relative pronoun are related. In the era of Government and Binding (cf. Chomsky 1982: 92–93, fn. 11, Safir 1986), co-indexing was used to indicate the relationship between the head noun and the relative pronoun:

(81) I like [the woman]_i whom_{1i} Peter kissed __₁.

The relative clause was interpreted as an open sentence that was predicated of the head noun. The predication relation was also assumed to take care of the agreement in phi-features between the head noun and the relative operator.²⁸

However, given standard assumptions about semantic interpretation, going back to Montague (1973) and Partee (1975), this co-indexing is nowadays no longer considered necessary: The relative clause itself is a predicate formed by λ -abstraction on the variable corresponding to the *wh*-word; movement of the relative pronoun/operator thus essentially corresponds to lambda-abstraction. The embedded NP position is just a variable, bound by the lambda-abtractor. The head noun and the predicate are thus both predicates that combine via intersec-

²⁸ A syntactic mechanism may be necessary, though, under the assumption to be introduced presently that relative pronouns have no intrinsic meaning and thus are not anaphoric elements, see Sternefeld (2006: 382). See also section 5.4.2.3 below for a proposal where the agreement is established by Agree.

tive modification. Identity is guaranteed by predicate modification, see Heim & Kratzer (1998). Importantly, the determiner applies to the newly formed predicate. This avoids the interpretive problem incurred in (72) and (78) above. On this, see also the evidence for the non-reconstruction of the external determiner in (142) below.²⁹

In the movement solution to the connectivity problem discussed so far, the relationship between the head noun and the relative-clause-internal position to which it is related is indirect, viz., mediated by the relative operator/pronoun. There are two major analyses of relative clauses that are based on this assumption, viz., the head-external analysis (HEA) and the matching analysis (MA). The HEA, which seems to go back to Quine (1960) and is explicitly adopted in Montague (1973), Partee (1975), Chomsky (1977), Jackendoff (1977), and in most work throughout the Government and Binding-period, there is A'-movement of a relative operator/pronoun (overt or covert) to the left periphery. The relative pronoun is then linked to the head noun in the ways described above. Crucially, under this analysis, there is no representation of the head noun inside the RC:

(82) I like the woman [_{CP} whom₁/Op₁ C_{rel} John kissed __₁].

The MA was originally proposed in Lees (1960, 1961) and Chomsky (1965). While there is still no direct relationship between the head noun and the gap inside the RC, there is a representation of the head noun inside the RC: The relative operator/pronoun is reanalyzed as a determiner taking an NP-complement. This NP-complement is PF-deleted under identity with the head NP:

(83) I like the woman [_{CP} [_{DP} whom/Op [_{NP} ~~woman~~]]₁ C_{rel} John kissed __₁].

More recent implementations of the MA will be discussed in section 2.4 below.

A very different solution to the connectivity problem is provided by the so-called head raising analysis (HRA). Under this analysis, there is a direct link between the head noun and the RC-internal position it is related to: The head noun

²⁹ In the majority of works, movement of the relative operator is triggered by some designated formal feature like [*uRel*] or [*uPred*], either on the C-head as in attract-based approaches or on the moving element as in Greed-based approaches. This is necessary to account for the fact that in many languages relativization differs from other types of A'-movement in certain respects (see, e.g., Bhatt 2015: 725 and chapter four of this book for a difference in long-distance movement). Note, though, that there is also the perspective (cf., e.g., Heim & Kratzer 1998) that movement in relative clauses is not syntactically triggered. Rather, it takes place for interpretive reasons; movement of the relative operator derives a predicate; without movement, the relative operator is not interpretable.

originates inside the RC and moves to its surface position. It was originally proposed by Brame (1968), Schachter (1973), and Vergnaud (1974):

(84) I like the woman₁ Peter kissed __₁.

The crucial property of the HRA that will determine much of the discussion in the following sections is that through the direct movement relationship it makes a full representation of the head noun available inside the RC.

I will discuss the pros and cons of the three analyses in detail in the rest of this chapter. Before doing so, I will briefly address the modification problem.³⁰

2.2.2 The modification problem

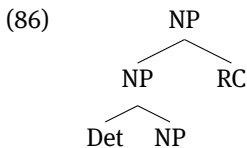
The modification problem consists of two subproblems. First, it has to be determined at what level the RC is attached, viz., is it combined with N(P) or D(P)? Second, it needs to be investigated how the RC is structurally integrated into the noun phrase. Both aspects will be addressed in turn.

2.2.2.1 The attachment site of the relative clause

That the attachment site of the relative clause is important immediately becomes obvious once the following ambiguous example is considered (see Sternefeld 2006: 375):

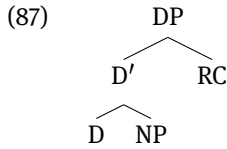
(85) [the servant of the actress]_j [who_i/_j was on the balcony]

The attachment site is thus relevant for semantic interpretation, and as we will see presently, semantic aspects have been very influential in this debate. One of the first proposals was the so-called NP-S-theory by Ross (1967), where the (restrictive) relative clause is generated as an adjunct to NP (which contains Det):

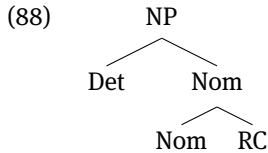


³⁰ The connectivity problem is equally challenging in head-internal RCs and correlatives. For the former it is frequently assumed that there is covert movement of the head, thus leading to an LF-representation very similar to that of externally headed RCs, cf., e.g., Cole (1987). For a non-movement alternative, see Shimoyama (1999). For correlatives, see, e.g., Bhatt (2003).

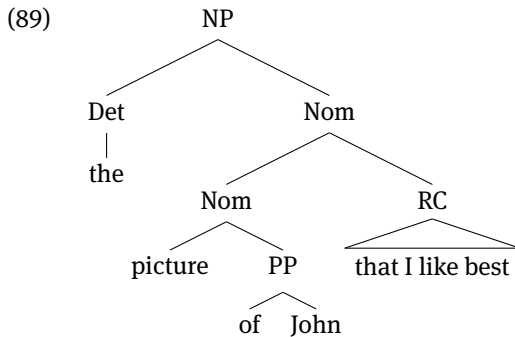
A more modern version of this theory is the proposal by Sternefeld (2006: 377), who argues that the determiner should be treated as a ditransitive element taking both the NP as well as the RC as arguments:



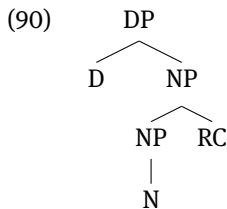
An important early alternative was the so-called Nom-S-theory by Partee (1975), where the RC is attached to a nominal constituent (called Nom) that excludes the determiner:



The RC can either directly combine with N(om) or, if Nom takes a complement or a modifier, with a projection of N(om) as in (89):



In more modern terms, assuming the DP-hypothesis (Abney 1987), the Nom-S-theory can be represented as in (90):



At the time, both theories had their pros and cons: On the one hand, given the assumption that RCs involved deletion of a full instance of the head noun (recall section 2.2.1.1 above), the Nom-S-structure runs into difficulties because the identity condition cannot be stated straightforwardly: Since the relative clause is part of its antecedent, i.e., it is embedded within NP, there is the danger of infinite regress. Under the NP-S-theory, on the other hand, identity can be stated easily given the constituency, i.e., the relative clause is *not* a subpart of the head noun. Nevertheless, the Nom-S-theory prevailed. Partee (1975) argued convincingly that the NP-S theory of Ross (1967) does not derive the correct semantics, which becomes clear once the determiner position is occupied by a quantifier: As the following example shows, D has scope over both N and the relative clause in restrictive relatives (recall also (72) and (78)):

(91) Every girl [who attended the lectures] passed the test.

The meaning can be roughly paraphrased as follows:

(92) $\forall x$ [girl (x) \wedge (x) attended lectures] (= every x such that x = girl and x attended the lectures)

The determiner thus selects the set of girls who attended the lectures. The advantage of the Nom-S-structure is thus that it can be given a straightforward compositional interpretation (recall from above): Head noun and RC are both predicates (type $\langle e, t \rangle$) that combine semantically via intersective modification. Then, the determiner is applied to the derived predicate. The interpretation of the NP-S theory for restrictive relatives on the other hand is less straightforward. However, Bach & Cooper (1978) show that a compositional semantics (with the correct interpretation) is possible given certain assumptions so that semantic arguments are not fully sufficient to choose between the two options.³¹

So far, the arguments for the Nom-S-Theory have been semantic in nature and theory-internal. Possible evidence could come from constituency tests. Indeed, Bhatt (2015: 720) argues on the basis of standard constituency tests like *one*-substitution and coordination that NP+RC form a constituent to the exclusion of the determiner:³²

³¹ Sternefeld (2006: 377) makes a similar claim: He proposes that in his structure in (87) above, a restrictive interpretation is possible.

³² While in (93-a) the adjective is combined with a constituent containing N+RC, there is also evidence that the RC can attach to a constituent containing A+N.

- (93) a. Bill admires the very tall [student who came to Tom's lecture today].
 Antony admires the very short **one**.
 → *one* substitutes for [[student] [who came to Tom's lecture today]]
- b. Clovis was the [[king who unified the Franks] and [ruler of much of Gaul]].

However, there are two problems with these examples: First, (93-a) may involve two separate deletion operations: Note that *one* can also substitute for N alone, cf. *John likes the boy who has read hair, and Mary likes the one who has blond hair*. Additionally, there is evidence that relative clauses can be deleted under identity with an antecedent, see Collins (2015) and section 2.3.3.2.4 below:

- (94) At the party, I saw three boys who I know and one girl ~~who I know~~.

Consequently, the example in (93-a) is actually ambiguous: Next to replacement of N+RC by *one*, it could also involve replacement of N by *one* and separate deletion of the relative clause. Second, (93-b) does not necessarily show that D has scope over the second conjunct because *Clovis was ruler of much of Gaul* is well-formed as well. Consequently, there could be a silent D in the second conjunct so that we would be dealing with DP-coordination. Interestingly, Aoun & Li (2003: 101–102) argue that if the first conjunct contains a relative clause, NP-coordination (= Nom-coordination) is not an option (while it is if only the second conjunct contains a relative clause):

This becomes clear in coordination as in (i), where the RC attaches to coordinated [A+N]-constituents:

- (i) The enthusiastic relatives and joyful friends [who were at the party at the same time]

Another argument that the RC must be attached higher than the NP and adjectival modifiers is provided in Sternefeld (2006: 380–381), who adapts an argument from unpublished work by Richard Larson. He observes that in (ii) the adjective *angeblich* 'alleged' only has scope over NP, but not over the RC (i.e., the specialization is uncontroversial; what is debatable is the status of certain individuals as thieves):

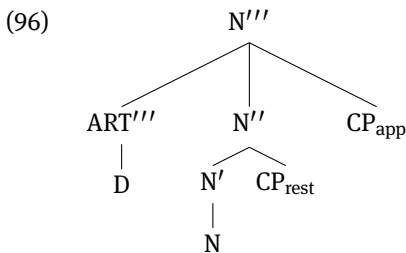
- (ii) alle angeblichen Diebe, die sich auf freistehende Landhäuser spezialisiert
 all alleged thieves who self on free-standing country houses specialized
 haben
 have.3PL

'all alleged thieves who have specialized in free standing country houses' *Std. German*
 Sternefeld concludes from this that the RC must be a specifier of D as in (87) above, but I think that nothing precludes the interpretation in (ii) if the RC attaches below D to a constituent containing A+N. Note that this also has the advantage that it is more compatible with the constituency tests in (93).

- (95) a. He is an actor and (a) producer that wants to please everyone.
 b. He is an actor that wants to do everything and *(a) producer that wants to please everyone.

If the facts are correct, they potentially show that the presence of the relative clause implies projection at least up to D' in the first conjunct. Consequently, given the Law of the coordination of Likes, the second conjunct must involve the D-layer as well, thereby accounting for the obligatoriness of the article in (95-b). In other words, the contrast suggests that restrictive relative clauses are attached to D' or DP, which would favor the NP-S-theory or the proposal by Sternefeld 2006, where RCs are specifiers of D, see example (87) above. Note also that (95-b) avoids the confound of a possible silent D in Bhatt's example because **he is producer that wants to please everyone* is ungrammatical. I have tried to corroborate the facts in an informal survey (in both English and German), but while some speakers do detect a contrast in pairs like (95), the pattern of the judgments I received is not clear enough to justify the postulation of a difference in grammaticality. In what follows I will therefore continue to assume that relative clauses are introduced below D, but the possibility of projecting the RC above D remains a viable alternative that will be considered in the discussion about late merger, see section 2.5.3.6 below.

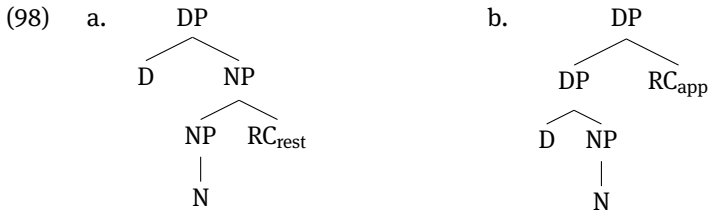
While the NP-S-theory has been largely abandoned for restrictive relatives, it is still a frequently assumed structure for appositive relatives. In Jackendoff (1977: 169) the restrictive/appositive distinction is handled configurationally:



While the restrictive RC is a daughter of N'' and thus in the scope of D (they are not adjoined), appositive relatives are outside the scope of the determiner (they are appositions to the entire D+N complex, like nominal appositions) and thus must be attached higher, to N''' . This is consonant with the interpretation of appositives: They do not restrict the denotation of the head noun; instead, they comment on the individual or set of individuals independently identified by the rest of the DP. The structure in (96) not only captures the semantic distinction but also correctly derives the fact that if restrictive and appositive RCs appear together, the restrictive relative precedes the appositive relative:

- (97) a. The man that came to dinner, who was drunk, fainted.
 b. *The man, who was drunk, that came to dinner fainted.

Given binary branching and the DP-hypothesis, the standard analysis until the early 90ies looked as follows, with restrictives adjoined to NP and appositives adjoined to DP (since Chomsky 1986 it has become a standard assumption that adjunction can only target maximal projections):³³



It should be pointed out that the syntax (and semantics) of appositive RCs has been a topic of intense debate in recent years with many alternative attachment sites of the RC being proposed; in some accounts, appositives are not even attached to the DP but rather at the clausal level or remain completely unattached. A very different analysis is proposed in de Vries (2006) where appositives are introduced via coordination. Note finally that there is also the position that the difference need not be encoded configurationally, cf. Sternefeld (2006: 378).

I am aware of two syntactic (rather than semantic) facts suggesting that appositive RCs must not be attached too high, i.e., higher than DP: First, the agreement between D and the relative pronoun in an appositive RC discussed in (119) below requires a position below DP. Second, Case attraction can affect appositive RCs, cf.

³³ A particularly recalcitrant phenomenon are so-called hydras (Link 1984), where the RC modifies two conjoined head nouns:

- (i) [the man and the woman] who were arrested

Since the relative pronoun is plural, it must have a plural antecedent. This strongly suggests that the RC is attached to the conjoined DP. This, however, clashes with the restrictive interpretation of the relative clause, leading to a paradox. Hydras can probably be accommodated by the structure proposed by Sternefeld (2006), see (87) above. An alternative possibility can be found in Grosz (2015: 30–31) (who focuses on RCs with split antecedents, though): He argues for a multidominance structure, whereby the RC is shared by the two NP nodes. The plural agreement then is not the result of Agree with the conjoined DP (and some plural feature that might result from resolution on DP) but results from simultaneous Agree of the RelP with the two external heads (the Ns). The two sets of phi-features are then realized as plural (and interpreted accordingly), but there is crucially no Agree with the coordination. Cecchetto & Donati (2015: 74–76) briefly touch upon hydras but do not address the attachment problem.

Harbert (1983: 280, fn. 16). Assuming that the RelP receives its Case by being part of the same noun phrase, the RC must not be attached higher than DP.

Since appositives will not play a major role in the rest of this book, I will not discuss their attachment site any further. The reader is instead referred to de Vries (2002: chapter 6) and Bhatt (2015: 740–743) for more details and references. The attachment site of restrictive RCs, however, will continue to be important. The next subsection, where the status of the RC as either a complement or an adjunct is discussed, will provide additional relevant details pertaining to this issue.

2.2.2.2 Complementation or adjunction?

Traditionally, relative clauses are treated as adjuncts because they are not selected by the noun and because they are optional (they can always be omitted). Being adjuncts, they have to be adjoined. However, there are reasons to be skeptical about this reasoning: First, omissibility does not show anything. Complements of nouns can generally be omitted:³⁴

(99) the destruction (of Rotterdam)

Furthermore, adjectival modifiers, which are equally optional, are often not adjoined even though they are clearly adjuncts; rather, they are merged in specifiers of N or specifiers of designated functional projections. Consequently, it is not obvious that complementation should be ruled out on the basis of RCs being optional.

A potentially stronger but more controversial (i.e., theory-internal) argument for the adjunct status of RCs comes from reconstruction effects: It has been observed that RCs pattern with other adjuncts with respect to reconstruction: According to the so-called Freidin-Lebeaux-generalization, arguments have to be merged cyclically, while adjuncts can be merged late. This assumption accounts for the following contrast (see also van Riemsdijk & Williams 1981: 201–204, Freidin 1986: 179, Lebeaux 1990, 1991, Fox 1999):

- (100) a. *[Which claim that Mary had offended John_i]₁ did he_i repeat __₁?
 b. [Which claim that offended John_i]₁ did he_i repeat __₁?

The contrast in (100) is usually explained as follows: In (100-a), the R-expression *John* is contained within an argument (a complement clause to the noun *claim*). Consequently, the complement clause has to be merged cyclically and will thus be

³⁴ Donati & Cecchetto (2011) and Cecchetto & Donati (2015) argue that the optionality indicates that nouns never take arguments; see the discussion of their approach in section 2.3.8 below. See also Adger (2013), where PP-‘complements’ are not structural complements.

represented together with the *wh*-phrase in the bottom-copy of the *wh*-movement chain. Since the R-expression ends up being c-commanded by *he*, a Condition C violation obtains. Such a violation can be avoided in (100-b) if the RC is merged late: It is attached to the head noun after *wh*-movement has taken place. Consequently, the RC and thus the R-expression *John* has never occupied a position in the c-command domain of the coreferential subject pronoun *he*, which accounts for the well-formedness of (100-b), whose LF is given in (101) (which presupposes the Copy Theory of Movement, cf. Chomsky 1995 and section 2.3.1.4 below):

(101) [Which claim]₁ [that offended John_i] did he_i repeat [x claim]₁?

The reason why arguments have to be merged cyclically is that arguments are required by the projection principle (and whatever replaces it in more recent versions of Minimalism), viz., the requirement that the argument has to be in a local relationship with its predicate. Therefore, arguments have to be introduced together with their predicates. This does not hold for adjuncts, which is why they can (but do not have to) be merged late; all that is necessary is that the modifier is in a local relationship with its modifiee, but this requirement can be satisfied anywhere.³⁵ A representational version of late merger is proposed in Sportiche (2006: 64–65): He shows that the same results can be obtained if the RC-adjunct is merged cyclically but undergoes LF-deletion under identity with the RC adjoined to the top *wh*-copy (for arguments in favor of this representational version and against literal late merger, see Sportiche (2016: section 4.2)):

(102) [Which claim [that offended John_i]]₁ did he_i repeat [x claim [~~that offended John_i~~]]₁?

Since according to standard assumptions, late merger is only possible with adjuncts but not with complements, non-reconstructing RCs (whether late-merged or LF-deleted) provide an argument in favor of the adjunct status of relative clauses.

In recent years, however, the assumption that complements cannot be merged late has been challenged: See, e.g., Bhatt & Pancheva (2004) on degree clauses and Sportiche (2006: 65) and Takahashi & Hulsey (2009), who argue that complements, more precisely restrictors of D, including relative clauses, can be merged

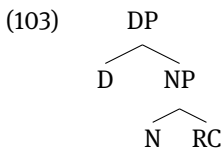
³⁵ In Fox (2002: 69), the difference in reconstruction behavior between arguments and adjuncts is stated in terms of the final representation: Late merger of a complement would lead to uninterpretable structures in most cases as the predicate would be unsaturated (see Takahashi & Hulsey 2009: 395–400 for a more detailed exposition). Essentially the same seems to be assumed in the representational version by Sportiche (2006) discussed below.

late under certain conditions. Consequently, late merger effects do not necessarily argue for the adjunct status of relative clauses. I will come back to late merger of RCs in the discussion of the raising analysis in sections 2.3.3.2.3 and 2.3.7 because the adjunct status of the RC seems a priori incompatible with it. Furthermore, it will also play a role in the discussion of reconstruction for Principle C in sections 2.4.1.1 and especially in the complex cases addressed in 2.5.3.6.³⁶

Taken together, the force of both the optionality and the late merger argument in favor of the adjunct status of RCs is thus rather moderate and largely theory-internal. In the rest of this subsection, I will approach the issue from the reverse perspective, investigating whether there are any arguments in favor of complementation. Indeed, such arguments have been advanced since the earliest days of relative clause research. Both N-complementation (Platzack 2000, Cecchetto & Donati 2015) and D-complementation proposals can be found. The latter are particularly prominent among proponents of the head raising analysis, but there are also complementation proposals based on the head-external analysis. I will discuss these proposals in turn.

2.2.2.2.1 The RC as a complement of N

Platzack (2000), who presupposes the DP-hypothesis and adopts the head-external analysis, treats the RC as a complement of N:



³⁶ The empirical basis of the argument-adjunct asymmetry has not gone unchallenged, see, e.g., Heycock (1995), Lasnik (1998), Bianchi (1999: 129), Fischer (2002, 2004). For example, (100-a) is a strange question in the first place, and this holds for many examples with complement clauses selected by nouns. Second, delimiting arguments from adjuncts is quite generally a far from simple matter (see especially Fischer 2004: 183–185, 221–222); for instance, it is not so clear that complement clauses to nouns really are arguments because they usually express the content of the noun rather than the object, see, e.g., Stowell (1981). Moreover, there are cases where the RC triggers a Condition C effect even though nothing seems to force its cyclic merger (such as anaphors or bound pronouns), see Higginbotham (1983: 412):

(i) *Which man [who admires [his wife]_i] does she_i try to please __?

Furthermore, other factors than argumenthood (such as embedding) may be relevant. Still, once sufficient care is taken, one can usually construct minimal pairs suggesting that the contrast is important. See Safir (1999: 589, fn.1) and section 2.4.1.1 below for more discussion. Sportiche (2016) accepts the empirical contrast but argues that it represents an argument/adjunct asymmetry only in an indirect way.

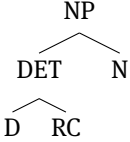
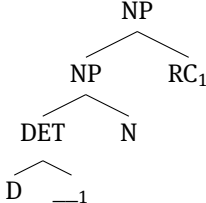
There are two main motivations for his assumption: First, RCs have to be complements because of antisymmetry (cf. section 2.3.3 below). Second, restrictive RCs in Scandinavian are transparent for extraction (Platzack 2000: 275):

- (104) [Den här teorin]₁ känner jag [mann-en som uppfann __₁].
 this here theory know I man-DEF that invented
 lit.: ‘This theory, I know the man who invented.’ Swedish

Treating the relative clause as a complement rather than an adjunct certainly provides a means to account for its transparency. However, apart from the fact that the argument does not work for languages where relative clauses are barriers for extraction, it is not obvious that the complement status is sufficient given that in many languages complement clauses to nouns constitute strong islands as well (cf. **the man that I heard the claim that Mary loves*). Consequently, it is not clear whether extractability really provides a convincing argument; alternatively, one could argue that Scandinavian languages are subject to different locality constraints independent of the mode of attachment of relative clauses. A very different argument in favor of selection by N will be provided in section 5.4.2.3 below on Case attraction, where in certain languages nouns taking a relative clause are equipped with an additional Case-probe. For another approach based on N-complementation, see the raising analysis by Donati & Cecchetto (2011) discussed in section 2.3.8 below.

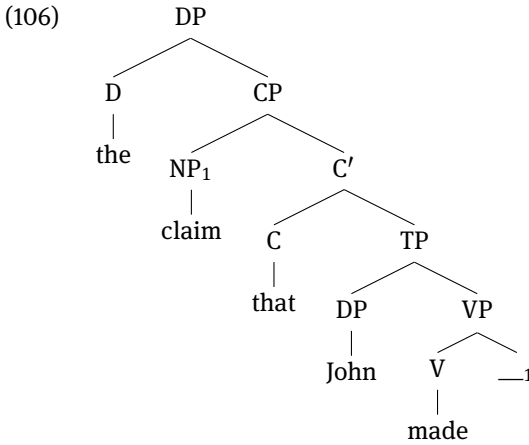
2.2.2.2.2 The RC as a complement of D

The D-complement hypothesis was originally proposed in Smith (1964) and Chomsky (1965): It is assumed that the RC originates as the complement of D, cf. (105-a), and is subsequently extraposed (in English) so that the correct surface structure obtains, cf. (105-b) (this is a simplification because the original format does not use movement operations but rather rewrite rules, adjunction, and deletion):

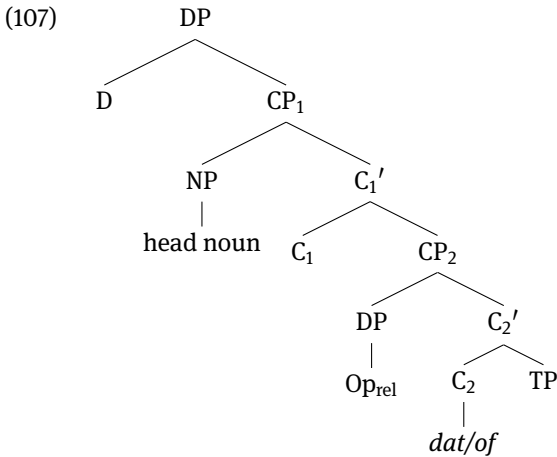
- (105) a.  → b. 

D-complementation has become the standard assumption in the head raising analysis since Kayne (1994). In this approach (and most subsequent versions based on it), the RC remains a complement of D until the end of the derivation.

The original proposal by Kayne (1994) is as follows (for justification and discussion, see section 2.3.3 below):



A different version of D-complementation can be found in Aoun & Li (2003: 122) and Boef (2012a: 130), where complementation is combined with the head-external/matching analysis: It thus differs from the structure of the raising analysis mainly in that the head noun is base-generated in the highest specifier of the RC, while the relative operator/pronoun moves to the specifier of a lower CP (in Aoun & Li 2003, the higher projection is labeled ForceP, the lower one TopP):



Another proposal where the RC is treated as a non-adjunct is the one by Sternefeld (2006), where the RC is a second argument of D, see (87) above.

- (112) a. Maria weighs (*the) forty-five kilos.
 b. Maria weighs the forty-five kilos Susana would love to weigh.
- (113) a. John painted the house a/*the nice color.
 b. John painted the house the nice color his girlfriend likes.

Again, these facts can be accounted for if D selects the RC, while NP is not selected by D. However, there is reason to be skeptical about this argument: The examples above also become grammatical if the RC is replaced by an adjective, a demonstrative or a PP-modifier:

- (114) a. We made the necessary headway.
 b. She is the most dangerous kind of person/that kind of person/the wrong kind of person.
 c. I did it in a clever way/in that way.
 d. the Paris of my youth/the old Paris
 e. He bought the wrong type of bread/that type of bread.
 f. Both weigh the same 1100 kilos.³⁸
 They all weigh the required 20 kilos on the nose.³⁹
 g. He painted the house the same/wrong color.

None of these nouns thus seems to be systematically incompatible with (in)definite determiners. An alternative generalization thus emerges: There is a semantic requirement that the reference of such NPs be explicitly restricted. Syntactic selection is then no longer needed.⁴⁰

While the previous arguments concerned selection, the following arguments in favor of D-complementation mostly arise from the absence of a visible NP-component.

[C] One of the strongest arguments in favor of the D-complement hypothesis comes from circumnominal relative clauses: As shown in 2.1.2.1.1 above, the entire RC has the distribution of a DP so that the RC appears as an overt complement of D, see Lehmann (1984: 111), via de Vries (2002: 41):

³⁸ http://fastestlaps.com/cars/aston_martin_db4_gt_lightweight.html, accessed February 5, 2017

³⁹ <http://forum.bodybuilding.com/showthread.php?t=122673001>, accessed February 5, 2017

⁴⁰ As far as I can tell, this also applies to the data discussed in Cinque (2008a: 4–5, ex. 2–6) and Krapova (2010: 1247, fn. 13).

- (115) [DP [CP Hatčoq ʔavi:-m ʔ-u:ta:v]-n^y-č] n^yəʔi:l^y-pč.
 [[dog stone-INST SUBJ.1-hit]-DEF-NOM] black-REAL
 ‘The stone with which I hit the dog was black.’
 (or ‘The dog which I hit with the stone, was black.’) *Mohave* (Hokan)

An alternative analysis only seems possible if a silent NP is postulated between D and the RC. In that case, the RC could be either a complement or an adjunct.

[D] Intransitive determiners can be directly modified by restrictive RCs, suggesting D-complementation (see Sternefeld 2006: 381; cf. also Bhatt 2015: 719 on Danish):

- (116) Jeder/keiner, der mich kennt, hasst mich.
 everyone/no.one who me know.3SG hate.3SG me
 ‘Everyone/no one who knows me hates me.’ *Standard German*

Note further that such determiners tend to be incompatible with the relative pronoun *welch-* ‘which’, a sign of selection.

However, the argument only goes through if there is no silent NP-component. In the case at hand, postulating a silent NP may be less obvious than with English *someone/no one*, which can easily be decomposed into a determiner and a nominal part. However, given the arguments in Elbourne (2005: chapter 3.4) that pronouns should be reanalyzed as determiners taking an (potentially silent) NP-complement, postulating a silent NP in (116) does not seem far-fetched. Note that a silent NP can either involve a silent N-proform or NP-ellipsis. Once any of these options is available, the RC can be combined with the NP (as a complement or as an adjunct).

An initially more convincing example is provided by the German demonstrative *derjenige* ‘that one’, which normally requires an RC but not an NP:

- (117) derjenige (Mann), *(der dort sitzt)
 the one man who there sit.3SG
 ‘the one who is sitting over there’ *Standard German*

Note that one cannot justify a silent NP on the basis of *-jenige* because it is clearly adjectival (as shown by the fact that it takes weak inflection, governed by *der-*). However, as in the previous case, nothing in principle rules out a silent NP so that the RC can combine with N(P). The selection argument, on the other hand, seems strong at first sight; upon closer inspection, however, it is equally unconvincing as the selection argument in [B] above because *derjenige* can occur without relative clauses, e.g., as in (118):

- (118) Der nächste internationale Flughafen ist derjenige von Thessaloniki.
 the next international airport is the one of Thessaloniki
 ‘The next international airport is the one of Thessaloniki.’⁴¹ *Std. German*

The generalization again seems to be that *derjenige*/the silent NP requires restriction. This need not be done by an RC. Consequently, the behavior of *derjenige* does not provide a strong argument in favor of D-complementation. I will come back to selection effects and silent NPs in section 2.3.1.2 below.

[E] The last potential argument for D-complementation comes from agreement in appositive RCs to pronominal heads as in (119):

- (119) I, who **am** tall, was forced to squeeze into that VW.

Given that it is unlikely that the relative pronoun bears the relevant person feature, the question arises how person agreement on the verb inside the RC comes about. Heck & Cuartero (2012) argue for a proposal where agreement results from feature-sharing between D, C, and T. This requires D–RC complementation. The example surely implies that D is structurally higher than the RC, but once the NP-ellipsis theory of pronouns by Elbourne (2005) is adopted, the RC can also attach to N(P), which is sufficient for Agree between D and C.

In summary, it seems fair to conclude that the arguments in favor of either adjunction or complementation are not compelling. There is some evidence for selection by D, but most if not all of the facts can probably be explained semantically. Furthermore, the cases where the RC seems to directly modify a D-element cease to be arguments for D-complementation once a silent NP is postulated. Conversely, there also do not seem to be any knock-down arguments for adjunction. Indeed, in many instances, arguments in favor of one or the other position will be of a more theory-internal nature, e.g., as in section 5.4.2.3 below, where I will argue in favor of complementation. The modification problem will also play an important role in the discussion of late merger, to which I return in sections 2.3.3.2.3, 2.3.7, and 2.5.3.6 below.

While I will thus come back to the modification problem at several points of this chapter, the connectivity problem will eventually turn out to be more important in the evaluation of the major theories of relative clauses. I will begin with a detailed discussion of the head raising analysis in the next subsection as it has

41 <https://de.wikivoyage.org/wiki/Stomio>, accessed February 5, 2017

become the most prominent approach in the last twenty years. The matching analysis will be treated thereafter in section 2.4.

2.3 The head raising analysis

Recall from section 2.2.1.2 that the basic idea underlying the raising analysis is that the head noun is generated within the RC and is then moved to its surface position during the derivation (for purposes of illustration I use a bare N as head noun to avoid the complications once an external determiner comes into play):

- (120) a. I only like [my granny has cooked **potatoes**]
 b. I only like [**potatoes**₁ my granny has cooked ___₁]

The HRA is in principle independent of the adjunction/complementation dichotomy even though in most approaches it is combined with complementation. Here is an overview:

- adjunction: Vergnaud (1974), Henderson (2007)
- N-complementation: de Vries (2002: 85–86), Cecchetto & Donati (2015)
- D-complementation: Kayne (1994), Bianchi (1999, 2000a), Bhatt (2002),
 de Vries (2002), Aoun & Li (2003)

In the following subsections, I will discuss the various implementations of the raising analysis in detail. I will show that despite the raising analysis' stellar success since its revival by Kayne (1994), there are very good reasons to reject it: On the one hand, the few arguments in favor of the raising analysis that stand up to scrutiny eventually only provide arguments in favor of a relative clause-internal representation of the external head. On the other, despite various modifications over the years, the raising analysis is still confronted with rather serious difficulties. For the analysis to work, very unorthodox assumptions must be made with regard to constituency, Case-assignment, locality, and the trigger for movement all of which imply a complication of the grammar and many of which are at odds with well-established principles of grammar. Although most of these problems have been known at least since Borsley (1997), they have had surprisingly little impact on the general trend in the field to adopt the raising analysis. It is because of this that I have chosen to highlight these issues again in great detail together with a number of additional problems that have been discovered more recently.

Against this background, I will argue in favor of a new version of the matching analysis. As I will show, not only is the matching analysis unaffected by the problems that beset the raising analysis; it also provides a more systematic account of

the facts that the proponents of the raising analysis use to motivate their proposals, viz., the evidence for a relative clause-internal representation of the external head.

Before discussing the individual proposals, I will briefly summarize what I consider the most important arguments in favor of the raising analysis. Note that in the literature on relative clauses, the D-complementation arguments of the previous subsection are often used in favor of the raising analysis; but of course, quite apart from their limited force, they only concern the modification problem but not the connectivity problem, which is what the raising analysis aspires to provide a solution to.

2.3.1 Arguments for head raising

Arguments for head raising generally involve evidence for a relative clause internal representation of the external head. Such a representation is crucially necessary if one wants to relate the superficially very different relativization types found crosslinguistically. Furthermore, an internal representation helps to capture the sometimes very close relationship between head noun and relative pronoun. Finally, an internal representation is inevitable if the external head can only be interpreted properly inside the RC.

2.3.1.1 Different types of relative clauses and uniform derivations

Apart from the fact that the raising analysis expresses the pivot function of the external head most directly, the probably strongest argument in favor of raising comes from internally headed RCs as in (121) (cf. Cole 1987: 277):

- (121) [Nuna **bestya-ta** ranti-shqa-n] alli bestya-m ka-rqo-n.
 man horse-ACC buy-PFV-3 good horse-EVD be-PST-3
 ‘The horse that the man bought was a good horse.’ *Ancash Quechua*

They overtly show the base structure that is posited in the raising analysis: The head noun occurs inside the RC in the position corresponding to its semantic function. To obtain the correct interpretation, one can assume covert raising (cf. *wh*-in-situ), see Cole (1987) as schematically represented in (122) (the upper copy is PF-deleted instead of the bottom one):

- (122) I only like [~~potatoes~~₁ my granny has cooked potatoes₁]

As a consequence, adnominal and circumnominal relatives basically receive the same analysis, the difference being whether raising of the head takes place overtly

or covertly. Crucially, it is completely unclear how the head-external analysis can handle such data. It seems that if one adopts the HEA for adnominal RCs, one has to posit an additional completely different derivation to account for internally-headed RCs. The raising analysis with its unified analysis clearly offers an advantage here.

A similar argument can be found in Bianchi (1999: 86–92): She notes that several languages have both correlatives and externally headed RCs in which the *wh*-word is taken from the same pronominal paradigm. Obvious cases are Latin, Hindi or Old English. Consider the following pair from Hindi (Srivastav 1991: 647–648):

- (123) a. *vo laṛkii [S_{rel} jo kharīi hai] lambii hai.*
 DEM girl.F REL standing.F be.PRS.SG tall.F be.PRS.SG
 ‘The girl who is standing is tall.’ embedded (postnominal)
- b. *[S_{rel} jo laṛkii kharīi hai] [S_{main} vo lambii hai].*
 REL girl.F standing.F be.PRS.SG DEM tall.F be.PRS.SG
 ‘The girl who is standing is tall.’ correlative

While both types of relative clauses show a number of important differences (see Srivastav 1991 and section 2.1.2.1.2 above), e.g., that the head is external in (123-a) but internal in (123-b), it is striking that the relative pronoun is identical in both cases. The raising analysis can capture this similarity: Since the external head originates within the RC, the correlative structure can be considered an intermediate step in the derivation of the externally headed relative: There is an extra movement step whereby the internal head moves over the relative pronoun and becomes the external head (see section 2.3.3 for details):

- (124) $[_{CP} [_{DP} \text{which girl}]] \rightarrow [_{CP} [_{DP} \text{girl}_1 \text{which } _1]]$

This similarity is surprising under the head-external analysis because there is no internal head. Bianchi further points out that the movement step in (124) may represent the diachronic development in Latin from correlative to postnominal RCs. Again, this can be captured straightforwardly under raising, while the change seems much more drastic from the perspective of the HEA.

I will come back to the relationship between the major types of relative clauses in section 2.3.9. There I compare the raising approaches by Kayne (1994) and de Vries (2002), who both attempt to derive all embedded RCs from the same base. How the matching analysis can deal with these facts will be discussed in section 2.5.2 below.

The treatment of these effects under the matching analysis will be discussed in section 2.5.2 below.⁴²

2.3.1.3 Antipronominal contexts

In recent work, Pankau (2015, 2016) argues that the relative pronoun must contain a (silent) NP-complement. He observes that relative pronouns are possible in so-called antipronominal contexts (cf. Postal 1994), viz., contexts that require a lexical DP (i.e., D + NP) but disallow pronouns. One such context is provided in (127) (from Pankau 2015: ex. 20; for German examples, see Pankau 2016):

- (127) Marko je na ✓te wašnje/ *njo/ *něšto rěčaŕ
 Marko is on the way it something spoken
 ‘Marko has spoken that way (*it/*something).’ *Upper Sorbian*

In the expression ‘speak in a certain way’, the preposition must be followed by a full DP, just a pronoun is not sufficient. Crucially, however, the expression can occur inside an RC, where on the surface there is only the relative pronoun:

- (128) Te wašnje, na kotrež je Marko rěčaŕ, je mje překwapilo.
 the way on which is Marko spoken is me surprised
 ‘The way Marko spoke surprised me.’ *Upper Sorbian*

⁴² If *was* is indeed used in the absence of a nominal antecedent, this implies that when a quantifier like *nichts* ‘nothing’ is relativized, the raising – and the matching – analysis seem to be in trouble as the head noun is missing (recall section 2.2.2.2.2). Postulating a silent N in these cases seems difficult to motivate because other D-elements show a systematic alternation between *das* and *was* depending on whether NP-ellipsis has occurred:

- (i) a. Dasjenige, *das/was mir am wichtigsten ist
 that which/what me.DAT the most.important be.PRS.3SG
 ‘that which is most important to me’
 b. Es lagen mehrere Bücher auf dem Tisch. Dasjenige, das/*was mich
 there lie.PST.3PL several books on the table that which/what me.ACC
 am meisten interessierte ...
 the most interest.PST.3SG
 ‘There were several books on the table. The one I was most interested in ...’

Standard German

In (i-a), *dasjenige* refers to a general thing, while in (i-b), it refers back to *Bücher* ‘books’. The choice between *das/was* is straightforward if there is a head noun in (i-b) but not in (i-a) so that *was* is used as the elsewhere case. Alternatively, if one wants to adhere to a head noun in every case, one has to postulate a silent noun in (i-a) whose properties must be such that it selects a different relative pronoun than an elided neuter noun. Note finally that quantifiers like *jeder* ‘everyone’ and *keiner* ‘no one’ will always have to involve NP-ellipsis (rather than a silent noun) in their neuter use when directly combined with a relative clause since they always select *das*.

This suggests that the pronoun actually takes an NP-complement, which is trivially the case under the raising analysis as the pronoun starts out as a constituent together with the head noun (which then later moves across the relative pronoun to its surface position):

(129) [PP na [DP kotrež [NP wašnje]]]

Although Pankau uses the data to argue in favor of the matching analysis, it is sufficient at this point to note that the data clearly argue against the head-external analysis, where there is just a pronoun inside the relative clause and in favor of approaches like the raising analysis, where the pronoun occurs with a full instance of the external head. I will come back to these data in the context of the matching analysis in 2.5.2 below.

2.3.1.4 Reconstruction

Probably the most prominent argument in favor of head raising comes from reconstruction effects, first noted in Schachter (1973: 31–33): In the examples discussed in this subsection, the external head has to be interpreted inside the RC, which thus implies that the RC has to contain a representation of it.⁴³ The first type of reconstruction effect involves idioms; as pointed out in Schachter (1973), they can be split in relative clauses (for Dutch examples, see de Vries 2002: 78–80, for French and Italian examples see Bianchi 1999: 43–45, 50):

- (130) a. The [careful track] [that she is keeping ___ of her expenses] pleases me.
 b. I was offended by the [lip service] [that was paid ___ to civil liberties at the trial].
 c. The [headway] [we made ___] was satisfactory.
 d. So all the [fun] [that I had made ___ of my vegetarian friends] has come back full circle.⁴⁴

Under the assumption that head noun and verb have to form a constituent at some point of the derivation for the idiomatic interpretation to obtain, the well-

⁴³ For reasons of simplicity, the majority of reconstruction effects will be illustrated on the basis of English unless the point cannot be exemplified by English; data from other languages will be used occasionally; for a wealth of reconstruction data from German, see Salzmann (2006a: chapter 2).

To facilitate legibility, the head noun henceforth appears in brackets when reconstruction is at stake. The underline indicates the position where it is interpreted.

⁴⁴ <https://rubeenahightimeyoublogged.wordpress.com/>, accessed February 6, 2017

formedness of the data in (130) is surprising given the surface structure. Under head raising, however, this is in fact expected because the head noun and the verb form a constituent at the point of Merge (or alternatively at LF after reconstruction, i.e., if the lower copy of the movement chain is interpreted):⁴⁵

- (131) a. The [headway₁ we made __₁] was satisfactory.
 b. The [we made headway] was satisfactory Merge/LF

The following German examples illustrate the same point:

- (132) a. Die [Rede], [die er gestern __ geschwungen hat],
 the speech which he yesterday swing.PTCP have.3SG
 war grässlich.
 be.PST.3SG terrible
 ‘The speech which he gave yesterday was terrible.’
 (“swing a speech” = ‘give a speech’)
- b. Durch ein paar [Fäden], [die er __ gezogen hat],
 through a few strings which he pull.PTCP have.3SG
 bekommt er einen lukrativen Auftrag
 receive.3SG he a profitable job
 ‘He receives a profitable job through a few strings that he pulled.’⁴⁶
Standard German

Similar effects have been observed with binding: As shown in (133) and (134), an anaphor (reflexive/reciprocal) inside the head noun can be bound by an element inside the RC. Again, this is surprising given the surface structure but straightforward if the head noun originates inside the RC, see de Vries (2002: 80) and Schachter (1973: 33) (for Norwegian examples, see Áfarli 1994: 86–88, for Italian data, see Bianchi 1999: 115–122; for more English data, see Aoun & Li 2003: 111–112):

⁴⁵ Reconstruction is limited to collocations. It is blocked with completely opaque idioms because in such cases one would have to relate two incompatible meanings to the same noun, an idiomatic one inside the RC and a literal one in the matrix clause, see de Vries (2002: 79):

(i) *The bucket that he kicked was full.

Since there is a sliding scale from completely opaque idioms like *kick the bucket* to rather simple collocations like *make headway*, there will be many intermediate cases, and their acceptability will depend on the speaker’s and the hearer’s creativity. A similar distinction is made in Bianchi (1999: 44–45); according to her, completely opaque idioms are characterized by a frozen = non-variable determiner.

⁴⁶ <http://www.lovelybooks.de/autor/Shannon-McKenna/Die-Nacht-hat-viele-Augen-316513010-w/>, accessed February 2, 2016

- (133) a. De [verhalen over zichzelf]_i₁ [die Paul_i ___₁ hoorde], waren
 the stories about himself which Paul heard were
 pure leugens.
 pure lies
 ‘The stories about himself_i that Paul_i heard were pure lies.’
 b. De [die Paul₁ [verhalen over zichzelf₁] hoorde] *Std. Dutch*
- (134) The [interest in each other_i] [that [John and Mary]_i showed ___] was fleet-
 ing.

The following example illustrates reconstruction for scope: the quantifier within the HN can be interpreted in the scope of an RC-internal quantifier. There are thus two patients per doctor. Under the wide-scope reading, which is also available, the total number of patients is two, and these two will be examined by every single doctor, see Aoun & Li (2003: 98):

- (135) I telephoned the [two patients] [that every doctor will examine ___].
 $\forall > 2; 2 > \forall$

Another case of scope reconstruction are amount readings, i.e., when an amount quantifier is reconstructed below another scope-bearing element such as a modal, see Sauerland (1998: 68) for (136-a/b) and Bhatt (2002: 51) (attributing the example to Irene Heim) for (136-c) (for German examples, see Salzmann 2006a: 96–97):

- (136) a. No linguist would read the [many books] [Gina will need ___ for vet
 school].
 many > need; need > many
 b. Mary shouldn’t even have the [few drinks] [that she can take ___].
 few > can; can > few
 c. I am worried about the [twenty-five people] [likely to ___ come for din-
 ner tomorrow].
 25 > likely; likely > 25

Under the amount reading, only the number of books/drinks counts, not particular ones. In the (136-a), it is likely that no linguist knows all the books Gina needs for vet school, but he probably knows that there are many; his objection is directed against the number but not necessarily against specific books. In (136-b), the most natural interpretation is that Mary should drink as little as possible, i.e., not even the small amount one knows that she can take. In both pairs the wide scope reading of the external head (usually called ‘referential’ with amount quantifiers) is possible as well even though the amount reading is much more salient.⁴⁷

⁴⁷ Amount readings occur more generally even in the absence of another scopal element when there is abstraction over a degree; it is usually assumed (see Bhatt 2002: 50–51) that amount read-

Reconstruction for variable binding is illustrated in (137): The pronoun within the head noun can be bound by the quantified subject of the relative clause ((137-a/b) are from Safir 1999: 613, also cited Bhatt 2002: 52; for more examples, see e.g., Áfarli 1994: 87 on Norwegian, Bianchi 1999: 124 on Italian, and Aoun & Li 2003: 113 on English):

- (137) a. John generally has an [opinion of his_i book] [that every novelist_i respects ____].
 b. The [picture of his_i mother] [that every soldier_i kept ____ wrapped in a sock] was not much use to him.
 c. The [period of his_i life] [that nobody_i talks about ____] is his adolescence.

The success of the raising analysis since the 90ies is arguably related to the copy theory of movement introduced in Chomsky (1995): Since movement leaves full copies, an explicit reconstruction operation (moving a constituent downward at LF) is no longer needed. Rather, it is replaced by means of the interpretation of lower copies as in (138):⁴⁸

- (138) a. [Which book about himself_i] does John_i like [which book about himself_i]?
 b. [Which x] does John_i like [x book about himself_i]?

The structure in (138-a) is converted into (138-b) according to the Preference Principle (Chomsky 1995: 209): It demands that operators be minimized. As a consequence, the restriction is deleted in the operator position but retained in the theta-position. Importantly, reconstruction is an automatic consequence: Evidence for this comes from Principle C effects in *wh*-movement:⁴⁹

- (139) *[Which picture of John_i]₁ does he_i like ____₁?

ings require reconstruction/an RC-internal representation of the external head because their interpretation is non-intersective (recall the introductory section of this chapter).

48 For a more detailed overview, see Salzmann (2006a: 43–50).

49 Note that there are also proposals that explicitly argue that the higher copy has to be retained (at least in certain cases), see Safir (1999) and Sportiche (2006). Finally, there are cases where a higher copy can be privileged, e.g., for anaphor binding (cf. binding in intermediate positions as in *Which picture of himself_i_{jj} does John_i think that Bill_j likes?*) or in cases of wide-scope, see Heycock (1995) and Fox (1999).

Although unlike in (138-a) the moved phrase does not contain an element that would need to be reconstructed, the ungrammaticality of (139) shows that the Preference Principle must have applied.

Fox (1999, 2002: 66–68) contains a more elaborate proposal about how copies are converted into semantically interpretable objects. He introduces the operation Trace Conversion, which involves two components, viz., variable insertion and determiner replacement. Variable insertion introduces a predicate of type $\langle e, t \rangle$ which is combined with the NP-restriction by predicate modification. This establishes a variable-binding dependency between the lower copy and the lambda-operator introduced by A' -movement. Determiner replacement converts the lower copy into a definite description of type $\langle e \rangle$. A sentence like (140-a) will receive an LF-representation like (140-b) and, after Trace Conversion, a semantic interpretation as in (140-c):

- (140) a. Which boy did Mary visit?
 b. [Which boy] did Mary visit [which boy]?
 c. Which boy λx . [Mary visited the boy x]

(140-c) can also be paraphrased by ‘Which boy is such that Mary visited the boy *identical to* x ’. For ease of representation, I will sometimes adhere to Chomsky’s notation or use the shorthand for Trace Conversion in (141), used in Hulsey & Sauerland (2006: 112):⁵⁰

- (141) the_x boy

Although I will usually present entire LFs in what follows, I would like to stress that all reconstruction facts can also be handled derivationally as may be necessary in recent phase-based Minimalist models (see Chomsky 2000, 2001, 2004 et seq.).

While the raising analysis provides a straightforward solution to reconstruction in relative clauses, the head-external analysis seems to run into difficulties: If there is co-indexing between the head noun and the relative pronoun, there may be some kind of feature transmission from the matrix clause into the embedded clause. However, without extra assumptions this will not make the internal structure of the head noun available within the RC as is necessary to account for reconstruction in examples like (133), (134), (135), (136), and (137). Since the match-

⁵⁰ In Guilliot (2011) it is argued that bottom copies can also be interpreted as indefinites to capture scope reconstruction (more precisely: distributive readings); for the representation of the bottom copy in scope reconstruction, see also Fox (1999: 188–192). For arguments that the relative DP is indefinite, see Bianchi (1999: 80–86) and Cinque (2008a).

ing analysis contains an RC-internal representation of the external head, it can in principle capture reconstruction effects. This is discussed in detail in sections 2.4.2 and 2.5.3 below.⁵¹

Note finally that reconstruction is limited to the NP-part of the head noun. The external D does not reconstruct, as is suggested by the following pair where there is no definiteness effect inside the RC:⁵²

51 Some of the arguments for the raising analysis are not particularly strong because they can be equally captured under the HEA if there is feature-transmission/agreement between the head noun and the relative operator. One case in point is the reconstruction of bare NP-adverbs (from Larson 1985, discussed in Bhatt 2002: 48–49):

- (i) a. the [way] [Op₁ that you talk ___]
- b. *the [manner/fashion] [Op₁ that you talk ___]
- c. You talk that way.
- d. *You talk that manner/fashion.

If the external head is reconstructed, we can understand the grammaticality pattern because only certain bare NPs can function as adverbs. However, if these features are present on the relative operator (via co-indexation or perhaps Agree), then the pattern can be accounted for under the HEA as well. See also the discussion on idiom reconstruction in section 2.3.1.4.2 below.

Another example is reconstruction of predicative DPs (from Vergnaud 1974: 65, as cited in Bianchi 1999: 52–53 and Donati & Cecchetto 2011: 525):

- (ii) *Ce ne sont pas les [comédiens] que leur père était ____.
- it NEG be.3PL not the.PL comedians that their father be.PST.3SG
- lit. ‘They are not the comedians that their father was.’

French

If the agreement features are present on the relative operator, this will be sufficient to rule out the sentence as there will be a clash in number with the embedded verb. More challenging are Spanish/Catalan degree relatives where the head consists of an adjective that does not agree with anything in the matrix clause but instead with the subject of the embedded clause, see Bianchi (1999: 53, 65–69):

- (iii) Juan vio lo contenta que estaba Maria ____.
- John saw the.M.SG content.F.SG that was Mary
- ‘John saw how happy Mary was.’

Spanish

While the reconstruction effect as such can arguably be handled by co-indexation under the HEA, there may be problems with interpretation as it is unclear how the adjective is to be interpreted in the matrix clause, a problem that emerges quite generally in amount relatives. Furthermore, since the external determiner does not agree with the adjective here (it rather refers to an amount), this will constitute an ill-formed external head under the HEA (a similar problem may emerge under the matching analysis; the problem is avoided in the version of the matching analysis that I will argue for in section 2.5 because it allows for (restricted) LF-deletion of the external head).

52 See Donati & Cecchetto (2011: 526) for the same type of argument based on the non-reconstruction of indefinite external determiners.

A similar argument is usually made on the basis of examples where a noun allegedly only occurs with the definite/indefinite determiner when combined with an RC as in 2.2.2.2.2 above; however, as pointed out there, once some modifier is added, the nouns can occur with a definite/indefinite

- (142) a. The [men] [that there were __ in the garden].
 b. *There were the men in the garden.

This accords well with the scope reconstruction facts in (135) above: Since D is never part of the relative clause, it will always have scope over it. If the D-element were reconstructed, the distributive reading should be blocked as in the following simple example (Aoun & Li 2003: 98):⁵³

- (143) Every doctor will examine the two patients. 2 > ∀; *∀ > 2

Before concluding this subsection, I would briefly like to review objections that have been raised against using reconstruction effects as a diagnostic for an RC-internal representation of the external head. As we will see, the discussion indeed shows that reconstruction effects are a phenomenon that goes beyond movement dependencies, and certain reconstruction phenomena arguably require a different explanation than one in terms of movement/interpretation of a lower copy. Still, once sufficient care is taken, there remain quite a number of cases that require a relative clause-internal representation of the external head so that reconstruction effects continue to be an important argument in the discussion.

2.3.1.4.1 Problems with anaphor binding

Reconstruction for Principle A plays a prominent role in the literature on reconstruction in relatives. This is somewhat problematic because binding can often come about in different ways.

First, in some languages (e.g., English), anaphors can be bound logophorically, across intervening definite, quantificational and expletive subjects, cf. (144),

determiner so that such data fail to show that the external D does not reconstruct. This also holds for some of the idioms in (130): Although at first sight they do not seem to be compatible with a definite determiner, they actually are, again, once a modifier is added: *keep the complete track of, pay the necessary lip service to, make the necessary headway, make the biggest fun of*.

53 If the external head does not contain a determiner but only a numeral, reconstruction is no longer possible:

- (i) I phoned two patients that every doctor will examine. *∀ > 2

This is usually explained by assuming that the numeral functions as the external determiner (the null determiner not being compatible with numerals; for a similar observation with superlative adjectives, see Bhatt (2002: 72).

For reasons that are unclear, the reverse scope judgment can be found in Donati & Cecchetto (2011: 543, fn. 9): For them, reconstruction is only possible in the absence of an external D as in (i) but not in the presence of an external determiner as in (135). I do not know what causes this difference in judgment.

sometimes in the absence of c-command, cf. (145), see Pollard & Sag (1992: 267, 278) and Reinhart & Reuland (1993: 681–685):

- (144) a. Bill_i remembered that the Times had printed a picture of himself_i in the Sunday edition.
 b. Bill_i thought that nothing could make a picture of himself_i in the Times acceptable to Sandy.
 c. The men_i knew that there were pictures of each other_i on sale.
- (145) a. Her_i pleasant smile gives most pictures of herself_i an air of confidence.
 b. The picture of himself_i in Newsweek dominated John_i's thoughts.

Consequently, what looks like reconstruction for binding in relatives as in (133) may be logophoric binding without c-command; as in (145-b), the anaphor would simply precede the binder. A concrete example is (146):

- (146) This is the [picture of herself_i] [that __ was most to Mary_i's taste].

Although binding data still figure prominently in the discussion (e.g., Aoun & Li 2003), at least in languages like English they should be handled with care or even disregarded (as, e.g., argued in Bhatt 2002: 49–50, but see Fox & Nissenbaum 2004: 481 for a different view).

Importantly, the problem does not obtain in those languages that do not allow for logophoric binding. This point is made in Bianchi (1999: 116) for Italian. Dutch *zichzelf* also cannot be bound logophorically, see de Vries (2002: 80–82). The following examples from German show that logophoric binding across intervening subjects as in (147) (from Kiss 2001: 186) or without c-command as in (148) is impossible:

- (147) a. *Gernot_i erinnerte sich daran, dass *die Zeit* ein Bild
 Gernot remember.PST.3SG self there.on that the Z. a picture
 von sich_i veröffentlicht hatte.
 of self publish.PTCP have.PST.3SG
 'Gernot_i remembered that *the Zeit* published a picture of himself_i.'
- b. *Gernot_i dachte, dass niemand ein Bild von sich_i
 Gernot think.PST.3SG that no.one a picture of self
 veröffentlichen wollte.
 publish.INF want.PST.3SG
 'Gernot_i thought that nobody would publish a picture of himself_i.'

Standard German

- (148) a. *Das Foto von sich_i in *der Zeit* beherrschte Peters_i
 the picture of self in the Zeit dominate.PST.3SG Peter's
 Gedanken.
 thoughts
 'The picture of himself_i in the *the Zeit* dominated Peter_i's thoughts.'
- b. *Ihr_i angenehmes Lächeln verleiht den meisten Fotos von sich_i
 her pleasant smile give.3SG the most pictures of self
 einen Ausdruck von Zuversicht.
 an air of confidence
 'Her_i pleasant smile gives most pictures of herself_i an air of confi-
 dence.' *Standard German*

Reconstruction for Principle A should thus only be tested in languages where anaphors are subject to the binding theory. The following discussion will therefore focus on German. There is another complication in many languages that pertains to picture NPs: The complementary distribution of reflexives and pronouns breaks down; instead, they are in free variation, cf. Kiss (2001: 184) (see also Reinhart & Reuland 1993: 661):⁵⁴

- (149) Ulrich_i las ein Buch über ihn_i/sich_i.
 Ulrich read.PST.3SG a book about him/self
 'Ulrich_i read a book about him_i/himself_i.' *Standard German*

There is a class of predicates, though, mostly involving semi-idiomatic expressions and collocations, where only the reflexive is possible (as the translations show, English patterns the same; see also Reinhart & Reuland 1993: 685):

- (150) a. Peter_i machte ein Foto von *ihm_i/sich_i.
 Peter make.PST.3SG a picture of him/self
 'Peter_i took a picture of *him_i/himself_i.'
- b. Peter_i hat eine Geschichte über *ihn_i/sich_i erzählt.
 Peter have.3SG a story about him/self tell.PTCP
 'Peter_i told a story about *him_i/himself_i.'
- c. Peter_i hat eine gute Meinung von *ihm_i/sich_i.
 Peter have.3SG a good opinion of him/self
 'Peter_i has a good opinion of *him_i/himself_i.'

⁵⁴ Fischer (2004: 107) assumes without argument that only reflexives are possible, Frey (1993: 168) assumes that the optionality is only apparent: Whenever a pronoun is possible, he assumes that there is a disjunct implicit PRO, see below.

- d. Peter_i hat ein Gerücht über *ihn_i/sich_i verbreitet.
 Peter have.3SG a rumor about him/himself spread.PTCP
 ‘Peter_i spread a rumor about *him_i/himself_i.’
- e. Peter_i hat ein Buch über *ihn_i/sich_i geschrieben.
 Peter have.3SG a book about him/self write.PTCP
 ‘Peter_i wrote a book about *him_i/himself_i.’ *Standard German*

One way of modeling these facts is by positing an implicit PRO inside the picture NP (cf. Chomsky 1986; there are potentially better alternatives as discussed in Reinhart & Reuland 1993: 685–686, but for ease of illustration and since it does not affect the arguments in this book, I will stick to the PRO-notation). The PRO corresponds to the agent role of the noun and is controlled by the subject; this captures the observation that the agent is obligatorily coreferential with the subject in these examples, while in examples like (149) they can be disjunct. As a consequence, while the NP in (149) does not have an external argument so that the NP does not constitute a binding domain (and reflexive and pronoun are thus both possible), the NPs in (150) are saturated because of the presence of PRO and thus are the relevant binding domain (a syntactic predicate). The pronoun is therefore ruled out by Principle B:

- (151) Peter_i machte [ein PRO_i Foto von *ihn_i/sich_i].
 Peter make.PST.3SG a picture of him/self
 ‘Peter_i took a picture of *him_i/himself_i.’ *Standard German*

Importantly, reflexives in such expressions are thus bound within NP. Consequently, if such an NP constitutes the external head of an RC and the reflexive appears to be bound by an RC-internal constituent as in (152), this does not necessarily present evidence for reconstruction:⁵⁵

- (152) das [PRO_i Foto von sich_i], [das Peter __ gemacht hat]
 the picture of self which Peter make.PTCP have.3SG
 ‘the picture of himself_i which Peter_i took’ *Standard German*

Binding with these semi-idiomatic expressions thus should be handled with care. However, once coreferential PROs are possible, the question arises whether im-

⁵⁵ Note, though, that reconstruction, i.e., interpretation of an RC-internal representation of the external head, may still be needed to bind the PRO and to capture the semi-idiomatic interpretation (but see Cecchetto 2005: 16 for a different view on control).

Importantly, a PRO inside the external head only makes sense if the interpretation inside the matrix clause is also idiomatic. Otherwise, the PRO should be limited to the RC-internal representation, see section 2.5.3.5 below.

implicit arguments are also present in non-idiomatic expressions such as *to like a picture of self*, *hear gossips about self* or, more obviously, in expressions with event nominals such as *conceal investigations about self*. There is no clear consensus here. In some cases, the postulation of a PRO seems attractive to capture differences in interpretation as in the following example from Frey (1993: 168):

- (153) Peter_i hat diese Nachforschungen über ihn_i/sich_i vor mir
 Peter have.3SG these investigations about him/self before me
 verheimlicht.
 conceal.PTCP
 ‘Peter_i concealed these investigations about him_i/himself_i from me.’
Standard German

With the anaphor, the preferred interpretation seems to be that Peter carried out the investigation himself, while if the pronoun is used, it is more likely that someone else did it. However, this only seems to be a tendency, and counterexamples can be found. In (154), a hypothetical implicit PRO would be disjunct (since the derogatory remarks are by someone else), thereby incorrectly predicting a violation of Condition A:

- (154) Er sucht Herzls Memoiren, *Mein Kampf* betitelt, in denen er_i
 he look for.3SG Herzl’s memories my fight titled in which he
 abfällige Bemerkungen über sich_i befürchtet.
 derogatory remarks about self fear.3SG
 ‘He is looking for Herzl’s memoirs titled ‘my fight’ in which he_i fears he
 will find derogatory remarks about himself_i.’⁵⁶ *Standard German*

The presence of implicit PROs with non-idiomatic expressions thus cannot easily be determined on the basis of the interpretation.⁵⁷ To rule out the confound with implicit PROs, binding should be tested with expressions where a *coreferential* implicit PRO is ruled out semantically, as in (154). An even safer strategy is to follow Bianchi (1999: 118–119) and test binding only with unaccusative nouns, viz.,

⁵⁶ <http://www.sim-kultur.at/?sub=archiv&sub1=werke&sub2=schauspiele&sub3=&sub4=&id=1829>, accessed January 5, 2005

⁵⁷ An interesting argument for an implicit PRO from Italian is provided in Cecchetto (2005: 17): An anaphor within a picture NP (constituting the external head of an RC) is licit even though the overt binder inside the RC does not c-command it; since Italian does not allow for logophoric binding, there must be a silent PRO present even though this does not necessarily become clear based on the interpretation.

nouns that do not take an external argument (see also Cecchetto 2005: 16–18), as in (155):⁵⁸

- (155) Il poeta descrive il [riflesso di se stesso]_i] [che Narciso_i vide __
 the poet describes the reflection of himself which Narcissus saw
 nella fonte].
 in.the fountain
 ‘The poet describes the reflection of himself_i that Narcissus_i saw in the
 fountain.’ *Italian*

The following example from German illustrates the same point:

- (156) Der [Wesenszug von sich]_i], [den Peter_i noch nicht __ kannte],
 the trait of self which Peter still not know.PST.3SG
 störte niemanden
 annoy.PST.3SG no.one.ACC
 ‘No one was annoyed by the side of himself_i that Peter_i did not know.’
Standard German

In conclusion then, reconstruction for Principle A can provide evidence for an RC-internal representation of the external head once certain confounds (logophoricity, implicit PROs) are avoided. The caveats of this section also apply to Condition C effects. However, since Principle C effects behave differently w.r.t. reconstruction in relative clauses, they will be discussed separately in 2.4.1.1 below.

2.3.1.4.2 Problems with idioms

Gazdar et al. (1985: 238) and Webelhuth et al. (to appear) observe that idiomatic meaning can be picked up by ordinary pronouns (some of the following examples additionally involve VP-ellipsis, but this is not a necessity):

- (157) a. We had expected that excellent care would be taken of the orphans,
 and **it** was.
 b. I said close tabs would be kept on Sandy, but **they** weren’t.
 c. My goose is cooked, but yours isn’t.

⁵⁸ Bianchi (1999: 300, fn. 17) argues that, while implicit PROs are a confound that should be avoided, they are not sufficient to capture reconstruction effects. She observes that there is no reconstruction in appositive RCs even if they have external heads that arguably contain implicit PROs. This suggests that the RC-internal representation is crucial after all (which is systematically absent in appositives).

- d. Kim's family pulled some strings on her behalf, but **they** weren't enough to get her the job.
- e. We need to pull some strings to get Mary the job, and we need to pull **them** fast.

Given this, why shouldn't the same be possible with relative pronouns? A representation of the external head inside the RC would then no longer be needed to capture the idiomatic interpretation as the relative pronoun forms a constituent with the verb at Merge/LF:

(158) the care which₁ was taken ___₁ of the orphans

However, it is not clear that this is sufficient. First, Aoun & Li (2003: 110), who argue that reconstruction is generally restricted to *that*-relatives, regard idiom reconstruction with *wh*-relatives as ungrammatical. Second, in languages without relative pronouns, an empty operator would have to take up the idiomatic meaning. It is, however, not obvious that they can be assimilated to pronouns. Third, it is not a priori clear that relative pronouns can be assimilated to ordinary anaphoric pronouns, especially under those (semantic) approaches where they are semantically vacuous and end up being interpreted as lambda operators in their landing site, cf. Heim & Kratzer (1998). Fourth, the facts may also indicate that pronouns are actually determiners with a silent NP-complement as proposed in Elbourne (2005):

(159) [DP he [NP N]]

Note that applying Elbourne's assumptions to relative clauses automatically leads to the raising or the matching analysis. In conclusion then, there is little reason to believe that the fact that ordinary (personal) pronouns can pick up idiomatic meaning is sufficient to account for reconstruction of idiomatic NPs in relative clauses.⁵⁹

⁵⁹ Webelhuth et al. (to appear: ex. 70a, 75, 76) point out that there are cases where either the verb or the noun occurs with idiomatic interpretation without the other element occurring in the same clause. This implies that the idiomatic interpretation is not only licensed if the two form a syntactic unit but that discourse considerations also play a role (the authors argue that the meaning of the other must be contextually available). In my view, though, this does not show that syntax should play no role since these examples are arguably the special cases.

2.3.1.4.3 Predicative vs. equative sentences

Cecchetto (2005) argues that reconstruction effects generally only obtain in identity/equative sentences but not in normal subject-predicate sentences. Most of the discussion focuses on scope and variable binding, but the claim extends to anaphor binding as well. In the following pairs illustrating scope reconstruction and reconstruction for variable binding, the a-example involves an identity sentence, while the b-example has the normal subject-predicate structure. According to Cecchetto, only the a-examples are fully acceptable (Cecchetto 2005: 19–21):

- (160) a. I [dieci aerei] [che ogni tecnico ha controllato __ per
the ten planes that every technician has checked as
ultimi] sono quelli che hanno rischiato di cadere per primi.
last are those that have risked to fall. INF as first
'The ten planes that every technician has checked last are those that
were at risk to crash first.'
- b. ??I [dieci aerei] [che ogni tecnico ha controllato __ per
the ten planes that every technician has checked as
ultimi] hanno rischiato di cadere per primi.
last have risked to fall. INF as first
'The ten planes that every technician has checked last were at risk to
crash first.' *Italian*
- (161) a. Il [proprio_i; fallimento] [che nessuno_i dimentica __] è quello
the self failure that nobody forgets is the one
che è avvenuto per primo.
that is happened as first
lit.: 'The self_i's failure that nobody_i forgets is the one that happened
first.'
- b. *Il [proprio_i; fallimento] [che nessuno_i dimentica __] è avvenuto
the own failure that nobody forgets is happened
per primo.
as first
lit.: 'The self_i's failure that nobody_i forgets happened first.' *Italian*

There is no general consensus on the data. In the literature on scope reconstruction, there is no indication that equatives are in any relevant way privileged: All examples with distributive readings in Bianchi (1999: 123) and Aoun & Li (2003: 113–114) involve subject-predicate structures. The same holds for the amount readings discussed in Sauerland (1998: 68) and Bhatt (2002: 51). However, it is remarkable that many of the examples with variable binding that are cited in the literature indeed involve equative sentences (see, e.g., Bianchi 1999: 124 and Aoun & Li

2003: 113). At the same time, this does not hold for all examples in Bianchi (1999) and Aoun & Li (2003), nor does hold it for the example in Áfarli (1994: 87) and those by Safir (1999: 613). The same goes for the example in Hulse & Sauerland (2006: 121), cf. (162-a), and those in Heycock (2012), cf. (162-b/c):

- (162) a. The [picture of himself_i] [that everybody_i sent __ in] annoyed the teacher.
 b. I noticed the [portrait of herself_i] [that every student_i had pinned __ up on the wall].
 c. The [books about his_i exploits] [that every candidate_i brought __ with him] annoyed the interviewers.

There is an additional problem with the variable binding data, though (and also the scope data more generally), as pointed out in Hulse & Sauerland (2006: 121). Reconstruction of the external head into the RC does not derive the most salient reading of the construction: In (162-a), the most natural construal is that *picture* covaries with *everybody*, i.e., each person sent in a different picture (the pair-list/distributive reading). However, since the definite article still has scope over the RC, the reading one obtains is one where there is a single picture that shows every student, which is rather implausible in this context. To obtain the distributive reading, Hulse & Sauerland (2006) propose that the QP undergoes quantifier raising (QR) out of the RC. This proposal is criticized in Sharvit (1999a) and Cecchetto (2005) because QR is normally clause-bound. Furthermore, there are examples with variable binding where the QP is further embedded; to derive the distributive reading, it would thus have to QR long-distance, which seems utterly unlikely, see Aoun & Li (2003: 113) (for another example, see Cresti 2000: 153):

- (163) a. The [picture of his_i mother] [that Mary thought that every student_i liked __ best] is impressive.
 b. We admired the [picture of his_i mother] [that Mary said every student_i painted __ in art class].

QR would also fail to derive the functional reading that such examples additionally allow (note, though, that the functional reading is most prominent in identity sentences). QR is thus a somewhat problematic solution. To obtain pair-list and functional readings in the presence of the definite article, an analysis with functional traces as in Sharvit (1999a) suggests itself. To ensure that the pronoun inside the external head is bound by the quantifier, a relative clause-internal representation may thus be necessary after all. Upon closer inspection, reconstruction for variable binding can thus potentially still provide an argument for a relative-clause internal representation of the external head.

Before concluding this section, I should mention that there is one type of variable binding that is even more challenging, viz., examples with indirect binding. In these examples, a QP inside the RC binds a pronoun in the matrix, see, e.g., Cecchetto (2005: 19, 22) for a case with variable binding, cf. (164-a), and one without, cf. (164-b) (the classical case of indirect binding):

- (164) a. The [one accident of his_i] [that everyone_i remembers ___] is the one that affected him_i first.
 b. The [woman] [every man_i loves] is his_i mother.

To derive the bound reading between QP and the pronoun in the matrix clause, reconstruction into the RC will arguably not be sufficient. Still, the existence of indirect binding does not invalidate the other reconstruction data with variable binding in my view.⁶⁰

Summarizing the last three subsections, even though some of the reconstruction examples in the literature do not show what they are purported to show, reconstruction effects do provide evidence for the presence of a relative clause-internal representation of the external head – once sufficient care is taken. Reconstruction effects will thus continue to play an important role in this book. More reconstruction facts will be introduced when discussing the proposals by Bhatt (2002) and Henderson (2007) as well as in sections 2.4 and 2.5.^{61, 62}

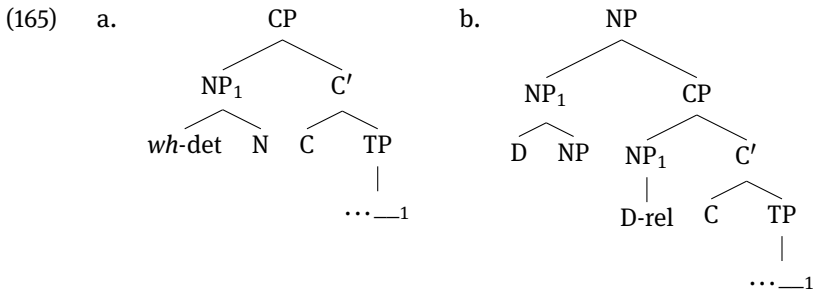
60 Cecchetto (2005) presents a semantic analysis where, simplifying somewhat, such relatives receive a reading where two functions are equated with each other. He then extends this analysis to the data in (161). Whether this is sufficient is unclear; first, his analysis only works for equatives, thus leaving the data in (162) and (163) unaccounted for. Second, while indirect binding is most prominent in identity sentences, it has also been observed in normal subject-predicate configurations, see, e.g., Safir (1999: 613) or Hulsey & Sauerland (2006: 135) (and systematically so in Hebrew, see Sharvit 1999a). There thus remain important open questions. What seems clear is that indirect binding requires a different solution than regular reconstruction effects. For a recent semantic proposal, see Sternefeld (to appear).

61 Note that I will adhere to a syntactic approach to reconstruction even though semantic approaches may provide important insights in certain areas of relativization (see the references mentioned above). Given the fact, however, that syntactic approaches have been very successful in other areas of *A'*-movement, see, e.g., Fox (1999), the null assumption should be that syntactic constraints are at work in relativization as well. Perhaps the best argument for a syntactic approach is reconstruction into intermediate positions, which is unexpected under semantic reconstruction.

62 Interestingly, Gračanin-Yuksek (2008: 280–282) argues that there is no reconstruction whatsoever in Croatian headed relatives, perhaps with the exception of amount relatives. I am not aware of any other sources claiming that relative clauses do not display reconstruction effects and I wouldn't know what could be responsible for this crosslinguistic difference.

2.3.2 Vergnaud (1974)

One of the earliest explicit implementations of the raising analysis is Vergnaud (1974). He proposes that the head noun, consisting of the determiner, the noun and a *wh*-feature, raises to Comp (= SpecCP). Then, the noun phrase (comprising Det + N) moves out of the clause and reprojects. The index of N is thereby transferred to the maximal projection. The result is an adjunction structure, the RC is now right-adjoined to NP. Finally, the trace of NP is realized as a relative pronoun (because the *wh*-feature stays behind):



The analysis is thus a variant of the NP-S-theory and is therefore faced with the interpretive difficulties (that may not be completely insurmountable) pointed out in section 2.2.2.1 above: The D-element fails to take scope over the relative clause. Apart from that, some of the technical devices seem exotic or incompatible with modern assumptions. For instance, it is unclear how exactly a part of a moved constituent (the *wh*-feature) can be left behind and be spelled out. Furthermore, since the relative clause is adjoined, the moved head noun may fail to c-command its trace (the CP is not excluded from NP because it is dominated by the higher segment of NP). Finally, reprojec-tion is not generally considered a possibility in structure-building. However, as we will see, there are recent proposals, see Bhatt (2002) and Donati & Cecchetto (2011), which do assume reprojec-tion. If reprojec-tion only involves the N and leads to complementation, most of the obstacles can be removed (on this see de Vries 2002: 85–86). In other words, Vergnaud (1974) can be seen as a precursor to these works. I will discuss them in detail below (in-cluding aspects not covered here such as questions about case-marking and the trigger for reprojec-tion).⁶³

⁶³ A reprojec-tion analysis is also proposed for Chinese in Aoun & Li (2003: chapters 5/6).

2.3.3 Kayne (1994)

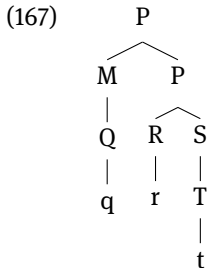
The most influential proposal which all recent analyses of head raising are based on in some way is that by Kayne (1994). Its success is partly related to the rise of antisymmetry in the early 90ies under which the traditional head-external analysis could no longer be upheld. I will first discuss the proposal in some detail before turning to the evaluation of the technical aspects.

2.3.3.1 The proposal

The starting point for the analysis is the antisymmetry hypothesis according to which hierarchical structure fully determines linear order:

- (166) Linear Correspondence Axiom (LCA)
 For any two non-terminals X, Y, if X asymmetrically c-commands Y, then all terminals x dominated by X precede all terminals y dominated by Y

The relevant consequence of this is that right-adjunction is systematically ruled out: An RC adjoined to NP asymmetrically c-commands NP so that it will automatically precede NP. Let us look at this in some detail and consider the following abstract structure:



P can be equated with the head noun and M with the RC. In a first step, we have to calculate the c-command relationships between the non-terminals. Kayne (1994: 16) adopts the following definition of c-command:

- (168) X c-commands Y iff X and Y are categories and X excludes Y [= no segment of X dominates Y] and every category that dominates X dominates Y.

Note that since c-command is restricted to categories, the NP (P) does not c-command the RC (M) because NP is just a segment. The adjoined M, however, does c-command into the XP it is adjoined to. If we now calculate the c-command pairs, we obtain the following: First, we establish c-command pairs between non-

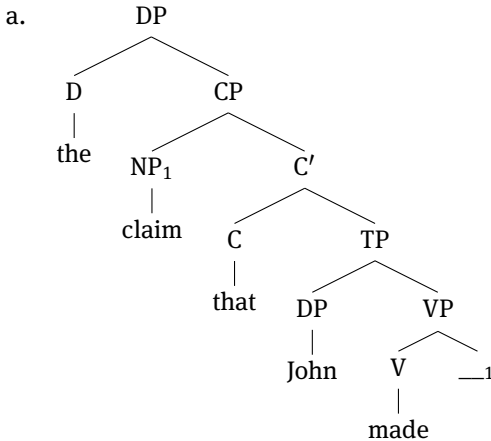
terminals, leading to (169-a). Then based on this, the c-command pairs involving the terminals can be established, see (169-b):

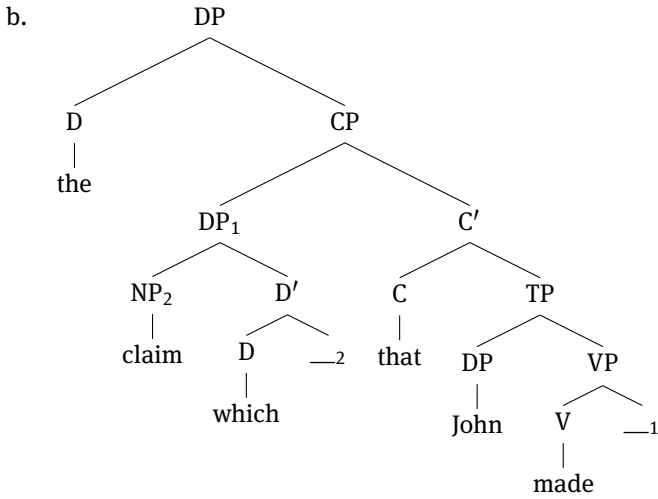
- (169) a. $\langle M,R \rangle, \langle M,S \rangle, \langle M,T \rangle, \langle R,T \rangle$
 b. $\langle q,r \rangle, \langle q,t \rangle, \langle r,t \rangle$

Therefore, the terminals dominated by the RC (viz., M) will necessarily precede the terminals dominated by the head noun (the lower segment of P). Consequently, post-nominal relative clauses cannot be derived under antisymmetry by means of adjunction. Therefore, a different structure is required.

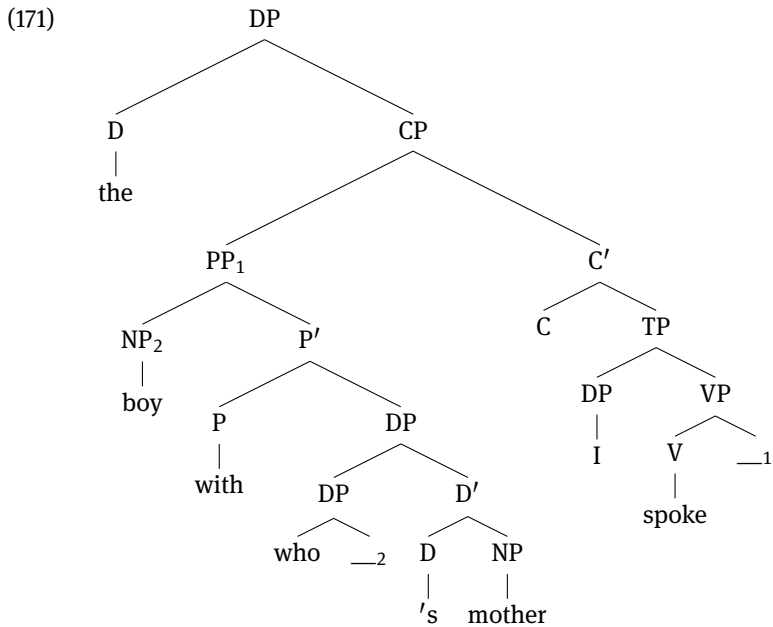
The obvious solution involves complementation between the external determiner D and the relative clause CP. While complementation is sufficient to comply with antisymmetry, Kayne (1994) combines it with head raising (not the least because of the reconstruction facts discussed in 2.3.1.4 above). He proposes that the head noun consists of an NP that is base-generated inside the RC and is then moved to SpecCP. This is all that needs to be said about *that*-relatives, cf. (170-a). In *wh*-relatives, the complex DP moves to SpecCP followed by movement of the head noun to the specifier of the relative pronoun, cf. (170-b):

(170) Post-nominal RCs





The following tree structure illustrates the derivation of a somewhat more complex example involving a possessive relative:



The raising analysis coupled with antisymmetry has one crucial implication for extraposition: Given that right-adjunction is no longer an option, RC-extraposition as in (172) can not be treated as rightward movement.

(172) Something just happened [that you should know about].

Instead: Kayne reanalyzes “extraposition” as stranding, i.e., the head noun moves away from the RC:

(173) Something₁ just happened [___₁ that you should know about].

The stranding analysis has a number of important consequences: First, since the head noun does not form a constituent with the external D given the raising analysis, extraposition should not be possible with overt determiners as this would require movement of a non-constituent (head noun plus determiner). This is only partially correct, though. While extraposition from definite (subjects) is generally degraded in English, extraposition from indefinite DPs is unproblematic:

(174) [A/??the man]₁ just walked in [who we knew in high school].

Kayne argues that indefinite articles belong to a different category. They are thus not external determiners but rather form a constituent with the head noun and originate within the RC:⁶⁴

(175) [A man]₁ just walked in [___₁ who we knew in high school].

Second, the optionality of extraposition can be reduced to the optionality of pied-piping: Either the head NP moves by itself or it pied-pipes the CP. Third, it predicts the effects of the Right Roof Constraint, which requires rightward movement to be clause-bound. Consider the following example:

(176) *[The fact that somebody_i walked into the room] is irrelevant [who_i I knew].

This derivation is readily ruled out since the constituent N+RC is not an argument of *irrelevant*. To derive the surface order, movement would have to be downward, viz., from the matrix clause into the complement clause of the subject to the argument position of *walk*. Finally, stranding accounts for the otherwise puzzling fact that the RC cannot be moved to the left of the head noun, stranding the head-noun:

(177) *[That you should know about], something just happened.

⁶⁴ This assumption raises obvious questions w.r.t. interpretation – how can the indefinite article have scope over the RC – and Case: How can the XP check both the RC-internal as well as the matrix Case (given that there is no separate external D)?

Since downward movement of the head noun is not an option, the RC would have to move. However, since it is not a maximal projection but only a C' , this is not an option either. Both restrictions (the Right Roof Constraint and the ban on leftward movement of the RC) are difficult to capture under the HEA because it is neither obvious why rightward movement should be restricted in this way nor why leftward movement of an adjunct CP should be blocked given that adverbial CPs can be moved to the left.

2.3.3.2 The problems

In this section, I will list the objections that have been raised against the raising analysis as implemented by Kayne (1994). As we will see, not all issues are equally serious. While some of them have been fixed in later versions of the raising analysis (and thus only apply to the implementation by Kayne 1994), some continue to constitute substantial problems. Importantly, none of these problems arise under the head-external analysis or (apart from the facts discussed in section 2.3.3.2.10) the matching analysis.

2.3.3.2.1 *that*-relatives: movement of NP or DP

In an early critique, Borsley (1997) pointed out a series of problems for the raising analysis. One of them was the observation that the trace of the head noun in *that*-relatives behaves like a DP and not like an NP, as proposed in Kayne's derivation: It allows for co-indexing with a pronoun, cf. (178-a), control, cf. (178-b), licenses parasitic gaps, cf. (178-c), and the movement of the head noun can skip weak islands (which normally block movement of NPs, see Cinque 1990), cf. (178-d):

- (178) a. the man that $_i$ thought he_i saw an Ufo
 b. the man that $_i$ tried PRO_i to fool everybody
 c. the book that Bill criticized $_$ without reading $_$
 d. the book that we wondered \langle how to afford $_ \rangle$

The only reasonable conclusion thus is that movement of the head noun involves movement of a DP. This requires a silent D. The question then arises why such silent Ds are not more widespread as in (179-a). Furthermore, one wonders what prevents an overt D in RCs, cf. (179-b).

- (179) a. *Bill liked [_{DP} e [_{NP} picture]]
 b. *the the picture that Bill liked

That movement in *that*-relatives involves movement of a DP seems to be generally accepted nowadays (but see the proposal by Donati & Cecchetto 2011 discussed

in 2.3.8 below for an exception and Aoun & Li 2003 for arguments that in Chinese, only NP moves). The nature of the empty D is explicitly addressed in Bianchi (2000a), cf. section 2.3.4 below. In the remaining works it is simply assumed that the empty D-element is a phonetically empty relative pronoun.⁶⁵

2.3.3.2.2 Wh-relatives: trigger for NP-movement and cyclicity

Another problematic issue concerns the trigger for the movement of NP to SpecDP in *wh*-relatives (Borsley 1997: 638). Kayne (1994: 90) argues that it moves to be governed by D, to check the selectional features of D. However, this is not obvious given that the NP is governed by the relative pronoun inside the relative. Furthermore, the resulting structural configuration does not correspond to what is standardly assumed for selection, viz., sisterhood.⁶⁶ Even more importantly, movement of NP to SpecDP is countercyclic if it takes place after the external D is merged. This seems unavoidable if movement is to be driven by the selectional feature of the external D (otherwise it would involve look-ahead).⁶⁷

Both issues have been addressed in subsequent work. As we will see, the cyclicity problem is solved in all subsequent proposals either because NP-movement takes place before movement of the entire relative DP (de Vries 2002) or because NP-movement targets the specifier of a higher position (Bianchi 2000a, Bhatt 2002) or undergoes sideward movement (Henderson 2007) or reprojects (Donati & Cecchetto 2011). As for the trigger, the selectional relationship with D plays a role in several approaches (Bianchi 2000a, de Vries 2002, Donati & Cecchetto 2011); alternatively, movement is triggered by whatever feature resides in the higher projections.

⁶⁵ Note incidentally that Kayne's analysis of *that*-relatives as well as many of the subsequent analyses seem to violate the doubly-filled Comp-filter. See Bianchi (1999: 166) for discussion.

⁶⁶ Further problems arise in comparison with the derivation of prenominal attributive adjectives and participial phrases, where the NP need not raise according to Kayne, see section 2.3.9 below. This undermines the motivation for raising or alternatively requires a reanalysis of the derivations involving prenominal modifiers.

⁶⁷ Cyclicity/the Strict Cycle Condition is defined as follows:

(i) Strict Cycle Condition:

No operation can apply to a cyclic domain α in such a way as to affect solely a proper sub-domain of α that is also cyclic (adapted from Chomsky 1973).

2.3.3.2.3 Late merger

Recall the contrast with regard to Condition C from 2.2.2.2 above:

- (180) a. *[Which claim that Mary had offended John_i]₁ did he_i repeat __₁?
 b. [Which claim that offended John_i]₁ did he_i repeat __₁?

The standard account of this contrast involves cyclic merger in (180-a) but late merger in (180-b). Late merger is standardly restricted to adjuncts so that the RC would have to be adjoined in (180-b). This is a priori incompatible with the raising analysis, where RCs are treated as complements and the head noun originates within that complement: *claim* in (180-b) would originate within the RC in the top copy but would have to be merged independently in the bottom copy. It is not immediately obvious how such a structure could come about derivationally.

Advocates of the raising analysis might propose that to account for these cases, the matching analysis is available as well, see the discussion in 2.4.3 below.

However, this is not sufficient once the data discussed in Sportiche (2006: 65), Henderson (2007: 214–217) and Takahashi & Hulsey (2009: 410) are taken into account: They provide examples where there has to be reconstruction into the relative clause, suggesting that the raising derivation is necessary. However, the relative clause contains an R-expression that is coreferential with a pronoun in the *wh*-clause. To avoid a Condition C violation, late merger of the RC is necessary, requiring the RC to be an adjunct. Since the raising derivation presupposes complementation, a paradox arises ((181-a/b) are from Henderson, (181-c) is from Sportiche):

- (181) a. [What headway that John_i made]₁ did he_i later regret __₁?
 b. [Which picture of himself_j that John_i gave to Mary_i]₁ did she_i take home __₁?
 c. [Which pictures of each other_j which Jane_i showed the boys_j]₁ does she_i think you like __₁?

More recently, the claim that late merger is restricted to adjuncts has been relativized. Thus, it has been proposed that complements can also be merged late under certain circumstances, see Bhatt & Pancheva (2004) (who limit their claim to degree clauses) and Takahashi & Hulsey (2009). Furthermore, Nunes (2001) provides a sideward movement solution that reconciles raising with late merger. I will come back to these possibilities in the discussion of Henderson's proposal (which combines adjunction with raising) in section 2.3.7 as well as in section 2.5.3.6 below.

2.3.3.2.4 Constituency

In Kayne's analysis, the RC does not form a constituent to the exclusion of the head noun (since the head noun remains within the RC, in SpecDP within SpecCP). This leads to problems in three areas where constituency tests suggest that the RC does form a separate constituent. First, relative clauses can be coordinated:

(182) the picture [which Bill liked] and [which Mary hated]

Given the structure postulated in Kayne (1994), the only possibility seems to be full CP-coordination plus deletion of *picture* in the second conjunct:

(183) the [picture which Bill liked] and [~~picture~~ which Mary hated]

However, this deletion operation does not seem to be independently motivated. A second constituency problem concerns so-called relative clause deletion, see Collins (2015): He observes that relative clauses can be deleted under identity. Consider the following example:

(184) At the party, I saw three boys who I know and one girl.

On one interpretation, the sentence has a meaning corresponding to the following structure (PF-deletion is marked by strikethrough):

(185) At the party, I saw three boys who I know and one girl ~~who I know~~.

Since deletion normally targets maximal projections, deletion of the RC is unexpected given the structure in Kayne (1994) as this would correspond to deletion of *C'*. The third problem that arises is extraposition: Even if extraposition is reanalyzed as leftward movement followed by remnant movement, the correct result is difficult to obtain as long as the head noun remains within the relative CP and movement thus has to target *C'*.⁶⁸

As will be shown below, subsequent analyses mostly solve the constituency problem: In de Vries (2002), extraposition is given a very different analysis so that no constituency problem obtains (but coordination and RC-deletion remain problematic). In the other analyses the NP moves to a higher specifier (Bianchi 2000a, Bhatt 2002) or out of the relative CP (Henderson 2007, Donati & Cecchetto 2011)

⁶⁸ Admittedly, Kayne's (1994) stranding approach has the advantage that it accounts for the impossibility of moving the relative clause leftward, as discussed in 2.3.3.1 above. If the RC forms a constituent to the exclusion of the head noun, this restriction requires a different explanation. Since both CP-complements and -adjuncts can be fronted, it is, however, not immediately clear which factors should be at work.

so that the RC forms a constituent to the exclusion of the head noun and the facts discussed in this subsection can be handled.⁶⁹

2.3.3.2.5 Extraposition as stranding

The stranding analysis of extraposition proposed in Kayne (1994) is problematic for independent reasons, as pointed out in (Borsley 1997: 641): First, since the extraposed RC occurs at the end of the clause, everything that precedes the RC must have moved across it. This will lead to rather complex derivations as in (186):

(186) [I]₃ [saw]₂ [a man]₃ [on Monday]₄, [VP ___₁ ___₂ [RC ___₃ who looked like Chomsky] ___₄].

It is unclear (a) what motivates these movements and (b) which positions they would target (the verb cannot move to T because otherwise one would expect it to behave like auxiliaries etc.). The movements essentially take place to derive the correct linear order. In other words, this theory of extraposition requires a massive complication of the basic assumptions about English sentence structure.⁷⁰ Second, if extraposition involves stranding, one might expect stranding in intermediate position (as with floating quantifiers); however, this leads to ungrammaticality:⁷¹

(187) *[One man]₂ seemed [___₂ who knew the truth]₁ to be ___₁ late.

Third, a stranding derivation violates the constraint against improper movement:

(188) Something₁ just happened [___₁ that you should know about ___₁].

⁶⁹ Non-manual markings in sign languages also suggest that the RC forms a constituent to the exclusion of the head noun: Pfau & Steinbach (2005) show for German Sign Language that relative clauses are post-nominal, include a relative pronoun and a non-manual marker 'rel', which consists of brow raise and a slight body lean towards the location of the relative pronoun. Crucially, the non-manual marking either only accompanies the relative pronoun or spreads over the entire RC but, crucially, never over the head noun.

⁷⁰ Bianchi (2000b: 136) argues that the movement of constituents across the extraposed clause is prosodically-driven as in Zubizarreta (1998). However, the only evidence Bianchi provides is the fact that in Italian a heavy PP can apparently follow the relative clause. But for English and other languages no evidence is provided that the movements really are prosodically-driven.

⁷¹ Bianchi (2000a: 134) argues that this ban follows from the fact that the extraposed clause is headed by a silent D, which can only be licensed in its theta-position (like the silent head of [*e de livres*]).

(i) [A man]₁ came into the bar [DP e [CP ___₁ who we knew in school]].

Movement inside the RC is A'-movement (certainly under Kayne's analysis of *that*-relatives but arguably also under his analysis of *wh*-relatives). Movement from SpecCP to matrix SpecTP is A-movement. One would thus expect the derivation to be ungrammatical, contrary to fact.⁷² Fourth, as Bianchi (2000a: 136–137) points out herself, if there is RC-extrapolation from both the subject and the object, the resulting sentence displays a nested order: [SU – [Non-SU ... RC-Non-SU] – RC-SU], as in (189):

- (189) [A man]₁ entered [the room]₂ last night [__₂ that I had just finished painting] [__₁ who had blond hair].

Given the antisymmetry framework, the object-extrapolated relative must c-command the subject-extrapolated relative for this ordering to obtain. This implies that the RCs cannot simply be stranded in their base-position (otherwise, the subject RC should precede the object RC). Fifth, given this structure, objects are predicted to c-command into the stranded "extrapolated" subject RC, which they do not, see Büring & Hartmann (1997: 8–19):

- (190) a. *[A man]₁ entered into every room_i last night [__₁ who lived in it_i].
 b. Nobody₁ would ever call her_i before noon [__₁ who knows anything about Rosa_i's weird sleeping habits].

Finally, (subject) extrapolation is possible with definite articles in German:

- (191) Gestern stand wieder **der** Mann vor der Tür, [von dem yesterday stand.PST.3SG again the man in front the door of who ich dir erzählt habe].

I you tell.PTCP have.1SG

'Yesterday, the man I told you about was standing in front of the door.'

Standard German

Since D+NP do not form a constituent on the raising analysis, it is unclear how this can be derived – moving just NP (to a complement position of D) would violate cyclicity. Even worse are cases with extrapolation from PPs, which clearly show that P+D+NP form a constituent to the exclusion of the relative clause, cf. Zwart (2000: 372).

⁷² Bianchi (2000a: 136) argues that there is no improper movement because the extrapolated relative is headed by a silent D which enters a checking relationship with the NP head so that so that SpecCP counts as L-related, i.e., counts as an argument position.

As this section has shown, the stranding analysis of extraposition is confronted with so many problems that it is difficult to maintain it. In fact, it seems that it has largely been given up, even by proponents of antisymmetry. Alternative solutions have therefore been proposed, including remnant movement (fronting of the RC followed by remnant movement of everything else left behind), coordination and ellipsis, see de Vries (2002, 2011). I will come back to extraposition in the discussion of the proposal by Hulsey & Sauerland (2006) in section 2.4.1.3 below, who argue that the raising analysis and extraposition rule each other out and that extraposition requires the matching analysis.

2.3.3.2.6 The head noun is not part of the RC: clitic placement in Croatian

Clitics in Croatian (as in many other languages) are 2nd-position elements, i.e., they always follow the first element in a certain domain where the relevant domain is the minimal tensed CP in which the clitic is base-generated. In other words, clitics cannot move out of (finite) CPs. The position of clitics is thus a diagnostic for CP-boundaries. The clause-boundedness of clitic movement is illustrated in (192), see Gračanin-Yuksek (2008: 284):

- (192) a. Hana misli [_{CP} da **će ga** Dan udariti].
 Hana thinks that will him.ACC Dan hit
 ‘Hana thinks that Dan will hit him.’
- b. *Hana **će**₁ **ga**₂ misli [_{CP} da ___₁ ___₂ Dan udariti].
 Hana will him.ACC thinks that Dan hit
 ‘Hana thinks that Dan will hit him.’ *Croatian*

In embedded *wh*-questions, the clitics follow the *wh*-constituent (193-a) or the first prosodic word of the *wh*-XP (193-b). If the *wh*-XP is ignored in the calculation of 2nd position, the result is ungrammatical (193-c) (Gračanin-Yuksek 2008: 286–287):

- (193) a. Vid ne zna [_{CP} [_{WHXP} čiji sat] **mu je** Hana pokazala].
 Vid not knows whose watch him.DAT AUX Hana showed
 ‘Vid doesn’t know whose watch Hana showed to him.’
- b. Vid ne zna [_{CP} [_{WHXP} čiji **mu je** sat] Hana pokazala].
 Vid not knows whose him.DAT AUX watch Hana showed
- c. *Vid ne zna [_{CP} [_{WHXP} čiji sat] Hana **mu je** pokazala].
 Vid not knows whose watch Hana him.DAT AUX showed *Croatian*

Crucially, under Kayne’s version of head raising, the head NP is still part of the CP. Consequently, one would expect it to play a role for the calculation of second

position, i.e., one would expect it to be able to host clitics. However, this prediction is not borne out: The clitics can never follow the head noun; instead, they follow the relative pronoun. This very much suggests that the head noun is not part of the relative CP (Gračanin-Yuksek 2008: 286):⁷³

- (194) a. Vid kupuje [_{NP} Sonyjev sat [_{CP} koji **mu je** Dan
Vid buys Sony's watch which him.DAT AUX Dan
preporučio]].
recommended
'Vid buys the Sony watch that Dan recommended to him.'
- b. *Vid kupuje [_{NP} Sonyjev sat **mu je** [_{CP} koji Dan
Vid buys Sony's watch him.DAT AUX which Dan
preporučio]].
recommended

Croatian

If, however, the relative clause functions as the subject of the matrix clause, clitics originating in the matrix clause can occur between head noun and relative pronoun (but not after the relative pronoun). This clearly shows that the head NP is part of the matrix clause (Gračanin-Yuksek 2008: 289):

- (195) a. [_{NP} Čovjek **mu**₁ **je**₂ [_{CP} koji laže]] nanio ₁ ₂ uvredu.
man him.DAT AUX which lies brought offense
'A/The man who lies offended him.'
- b. [_{NP} Ovaj **mu**₁ **je**₂ čovjek [_{CP} koji laže]] nanio ₁ ₂
this him.DAT AUX man which lies brought
uvredu.
offense
'This man who lies offended him.'

Croatian

Surprisingly, these facts have not received much attention in the literature, although they have drastic implications: They constitute a serious problem for those versions of the raising analysis, where the head noun stays inside the relative CP (Kayne 1994, Bianchi 1999, de Vries 2002). They can be captured by those versions where the head noun ends up outside the RC (as in Bhatt 2002, Henderson 2007,

⁷³ As the author points out, the placement facts cannot be explained by assuming that (for whatever reason) the clitics have to follow the relative pronoun. In reduced/infinitival relatives, which do not have relative pronouns, the clitics can never follow the head noun but occur after the first element of the RC.

Donati & Cecchetto 2011). Of course, the clitic placement facts trivially follow under the matching and the head-external analysis.

2.3.3.2.7 Extraction asymmetry

Another fact strongly suggesting that the head noun is not part of the RC is discussed in Bianchi (1999: 54–61), who notes an interesting extraction asymmetry: While extraction from the head noun of the RC is unproblematic, extraction from inside the RC leads to ungrammaticality:

- (196) a. ?Questo è l'autore [di cui]₂ non conosco [DP i [CP [libri ___]₁
 this is the.author of who not know.1SG the books
 che hai comprato ___]₁].
 that have.2SG bought
 lit.: 'This is the author of whom I don't know the books you bought.'
- b. *[A quale ragazzo]₂ nonosci [DP i [CP [libri]₁ che ho
 to which boy not know.2SG the books that have.1SG
 consigliato ___₁ ___₂]]
 recommended
 lit.: 'To which boy don't you know the books that I recommended?'

Italian

This is unsurprising under the traditional constituency, where the head noun is base-generated in the matrix clause: Extraction then takes place from an object that is in-situ, accounting for (196-a), while (196-b) violates the Complex Noun Phrase Constraint. Given a raising analysis, however, this is no longer obvious since extraction in (196-a) also crosses a relative clause boundary. It is thus not clear why subextraction from a DP moved to SpecCP should be better than extraction across a DP moved to SpecCP. Bianchi derives the difference as follows: Assuming that movement to SpecCP voids the CP barrier, extraction in (196-a) does not violate any constraints. In (196-b), however, PP-extraction has to cross the CP barrier because SpecCP is already occupied. Her account thus mimics the traditional explanation of *wh*-islands. As she points out herself, these assumptions potentially make all islands permeable, which is unsatisfactory. Quite apart from that, the subextraction in (196-a) should lead to a freezing violation, i.e., the example should be as degraded as (197), but this is not the case (while the degree of unacceptability of this type of example is contested, see Müller 2010: 53–56, it is clear that it is far worse than (196-a) so that the contrast remains unaccounted for under Bianchi's assumptions):

- (197) ??Who₂ do you wonder [which picture of ___₂]₁ is ___₁ on sale?

I conclude thus that Bianchi's approach does not solve the problem. The issue largely remains unaddressed in the literature and continues to be a serious problem for many approaches, perhaps to the exclusion of Henderson (2007) and Donati & Cecchetto (2011). See the discussion in sections 2.3.7 and 2.3.8 below for details.

2.3.3.2.8 Locality

The lack of freezing effects when extracting from the head noun is part of a larger problem: As pointed out in Heck (2005), all raising analyses that involve additional movement of the head noun to a higher position (as is standard in most raising analyses of *wh*-relatives) are in conflict with the Condition on Extraction Domains (CED, Huang 1982) and the Freezing Principle (Wexler & Culicover 1980): Extraction takes place from a derived position so that one would expect freezing effects, contrary to fact. The problem becomes worse if the relative phrase is more complex, e.g., consists of a PP: In languages like German which disallow P-stranding and where PPs are islands quite generally, the following relative would be expected to be ungrammatical as the head noun extracts from PP; however, it is impeccable (for purposes of illustration, I assume that NP moves to SpecFocP, as proposed in Bianchi 2000a, cf. section 2.3.4 below; but the issue also arises in those approaches where the head moves out of the RC, cf. Bhatt 2002 and Cecchetto & Donati 2015.)

- (198) der [_{ForceP} [Mann]₁ [_{TopP} [PP mit [_{DP} dem __₁]] ich geredet habe]]
 the man with who I talk.PTCP have.1SG
 'the man with whom I spoke' *Standard German*

The same problem obtains with possessive relatives, where raising of the head implies a violation of the Left Branch Condition:

- (199) [_{DP} the [_{ForceP} boy₁ [_{TopP} [_{DP} [_{DP} who __₁]'s mother]₂ I saw __₂]]]

Another locality issue arises under extraposition from the head noun. As pointed out in Webelhuth et al. (to appear), complements of the head noun can be extraposed to the end of the matrix clause:

- (200) The police showed [_{CP} [_{DP} color pictures __₂]₁ that had been taken __₁]
 to every witness [_{PP} of everybody who had been at the crime scene]₂.

Under those versions of the raising analysis where the head noun remains inside the relative CP, extraposition as in (200) violates the Right Roof Constraint (as it

technically leaves the embedded clause and targets the right edge of the matrix clause).

Strikingly, the locality issue is hardly ever addressed (apart from the discussion of possessive relatives in Bhatt 2002, see section 2.3.6 below). Needless to say, no problems arise under the HEA and the matching analysis since the head noun is base-generated in the matrix clause.

2.3.3.2.9 Case marking and adjectival inflection

Perhaps the most obvious problem for the raising analysis concerns Case-marking on the head noun: The raised NP bears the Case assigned to the external DP. However, since it originates within the RC, one would expect it to bear the RC-internal Case. In the following example, the relative DP is assigned nominative inside the relative clause, but the head noun surfaces with genitive, the case assigned to the external D(P) (the nominative version of ‘man’ would be *Mann*):

- (201) Er gedachte des [CP [DP Mannes₁, der ___₁]
 He commemorate.PST.3SG the.GEN man.GEN who.NOM
 gestorben war].
 die.PTCP be.PST.3SG
 ‘He commemorated the man who had died.’ *Standard German*

Basically the same problem obtains with adjectival inflection in German, see Heck (2005): As a generalization, the (shape of the) D-element determines the inflection on the attributive adjective. Crucially, adjectives that modify the head noun are affected by the external determiner, not by the relative clause-internal one (= D_{rel}):⁷⁴

- (202) a. mit gut-em Wein, den sie gekauft hat (cf. *den
 with good-STR wine which she buy.PTCP have.3SG the
 gut-em)
 good-STR
 b. *mit gut-en Wein, den sie gekauft hat (cf. ✓den
 with good-WK wine which she buy.PTCP have.3SG the
 gut-en)
 good-WK
 ‘with good wine that she bought’ *Standard German*

Simplifying somewhat (cf. Gallmann 1998 for details), zero and uninflected determiners require the so-called ‘strong’ form of the adjective, while overt inflected

⁷⁴ For the same problem with adjectival inflection in Dutch, see Boef (2012b: 149).

whose minimal domain it is included). In other words, DP-internal concord is post-syntactic. Note that this type of concord has to be quite elaborate in that it has to affect all Case-bearing elements within DP (quantifiers, numerals, adjectives) and also has to be extended to the strong/weak inflection of the adjective as well. Unfortunately, the details of PF-concord have never been spelled-out. On a more general level, there also arise questions about the architecture of grammar: While nothing in principle argues against Case-assignment at PF and in some instances there may actually be good reasons for it (see, e.g., McFadden 2004), such a move would be easier to justify if DP-internal concord bore the typical signatures of PF-operations such as being sensitive to adjacency/linear order. However, this is crucially not the Case here. Bianchi explicitly refers to government, a syntactic notion involving c-command. It thus seems that a genuinely syntactic process is moved to the post-syntactic component to repair a problematic syntactic derivation.

Another possibility to solve the Case problem is to assume overwriting; i.e., the Case of the head noun is overwritten by whatever process is responsible for Case-concord. While not impossible, one would probably want to limit this possibility to those languages where there is independent evidence for (what looks like) overwriting, i.e., to languages that have Case attraction. I will come back to overwriting in section 2.3.7 and to Case attraction in section 5.4.2.3.

2.3.3.2.10 RelPs as determiners

Under the raising analysis, relative pronouns are reanalyzed as relative determiners. This seems unproblematic as long as cases such as *the book which* are considered where the relative determiner can be related to the *wh*-determiner. However, as pointed out in Aoun & Li (2003), there is no perfect parallelism: There are many instances where relative ‘pronouns’ take a complement under the raising analysis, while their *wh*-counterparts cannot:

- (204) a. the [boy₁ who ___₁] → [who boy]; but *Who boy was late?
 b. the [reason₁ why ___₁] → [why reason] but *Why reason did he leave?

Similar problems obtain in German, where on the surface the relative pronoun seems similar to the demonstrative determiner. However, the paradigms differ in the dative plural (RelP *denen* vs. Det *den*), the genitive plural (RelP *derer/deren* vs. Det *der*) as well as the genitive singular (RelP *dessen [m/n]/deren [f]* vs. Det *des [m/n]/der [f]*), see Heck (2005). So far one could argue that relative pronouns, now reanalyzed as determiners, are simply somewhat different from demonstrative determiners. Crucially, however, the relative pronoun is not just different from the demonstrative determiner; rather, it systematically patterns with the demon-

strative *pronoun*. The pattern/homophony makes sense if the two are (in some sense) the same element, viz., a D-pronoun with two functions (determination and relativization), but it would be unexpected if one of the two is a relative *determiner*, while the other is a demonstrative *pronoun*. I will illustrate the problem by means of the dative plural: The form used in relativization (205-a) cannot be used as a demonstrative determiner (205-b), but a different form is needed (205-c). Crucially, the relative form in (205-a) is formally identical to the demonstrative pronoun, see (205-d):

- (205) a. die Freunde, denen ich vertraue
 the friends who.PL.DAT I trust.1SG
 ‘the friends who I trust’
- b. *Ich habe denen Freunden vertraut.
 I have.1SG DEM.PL.DAT friends.PL.DAT trust.PTCP
 ‘I have trusted these friends.’
- c. Ich habe den Freunden vertraut.
 I have.1SG DEM.PL.DAT friends.PL.DAT trust.PTCP
 ‘I have trusted these friends.’
- d. Ich habe denen vertraut.
 I have.1SG DEM.PL.DAT trust.PTCP
 ‘I have trusted those.’
- Standard German*

A different argument is provided by doubling of the relative pronoun in Dutch, see Boef (2012a,b) as in (206):

- (206) Dat is de man **die** ik denk **die** ze geroepen hebben.
 that be.3SG the man who I think.1SG who they call.PTCP have.PL
 ‘That is the man who I think they called.’
- Colloquial Dutch*

Under the assumption that doubling is the result of the spell-out of multiple copies (e.g., as in Nunes 2004), one would expect the head noun to be spelled out multiply as well as it is part of the same DP. However, this is crucially not a possibility:

- (207) *de [_{CP} [_{DP} man₁ [_{D'} **die** ___₁]] ik denk [_{CP} [_{DP} **die** (man)] ze geroepen hebben]]

The facts follow directly from the head-external analysis but require a number of stipulations under the raising analysis (or the matching analysis, where deletion under identity would have to affect the entire chain).

Another argument of that type comes from the ordering of German adpositions like *mit*: Their position vis-a-vis their complement depends on the complexity of the complement (if it is inanimate): The adposition is *prepositional* if the

complement is phrasal but postpositional if the complement is pronominal, see Boef (2012a: 137) and Webelhuth et al. (to appear):⁷⁵

- (208) a. Wir hatten [PP <mit> dem Anruf <*mit>] gerechnet.
 we have.PST.1PL with the call with expect.PTCP
 ‘We had expected the phone call.’
 b. Wir hatten [PP <*mit> da <mit>] gerechnet.
 we have.PST.1PL with it with expect.PTCP
 ‘We had expected it.’ *Standard German*

Interrogatives respect this generalization, see (209-a), but relativization under the raising analysis does not, cf. (209-b), as the adposition combines with a phrasal complement at Merge, the head NP but surfaces as a postposition. Note that reanalyzing *wo* as a determiner raises the same problem as with *why* in English: Neither has a *wh*-determiner equivalent; furthermore, replacement with R-pronouns normally only applies to pronouns but not to determiners:

- (209) a. [PP <*mit> wo <mit>] hattet ihr nicht gerechnet?
 with what with have.PST.2PL you not expect.PTCP
 ‘What did you not expect?’
 b. etwas Schreckliches₁, [PP <*mit> [DP wo ___₁] <mit>] wir
 something terrible with what with we
 nicht gerechnet hatten
 not expect.PTCP have.PST.1PL
 ‘something terrible that we had not expected to happen’
Standard German

Under the raising analysis (as well as the matching analysis) one could argue that the linearization is sensitive to the PF-representation. This would derive the correct result since the complement of the adposition would no longer be complex in (209-b). Nevertheless, this assumption constitutes a complication that is not needed if the relative pronoun is analyzed as a pronoun.

RCs that are directly attached to a D-element provide a similar challenge:

- (210) Jeder/keiner, der mich kennt, hasst mich
 everyone/no.one who me know.3SG hate.3SG me
 ‘Everyone/no one who knows me hates me.’ *Standard German*

⁷⁵ Importantly, the adposition is only postpositional with so-called R-pronouns like *da* and *wo*, which replace the regular personal pronouns inside PPs if the pronoun is neuter and/or inanimate. With other pronouns *mit* is prepositional.

Under the raising analysis the relative pronoun takes an NP complement that undergoes further movement. This is not so obvious in examples like (210). However, if as discussed in section 2.2.2.2 above, the pronouns heading the relative clause are reanalyzed as determiners taking a silent NP-complement, they are unproblematic for the raising (and the matching) analysis. If there is no silent NP-head, such examples are only unproblematic under the head-external analysis (the RC must then be attached to D).

To summarize this subsection, the issues discussed here follow naturally under the head-external analysis but constitute complications for both the raising as well as the matching analysis. Interestingly, they are hardly ever addressed by proponents of the latter. The presupposition seems to be that relative pronouns are simply different so not that no parallelism is to be expected in the first place. The fact that relative pronouns pattern with demonstrative pronouns in German thus seems to remain completely accidental. The only work where the problems are acknowledged is Aoun & Li (2003). They argue that *wh*-relatives must be given a different derivation (one in terms of the head-external analysis). They also provide reconstruction evidence suggesting that there is indeed a fundamental difference, see 2.4.3 below. For further critical discussion, see also Webelhuth et al. (to appear). I will briefly come back to this issue in 2.5.4 below and show that at least the difference between relative pronouns and demonstrative determiners in German can be dealt with straightforwardly if the morphological difference is due to the licensing of the silent NP-complement.

2.3.4 Bianchi (1999, 2000)

Bianchi's implementation of the raising analysis is among the most influential works. She addresses some of the issues raised by Borsley (1997) and provides reasonable solutions in at least some areas. Much subsequent work adopts her revisions. I will first go through her proposal before discussing the remaining problems.

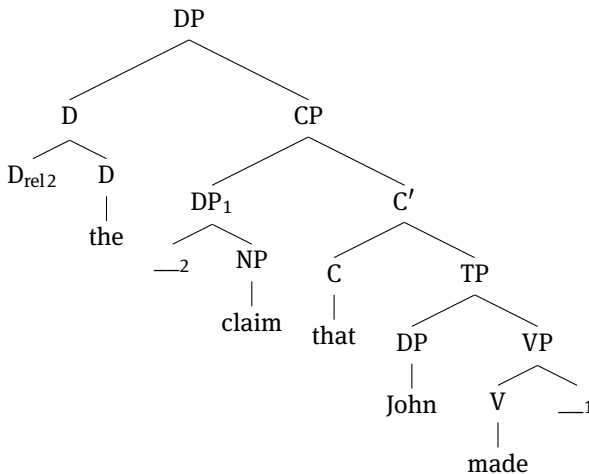
2.3.4.1 The proposal

Bianchi's modifications concern two main areas: She provides a new analysis of the silent D in *that*-relatives and proposes that *wh*-relatives involve a slightly more complex derivation with the head noun targeting a high position in the left periphery.

2.3.4.1.1 The empty head of *that*-relatives is a D_{rel}

Bianchi adopts the conclusion in Borsley (1997) that movement inside the RC must involve movement of a DP. She proposes that the silent D-element is a silent relative element. Since it is a relative determiner, one does not necessarily expect silent Ds in other areas of English grammar (such as the contexts suggested by Borsley). And the fact that it must be silent is simply a lexical fact. As for its licensing (a concern that seems to be characteristic of early minimalism that was still GB-inspired), Bianchi (1999: 169–175) proposes that the silent D is licensed by the external determiner via D-to-D-incorporation, followed by fusion at PF. She assumes that this requires consistency in feature values. As a consequence, (D_{rel} must be underspecified for definiteness so that it is compatible with both definite and indefinite external Ds. The consistency requirement explains why there is no incorporation into a governing verb as in example (179) above. Furthermore, to avoid a crash in case of Case-conflicts, Bianchi assumes that the Case that D_{rel} is assigned inside the relative clause can be erased before the external D is merged (Bianchi 1999: 309, fn. 24). Finally, it is assumed that incorporation is triggered by economy of representation. Note that since no NP-movement from SpecCP is involved, no cyclicity problem arises. The derivation thus looks as follows:

(211)

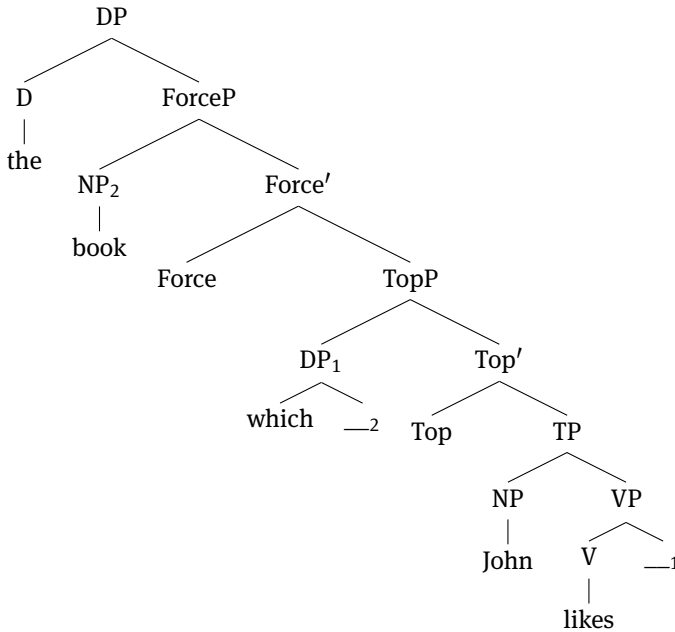


2.3.4.1.2 A new analysis of *wh*-relatives

Wh-relatives receive a completely different analysis, cf. Bianchi (1999: 190–191), Bianchi (2000a: 130): Assuming an articulate left-periphery, the relative DP first

moves to the spec of a topic projection, followed by subextraction of the head noun to SpecForceP:⁷⁶

(212)



Some motivation for adopting a complex left periphery in RCs with subextraction of the head noun comes from languages like Hungarian where a topic can separate the head noun from the relative pronoun (however, since antisymmetry rules out multiple specifiers/adjuncts, this requires another functional projection between the RelP and the head noun), see Bianchi (1999: 192):⁷⁷

- (213) a könyv, **Janos** amit említett
 the book John which mentioned
 ‘the book which Janos mentioned’

Hungarian

⁷⁶ Motivation for several head-positions can, e.g., be found in languages where several complementizers can co-occur, see (63) above.

⁷⁷ Similar examples can be found in Bulgarian, cf. Krapova (2010: 1256–1257), and Latin, see Bianchi (1999: 192; 315–316, fn. 64). Things are different in English or Italian, where the relative phrase precedes topics (in English it also precedes constituents undergoing negative preposing):

- (i) a. He’s a man to whom liberty we would never grant.
 b. John is the kind of person who under no circumstances would I be willing to talk to.

Similar evidence comes from Swahili relatives, where under the analysis in Zwart (2000: 372–376), the head noun is separated from the relative pronoun *cho* by the complementizer *amba*:

- (214) ki-tabu **amba** cho wa-li-ki-som-a
 7-book C 7.REL 2SM-PST-7OM-read-IND
 ‘the book they read’ *Swahili*

Subextraction of the head noun to a higher specifier (e.g., SpecForceP, while the relative pronoun stays in SpecTopP, as in (213)) derives the correct word order.

There are two further important advantages of Bianchi’s revised raising analysis: First, the cyclicity problem disappears; second, in *wh*-relatives, the relative clause forms a constituent to the exclusion of the head noun. This assumption proves helpful to account for prenominal relatives. This is particularly obvious in prenominal relatives from Ancient Greek and Latin that involve a relative pronoun and are located between D and the head noun (Bianchi 1999: 193, see also Pompei 2011: 493, ex. 98; 499, ex. 107; 501, ex. 109; 514, ex. 124); the word order follows if the RC corresponds to TopP (and therefore does not include the head noun, which has moved to SpecForceP) and moves to a specifier between Force and D:

- (215) odorare hanc [_{TopP} quam ___₁ ego habeo]₂ pallam₁ ___₂
 smell.IMP this.ACC which.ACC I have.1SG garment.ACC
 ‘Come and smell this garment which I am holding here.’ *Latin*

More evidence that head noun and RC can be separated comes from prenominal relative clauses in Chinese, where the particle *de* separates the two, see den Dikken (2006a: 240):

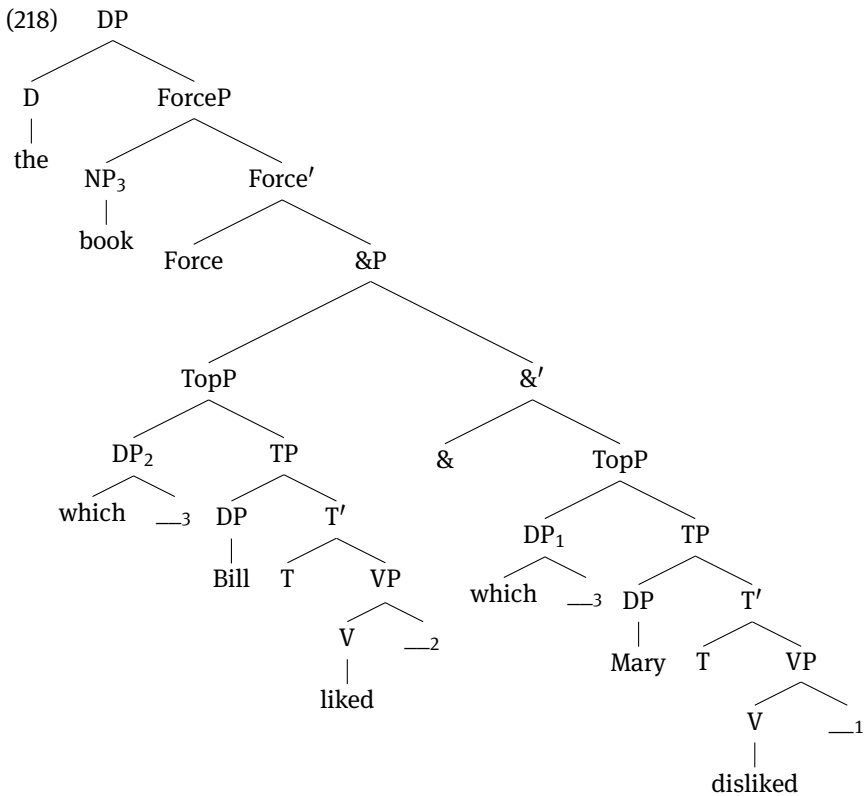
- (216) wo mai de shu
 I buy de book
 ‘the book that I bought’ *Chinese*

Den Dikken assumes that the head noun and the RC are generated in a small clause structure rendered as a relator phrase with the head noun as the subject and the RC as the predicate. Above the relator phrase is an FP whose head can be spelled out as a linker. The external D is above the FP, see (217-a). The surface order obtains by means of predicate inversion: The RC moves to SpecFP, and as a consequence, F is spelled out as the linker D:

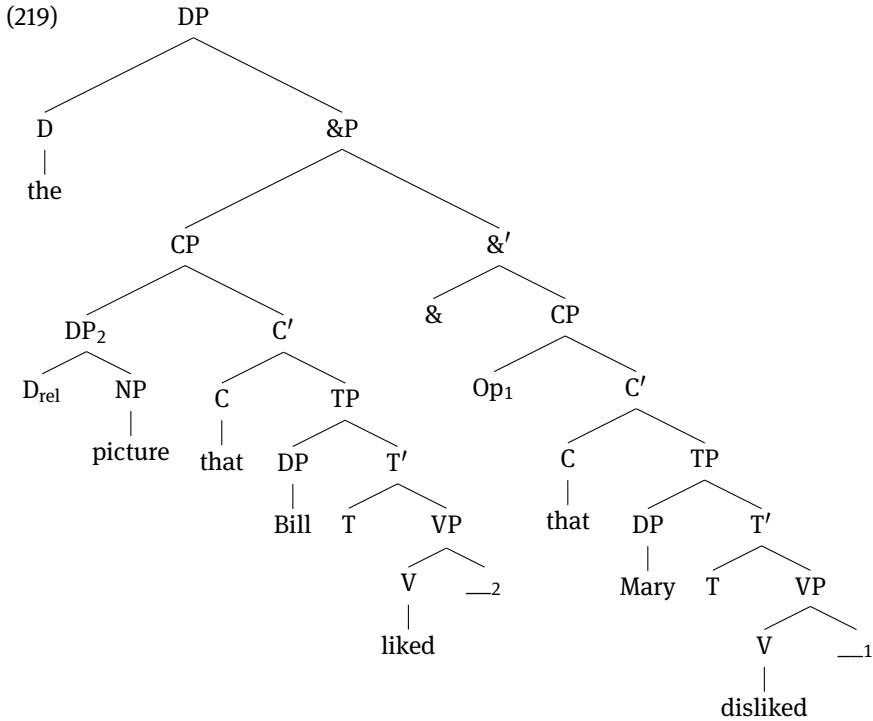
- (217) a. [_{DP} D [_{FP} [_{F'} F [_{RelP} HN [_{Rel'} Rel RC]]]]]
 b. [_{DP} D [_{FP} [RC wo mai]₁ [_{F'} F=de [_{RelP} [_{HN} shu] [_{Rel'} Rel ___₁]]]]]]

The approach can also be translated into Bianchi's system with *de* in Force and the RC in SpecForceP. To avoid pied-piping of the head noun by the RC, the head noun has to move to an intermediate position between TopP and ForceP so that it is unaffected by RC-fronting (or if the RC moves to a projection above ForceP, as in the derivation of the Latin example above). I will come back to the derivation of prenominal RCs in section 2.3.9 below.

Importantly, the revised constituency is also compatible with facts from extra-position (movement of TopP, see also Zwart 2000: 370–371), relative clause deletion, and coordination. Coordination of 2 *wh*-relatives can thus be analyzed as coordination of 2 TopPs with Across-the-Board (ATB)-extraction of the head-noun:



coordination of *that*-relatives, however, is treated differently: Bianchi proposes a parasitic gap-style analysis of ATB-movement as in Munn (1993) with an empty operator moving in the second conjunct:



2.3.4.2 The problems

While Bianchi provides reasonable solutions for the silent D in *that*-relatives, the cyclicity and the constituency problem, the following issues identified in 2.3.3.2 above remain unsolved:

- the late merger problem
- the two phenomena showing that the head noun is not part of the RC, viz., the clitic placement in Croatian (194) and the extraction asymmetry in (196)
- the locality problem (violations of the CED, the Freezing Principle, the ban on preposition stranding and the LBC)
- the Case marking problem.⁷⁸
- the cases where the RelP does not behave like a determiner

⁷⁸ The fact that Bianchi assumes that the Case of the relative D in *that*-relatives can be erased (cf. section 2.3.4.1.1 above) raises additional concerns as one might expect this option to be available more generally with the D-element then being realized by a default Case, see Borsley (2001).

Other issues are only partially solved: As for the trigger problem, selection still plays a crucial role in that the external D and the NP originating inside the RC must be connected (Bianchi 2000a: 127–128): In *wh*-relatives, raising of NP to a specifier below D helps check a selectional/subcategorization feature of the external D (N-feature). In *that*-relatives, incorporation of D_{rel} serves the same purpose by making government of the head NP possible. However, even if these movement operations are properly triggered, the raising analysis does imply that selection must be treated in a non-standard way: Normally, selectional features are checked under sisterhood (cf., e.g., Adger 2003). However, this is crucially not the case in the raising derivation. Rather, the NP-complement of the external D is located inside a specifier of a clausal complement. Some rather complicated definition of government is then needed to ensure checking of selectional features. This seems spurious from a Minimalist perspective. An alternative (for *wh*-relatives) is entertained in Bianchi (1999: 78–79, 198–201), where she posits an AgrD head above CP/ForceP (thus within the matrix clause), which attracts the head NP (see also Bhatt 2002 below):

(220) $[_{DP} D [_{AgrP} NP_1 Agr [_{CP} [_{DP} RelP _1] \dots]]]$

Quite apart from questions about the independent justification of such heads, many problems remain: While the modified version may seem closer to the standard approach to DP-internal checking, the structural relationship between the external D and its NP-complement is still not one involving complementation so that selection has to be handled in a non-canonical way under the raising analysis. Furthermore, it is not obvious that an Agr-head should be involved in selection. Normally, Agr-heads are involved in phi-feature checking, but since the NP has already been involved in phi-feature checking with the D_{rel} , it is not clear why AgrD should trigger raising of the NP. It is thus not clear that the trigger problem is completely solved, and this conclusion holds for most subsequent implementations of the raising analysis as well. An interesting alternative is proposed in Zwart (2000: 377–378): He argues that the head noun subextracts so that HN and RC are two independent constituents that can be combined by predicate modification, i.e., to derive the intersective interpretation. Still, even under this alternative, selection will be non-standard under the raising analysis.⁷⁹ Note finally that it is also not obvious that the head noun should move to SpecFocP (in the derivation of

⁷⁹ The selection problem is even more serious in Áfarli (1994), who assumes that RCs are TPs that are directly embedded without an external D. This implies that a verb selecting a DP actually takes a TP complement and its selectional requirements are satisfied by the DP in the specifier of the RC.

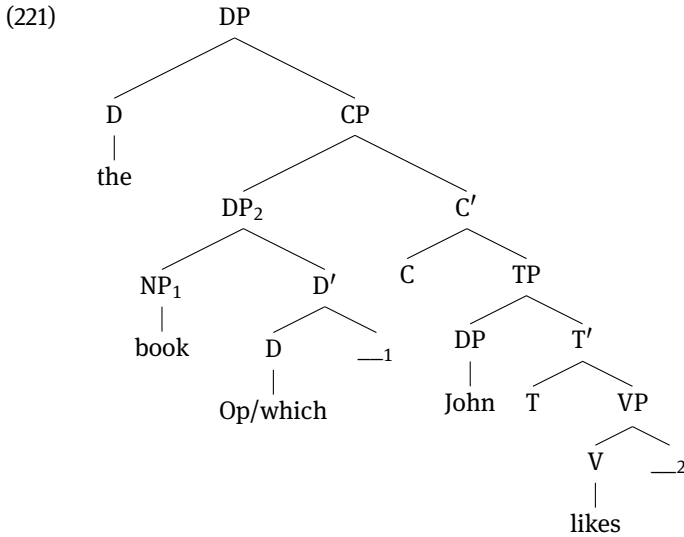
wh-relatives) given this is a discourse-related position normally occupied by DPs (the same question arises for the base-generation alternative in (107)).

The assumptions about coordination also remain somewhat unsatisfactory: First, it receives two different analysis, depending on the type of RC. Replacing the ATB-analysis for *wh*-relatives by means of the PG-analysis is not so simple. One would have to assume ForceP-coordination with an empty operator moving from the complement position of *which* in the second conjunct. However, since the extractee is not an operator in any obvious sense, this is spurious. Conversely, Bianchi's PG-derivation for *that*-relatives involves a violation of the Coordinate structure constraint because the silent D incorporates into the external D only from one conjunct. One way to rescue the derivation would be to assume C'-coordination with ATB-movement of the Relative DP to SpecCP. Consequently, there would be just one instance of the relative DP above coordination and one relative D that needs to be incorporated. In some of the subsequent implementations of the raising analysis (e.g., Bhatt 2002), *that*- and *wh*-relatives are completely assimilated so that these objections can be avoided. *that*-relatives are usually analyzed as relatives with a silent relative pronoun.

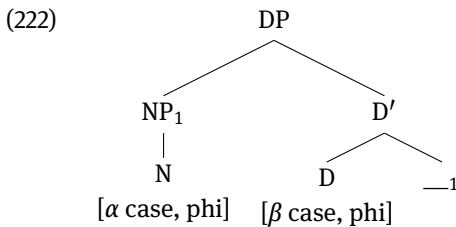
In conclusion then, while Bianchi's amendments definitely constitute an improvement over Kayne's original analysis, several fundamental problems remain. And as we will see, they persist in most subsequent versions of the raising analysis.

2.3.5 de Vries (2002)

On the surface, the structure proposed by de Vries (2002: 123–124) seems identical to the original proposal in Kayne (1994):



Crucially, however, de Vries' proposal involves different derivational steps that help solve some of the serious problems of previous implementations: First, he assumes that N(P) to SpecDP movement takes place cyclically, viz., at the beginning of the derivation to check phi-features between N and D. Normally, XP-movement is blocked by economy; instead, feature movement of N to D applies (= Agree in more current terms). It is assumed that NP-movement is possible when the relative pronoun and the NP do not agree in Case because by assumption head-movement/incorporation is incompatible with conflicting case features:



Since the Case of N has not been involved in Case checking, it is still active when targeted by the external D (the link is established by feature movement/covert movement as in Kayne 1994). De Vries thus elegantly solves the trigger and the cyclicity problem.

Some questions remain concerning the Case problem. While he can derive the systematic Case mismatch, this crucially requires a checking approach. Under an Agree/valuation approach to nominal concord, a Case mismatch could not obtain in the first place as D_{rel} would always match N's Case (via feature sharing

or feature valuation). Furthermore, if DP-internal Case-concord involves checking, D will normally have to check Case with N and DP-internal modifiers. But crucially, this must be prevented in the case of relatives since otherwise N would no longer be available for checking with the external D. As a consequence, there may thus remain an unchecked Case-feature on the relative D, and the derivation would thus be expected to crash, at least under an implementation as in Georgi & Salzmann (2011), where D has both a probe feature that must be discharged (via Agree with DP-internal constituents) and a Case-feature that requires a checker from outside (v, T, P). de Vries (2002: 122, fn. 16) assumes that D can enter multiple checking operations, viz., it can enter checking with DP-internal constituents as well as with the DP-external Case-Probe (v, T, P), but apparently it is sufficient if D enters just one checking operation in the case of relativization, viz., with the DP-external probe. This is an inconsistency that may be a cause for concern. More generally, checking under NP-to SpecDP movement does not seem to be necessary anywhere outside relativization (admittedly, it will normally crash since N's Case feature remains unchecked). Things will get even more complex once German adjectival inflection is taken into account: Here, NP-movement will also be necessary if there is a mismatch between D_{rel} and A. Finally, an interesting economy problem arises if the RC-internal Case is identical to the matrix Case (cf. de Vries 2002: 125): Case-checking between D_{rel} and N must be blocked because otherwise, N would no longer be visible for the external D. This seems difficult to prevent under current strictly derivational implementations of the Minimalist Program (Chomsky 2000 et seq.), where features are discharged in accordance with the Earliness Principle (Pesetsky 1989), which demands that features be discharged as quickly as possible.

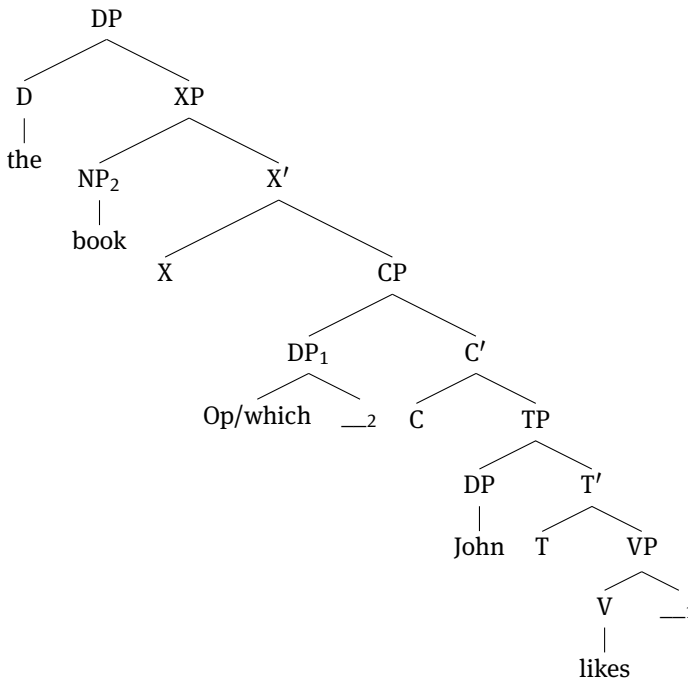
There remain a number of additional problems: First, as in all previous approaches, selection will be non-standard because the external D and the head noun are not in a sisterhood relationship. Second, the constituency in (221) is not compatible with the facts from coordination, extraposition and deletion which suggest that the RC forms a constituent to the exclusion of the head noun. To be fair, de Vries assumes a very different analysis of extraposition (some kind of coordination) so that the issue is at least partially solved. Third, late merger of RCs and the facts showing that the head noun is not part of the RC, viz., the extraction asymmetry in (196) and clitic placement in Croatian (194), remain unaccounted for as well. Fourth, the approach runs into problems in those cases where the relative pronoun does not behave like a determiner. Finally, since NP-movement takes place before movement of the RelP and does not leave RelP, some of the locality issues such as the CED/the Freezing Principle may not apply. However, the ban on P-stranding and the LBC may still be violated.

In conclusion, while de Vries' implementation clearly constitutes a step ahead and is arguably the only version of the raising analysis that addresses the Case problem in a satisfactory way, serious problems remain.

2.3.6 Bhatt (2002)

Bhatt (2002), like Bianchi (1999), assumes that after movement of the RelDP to the left periphery, the head noun subextracts and moves to a higher position. Importantly, in Bhatt's implementation, it targets a nominal head outside the RC. Bhatt assumes a uniform analysis for both *that*- and *wh*-relatives, which simplifies things considerably. The relative pronoun is simply taken to be silent in *that*-relatives:

(223)



There are three immediate advantages: The constituency problem with coordination, extraposition and RC-deletion is solved and the derivation also obeys cyclicity. Furthermore, the clitic placement facts from Croatian (194) follow as well since the head noun moves out of the relative CP and therefore does not count for second position effects within the RC.

Importantly, Bhatt also provides two new arguments in favor of the raising analysis. The first one concerns argument-adjunct asymmetries w.r.t. elements contained in the external head. Consider the following paradigm:

- (224) a. *[Pictures of anyone_i] [which he_i displays __ prominently] are likely to be attractive ones.
 b. [Pictures of anyone_i] [which __ put him_i in a good light] are likely to be attractive ones.
 c. [Pictures on anyone_i's shelf] [which he_i displays __ prominently] are likely to be attractive ones. Safir (1999: 611–612)

The contrast between (224-a) and (224-b) shows that the position of the trace matters. (224-a) is a case of secondary strong crossover (SSCO): If the head noun is reconstructed, the quantifier *anyone* will end up in the c-command domain of the coreferential pronoun *he* so that a Principle C violation obtains. No such violation obtains in (224-b) under reconstruction since the quantifier is not c-commanded by the pronoun. The contrast between (224-a) and (224-c) shows the familiar argument-adjunct asymmetry (i.e., the Freidin-Lebeaux-Generalization), recall section 2.2.2.2: It is assumed that unlike arguments as in (224-a), adjuncts as in (224-c) can be merged late, i.e., after the relative clause has been built. As a consequence, the adjunct *on anyone's shelf* (and thus the quantifier *anyone*) is not represented inside the relative clause, only *pictures* is. Consequently, no Principle C effect obtains. The facts follow straightforwardly under the raising analysis because the complement of *anyone* starts out relative clause-internally in (224-a) so that a Principle C effect is expected, while in (224-c) the adjunct *on anyone's shelf* is only merged after completion of the relative clause and thus does not interfere with the coreferential pronoun inside the RC.

The argument-adjunct asymmetry is difficult to account for under the head-external analysis. Even if there were a way to capture reconstruction, e.g., by some kind of feature transmission via the empty operator, the asymmetry between (224-a) and (224-c) would be unexpected since in both cases the operator would be co-indexed with an NP containing the quantifier. Of course, this depends on when co-indexing and the reconstruction mechanism take place; if co-indexing applies before the merger of the adjunct, the correct result could still be derived, but this requires an extra assumption.

The timing is also important in the matching analysis: If matching between the external NP and the relative clause-internal NP takes place before late merger of the adjunct, the asymmetry can be derived. If matching takes place thereafter, however, the two NPs would differ in drastic ways so that matching would fail and the derivation crashes. For the correct result to obtain, deletion/matching thus has

to apply early/cyclically. Note that this does not have to be stipulated. One can assume that the order between late merger and matching/deletion is in principle free, but there is only one order that leads to a convergent result, and this order also accounts for the asymmetry between (224-a) and (224-c).

Bhatt provides another argument in favor of head raising, the so-called low readings of superlative adjectives (and adjectives like *only*) as in (225):

(225) the **first** book that John said that Tolstoy had written

The sentence is ambiguous: *first* can refer to the first actual book that Tolstoy wrote, which is the so-called low reading, or it can refer to the first book about which John said that Tolstoy wrote it, the high reading. While the high reading does not require reconstruction, the low reading requires a representation of the adjective inside the RC. That the readings indeed result from successive-cyclic A'-movement is suggested by the following observations: First, if an additional clause is involved, one can get intermediate readings (Bhatt 2002: 61). Second, since negation and negative verbs like *doubt* or *deny* block reconstruction, the reconstruction behavior of superlative adjectives can be assimilated to that of *wh*-quantifiers like *how many* with non-referential/amount interpretations that are blocked in the same environment (the assimilation is, however, not without problems, cf. Bhatt 2002: 62, fn. 11).

While initially appealing, there are a number of problems with this argument. First, as shown in Bhatt (2002: 73, fn. 18) and Heycock (2005: 362), ambiguities can also arise with ordinary adjectives as in (226):

(226) the **wonderful** books that Siouxsie said that Lydia had written

Here, the evaluation can be attributed to the speaker or to Siouxsie. Similar ambiguities also arise without adjectives, see Bhatt (2002: 73, fn. 18) (Another case is discussed in Donati & Cecchetto 2011: 542–543):

(227) The **idiot** that John said broke the coffee pot was me.

In fact such ambiguities also arise without a relative clause being present (the reading where the evaluation is not the speaker's requires a scare quote intonation):

(228) Siouxsie was always going on about the books that Lydia had written.
But I've read those **wonderful** books and they're complete rubbish.

Additionally, even in the case of superlative adjectives, Bhatt's analysis has been questioned, see Heycock (2005) and Sharvit (2007). Bhatt & Sharvit (2005) and

Hulsey & Sauerland (2006), on the other hand, argue that the low readings do require reconstruction. I cannot enter this discussion here for reasons of space; at this point, it is sufficient to know that the implications of the low readings for the theory of relative clauses are controversial.

Quite apart from these issues and despite the advantages of Bhatt's proposal, there remain a number of – by now familiar – problems for his implementation: First, the problem concerning the Case of the head noun and the adjectival inflection remains unsolved (the issue is not addressed; apparently, it is assumed that Case only affects DPs; how concord works is left unspecified). Secondly, the locality problem (CED, PP-islands) also remains unsolved; however, one should add that Bhatt (2002: 82–83) assumes that the raising analysis is not available if complex pied-piping is involved by which he essentially means cases where extraction would have to take place either from the possessor of the RelDP (as in *the student whose brother Jonah likes*) or from some position buried further in the RelDP (as in *the first man a picture of whom John said that Mary liked*). According to Bhatt, the reconstructed readings of superlative adjectives are not available in these cases; he argues that the matching analysis has to be used instead in these contexts. While this avoids some of the problems, a CED violation would nevertheless be expected in the cases without complex pied-piping as in (223) above (he does not discuss pied-piping with prepositions). Furthermore, the empirical coverage of the raising analysis is diminished as a consequence of his assumptions. Third, the motivation for the movement step of the head NP out of the RC is somewhat unclear; arguably, selection is involved again, but since there is no sisterhood relationship between D and the head noun, selection may end up being non-standard. Furthermore, the nature of the agreement projection is not spelled out. Fourth, the cases where the relative pronoun does not behave like a determiner remain problematic or at least imply that any similarity between relative pronouns and demonstrative pronouns is accidental. Fifth, cases of late merger of the RC remain problematic if late merger is restricted to adjuncts. Finally, it is unclear what the predictions are for the extraction asymmetry in (196): Since extraction takes place from inside the noun phrase and thus from outside the RC, a violation of the CNPC might be avoided. At the same time, extraction takes place from a derived position so that a CED effect/a violation of the Freezing Principle would arguably be expected, contrary to fact. Note in this context that extraction from raising to object is ungrammatical, see Chomsky (1973: 249):

(229) *Who₁ do you believe a friend of __₁ to like Mary?

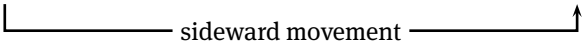
In sum, while Bhatt's implementation solves some of the problems besetting the raising analysis, there remain several serious unsolved issues.

The derivation of the paradoxical examples in (230) proceeds as follows:

1. A head raising relative is constructed, the RelDP moves to the left periphery:

(234) [CP headway₁ that John made headway₁]

2. Sideward movement of *headway* to an unconnected *wh*-determiner applies:

(235) [CP headway₁ that John make headway₁] what + headway₂

 A horizontal line with an upward-pointing arrow at its right end. The line starts under 'headway₁' in the first bracketed phrase and ends under 'what + headway₂'. The text 'sideward movement' is centered below the line.

3. *what headway* is merged as a complement of *regret*

(236) regret + [what headway₂]

4. The root clause is constructed including *wh*-movement of *what headway*

(237) [what headway₂]₃ did he_i later regret [what headway₂]₃

5. Then, the RC is late-merged, i.e., adjoined to the NP-restriction of the moved *wh*-phrase:

(238) [What [[headway]₂ [headway₁ that John_i made headway₁]]]₃ did he_i
 later regret [what headway₂]₃?

6. Chain formation and reduction has the following consequences: The *wh*-movement chain is regularly reduced, leading to PF-deletion of *what headway* in the theta-position. Within the head-noun, there is chain formation between the external head and the two copies of *headway* inside the RC, PF-deleting both RC-internal ones, deriving the correct surface output of (230).⁸⁰

80 A similar derivation of late merger under head raising is presented in Nunes (2001: 318). The derivation of *Which claim that John_i made was he_i willing to discuss?* proceeds as follows: He also assumes that first a raising relative is formed; the *wh*-phrase originates within the RC:

(i) [CP₂ [DP Which claim] that John made [DP which claim]]

When the matrix verb is merged, *which claim* undergoes sideward movement to satisfy the verb's internal theta-role:

(ii) discuss [DP which claim]

Then, the entire matrix clause is built up to C. Finally, the entire raising relative is merged into SpecCP:

(iii) [CP₁ [CP₂ [DP Which claim] that John made [DP which claim]] was he willing to discuss [DP which claim]]

Crucially, it is assumed that the *wh*-DP in the specifier of the relative CP can check the *wh*-feature of C₁ (being in the specifier of the specifier). Furthermore, since specifiers are assumed to be

Henderson's approach has certain advantages in addition to capturing the paradoxical reconstruction facts: First, selection can be treated in the standard way since the head noun is merged with the external D (and since selection is involved, there may thus also be a proper trigger for sideward movement). Second, since the RC is eventually adjoined to the head noun, the correct constituency is obtained for coordination, extraposition and RC-deletion. Third, it can perhaps explain the asymmetry in (196) above if extraction takes place from the RC-external copy, presupposing that sideward movement does not lead to freezing effects. Fourth, since the head NP is outside the RC, the clitic placement facts in (194) can be accounted for as well.

However, as with other versions of the raising analysis, there remain a number of problems: First, the problem with case and adjectival inflection remains unsolved under the standard assumption that case assignment takes place cyclically: The head NP can potentially receive a different Case RC-internally than the external DP. In that case, the head noun should not be able to undergo concord with the external D after sideward movement. Furthermore, there will be a problem with the Activity Condition if the NP has already been involved in concord RC-internally. As before, the only way out seems to be Bianchi's PF-approach to concord, recall section 2.3.3.2.9. Second, it remains unclear if the violation of fundamental locality constraints ((CED, PP-island, LBC) can be avoided once a *wh*-/PP-relative is involved: The resulting chain of the HN will contain a link in a possibly offending position. This conclusion can only be avoided if it can be shown that sideward movement is not subject to any of these locality constraints, which at this point is unclear. Finally, like most other versions to the raising analysis, it runs into difficulties in those cases where the relative pronoun does not behave like a determiner.

adjuncts, the *wh*-DP can actually *c*-command out of CP₂. This is crucial for the *wh*-phrase to take scope as well as to allow for chain reduction (it *c*-commands both lower instances of *which claim* so that at PF only the top copy survives).

Even if one accepts these special assumptions about specifiers, there remain serious problems for this approach: First, it is unclear how the relative CP can function as a *wh*-phrase, or, conversely, how a *wh*-element can undergo head raising inside the relative clause. In both cases, one may expect a feature clash. Second, there is a problem with the constituency: The *wh*-determiner cannot be the relative pronoun/determiner since the construction is possible with an overt relative pronoun as in (iv) (repeated from above):

- (iv) [Which pictures of each other_{*j*} which Jane_{*i*} showed the boys_{*j*}]₁ does she_{*i*} think you like —₁?

This strongly suggests that the *wh*-determiner is outside the RC (otherwise one would have to assume that the relative pronoun *which* takes a DP-complement including the *wh*-determiner). More problems of this approach will be discussed in section 2.5.3.6 below.

In addition to these general problems, there remain two more specific problems: First (as the author admits himself, cf. Henderson 2007: p. 212, fn. 16), since the head noun does not c-command into the adjoined relative clause on standard assumptions (rather, the reverse normally holds), it is unclear how chain reduction should be possible. Second, in the paradoxical examples there is a representation of *headway* and *picture of himself* in the bottom copy of the *wh*-phrase, i.e., as an argument of *regret*. However, they are not licensed there since there is no idiomatic verb/no antecedent for the anaphor. Henderson (2007: 216) assumes that reconstruction in *wh*-movement is optional and argues that only the higher copy of the *wh*-chain is interpreted in the problematic examples. He takes the upper copy to be licensed (even though there is no local binder/no idiomatic verb) because that copy is part of the head raising chain originating in the RC, where the NP is indeed licensed. Given the evidence that reconstruction in *wh*-movement is obligatory (recall the discussion about Principle C in section 2.3.1.4 above and Fox 1999), however, the account is not fully convincing.

Takahashi & Hulsey (2009: 408–410), who discuss Henderson's data in some detail, provide an alternative account based on late merger of complements, building on insights from Bhatt & Pancheva (2004). More precisely, they argue that restrictors of D-elements (operators/determiners) can be merged late, a type of late merger they dub wholesale late merger (WLM). Late merger is thus not driven by the argument/adjunct distinction but rather by interpretability at LF: Takahashi & Hulsey (2009: 395–404) show that the Trace Conversion mechanism by Fox (1999) provides interpretable LF-representations when restrictors of determiners/operators are merged late.

Without any further restrictions, wholesale late merger would systematically bleed reconstruction for Principle C, contrary to fact. The authors argue that WLM is constrained by the Case requirements of the restrictors: Being usually NPs, they require Case, which implies that they have to be introduced before the relevant Case-probe is merged. While allowing WLM in A-movement to some extent, this puts strong limits on WLM in *wh*-movement as the restrictor will have to be introduced before v/T probe. We thus obtain the A/A'-contrast in (239):

- (239) a. ??/*Which argument that John_i is a genius did he_i believe?
 b. Every argument that John_i is a genius seems to him_i to be flawless.

WLM is possible in (239-b) since the restrictor *argument that John is a genius* can be introduced between the matrix Case probe (on T) and the coreferential *him*. This is not possible in (239-a), though, because to receive Case, the restrictor must be introduced before the embedded v and thus before the coreferential *he*. Restricting WLM by Case thus makes the right cut. The major advantage of WLM in the current

context is that it provides a handle on the paradoxical examples in (230): Since the relative clause is a CP, it does not need Case and therefore can undergo WLM, i.e., can be introduced after the *wh*-determiner has reached its landing site. The example in (230-b), repeated in (240-a), thus receives the structure in (240-b), see Takahashi & Hulsey (2009: 410):⁸¹

- (240) a. [Which picture of himself_i that John_i gave to Mary_j] did she_j take home __?
 b. [CP [DP which [CP [DP picture of himself_i] that John_i gave [DP picture of himself_i] to Mary_j]] did [TP she_j take home [DP which]]]

This derivation not only reconciles raising relatives with late merger and thereby correctly accounts for the absence of a Condition C violation, it also avoids the drawbacks of the sideward movement approaches: No problems arise for chain reduction and since the restriction of the *wh*-determiner is not represented in the theta-position, there will be no unlicensed material like an idiom chunk or an unbound anaphor in the bottom-copy of the *wh*-phrase. Similarly, since the head of the relative is reconstructed into the theta-position inside the RC, there is also no unlicensed material in the complement position of the upper *wh*-determiner. The advantages of this approach also become visible in the following minimal pair (according to Takahashi & Hulsey 2009: 409, fn. 19, there is some variability in the judgments):

- (241) a. *[Which corner of John_i's room]₁ was he_i sitting in __₁?
 b. [Which corner of John_i's room [that Mary repainted]]₁ was he_i sitting in __₁?

The contrast in (241) is puzzling at first sight since the R-expression is contained inside a complement of N (*of John's room*) in both cases. Consequently, one would expect a Condition C violation in both examples; traditional late merger of the relative clause in (241-b) would be of no avail. Under the WLM approach, the contrast falls out straightforwardly: WLM is not a possibility in (241-a) since the NP-restriction of *which*, viz., *corner of John's room* requires Case and therefore has to be introduced before the coreferential pronoun *he* is merged. In (241-b), however, the complement of the *wh*-determiner is the entire relative CP, which does not need

⁸¹ Note that WLM of raising relatives is arguably only compatible with a subset of the available raising analyses, viz., those where the RC is a complement of the matrix determiner as in Kayne (1994), Bianchi (1999) and de Vries (2002); it is probably not compatible with the approaches by Bhatt (2002) and Cecchetto & Donati (2015) because in those the relative CP is the complement of a DP-internal constituent, viz., N or Agr.

Case and therefore can be merged after *wh*-movement. As a consequence, the head noun *corner of John's room* is only present in the upper copy of the *wh*-phrase:

- (242) a. [_{CP} He was sitting in [which]]
 b. [_{CP} [_{DP} which₂ [_{CP} [corner of John_i's room]₁ that Mary repainted __₁]] was [_{TP} he_i sitting in __₂]]
 c. [_{CP} [_{DP} which₂ [_{CP} [~~corner of John_i's room~~]₁ that Mary repainted [corner of John_i's room]₁]]] was [_{TP} he_i sitting in which₂]]

While the WLM analysis derives the contrast straightforwardly, the data in (241) are problematic for Henderson (2007) since he does not envisage merging just the *wh*-determiner in the argument position. Consequently, once the restriction *corner of John's room* is present in the theta-position, a Condition C effect will obtain; late merger of the RC does not help here.

There is, however, one aspect the authors seem to have overlooked: While the relative-CP does not need case, the head noun in SpecCP of the RC does. Since it agrees with the *wh*-determiner in Case (in a language with the morphological means to do so), it must have been assigned Case. Recall from section 2.3.3.2.9 above that under the raising analysis, special provisions must be made for the head noun to bear the matrix case (rather than the expected RC-internal Case given that the head noun originates RC-internally): Either it receives case at PF from D via some copying mechanism as proposed in Bianchi (2000b: 129–130), or it receives another Case during the derivation, i.e., its Case is overwritten. The first solution is incompatible with the authors' assumptions because DP-internal constituents could then be Case-licensed much later in the derivation; essentially, NP-restrictors could be merged with a D in its final landing site. This would predict that Principle C could be systematically bled in A'-movement as well, contrary to fact.⁸² Rather, NP-restrictors must be Case-licensed cyclically. Takahashi & Hulsey (2009: 401) are unfortunately not explicit about their assumptions about DP-internal concord, but the relevant passage can be interpreted such that it is the result of multiple Agree (see Hiraiwa 2000 for the original idea and Assmann et al. 2014 for an application to concord): All DP-internal constituents in need of Case simultaneously undergo Agree with the relevant Case-probe. This implementation of DP-internal concord puts more constraints on WLM than Bianchi's as it implies that the restrictor has to be merged before the determiner/operator enters Agree with the Case-probe and thus has the desired consequences for WLM. To account

⁸² The proposal in de Vries (2002) may fare better because concord between D and N is normally cyclic; only in relativization is it delayed and does N have its features checked by the external D.

for the fact that the head noun bears the matrix Case, we need to assume that the Case it was assigned RC-internally has been overwritten.

At first sight, this does not seem to change much. However, since we need to assume that raising relatives involve overwriting, we obtain a grammar that provides an additional mechanism to Case-license restrictors: WLM is expected to be possible after the D has first been involved in Case-Agree *if* D can enter another Case-Agree operation in the course of the derivation. This may not be fully obvious when considering English, but even within the grammar English there are data suggesting that the possibility of overwriting must be taken into account: The first involves Case-switch from nominative to accusative in long distance subject extraction. Subject pronouns can surface in the accusative if they pass through a phase edge right below a predicate assigning accusative Case (see, e.g., Jespersen 1949: Vol 3, 197–201, Kayne 1984: 4, Řezáč 2013 and Arnold Zwicky's *Language Log*):⁸³

(243) the man whom₁ I believe __₁ is intelligent

Since relative clauses generally do not show any Principle C effects (if the R-expression is part of the head noun, see, e.g., Munn 1994 and Sauerland 2003 and the discussion in 2.4.1.1 below), a more relevant point in case would be *wh*-movement as in (244) (where overwriting seems less frequent):

(244) Whom₁ do you believe __₁ is intelligent?

If the *wh*-phrase can indeed be Case-marked a second time in the intermediate SpecCP, we expect, given the logic of Takahashi & Hulseley (2009), that WLM of an NP-restrictor should be possible at this point. This predicts that Principle C effects should be bled in long A'-movement as in (245) (of course, Case overwriting is not visible here, but if we assume that Case-assignment into SpecCP is possible, perhaps optionally so, overwriting should be present here as well). As (245) shows, this prediction is not borne out, a full copy of the *wh*-phrase must be present in the argument position:⁸⁴

83 Of course, as convincingly demonstrated in Lasnik & Sobin (2000), not all instances of *whom* are indicative of accusative Case assignment so that the examples discussed in this section must be handled with care. Nevertheless, though frowned upon by prescriptive grammarians, the data have a long history going back to Shakespeare and can be made sense of under an overwriting perspective. See also the discussion on Arnold Zwicky's *Language Log*: <http://itre.cis.upenn.edu/~myl/language-log/archives/004084.html>.

84 Note that Principle C effects have been argued to be systematically bled if the *wh*-phrase takes wide-scope with respect to the matrix verb, cf. Heycock (1995). Crucially, what is at stake here is

(245) *Which investigation of Nixon_i do you believe that he_i resents ___?

There are two further contexts with additional Case-licensing potential that come to mind: First, free relative clauses often involve Case attraction as, e.g., in Modern Greek, cf. Spyropoulos (2011), but see also Jespersen (1949: Vol 3, 57) on *whomsoever* in older stages of English as well as cases of overwriting in contemporary English such as *It is a picture of voters venting their frustration on whomever happens to be in power*, cf. <http://itre.cis.upenn.edu/~myl/languageelog/archives/004084.html>. Such examples show that the *wh*-phrase is assigned Case by the matrix predicate. In such a configuration, late merger of the NP-restrictor should be possible as well, predicting the absence of Condition C effects. Unfortunately, the empirical facts are rather unclear. Citko (2002) reports the absence of Condition C effects in English free relatives; similarly, in Modern Greek free relatives, Condition C effects seem rather weak, cf. Daskalaki (2009: 73). On the other hand, Gračanin-Yuksek (2008) reports robust Condition C effects in Croatian free relatives and Takahashi & Hulsey (2009: 412, fn. 22) dispute Citko's judgments for English. Given the empirical uncertainties, I will have to leave this open here. Another configuration with potential overwriting is represented by embedded *wh*-questions selected by an accusative Case-assigning verb or preposition. Since the verb/preposition can in principle assign accusative Case, overwriting could affect the *wh*-phrase in SpecCP (cf. examples with overwriting in spoken English like *let me know whom will be attending in your spot*). Consequently, late merger of the NP-restrictor should be possible, predicting the bleeding of the Condition C effect. Again, this prediction is not borne out:

- (246) a. *I know which investigation of Nixon_i he_i resents ___.
 b. *I wonder about which investigation of Nixon_i he_i resents ___.

While overwriting is somewhat limited in English, instances where a DP is assigned more than one Case during the derivation are well-attested cross-linguistically, see, e.g., Case-switch in Hungarian (cf. den Dikken 2009), Case-matching in long subject extraction in Norwegian (cf. Taraldsen 1981), Case attraction in relative clauses (cf., e.g., Georgi & Salzmann 2017) and Case-stacking more generally in languages like Korean or Quechua (see Baker 2015: 281–283 for recent

the narrow scope reading, for which it is sufficient that the restriction of the *wh*-phrase originates below the matrix verb. This is the case under WLM, where the restriction would be introduced in the embedded SpecCP position. Nevertheless, Condition C effects are not bled.

While examples like (245) are sometimes judged better than Condition C violations in local *wh*-movement, the following example is fully ungrammatical for all speakers:

- (i) *Which picture of who_i do you believe he_j likes ___?

discussion). Consequently, given the possibility of overwriting, the applicability of WLM is much wider than originally envisaged by Takahashi & Hulseley (2009). As shown above, this overgenerates for English and it is likely that the same holds for languages where overwriting is more visible.

As a consequence, the applicability of WLM must be more constrained. In a very recent contribution Stanton (2016) has proposed that, while WLM is still constrained by the Case requirements of NP-restrictors, there are additional constraints applying to certain types of A'-movement that substantially restrict WLM. Stanton observes that certain prepositions are incompatible with bare pronouns and thus require a full NP complement. (247) illustrates this for temporal *in*:

(247) *I went swimming in December, and John went swimming in it, too.

Crucially, not all types of A'-movement are compatible with such antipronominal contexts (cf. also Postal 1998): While grammatical with *wh*-movement and restrictive and free relatives, topicalizing the complement of a pronoun-rejecting preposition leads to ungrammaticality:

- (248) a. [Which month]₁ did John go swimming in __₁?
 b. *December₁, John went swimming in __₁.

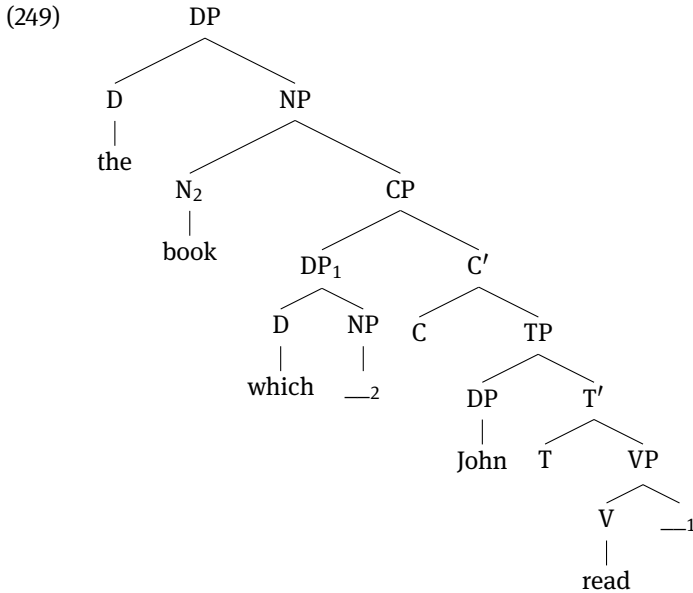
To account for the contrast, Stanton proposes that WLM is allowed in topicalization but strictly prohibited in *wh*-movement and in restrictive and free relatives. Thus, while *wh*-movement leaves behind a full copy and is thus compatible with antipronominal contexts, topicalization only leaves behind a D-element, i.e., it requires WLM (when the relevant D is located within a PP, WLM has to take place in SpecpP to ensure Case-licensing). Crucially, since *wh*-movement no longer allows for WLM, the ingenious account by Takahashi & Hulseley (2009) of the raising paradox in (230) is no longer available (assuming that Stanton's approach is otherwise on the right track).⁸⁵ Since the solutions by Nunes (2001) and Henderson (2007) were shown to be problematic as well, the prospects of reconciling late merger with raising relatives have become rather dim. In section 2.5.3.6 below I will therefore propose an alternative that is based on the matching analysis.⁸⁶

⁸⁵ Note that Stanton categorically rules out WLM for *wh*-movement by means of a constraint that prevents late merger that is too countercyclic. *Wh*-movement is different from topicalization in that the moving DP is embedded within a QP. By stipulation, WLM is restricted to apply to the daughter of the current root node. This blocks WLM of NP to the *wh*-D as it is not the daughter of the root node, see Stanton (2016: 112–117).

⁸⁶ Since the theory of Stanton (2016) allows WLM under topicalization, it still predicts bleeding of Condition C under overwriting. There is conflicting evidence in this respect. In regular DP-topicalization, Principle C effects do not seem to be bled:

2.3.8 Donati and Cecchetto (2011), Cecchetto and Donati (2015)

Donati & Cecchetto (2011) and Cecchetto & Donati (2015) revive Vergnaud's (1974) raising analysis that involves reprojection of the noun (see also Bhatt 2002 for such an analysis). The derivation of a *wh*-relative looks as follows:



The possibility of reprojection follows from the following algorithm:

(250) Probing algorithm

The label of a syntactic object $\{\alpha, \beta\}$ is the feature(s) that act(s) as a probe of the merging operation creating $\{\alpha, \beta\}$ (Cecchetto & Donati 2010: 245)

Importantly, the probing algorithm applies to both internal and External Merge. A crucial assumption is that every lexical item is endowed with a feature, the edge

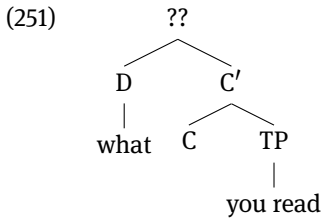
(i) *This investigation of Nixon_i, I believe he_i resents __.

This is unexpected if the restrictor is merged above *he* and Case-licensed by the matrix verb. However, in the following example from Takahashi & Hulseley (2009: 411) late merger under topicalization would derive the correct result:

(ii) [Whichever picture John_i likes], I want him_i to take home __.

The authors propose that the free relative is late merged with a (topicalized) silent D. Since no element inside the FR is in need of Case, it can be merged with D above the coreferential *him*. The contrast suggests that WLM after overwriting is simply not a possibility. Rather, it has to apply before the first instance of Case-Agree, for reasons still to be explored.

feature, that forces the lexical item to merge with other material. The authors identify the edge feature with the categorial feature. Any time a lexical item is merged, it qualifies as a probe by virtue of its edge feature. This activates the probing algorithm, and its categorial feature can provide the label. The system derives two empirical generalizations: First, it is usually the target of movement that projects. Second, a lexical item (a head) projects when it is merged with a complement XP. Interestingly, labeling conflicts arise when there is more than one probe involved in a merge operation as, e.g., in free relatives:



Both C and the relative pronoun can in principle provide the label: C has an EPP-feature and *what* has an edge-feature. This means that the structure can be labeled in two ways: As a CP, resulting in an indirect *wh*-CP or as a DP, which results in a free relative:

- (252) a. I read [_{DP} what you read].
 b. I wonder [_{CP} what you read].

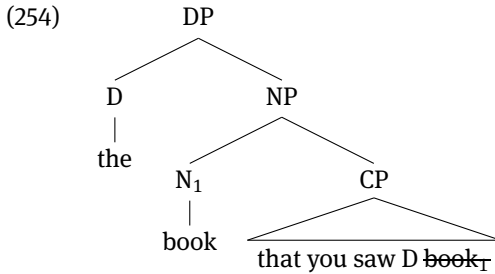
Importantly, no ambiguity arises when phrasal movement is involved: Phrases do not activate the probing algorithm (because they are not words) so that in such a case, the CP-label is the only possibility:

- (253) I wonder [_{CP} which book you read].

As for the trigger for N-raising (in both *that*- and *wh*-relatives): It is assumed that reprojection is triggered by the selectional features of D in the numeration. This is taken to be unproblematic since selection under External Merge also involves an element from the numeration and a syntactic object in the workspace (and thus no c-command relationship). Therefore, nothing should in principle rule out the same under Internal Merge.⁸⁷

⁸⁷ However, in the case the authors refer to, the selecting element is in the workspace, while the selected one is in the numeration. Under the reprojection derivation for relatives it is the other way around. In other implementations of reprojection, it is triggered by a requirement of the reprojecting element itself, see, e.g., Georgi & Müller (2010).

The analysis of *that*-relatives is somewhat different: It involves stranding of a D-element, which in some languages is realized as a resumptive pronoun:⁸⁸



The reprojection approach has a number of interesting advantages: First, the derivation obeys cyclicity since N moves before the external D is introduced. Second, C-selection can be handled in the canonical way: D takes the NP as its complement. Third, no constituency problem arises for extraposition, coordination and RC-deletion. Fourth, NP and CP are two independent constituents so that one can apply predicate modification to get the intersective interpretation. Fifth, since the head NP ends up outside the RC, the clitic placement facts in (194) can be captured straightforwardly.

There is one obvious issue that arises: What if the head noun of the relative is not just a bare head but contains a complement as in (255)?

(255) the [book about Obama] [which you bought]

Given the probing algorithm, the complex NP cannot relabel the structure (recall that this is restricted to heads) so that reprojection should not be possible. The radical consequence proposed by the authors is that all dependents of the head noun,

Note that in Cecchetto & Donati (2015: 59, 152–154), it is assumed instead that movement of N is “unprobed”.

88 This derivation raises a number of issues: First, a movement analysis of resumption is unlikely for languages where resumption is island-insensitive, see section 3.1.3 below. Second, the analysis (even in abstract form) is implausible for languages without resumptives because resumptive relatives usually impose interpretive restrictions on the head noun which non-resumptive relatives do not, see section 3.1.2.5 below. Furthermore, given the observations in Borsley (1997) discussed in 2.3.3.2.1 above that what moves in *that*-relatives is a DP rather than an NP, raising just N seems unattractive. Related to this fact is that it is unclear whether the N moves and reprojects in one step or whether there is a stopover in the left-periphery. Given that there is no operator feature on N, a direct movement step seems more likely, but then it becomes unclear why movement of N should constitute an island. In Cecchetto & Donati (2015: 60–62) an alternative is discussed where *that* is reanalyzed as a relative determiner so that what moves to the left periphery is actually a full DP. This avoids most of the complications of the derivation in (254).

including apparent complements, must be late merged. They provide a number of interesting arguments in favor of their assumption apart from the well-known observation that “arguments” of nouns are always optional (unlike arguments of verbs): First, there are proforms which can replace determiner+noun without replacing an alleged complement of the noun:

- (256) a. Ho visto [il padre di Gianni].
 have.1SG seen the father of John
 ‘I saw the father of John.’
 b. Ho visto **quello** di Gianni.
 have.1SG seen the.one of John
 ‘I saw John’s.’

Italian

Quello replaces *il padre*. The authors argue that a PP-extrapolation analysis is unlikely, at least for Italian, because the PP does not have the contour of right-dislocation. Note, however, that this implies that in these examples, the PP is adjoined to DP rather than to NP. This raises at least three questions: First, the modifiers in the examples seen so far are all clearly restrictive; adjoining them to DP seems to imply that they are appositive, which clashes with their interpretation. Secondly, *quello* like its German equivalents *derjenige* ‘the one’ or *dieser/jener* ‘this/that’ in German can occur with a restrictive relative clause:

- (257) a. ... und jenes, das ich am liebsten mag
 and that.N which I the most like.1SG
 ‘and that one I like most’
 b. .. è quello che mi piace il più
 be.3SG the.one C me please.3SG most
 ‘... is the one that I like best’

Standard German

Italian

Since the relative clause is restrictive, it should be DP-internal, but if *quello* is a proform that replaces the entire DP, it would have to be adjoined to DP like appositive RCs, again leading to a paradox (there is no indication that the RC is extraposed). If instead the RC is attached to N(P), the use of *quello* in (256-b) no longer implies that the PP is attached to DP. This is corroborated by the fact that both the PP and the RC can co-occur with *quello* without there being any indication of extraposition:

- (258) ... è quello di Gianni che mi piace il più
 be.3SG the.one by John C me please.3SG most
 ‘... is the one of John that I like best’

Italian

The data with *quello* are thus better accounted for if we assume that it is a D-element that takes a silent N(P) to which both the PP and the RC are attached. This is independently necessary given that the normal order within the noun Phrase in English (and German) is D – head noun – complements of N – RC:

(259) the book about John that I like best.

If the PP-modifier were adjoined to DP, however, it should follow the restrictive RC, contrary to fact. Because of this last fact the authors (Donati & Cecchetto 2011: 536) in fact assume that next to adjunction to DP as in (256-b), PP-“complements” can also be adjoined to N. Crucially, late Merge thus has to target a [+minimal –maximal] projection – if it were to target the NP resulting from the combination of the head and the RC, the modifier would have to follow the RC, contrary to fact (although the authors note that this is marginally possible in Italian). How adjunction to N (and not to NP) should be possible, however, is not fully clear to me. According to Carlo Cecchetto (p.c.), no problems should arise under Bare Phrase Structure; all that is necessary is that whichever operation introduces adjuncts creates an asymmetric structure. However, since the operation involves adjunction inside of complementation, I am not sure how innocuous this is.

Abstracting away from this technical issue, the behavior of PP-modifiers under NP-ellipsis with *quello* (and their counterparts in other languages) does seem to support the assumption that PP-modifiers are structural adjuncts. Like RCs in (258), they need not be affected by NP-ellipsis (but they can). They thus behave like VP-adjuncts under VP-ellipsis. However, the fact that PP-modifiers behave like relative clauses suggests that RCs cannot be complements of N since they should then obligatorily be affected by NP-ellipsis, contrary to fact. Therefore, given the parallel behavior under NP-ellipsis and Cecchetto & Donati’s (2015) reasoning, it does not seem to be possible to treat PP-modifiers differently than RCs; rather, a consistent account of the facts above seems to require NP-adjunction in both cases.⁸⁹

Setting aside the questions about the exact attachment site of DP-internal PPs, late merger of PPs perhaps provides a handle on the extraction asymmetry in (196): Since the PP extracted from the head noun is merged after the construction of the

⁸⁹ However, things are somewhat more complex. It has been noted before that ‘complements’ of N can survive NP-ellipsis. One alternative possibility to accommodate this fact is to assume that the PP-complements (and perhaps also an RC that is merged as a complement) move out of the ellipsis site prior to ellipsis, basically as in pseudo-gapping. Under such an analysis, the distinction between arguments and adjuncts is blurred as well so that NP-ellipsis with determiners like *quello* does not tell us anything about the merge position of PP-modifiers and relative clauses. See Saab (to appear) for relevant discussion and references.

RC, it is not extracted from the RC so that no violation of the Complex Noun Phrase Constraint is involved.⁹⁰

The assumption that all modifiers of N must be merged late has drastic consequences for reconstruction: The approach cannot capture reconstruction effects where the crucial element is a subconstituent of the head noun such as an anaphor contained in *pictures of himself* or a superlative adjective. As a side-effect, the asymmetry in (224) no longer follows, there should never be any Principle C effects, contrary to fact. The authors argue that this is in fact a welcome result because according to them many of the reconstruction facts are inconclusive, a fact that was discussed in detail in 2.3.1.4 above. What the approach can capture are cases where only the position of the entire head noun is relevant, as in examples involving strong crossover (SCO) effects and idiom reconstruction:

- (260) a. *the [professor_i] [that he_i always praises ___] SCO
 b. the [headway] [we made ___] was fantastic

90 A lot depends on when exactly late merger takes place. Donati & Cecchetto (2011: 538, fn. 8) seem to assume that late merger takes place after the entire structure has been completed. This assumption seems to be necessary to account for the ungrammaticality of (i):

- (i) *[Which landmark]₁ did you like [two photos of ___₁] [that you made ___]?

The ungrammaticality in (i) follows of course, if late-merged constituents cannot be moved at all, but this clashes with Bianchi's data in (196) as well as the following example from German, which is unmarked:

- (ii) [Über welchen Politiker]₁ hast du schon mal ein [Buch ___₁] gelesen, [das
 about which politician have.2SG you once a book read.PTCP which
 dir gefallen hat]?
 you.DAT please.PTCP have.3SG

'Which politician have you ever read a book about which you liked? *Standard German*

While paradoxical at first sight, a consistent description is possible if late merger instead applies as soon as an adjunction site becomes available (which is arguably what is assumed in Cecchetto & Donati 2015: 68–69): In (i), there is subextraction from the PP, while in (ii) and in Bianchi's data, the entire PP is moved. If the PP is an adjunct, subextraction is independently expected to be impossible (given the CED), which thus accounts for the ungrammaticality of (i). Moving the entire adjunct, however, as in Bianchi's data and in (ii), is unproblematic.

However, I am skeptical that subextraction from the head noun is ungrammatical. The following examples provided by Andrew Murphy seem impeccable (they are constructed in such a way that the RC indeed modifies the intended head noun rather than the PP-modifier, a confound that may contribute to the degradedness of (i)):

- (iii) a. [Which politician]₁ have you read several [books about ___₁] [which you then recommended ___ to others]?
 b. [What kind of topics]₁ did you take [courses on ___₁] [that were later ___ canceled]?

If correct, this would cast serious doubts on the assumption that PP-modifiers are late-merged adjuncts.

The authors argue that this is an advantage of their proposal because according to them these are the only robust reconstruction effects in relatives. However, even if this should turn out to be correct, it can be shown quite easily that their approach still crucially undergenerates w.r.t. reconstruction: As shown in Pankau (2016), there are cases of idiom reconstruction that crucially involve a complex NP, viz., a noun plus an adjective where both lexical items are fixed. Since reprojection is only possible with bare Ns, the approach has no means to accommodate such examples:

- (261) a. Die [schönen Augen], [die er ihr __ machte],
 the beautiful eyes which he her make.PST.3SG
 wurden ihm zum Verhängnis.
 become.PST.3SG he.DAT to.the fate
 ‘The eyes he made at her were fatal for him.’
- b. denn das [grüne Licht], [das er __ gibt], ist oft
 because the green light which he give.3SG be.3SG often
 ausschlaggebend ...
 crucial
 ‘because the go-ahead which he gives is often crucial’⁹¹ *Std. German*

Donati and Cecchetto’s approach is surely innovative and provides an interesting perspective on relative clauses. Still, like other implementations, it is confronted with the by now familiar problems. First, the Case problem remains unsolved. The authors seem to assume (Cecchetto & Donati 2015: 62) that the postulation of 2DPs is sufficient, but if concord is handled syntactically, the raised head may bear a Case different from the external D so that a clash should obtain.⁹² Second, locality constraints (such as the CED, the LBC and the islandhood of PPs) are violated when the head noun subextracts from the left-periphery in *wh*-relatives. Third, the approach can handle only a small subset of the reconstruction effects that are

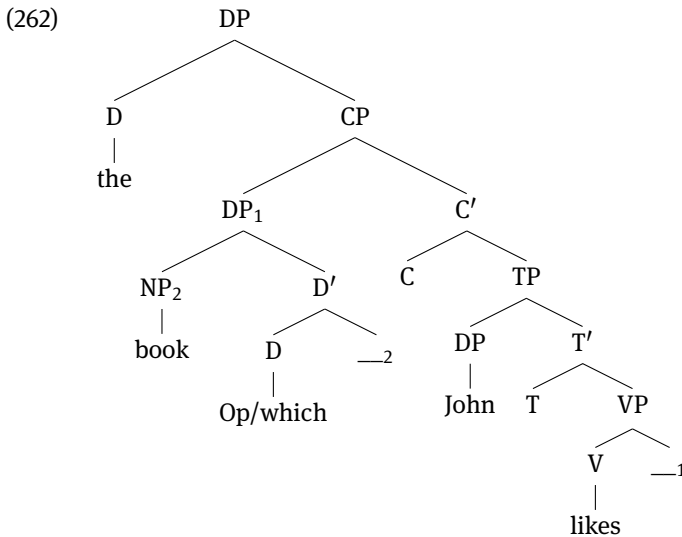
⁹¹ www.bayerische-staatszeitung.de/staatszeitung/leben-in-bayern/detailansicht-leben-in-bayern/artikel/der-mann-mit-den-schluesseln.html, accessed February 7, 2017

⁹² Problems with adjectival inflection can largely be avoided because by assumption modifiers of N are merged late, after construction of the relative NP. The adjective will thus only be affected by the external D so that no conflict arises. However, for those nouns that inflect like adjectives, recall ex. (203), this assumption is not sufficient. For those, there will be a conflict between the requirements of the RC-internal D and the external N and some mechanism is thus needed to ensure that the adjectival noun bears the inflection selected by the external D.

usually considered relevant. Finally, all those cases remain problematic where the pronoun does not behave like a determiner.⁹³

2.3.9 Raising and uniform derivations

A potential argument for the raising analysis comes from the fact that superficially very different RCs can be derived from the same base. Concretely, it has been argued that at least embedded RCs, viz., pre- and postnominal as well as circumnominal RCs, are all derivationally related. Furthermore, it has additionally been claimed that the raising analysis not only captures the different word order patterns but also some of the special properties of these RC-types. I will begin with postnominal RCs. The D–N–RC order as in English is derived in the familiar way (for convenience sake I am using the derivation by Kayne/de Vries):



⁹³ Cecchetto & Donati (2015: 106–107) briefly discuss the late merger problem. They argue that both RCs and noun complement clauses exhibit a mild Principle C effect and that the stronger degradation observed with complement clauses of nouns is due to a parsing overload, i.e., it involves a garden path effect on top of Condition C. This explanation is rather puzzling because according to their assumptions, nouns never take arguments so that the complement could be merged late. The RC, however, has to be introduced cyclically since it is a complement of D. Given this, one would expect the judgments to be reversed. At the very least, the grammaticality pattern cannot have anything to do with Condition C under their analysis.

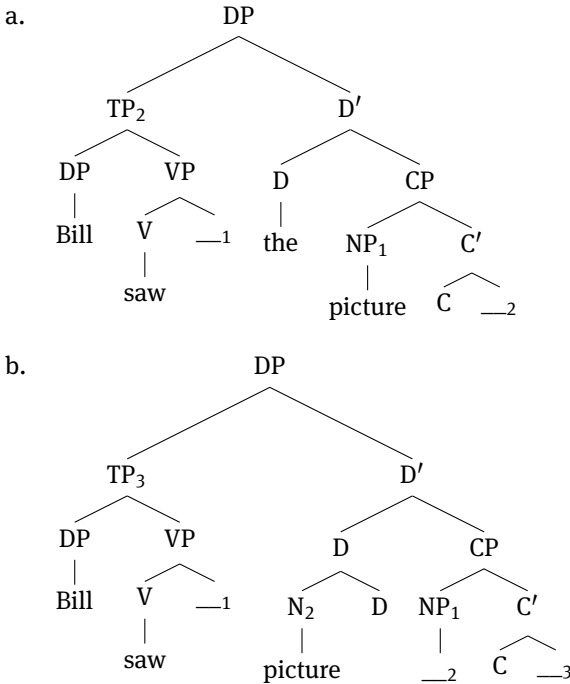
Postnominal RCs with N–D–RC-order (as, e.g., in Romanian) additionally involve N-to-D-movement (Kayne 1994: 88):

(263) $[_{DP} N_2 + D [_{CP} [_{DP} _2 [_{D'} Op/which _2]]]_1 [_{TP} \dots _1]]]$

Crucially, Kayne (1994) proposes that prenominal and circumnominal RCs are based on the derivation for postnominal RCs: Both involve movement of TP to SpecDP.

Starting with prenominal RCs with the order RC – D – N, the derivation proceeds as in English, but in addition, there is an extra movement step of the RC-internal TP to the specifier of the external determiner, see (264-a). Languages with RC – N – D order involve additional raising/adjunction of N to D (cf. Kayne 1994: 158, note 27), see (264-b):

(264) Prenominal RCs

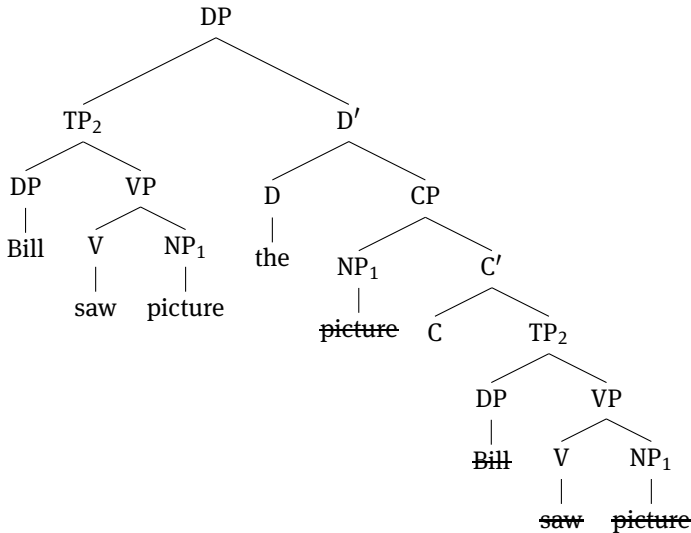


Since the prenominal RC is just a TP, the analysis captures the following generalizations (see Wu 2011 and the discussion in 2.1.2.1.1): First, prenominal relatives have neither relative pronouns (but recall example (215) above) nor a (relative) complementizer that is identical to the normal complementizer of sentential com-

plementation (like, e.g., English *that*). Second, prenominal RCs are often not fully finite.

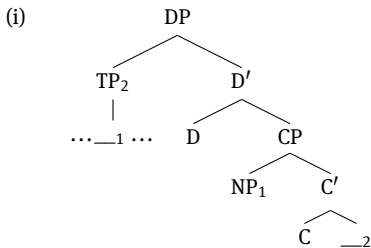
The analysis of head-internal RCs is based on that of prenominal RCs, the only difference being that the copy of the head noun in the fronted TP is realized and not the one in SpecCP:

(265) Head-internal RCs



Kayne argues that this correctly derives the generalization that internally headed RCs only occur in head-final languages. However, as mentioned in 2.1.2.1.1 above, while certainly a tendency, this is not generally correct, see de Vries (2002: 36, 408).⁹⁴

⁹⁴ Kayne (1994) extends the TP-movement analysis to appositive RCs: They differ from non-restrictives in that TP moves to SpecDP at LF:



It is assumed that TP-movement is triggered by some syntactic feature which, if present at PF, leads to an intonational break. Since movement is covert in English, the feature survives until

de Vries (2002) adopts Kayne's analysis in spirit but proposes a somewhat different implementation for prenominal and circumnominal RCs: He argues against (remnant) TP-movement because the trigger is unclear: There does not seem to be a checking relationship between the external D and TP or a constituent contained in it (additionally there are more specific problems with prenominal RCs, see de Vries 2002: 133). Instead, he argues in favor of CP-movement to SpecDP: Apart from the fact that crosslinguistically, CPs are much more mobile than TPs, there is a more plausible trigger: The phi-/Case-features of the external D must be checked with those of the head noun. Under the assumption that the features of the head noun percolate up to the complementizer of the RC, CP-movement is essentially pied-piping to establish checking between D and the head noun. For circumnominal RCs, the (simplified) derivation thus looks as follows (the head noun is in its base-position), cf. de Vries (2002: 139, ex. 53a):

(266) [DP [CP [TP ... [DP Op NP]]]1 [D' D ___1]]

An immediate advantage of the CP-movement analysis is that the PF-realization is simpler than in Kayne's approach: Here, the relative CP (and, as a consequence, the head noun) is simply pronounced in its landing site in SpecDP (while in Kayne's approach one has to make sure that the copy in SpecCP is unpronounced). Another advantage of CP-movement is that it can be extended to postnominal RCs with N-RC-D order, which remains unaccounted for under Kayne's TP-movement analysis. The only difference w.r.t. (266) is that there is overt movement of RelP inside the RC (de Vries 2002: 128, ex. 34c):

(267) [DP [CP [DP N [D' Op ___2]]]1 [TP ... ___1]3 [D' D ___3]]

Prenominal RCs also involve movement of the relative CP to SpecDP. The most straightforward case are languages with RC-N-D order: N adjoins to the external D, followed by remnant CP-movement to SpecDP (de Vries 2002: 133, ex. 43c'):

(268) [DP [CP [DP ___2 [D' Op ___2]]]1 [TP ... ___1]3 [D' N2+D ___3]]

PF, which accounts for the break in appositives. In languages with prenominal appositives (e.g., Japanese, Basque), the feature is deleted in overt syntax so that it is no longer present at PF and cannot trigger an intonational break.

Movement out of the c-command domain of the external D is supposed to explain the scopal properties of appositive RCs. However, given that they receive the same derivation as restrictive prenominal RCs, it is not clear how the interpretive differences are obtained. Apparently, the TP in prenominal RCs is obligatorily reconstructed/interpreted in its base-position. In my view, this rather constitutes an argument *against* assigning appositives and prenominal RCs the same derivation.

Prenominal RCs with RC–D–N order are more difficult if CP-movement is involved (there is no problem under Kayne’s TP-movement approach). de Vries (2002: 134, ex. 44) proposes that in this case, N right-adjoins to D (in violation of antisymmetry):

(269) $[_{DP} [_{CP} [_{DP} _2 [_{D'} Op _2]]_1 [_{TP} \dots _1]]_3 [_{D'} D+N_2 _3]]$

RCs with D–RC–N order remain problematic for both Kayne and de Vries. CP-movement is not a possibility because the head noun is not moved along. Consequently, the only option is (remnant) TP-movement. It must target a position between the landing site of RelP-movement and the external D. This is essentially what Bianchi proposes for certain prenominal RCs in Latin (although I omit parts of the complex left periphery in (270)), recall example (215):

(270) $[_{DP} D [_{XP} [_{TP} \dots _1]]_3 X [_{CP} [_{DP} N_2 [_{D'} Op _2]]_1 _3]]]$

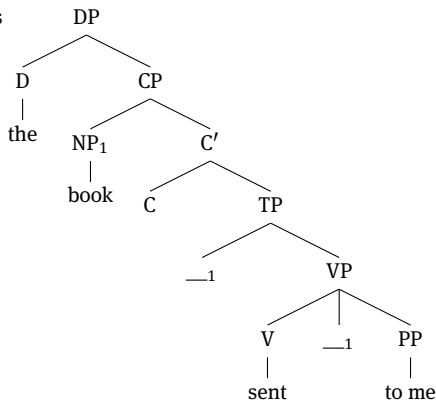
The different relative clause types and word order types can thus be derived quite straightforwardly by means of the raising analysis, especially given the assumptions in de Vries (2002). Other versions of the raising analysis like Bhatt (2002) or Cecchetto & Donati (2015) can derive the various types and orders in largely the same way. The only relevant difference concerns the N–RC–D order, which requires NP-movement (containing the RC) to SpecDP under these approaches.

The question that remains, though, is whether the coherent treatment of the different relative clause and word order types constitutes an argument for the raising analysis. Given that we want to capture head-internal RCs as well, the head-external analysis will not be an option, but the matching analysis, where there is a relative clause-internal representation of the external head, certainly is. I will dis-

cuss the derivation of the different relative clause and word order types in section 2.5.2 below.^{95, 96}

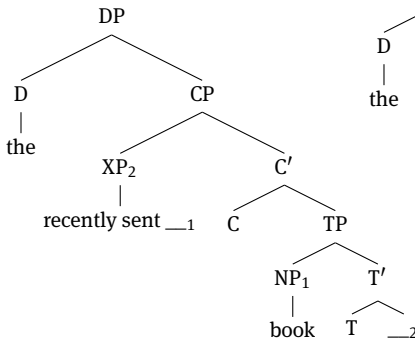
⁹⁵ Kayne (1994) even derives reduced relatives and attributive adjectives from the same structure, i.e., they are also assigned an RC clause structure. This holds both for postnominal and prenominal modifiers. The derivation of post-nominal modifiers is essentially identical to that of post-nominal RCs, see (i). Prenominal modifiers, however, do not involve head raising but raising of the predicative element inside the RC to a position above the head noun, see (ii) (Cecchetto & Donati 2015: 76–80 provide a raising analysis for reduced postnominal relatives where the RC only consists of a VP):

(i) Postnominal modifiers

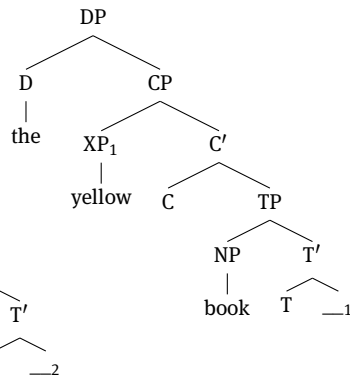


(ii) Prenominal modifiers

a.



b.



Borsley (2001) points out a number of problems with Kayne's derivation of prenominal modifiers: First, it is unclear how the empty D_{rel} (not indicated in (ii)) that is normally merged with the head noun can be licensed if it is so distant from the external D (Bianchi 2000a: 129, fn. 10 proposes that the head noun is not a DP in this case). Second, questions also arise if there is both a prenominal adjective as well as a relative clause. Since the adjective can be independently fronted, while the head noun can stay behind in (ii), it is surprising that the head noun has to be fronted in the presence of an RC, see (iii):

2.3.10 Intermediate summary: the raising analysis – pros and cons

The raising analysis is surely an attractive option to capture all effects that require a relative clause-internal representation of the external head such as reconstruction effects as in (131)–(137), head-internal relative clauses, cf. (121), the selection effects between head noun and relative pronoun in (125), and the antipronominal effects in (128). In this respect, it is clearly superior to the head-external analysis, which cannot straightforwardly account for these facts.

However, once we consider the many problems that have arisen in the various implementations since Kayne (1994), this positive picture changes drastically. Admittedly, some of the modifications have led to an improvement over Kayne's original proposal: The constituency is no longer a problem in most approaches: In some approaches, the head noun subextracts to a higher position – located within the RC, cf. Bianchi (1999), or outside the RC, cf. Bhatt (2002) and Donati & Cecchetto (2011); in Henderson (2007), the problem vanishes because raising is combined with adjunction. As a side effect of these assumptions, the cyclicity problem is solved as well. However, despite these improvements, the head raising analysis is still confronted with most of the other serious issues identified in 2.3.3.2 above (next to problems specific to the individual implementations): The cases where RelPs do not behave like determiners is perhaps the least serious one because one can always argue that relative elements are simply different (even though cases where they happen to pattern with pronouns morphologically then have to be considered accidental). Perhaps to the exclusion of de Vries (2002) and Henderson (2007), the trigger for N(P)-movement is far from clear. Selection plays

-
- (iii) a. the strange picture that Bill painted
 b. *the strange that Bill painted (the) picture

The ungrammaticality of (iii-b) may argue in favor of fronting of a larger constituent involving A+NP to SpecCP:

- (iv) the [_{CP} [_{DP} e [_{XP} strange picture]]₁ that Bill painted __₁]

Borsley argues that this derives the wrong reading in the case of superlative adjectives like *best* or *only* since they have scope over the NP and the RC and thus should c-command both:

- (v) the only/best book that John wrote

In the structure in (iv), however, they only have scope over the NP. Given the assumptions in Bhatt (2002), where *-est*-movement plays an important role in deriving the scope of the adjective, these problems can arguably be avoided. And, as Bhatt points out, the raising analysis is not necessary to derive the high reading.

96 Cinque (2008a, 2015) proposes a unified theory of relative clauses where RCs invariably originate prenominal like adjectives. There is both an external and an internal head, both of which can move, leading to the deletion of the other. Since only small parts of the proposal have been published so far, I refrain from discussing it in detail as this would not do justice to this ambitious program.

a crucial role in most approaches, but except in Donati & Cecchetto (2011), the resulting configuration does not correspond to canonical head-complement relationship that is normally involved in selection. The locality problem that obtains in *wh*-relatives with violations of the CED, the Freezing Principle, the LBC and possible PP-islands is hardly addressed (and, as in Bhatt 2002, to some extent leads to a reduction of the empirical scope of the raising analysis because it is argued not to apply in some of these cases). Due to raising from the RC, the extraction asymmetry in (196) remains problematic except in Donati & Cecchetto (2011). Late merger of the RC only seems to be compatible with raising if a sideward movement derivation as in Nunes (2001) or Henderson (2007) is adopted. The clitic placement facts in (194) can only be captured in those approaches where the head noun is outside the RC, viz., Bhatt (2002), Henderson (2007) and Donati & Cecchetto (2011).⁹⁷ Finally, the problems with Case and adjectival inflection can basically only be solved if concord is handled at PF (as discussed above, de Vries' proposal involves some inconsistencies one would prefer to avoid).⁹⁸

All in all, then, the picture is mixed. Despite its virtues, the raising analysis still faces severe problems, and since these concern rather fundamental issues like Case and locality, alternatives should definitely be considered. One such alternative is the matching analysis, which is the topic of the next section.

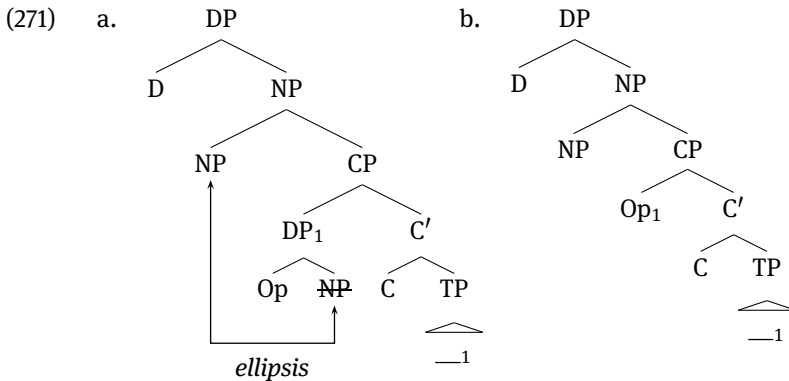
97 In the derivations where the head noun moves out of the RC, a lot depends on how clitic placement is handled. If it takes place in syntax, the clitics could attach to the head noun when it is still inside the RC and might then be moved along into the matrix clause, deriving the wrong result.

98 Deal (2016b) argues that inverse attraction provides evidence for head raising. The argument goes as follows: In inverse attraction, which according to her is only found in left-dislocation structures, there is no external probe for the dislocated DP. In those instances, the external D, which normally overwrites the case assigned to the head noun RC-internally, cannot do so. Instead, the raised head noun preserves its RC-internal Case and via Agree with D passes it on to the entire DP. Since the head noun forms a constituent with the RelP, the fact that they share the case is directly captured under raising. However, it is not clear what rules out passing up the Case from the RelP to the external head (and the external D) under the head-external analysis or the matching analysis once there is a last resort mechanism that provides parts of the DP with a Case value from below.

2.4 The matching analysis

As mentioned towards the end of section 2.2.1, the matching analysis has its origins in Lees (1960, 1961) and Chomsky (1965). In recent years, it has been revived in Munn (1994), Sauerland (1998, 2003), Cresti (2000), Citko (2001), and Salzmann (2006a).

In the MA, the relative operator takes an instance of the external head as its complement. This NP is PF-deleted under identity with the external head. The MA thus bears similarities to both the raising analysis and the head-external analysis: Like the former it contains a relative clause internal representation of the external head; and like the latter, there is no movement relationship between the external head and its relative-clause internal representation. In the more recent versions the MA is normally combined with adjunction, but it is equally compatible with complementation. The representation in (271-a) assumes an adjunction structure (I have added the structure for the head-external analysis for comparison in (271-b)):



2.4.1 Motivation: non-reconstruction

Part of the motivation for the matching analysis comes from the fact that the external head does not always reconstruct. The raising analysis runs into problems in this case because if reconstruction is assumed to be as automatic as in *wh*-movement, there is no handle on non-reconstruction.

2.4.1.1 Principle C

While reconstruction for idioms, anaphor and variable binding shows the same pattern in *wh*-movement and relative clauses (modulo the provisos from section

2.3.1.4.3), there is an asymmetry with respect to Principle C: Condition C effects are often judged to be absent in relativization, cf. Munn (1994), Sauerland (1998), Bianchi (1999), Citko (2001), Bhatt (2002), Cecchetto (2005: 26–29), Salzmann (2006a):⁹⁹

(272) Principle C in relativization

- a. The [picture of John_i] [which he_i saw ___ in the paper] is very flattering.
- b. I have a [report on Bob's_i division] [he_i won't like ___].
- c. The [pictures of Marsden_i] [which he_i displays ___ prominently] are generally the attractive ones.

(273) Principle C in *wh*-movement

- a. *[Which picture of John_i]₁ did he_i see ___₁ in the paper?
- b. *[Which report on Bob's_i division]₁ will he_i not like ___₁?
- c. *[Which picture of Marsden_i]₁ does he_i display ___₁ prominently?

Importantly, the R-expression is contained in an argument in both cases so that the absence of a Condition C effect in (272) cannot be related to late merger.

It should be mentioned that there are also claims in the literature that reconstruction for Principle C is not exceptionless with *wh*-movement either (even with R-expressions contained in arguments), cf. Heycock (1995), Fox (1999), Safir (1999), Fischer (2002, 2004), Henderson (2007); Safir (1999: 609, ex. 61) provides a representative list of the types of examples found in the discussion of which I reproduce some in (274):

- (274) a. [Which biography of Picasso_i]₁ do you think he_i wants to read ___₁?
- b. [Which witness's attack on Lee_i]₁ did he_i try to get ___₁ expunged from the trial records?
- c. [Whose criticism of Lee_i]₁ did he_i choose to ignore ___₁?
- d. [Whose criticism of Lee's_i physical fitness]₁ did he_i use ___₁ when he applied to NASA for space training?
- e. [Whose allegation that Lee_i was less than truthful]₁ did he_i refute ___₁ vehemently?

⁹⁹ As with anaphor binding, semi-idiomatic expressions should be handled with care since they may contain an implicit PRO that triggers the Condition C effect irrespective of whether there is reconstruction (recall section 2.3.1.4.1):

(i) the [PRO_i picture of *John_i/✓himself_i] [that he_i took ___]

See section 2.5.3.5 below for arguments that the implicit PRO is only present in the external head if there is an idiomatic interpretation in the matrix clause.

- f. [Most articles about Mary_i]₁ I am sure she_i hates __₁.
- g. [That Ed_i was under surveillance]₁ he_i never realized __₁.
- h. [That John_i had seen the movie]₁ he_i never admitted __₁.
- i. [Which picture of John_i]₁ does he_i like best __₁?

Some, i.e., Safir (1999) and Henderson (2007), explicitly argue that there is no relevant difference between *wh*-movement and relativization with respect to Principle C (even though they concede that they are weaker with relatives), but this seems to be the minority position. There seem to be both conflicting judgments (most people I consulted rejected several of the examples in (274)) as well as cases where there is indeed no Condition C effect. There may be various factors that make these examples more acceptable. Discourse factors such as perspective may be one; another seems to be embedding and the presence of a (disjunct) specifier, as discussed in Fischer (2004: 206–207). Also, the status of PP-modifiers as either arguments or adjuncts may be variable/speaker-dependent. As for the last point, the clearest contrast is probably provided by event nominals which more clearly select (optional) arguments. Safir (1999: 589, note 1) gives the following example:

- (275) a. *[Which investigation of Nixon_i]₁ did he_i resent __₁?
 b. [Which investigation near Nixon_i's house]₁ did he_i resent __₁?

Given the robust contrast in (275), I will assume that there is a systematic asymmetry between *wh*-movement and relativization, i.e., that there are Principle C effects in *wh*-movement but not in relatives. The (putative) absence of Condition C effects in (274) must then be attributed to other (partly ill-understood) factors whose investigation I have to leave for future research.

The asymmetry between *wh*-movement and relativization is found in other languages as well; here is a pair illustrating the same contrast in German:¹⁰⁰

100 According to Bianchi (1999: 109–115), Condition C effects in Italian relatives are only absent with overt pronouns but not with *pro*. Cecchetto (2005), however, claims that they are generally absent. A more nuanced description can be found in Bianchi (2004: 82), who argues that, while there are no sharp effects with specific relatives (especially with an overt pronoun), there are robust Condition C effects with non-specific relatives and amount relatives.

Exceptions to the non-reconstruction for Principle C are reported in Szczeglielniak (2004), who claims that Principle C effects are present in Polish and Russian *that*-relatives (but not in *wh*-relatives). Similarly, Pan (2016: 185) reports Condition C effects in Mandarin Chinese relatives. Kotzoglou & Varlokosta (2005: 40), finally, report Condition C effects in Greek *that*-relatives.

- (276) Principle C in relatives
- a. die [Nachforschungen über Peter_i], [die er_i mir lieber __
 the investigations about Peter which he me rather
 verschwiegen hätte]
 conceal.PTCP have.SBJV.3SG
 ‘the investigations about Peter_i that he_i would have rather concealed
 from me’
- b. der [Wesenszug von Peter_i], [auf den er_i am meisten __ stolz
 the trait of Peter on which he the most proud
 ist]
 be.3SG
 ‘the side of Peter_i he_i is most proud of’ *Standard German*
- (277) Principle C in *wh*-movement
- a. *[Welche Nachforschungen über Peter_i]₁ hätte er_i dir
 which investigations about Peter had.SBJV.3SG he you.DAT
 lieber __₁ verschwiegen?
 rather conceal.PTCP
 lit.: ‘Which investigations about Peter_i would he_i have rather con-
 cealed from you?’
- b. *[Welchen Wesenszug von Peter_i]₁ kannte er_i noch nicht __₁?
 which trait of Peter know.PST.3SG he still not
 lit.: ‘Which side of Peter_i didn’t he_i know yet?’ *Standard German*

Importantly, Condition C effects are not generally absent in relativization. They do occur if the R-expression is contained within the operator phrase, see Sauerland (2003: 211):

- (278) a. *I respect any [writer] [_{CP} [whose depiction of John_i]₁ he_i’ll object to
 __₁].
 b. I respect any [depiction of John_i] [_{CP} he_i’ll object to __].

The ungrammaticality of (278-a) is unsurprising because there is no doubt that the relative operator phrase has moved across the coreferential pronoun. Once there is an identical copy in the base-position, a Condition C effect will obtain. This makes the acceptability of (272) and (278-b) even more mysterious from the perspective of the raising analysis. What is special is not relative clauses per se but the link between the external head and the RC-internal context.

Obviously, this has important implications: The facts are unproblematic under the head-external analysis, where there is no representation of the external head inside the relative clause. Under the head raising analysis, however, non-

reconstruction is unexpected because there is a representation of the external head inside the relative clause so that a Condition C violation should obtain:

- (279) a. The [picture of John_i] [which he_i saw __ in the paper] is very flattering.
 →
 b. The [~~picture of John_i~~] [_{CP} which [~~picture of John_i~~] he_i saw [x picture of John_i] in the paper] is very flattering.

Importantly, assuming that unlike in *wh*-movement reconstruction is simply optional in relatives (unless forced by binding/idiom interpretation) is not sufficient because of Principle C effects with quantifiers as in (224) above, where an RC-internal copy is needed (**Pictures of anyone_i which he_i displays __ prominently ...*). Consequently, the raising analysis is not an option for examples like (279).

Without further qualifications, the data in (272) and (276) also provide a challenge for the matching analysis. Two types of solutions have been proposed under the matching analysis: One is based on deletion under identity, the other one involves vehicle change.

Munn (1994) and Citko (2001) argue that the relative clause-internal copy can be deleted since there is still a copy inside the external head so that deletion is recoverable (note that for *wh*-movement the Preference Principle must be taken to be obligatory so that the restriction is retained only in the lower copy). Under their approach, reconstruction as such is thus optional in relatives. As the following representation shows, this accounts for the lack of Principle C effects in relatives:

- (280) The [picture of John_i] [_{CP} which [~~picture of John_i~~] he_i saw [x ~~picture of John_i~~] in the paper] is very flattering.

Sauerland (1998, 2003) and Salzmann (2006a) instead propose a solution based on vehicle change: The matching operation between the external head and the internal head is analyzed as an ellipsis operation. Consequently, properties of ellipsis are expected. One of these are mismatches between R-expressions and pronouns, so-called vehicle change effects, where a pronoun can count as identical to an R-expression, cf. Fiengo & May (1994):

- (281) a. *John likes Mary_i and she_i does, too.
 b. John likes Mary_i, and she_i knows that I do, too.

The contrast in (281) is mysterious if the ellipsis site contains *like Mary* as there should be a Condition C violation in both cases. The pattern can be accounted for, though, if instead of an R-expression, the ellipsis site contains a pronoun:

- (282) a. *John likes Mary_i and she_i does (~~like her_T~~), too.
 b. John likes Mary_i, and she_i knows that I do (~~like her_T~~), too.

(282-a) is still ungrammatical because of Principle B, but in (282-b), the additional level of embedding improves the example to full grammaticality.

The same mismatch is supposed to explain the absence of Condition C in relatives: The copies inside the RC only contain a personal pronoun and not a full R-expression:¹⁰¹

- (283) The [picture of John_i] [_{CP} which [~~picture of him_T~~] he_i saw [x picture of **him_i**] in the paper] is very flattering.

The binding relationship inside such an RC is thus equivalent to the one in (284) (recall from section 2.3.1.4.1 that pronouns are grammatical inside picture NPs):¹⁰²

- (284) He_i saw the picture of him_i.

2.4.1.2 Obligatory non-reconstruction

In some cases, reconstruction must be blocked because an idiom chunk or an anaphor is only licensed inside the external head but not inside the relative clause (where there is no idiomatic verb/no binder for the anaphor), see McCawley (1981: 137) for (285-a) and Bhatt (2002: 47, fn. 1) for (285-b):

- (285) a. Parky pulled the [strings] [that __ got me my job].
 b. We made [headway] [that __ was sufficient].
 c. But Hawking has endorsed The Theory of Everything, so he_i must like the [portrait of himself_i] [that it presents __].¹⁰³

101 To be precise, this is the proposal from Sauerland (1998: 76), while Sauerland (2003: 222) assumes vehicle change to the NP-anaphor *one*, because he assumes takes pronouns to be ungrammatical inside picture NPs, in contrast with what is usually assumed, recall the discussion in 2.3.1.4.1 above.

102 A very different solution to the lack of Principle C effects in relatives is proposed in Cecchetto (2005: 26–29): Assuming the head-external analysis, he proposes that the R-expression undergoes QR to a position from where it can c-command and bind the pronoun inside the RC. However, if there is no relative clause-internal representation of the external head in the first place, it is not clear why there should be a problem with Principle C and consequently, why there should be QR of the R-expression. Note further that QR from the external head is insufficient to capture the subject-object contrast with quantifiers in (224) above.

103 <http://www.spectator.co.uk/2015/01/what-the-theory-of-everything-doesnt-tell-you-about-stephen-hawking/>, accessed June 1, 2016

The following German examples make the same point, cf. Heck (2005: 14, ex. 53) for (286-a), Salzmann (2006a: 40–41, 117–118) for (286-b) (for Dutch data, see Boef 2012a: 139):

- (286) a. Hier werden die [Fäden] gezogen, [die __ anschließend zu
here become.3PL the strings pull.PTCP which later to
Toren führen].
goals lead.3PL
'This is where the strings are pulled that later lead to goals.'¹⁰⁴
- b. Schicken Sie; uns ein [Foto von sich;], [das __ beweist, dass
send.IMP you us a picture of self which prove.3SG that
Sie ein wahrer Ferrari-Anhänger sind].
you a true Ferrari-fan be.3PL
'Send us a picture of yourself which proves that you are a true Ferrari-
fan.'¹⁰⁵ *Standard German*

A similar argument is presented in Citko (2001: 134–135) with respect to negative polarity item (NPI-) licensing: (287-a) would be ungrammatical if the external head were interpreted within the relative clause as indicated in (287-b) because another quantifier would intervene between the negative quantifier and the NPI, thereby violating the Immediate Scope Constraint by Linebarger (1987: 338), cf. the example in (288):¹⁰⁶

- (287) a. Nobody found [a picture of **anybody**] [that everybody liked ____].
b. *Nobody found [a picture of **anybody**] [that everybody liked [picture of **anybody**]].
- (288) John didn't give a red cent to *every/✓ charity.
(at LF: *not > every charity > a red cent)

In the previous subsection on Principle C effects it was shown that simply assuming that reconstruction is optional does not save the raising analysis as this fails to account for the SCO effects with quantifiers discussed in (224) above (where there is no independent reason that would force reconstruction).

At first sight, examples with Principle A as in (285-c) seem to be compatible with the raising analysis given a parallel with *wh*-movement: One can construct

¹⁰⁴ www.kicker.de/news/fussball/bundesliga/startseite/608708/2/slideshow_ein-koeniglicher-weltmeister-geht-voran.html, accessed June 1, 2016

¹⁰⁵ www.vodafone-racing.de/pda/f_fancontest.html, accessed September 2005

¹⁰⁶ The argument is weakened by the fact that NPI-licensing is frequently sensitive to surface structure.

variants of (285-c) where the anaphor can either be bound by the matrix subject or the embedded subject, see Kayne (1994: 87, ex. 8) (a Dutch example can be found in de Vries 2002: 82, ex. 26):

(289) John_i bought the [picture of himself_i/j] [that Bill_j saw ___].

This recalls facts from *wh*-movement, where it is usually assumed that, although the Preference Principle is the default, it can be overridden if additional binding options obtain:

(290) John_i wondered [which picture of himself_i/j]₁ Bill_j saw ___₁.

It is conceivable that the Preference Principle can also be overruled under the raising analysis if this leads to new binding options. However, while this may work for English, it arguably does not for languages like German, where anaphors cannot be bound when located in SpecCP (see Kiss 2001: 186, Salzmann 2006a: 140–141, and the discussion in section 4.2.1 below):

(291) Hans_i fragt sich, [[welches Foto von *sich_i/ihm_i]₁ ich am besten
John ask.3SG self which picture of self/him I the best
___₁ mag].
like.1SG

‘John_i was wondering which picture of himself_i I like best.’ *Std. German*

Even if it were possible to privilege the higher copy under the raising analysis, this would not be sufficient to account for the German cases in (286-b) above, where the anaphor fails to reconstruct, at least not in those implementations where the external head remains inside the relative clause (as in Kayne 1994, Bianchi 1999 and de Vries 2002). Things may be different in the implementation by Bhatt (2002), where the external head moves out of the relative clause.

In the idiom cases in (285) and the NPI-example in (287), there is no obvious way to overrule the Preference Principle. As a consequence, they cannot be captured under the raising analysis either. If reconstruction is as automatic as in *wh*-movement (which is the underlying logic of the raising analysis), these examples are incorrectly predicted to be ungrammatical because the lower RC-internal copy would contain material that is not licensed there, e.g., an idiom chunk as in (292):

(292) *Parky pulled the [[Op strings]₁] that [x strings]₁ got me the job].

I thus conclude that obligatory non-reconstruction cannot be accounted for under the raising analysis.¹⁰⁷

Under the matching analysis, a recoverability perspective has been offered to handle non-reconstruction: Citko (2001) and Salzmann (2006a) account for obligatory non-reconstruction by assuming that the relative-clause internal copy can be deleted under identity with the external head (as proposed for Principle C in (280) above):

(293) Parky pulled [the strings] [_{CP} [Op ~~strings~~] that [_x ~~strings~~] got me the job].

The principles regulating deletion under identity will be discussed in more detail in section 2.5.3 below.

2.4.1.3 No reconstruction under extraposition

Hulsey & Sauerland (2006: 114–120) observed that there is no reconstruction under extraposition:

- (294) a. *I was shocked by the [advantage] yesterday [that she took ___ of her mother].
 b. *I saw the [picture of himself_i] yesterday [that John_i liked ___].

According to the authors, the raising analysis is not a possibility under extraposition given the following assumptions: First, under a Kaynian relative structure with the head in SpecCP, extraposition would require C'-movement, which is generally taken to be impossible. Second, if extraposition is handled as an instance of late merger as in Fox & Nissenbaum (1999) where the relative clause adjoins to the QR-ed object, a raising analysis is ruled out because it presupposes that the RC is a complement and thus has to be merged cyclically (according to the authors; WLM had not yet been proposed at that time). Instead they argue that the match-

107 A similar problem arises for the raising analysis with antipronominal contexts (recall section 2.3.1.3). One can construct examples where the antipronominal context is in the matrix clause so that the highest copy must be interpreted rather than the lowest one, see Pankau (2015: ex, 23):

(i) Marko je řečal na vašnje, kotrež je mje překwapilo.

Marko is spoken on way which is me surprised

'Marko spoke in a way that surprised me.'

Upper Sorbian

The relevance of these cases depends on what kind of condition antipronominal contexts actually are. They are most challenging for the raising analysis if they are a condition on the LF-interpretation. If, instead, they are just a formal requirement that can be checked during the derivation, they may eventually not constitute too serious a problem for the raising analysis.

ing analysis is the only possibility here (see Henderson 2007: 215 for a different explanation of (294) on the basis of the raising analysis).

However, the implications of these facts are actually not that clear. First, the matching analysis can handle reconstruction effects once certain assumptions are made, see the next subsection; once reconstruction is a possibility under the matching analysis, the absence of reconstruction in (294) is equally unexpected. Second, extraposition can, of course, target a maximal projection under those versions of the raising analysis where the head noun moves out of the RelP to some higher position as in Bianchi's, Bhatt's or Donati & Cecchetto's analysis. Consequently, the argument only goes through if extraposition presupposes late merger (note that WLM is not a possibility here because QR involves the head noun to which the RC needs to attach). Third, the empirical facts are not as clear-cut as claimed in Hulsey & Sauerland (2006): For instance, in German, reconstruction seems to be possible in extraposed relatives (at least with idiom chunks):

- (295) a. Die *Zeit* sollte häufiger über die [Fortschritte] berichten,
 the Zeit should.3SG more often about the progresses report.INF
 [die unsere Jungs __ gemacht haben].
 which our boys make.PTCP have.3PL
 'The *Zeit* (newspaper) should cover more often the progress our boys
 have made.'
- b. weil er sich über den [Streich] ärgerte, [den wir
 because he self about the trick be.annoyed.PST.3SG which we
 ihm __ gespielt haben]
 he.DAT play.PTCP have.1PL
 'because he was annoyed about the trick we played on him'

Standard German

Similarly, Heycock (2012, to appear) argues that extraposition does not always block reconstruction in English either (at least not reconstruction of low readings of adjectives and reconstruction of idioms, perhaps not even reconstruction of anaphors). One of the acceptable examples she provides can be found in (296):

- (296) Describe all the [habits] to me [that you want to kick __].

It thus seems that, while extraposition does have some influence on reconstruction, it arguably does not systematically block it. Heycock (to appear) suggests that some of the examples may be unacceptable because they involve a garden path: The degradedness seems to correlate with the difficulty in accommodating the idiomatic NP: *shocked by the advantage* is locally more difficult to parse than *describe all the habits*. The same factor may account for the impeccability of the

German examples. Consequently, one could reinterpret the facts such that reconstruction under extraposition is in principle possible and relate the unacceptability of certain examples to parsing difficulties.¹⁰⁸

2.4.2 The matching analysis and reconstruction

The question now arises whether the matching analysis can also be used to account for reconstruction into the relative clause (idioms, anaphors, bound variables, superlative adjectives). Sauerland (1998) and Bhatt (2002) claim that it cannot because there remains a copy inside the external head that must also be interpreted, but the elements in question either do not receive the correct interpretation (idioms) or are simply not licensed there (anaphors, bound variables). Consider the following example from Bhatt 2002: 52:

- (297) John generally has an [opinion of **his**_i book] [_{CP} [Op ~~opinion of his_i book~~] that every novelist_i respects [x opinion of his_i book]].

The external head *opinion of his_i book* cannot be interpreted properly inside the external head if it is to receive the bound variable reading because the binder is located RC-internally. However, that perspective is not universally accepted: Citko (2001) and Salzmann (2006a) argue that this can be avoided if it is assumed that the external head can be deleted under identity with the relative clause internal copy:

- (298) John generally has an [~~opinion of his_i book~~] [_{CP} [Op ~~opinion of his_i book~~] that every novelist_i respects [x opinion of his_i book]].

Given this possibility, there is no reason to believe that the matching analysis cannot handle reconstruction.

2.4.3 One or two structures for relativization?

Bhatt (2002) and Sauerland (2003) argue that because there are cases of reconstruction and non-reconstruction, both the head raising as well as the matching

¹⁰⁸ Reconstruction for binding in German is strongly degraded under extraposition, see Salzmann (2006a: 147–148, fn. 123). This may be related to the fact that reconstruction for Principle A is best if the head noun occurs sentence-initially, a fact that holds in Dutch as well, see de Vries (2002: 82).

analysis (without reconstruction) are needed. A different position can be found in Citko (2001), Cecchetto (2005), Salzmann (2006a), and Henderson (2007), who argue that one type of derivation is sufficient.

Before arguing below that one type of derivation is indeed sufficient and that this should be the matching analysis, I should mention that there have been arguments that *that*- and *wh*-relatives should be derived differently: Åfarli (1994), Aoun & Li (2003: 110–123) and Szczeglielniak (2004) argue that, while *that*-relatives should receive the raising analysis, *wh*-relatives should be modeled by means of the matching analysis (by which they mean the traditional head-external analysis, though). Apart from the observation that relative pronouns cannot always easily be reanalyzed as determiners (recall the facts in 2.3.3.2.10 above), they argue that there are systematic reconstruction asymmetries between the two: While reconstruction is systematic in *that*-relatives, it is argued to be blocked in *wh*-relatives. A concrete contrast is the following (from Aoun & Li 2003: 110):¹⁰⁹

(299) The [careful track] [that/*which she is keeping __ of her expenses] pleases me.

While the Norwegian facts discussed in Åfarli do not seem to be contested, the contrast has been disputed for English, see, e.g., Bhatt (2002: 83, fn. 23) and does not seem to constitute the majority position.¹¹⁰ Bianchi (1999: 74) speculates that reconstruction in *wh*-relatives may be less acceptable because relative pronouns are more frequent in appositive relative clauses in contemporary English, where reconstruction is not possible.¹¹¹ Given the empirical uncertainties, I will not adopt Aoun & Li's conclusion, not the least because reconstruction with relative pro-

109 A similar contrast is said to obtain in Lebanese Arabic, where RCs with a strong determiner ('definite' RCs) allow for reconstruction, while those with an indefinite determiner ('indefinite' RCs) do not.

110 On p. 244, fn. 15, the authors admit that there is some variation. They speculate that for speakers that allow reconstruction, the relative pronoun is reanalyzed as a complementizer. In support of this, they note that even for those speakers reconstruction is much less acceptable with complex/heavy pied-piping, where raising is less likely given the locality problems that arise in such a derivation.

111 Another argument for a different treatment of *that*- vs. *wh*-relatives is advanced in Szczeglielniak (2004: 37), who shows that only *wh*-relatives display anti-reconstruction effects (i.e., allow for late merger), while *that*-relatives do not.

nouns seems acceptable in many languages, especially in those like Standard German, which obligatorily use relative pronouns.^{112,113}

2.5 In favor of the matching analysis

In this last section, I will argue that only the matching analysis is needed to account for the syntax of restrictive (and amount) relative clauses. It not only avoids the many problems that the raising analysis is confronted with, it also, given certain assumptions, captures the complex pattern of reconstruction effects. In fact, by combining exceptional deletion under recoverability with vehicle change, its empirical scope in the domain of reconstruction will be shown to be superior to that of the raising analysis so that in conclusion the raising analysis can be discarded.

2.5.1 General advantages

I would first like to stress that the matching analysis does not have any of the problems the raising analysis is beset with because the external head is base-generated outside the RC: Consequently, there are no problems with Case and adjectival inflection. Note that if the head noun has a different syntactic function in the main clause than in the RC, there will be mismatches between the NPs matched against each other. Since ellipsis is involved, such mismatches will be as unproblematic as

112 Their strongest argument that *wh*-relatives should be treated differently arguably comes from adjunct *wh*-relatives, where reconstruction indeed seems very hard to obtain, see Aoun & Li (2003: 124). However, the relevant examples are rather cumbersome so that it is eventually not clear whether the unacceptability of such examples is really due to an intrinsic property of adverbial relatives. If reconstruction should indeed turn out to be completely impossible with adverbial relatives, this might suggest that there is a residue where the head-external analysis is needed after all.

113 The difference between *that*- and *wh*-relatives is important in the discussion about amount relatives: According to Carlson (1977), amount relatives are only possible with *that* but not with *wh*-pronouns; this claim is contested as well, though, see Heim (1987).

Cinque (2015) argues that both the raising and the matching derivation are necessary based on the observation that amount relatives, for which a raising analysis is generally postulated, crucially differ from restrictive relatives in that they cannot undergo extraposition, fail to stack and are sensitive to weak islands. This certainly shows that amount relatives have special properties, but in my view this does not warrant the conclusion that they must be derived differently; rather, the differences could be due to properties that are orthogonal to the raising/matching divide (for instance, that they involve abstraction over a degree/kind variable as Cinque suggests himself).

in other instances of ellipsis. Furthermore, Under the MA, RCs have the right constituency for coordination, extraposition and RC-deletion. There are no locality violations (CED, LBC, PP-islands) because the head is not raised; this also implies that no questions arise concerning the trigger of NP-movement. The extraction asymmetry in (196) trivially follows: Only in the degraded case is there extraction from CP, while in the grammatical case there is extraction from a non-moved constituent. The clitic placement facts in (194) are also straightforward since the head NP is generated in the matrix clause. Finally, since the head noun is generated together with the determiner, selection can be handled in the canonical way: It involves a head-complement structure. Because the matching analysis is compatible with adjunction, late merger does not constitute a principled problem either (but see the discussion in 2.5.3.6 below).

The only potential problem, which the matching analysis shares with the raising analysis, concerns the data showing that relative pronouns do not pattern with determiners, cf. section 2.3.3.2.10. I will come back to this issue in section 2.5.4 below.

2.5.2 Different types of relative clauses and uniform derivations

As discussed in sections 2.3.1.1 and 2.3.9 above, the raising analysis provides a straightforward account of head-internal relative clauses in that it can assign them essentially the syntax of (embedded) prenominal RCs, the only difference being that the head is realized in its base-position rather than in its operator position. Similarly, it naturally captures the fact that in Hindi and other languages, the relative pronoun used in correlatives and postnominal RCs is identical.

However, both arguments only provide evidence for a relative clause-internal representation of the external head. They thus argue against the head-external analysis. Crucially, however, the facts are also compatible with the matching analysis: Head-internal RCs can be accounted for if in these languages it is the external head that is PF-deleted, while the internal one survives at PF, as schematically represented in (300):

(300) I only like ~~potatoes~~ [_{CP} ~~potatoes~~₁ my granny has cooked potatoes₁]

Similarly, the identity of the relative pronoun in the Hindi correlative and postnominal RCs in example (123) above can also be captured since in post-nominal

RCs there is a complex DP in SpecCP consisting of the operator and an instance of the external head: [which girl].¹¹⁴

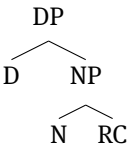
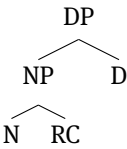
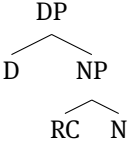
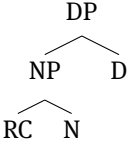
The same goes for the selection effects discussed in section 2.3.1.2: Since the operator phrase in SpecCP is complex under the matching analysis and involves an instance of the external head, the selectional relationship between *al* and *wat* in Dutch (125) or superlative head nouns and *was* in German (126) can be handled under a standard head-complement relationship: [wat al]. The data from antipronominal contexts discussed in 2.3.1.3 also follow straightforwardly under the matching analysis as the relative pronoun takes an instance of the external head as its complement.

I now finally turn to the relationship between prenominal, postnominal and circumnominal RCs and the different orders of D, N and RC, discussed in section 2.3.9 above under the perspective of the raising analysis. Suppose first that an anti-symmetric framework is adopted but without raising, i.e., the RC would be merged as a complement of N. Some orders will require potentially unmotivated movement steps: While D–N–RC and N–D–RC are unproblematic (the former can be generated as is, the latter involves N-to-D-movement), N–RC–D seems to require moving the entire NP-complement (containing the relative CP) to SpecDP. D–RC–N would require moving the RC to a position inside the matrix DP; RC–N–D would seem to require movement of the RC to SpecNP followed by moving NP to SpecDP. RC–D–N finally requires movement of the RC to SpecDP. Movement of NP (containing an RC) to SpecDP can perhaps be motivated as a means to establish feature-checking between D and N (although this runs the risk of violating Antilocality, cf. Abels 2003), but movement of the RC to either SpecNP, a position between N and D or to SpecDP, seems ill-motivated. Head-internal RCs would also require movement of CP to SpecDP (as the D generally follows the RC). Under the assumption that there is a silent external head in such RCs, movement of the relative CP again does not seem to be well-motivated. The raising analysis thus appears to be superior because CP-movement can be motivated in terms of pied-piping; only the D–RC–N order remains problematic, recall the discussion in section 2.3.9.

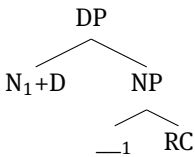
However, once antisymmetry is given up and the RC is treated as a complement of N or as an adjunct, the picture changes: If sisters can be linearized in

114 The double-headed relatives in 2.1.2.1.3 tend to provide an argument for the matching analysis because there are two independent heads so that double-headed RCs simply result if no head is PF-deleted (but only the representation in SpecCP). Under the raising analysis, one would have to assume that both the bottom copy and the top-copy can be pronounced. Since as discussed above the phenomenon seems rather restricted and perhaps requires a different analysis (viz., one in terms of noun classification), the force of this argument is somewhat limited.

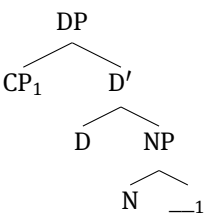
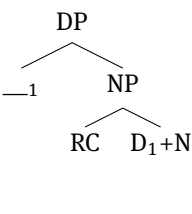
flexible ways as proposed in Abels & Neeleman (2012), four orders can be directly generated:

- (301) a.  c. 
- b.  d. 

Consequently, movement will only be required if N and RC are not adjacent, viz., for N–D–RC and RC–D–N. The former can easily be derived by N-to-D-movement, while the RC is ordered to the right of N/D:

- (302) 

The RC–D–N order is somewhat more problematic. It either requires movement of the RC to SpecDP as in (303-a), which may be difficult to motivate, though. Alternatively, the order can be derived if D undergoes Lowering (= downward head-movement at PF, cf. Embick & Noyer 2001) to N and the RC is ordered to the left of N, cf. (303-b):

- (303) a.  b. 

At least at this superficial level (a complete proposal would have to take into account the other constituents of the DP as well), this alternative does not seem to fare any worse than de Vries' proposal based on the raising analysis. Both analyses require weakly motivated movement operations to derive one of the orders (in de Vries' case, this is the D–RC–N order). To be fair, my alternative so far has

nothing to say about some of the typological generalizations that Kayne and de Vries attempt to derive, such as the lack of relative pronouns in prenominal RCs or the fact that overt determiners in circumnominal RCs are always final. For reasons of space, I have to leave more detailed investigation of these issues for further research. As a final note, in de Vries' system, the orders RC–N–D, RC–D–N and N–D–RC involve N-to-D movement, while in the non-antisymmetric alternative presented in this section, head movement is only necessary in the N–D–RC (and perhaps the RC–D–N) order. Since head movement is involved, it is predicted that the noun cannot be complex in these orders. I leave it to future research to determine which approach makes the better predictions in this respect.¹¹⁵

2.5.3 Reconstruction

In the following subsections, I will discuss all relevant reconstruction contexts and show that the matching analysis provides a straightforward solution to the many puzzles that arise and thus achieves much better empirical coverage than the raising analysis.

2.5.3.1 Regular reconstruction

Since there is an RC-internal representation of the external head, the MA has the potential to capture reconstruction. To avoid unlicensed material inside the external head, it requires the additional option (also proposed in Citko 2001) to delete the external head under identity with the internal head. The examples in (304) thus receive the LFs in (305):

- (304) a. The [careful track] [that she's keeping ___ of her expenses] pleases me.
 b. Der [Wesenszug von sich]_i, [den Peter_i noch nicht ___
 the trait of self which Peter still not
 kannte], störte niemanden.
 know.PST.3SG annoy.PST.3SG no.one.ACC
 'No one was annoyed by the side of himself_i that Peter_i did not know yet.'
Standard German

115 If the RC is attached higher, i.e., as an adjunct or a specifier (Sternefeld 2006) of D, the orders RC–N–D, D–N–RC, RC–D–N and N–D–RC can be base-generated. The orders N–RC–D and D–RC–N thus require extra operations. Interestingly, it is not so obvious what these operations would be, which thus provides an argument against approaches that posit such a high attachment site.

- (305) a. the [~~careful track~~]_{CP} [λx . ~~careful track~~]₁ she is keeping [the_x careful track]₁ of her expenses]
 b. the [~~trait of himself~~]_{CP} [λx . ~~trait of himself~~]₁ Peter_i did not know [the_x trait of himself_i]₁]

Crucially, I propose that only elements with a so-called *positive* licensing requirement can be deleted (whether they are located inside the external head or inside the RC) if they are not licensed in that particular position. By positive licensing requirement I mean elements that depend on others. The crucial cases at hand are anaphors, bound variables and idiom chunks: The first require a local binder, the second a c-commanding binder and the third an adjacent idiomatic verb. Next to elements with a positive licensing requirement, there are elements with a *negative* licensing requirement. Such elements have to be free in a certain domain. The prime examples of this category are pronouns and R-expressions. By assumption, neither one can be exceptionally deleted. Since *track* in (305) is an element with a positive licensing requirement, exceptional deletion of the external head is licit and the correct LF obtains. The assumptions so far are sufficient to capture reconstruction with idioms, anaphors and bound variables. Things are slightly different with scope reconstruction as in the following example (to be precise, scope reconstruction is optional here):

- (306) No linguist would read the [many books] [Gina will need __ for vet school].
 (many > need; need > many)

Since the quantified external head is not subject to a positive licensing requirement, its deletion must be justified differently. Obviously, retaining both copies is not possible as it would lead to contradictory scope readings. Instead, I propose for these cases that either the external head or the lower RC-internal copy can be privileged to derive the respective readings. Importantly, this option is limited to scopal elements (but crucially not available for R-expressions) since it yields a difference in interpretation. The two LFs then look as follows (the reading in (307-a) is an amount reading and thus involves abstraction over a degree variable):

- (307) a. the λd . Gina will need [d many books] for vet school
 b. the [many books] λx . Gina will need x for vet school

2.5.3.2 Absence of Condition C effects

As mentioned in 2.4.1.1 above, Munn (1994) and Citko (2001) derive the absence of Condition C effects in examples like (272) (and the NPI-case in (287)) by assuming that the internal head can be deleted as long as the external one is preserved:

- (308) The [picture of John_i] [_{CP} which [~~picture of John_i~~] he_i saw [~~x picture of John_i~~] in the paper] is very flattering.

Given my assumptions about exceptional deletion, this is not an option because R-expressions are not elements with a positive licensing requirement. Consequently, there has to be a representation of the external head RC-internally. To avoid a Condition C violation, I propose that there is optional vehicle change. Under vehicle change the R-expression *John* corresponds to *him* inside the RC. The LF of (308) is thus (309):¹¹⁶

- (309) The [picture of John_i] [_{CP} λx. [~~picture of him_i~~] he_i saw [the_x picture of **him_i**] in the paper] is very flattering.

This assumption has one major advantage: It provides a handle on the Principle C effects with quantifiers in (224), repeated from above:

- (310) *[Pictures of anyone_i] [which he_i displays __ prominently] are likely to be attractive ones.

If the RC-internal representation of the external head can simply be deleted as proposed by Munn (1994) and Citko (2001), the ungrammaticality of (310) is unexpected. The vehicle change solution has an advantage here because it has been independently shown that vehicle change cannot apply to quantifiers. According to Safir (1999: 605–607), (311-a) should get the interpretation of (311-b), an E-type reading, under vehicle change of *several chorus girls* to *them*. However, this is not the case, the set of chorus girls recommended can be different in (311-a) but not in (311-b), showing that the ellipsis site in (311-a) does not contain a pronoun:

- (311) a. Jones recommended several chorus girls to the producer and then Smith did too.
 b. Jones recommended several chorus girls to the producer and then Smith recommended **them** to him too.

116 That the external head has to be retained if it contains elements with a negative licensing requirement is shown by the following example:

- (i) *He_i likes the [picture of John_i] [that I bought __].

Vehicle change could turn *John* into *him*, avoiding the Condition C effect inside the relative clause; if additionally the external head could be deleted, the Condition C effect would also be voided in the matrix clause, contrary to fact.

Furthermore, if vehicle change could freely apply to quantifiers, sentences like (312-a) should be grammatical as shown by the partial LF in (312-b), contrary to fact, see Safir (1999: 607, ex. 54a):

- (312) a. *No one loves everyone's_i mother as much as he_i does.
 b. ... as much as he_i [loves his_i mother].

Consequently, since vehicle change is not a possibility in (310), there will be a full instance of *anyone* in the c-command domain of *he*, leading to a Condition C effect under my version of the matching analysis.¹¹⁷

The inapplicability of vehicle change also accounts for strong crossover effects in relative clauses:

117 A different view can be found in Sauerland (1998: 79–84), Sauerland (2003: 222–223), and Sauerland (2004: 110–111): He assumes QR of *anyone* from the external head to a position c-commanding the bound pronoun. QR leaves behind a variable, which counts as an R-expression for the purpose of vehicle change. Consequently, it should be possible to relate it to a pronoun inside the internal head. This results in *picture of him* in the copies inside the RC. Interestingly, Sauerland assumes that the pronoun is ungrammatical inside the picture NP, in conflict with the observations in 2.3.1.4.1 above. Even if pronouns inside picture NPs were marked for certain speakers, this would not account for the strong ungrammaticality of the SCO example in (310). He goes on to predict that once the quantifier is more deeply embedded, the result should be felicitous, a prediction that is borne out according to him by the contrast in (i):

- (i) a. *Mary exhibited the [picture of every boy_i] [that he_i brought ____].
 b. Mary exhibited the [picture of every boy_i's mother] [that he_i brought ____].

Due to the deeper embedding, vehicle change of (i-b) results in *picture of his mother*, which would surely be grammatical in the c-command domain of *he*. However, I am very skeptical about the acceptability of this type of sentence. German equivalents with quantifiers are all downright ungrammatical. In my view, the empirical facts are better accounted for under the assumption that vehicle change is not an option here. For further discussion, see Safir (1999: 606, fn. 19) and Safir (2004: 94–99).

An example that is problematic for the view that vehicle change cannot apply to quantifiers is the following:

- (ii) Which politician_{1/i} did you read a [book about ____] [that he_i dislikes ____]?

The grammaticality of this example and thus the absence of an SCO effect suggests that *book about which politician* corresponds to *book about him* inside the RC. This may be possible if what is vehicle changed is not the quantifier *which politician* but rather the variable left behind. Why this should be impossible in the cases with *anyone* in (310), with *everyone* in (312) or with *every boy* in (i-a) is not fully clear.

Aoun & Nunes (2007) propose that quantifiers can be (indirectly) affected by vehicle change if they are part of a vehicle-changed DP; this may account for the grammaticality of (ii) and would still rule out (310), (312), and (i-a). However, it would wrongly rule in (i-b) (*every boy's mother* → *her*) and RCs with semi-idiomatic expressions like **the picture of John that he took*, since *picture of John* could correspond to *it* so that the Condition C effect should be bled, contrary to fact.

- (313) a. *the man who_i he_i likes __
 b. *the man whose_i sister he_i likes __

The relative clause-internal representation under the MA is [who man] and [who man's sister]; again, there is no target for vehicle change since the only DP available is the entire operator phrase, but again, quantifiers cannot be vehicle changed so that a Condition C violation is unavoidable; cf. Salzmann (2006a: 65–70) for further discussion.

Citko's example with the non-reconstruction of the NPI in (287) above, repeated in (314), requires a different solution as well under my approach:

- (314) Nobody found [a picture of **anybody**] [that everybody liked __].

Since the NPI in is in principle licensed in the bottom copy (it is an element with a positive licensing requirement and occurs in the c-commanded domain of *nobody*), exceptional deletion is not a possibility (unless it were extended to take into account the Immediate Scope Constraint). Instead, vehicle change can come to the rescue as ellipsis allows mismatches between *some* and *any*: *John drank some milk, but Bill didn't <drink any milk>*. Therefore, the bottom copy of (314) will be *a picture of somebody* so that the Immediate Scope Constraint is not violated:

- (315) Nobody found a picture of anybody λx . that everybody liked [the_x picture of **somebody**].

As in the Principle C cases, both the external head and the relative clause-internal copy are thus retained.

2.5.3.3 Obligatory non-reconstruction

One of the major advantages of the MA is that it can also capture the examples in (285) above, repeated in (316), where reconstruction must be blocked:

- (316) a. Parky pulled the [strings] [that __ got me the job].
 b. But Hawking has endorsed The Theory of Everything, so he_i must like the [portrait of himself_i] [that it presents __].¹¹⁸

Such examples are a problem for the version of the MA proposed in Sauerland (1998, 2003) because without further assumptions there will be an RC-internal

¹¹⁸ <http://www.spectator.co.uk/2015/01/what-the-theory-of-everything-doesnt-tell-you-about-stephen-hawking/>, accessed June 1, 2016

representation of the external head which is not licensed there.¹¹⁹ Citko (2001) proposes that such cases of obligatory non-reconstruction can be captured if the internal head can be deleted under identity with the external head, an assumption I will adopt. Since an element with a positive licensing requirement that is not licensed in that position is involved, exceptional deletion is licit. The LF of (316-a) thus looks as follows:

- (317) Parky pulled the [_{NP} strings] [_{CP} λ_x. ~~strings~~ that the _x ~~strings~~ got me the job].

Importantly, the anaphor case in (316-b) can arguably be captured under Sauerland's implementation of the MA because the anaphor could be vehicle-changed to *him*, a possibility which the following example shows to be independently available, cf. Fiengo & May (1994: 206–216):

- (318) John_i believes himself_i to be heroic, and he_i said that Mary does, too ⟨ believe **him**_i to be heroic ⟩.

Consequently, no local binder would be necessary inside the RC in (316-b) above since it would contain *it presents a portrait of him*.

Note that the possibility of vehicle change in principle provides an alternative to the full retention of the RC-internal copy in the case of anaphor reconstruction as in (304-b). If the external head is deleted (given that it contains unlicensed material with a positive licensing requirement) and there is vehicle change from anaphor to pronoun, one will generally obtain a well-formed representation inside the RC, e.g., *picture of him*.

Since vehicle change is in principle optional, either option will lead to a grammatical result. Note that vehicle change must be optional because of examples like (319):

- (319) I like the [picture of himself_i] [that Peter_i took ___].

Recall from section 2.3.1.4.1 above that in picture NPs of this semi-idiomatic type, only the reflexive is grammatical, while the pronoun is not, cf. *He_i took a picture of himself_i/*him_i* (arguably because of an implicit PRO). Consequently vehicle change must not apply in (319) and therefore must in principle be optional. The

¹¹⁹ Bhatt (2002: 47–48, note 1) speculates that his (and Sauerland's) implementation of the MA could perhaps handle the idiom cases if the external head is matched not against the literal form of the idiom but its semantic interpretation. However, this certainly goes beyond regular cases of vehicle change and it is not clear what the consequences of such an extension would be.

same arguably also holds for the example in (304-b) above, where only the reflexive seems acceptable (cf. *he_i discovered a new side of ??him/✓himself_i*).

2.5.3.4 Conflicting requirements

Another argument for the present version of the MA (and against the HRA) comes from data where it seems that the external head (or at least parts of it) must be interpreted in more than one position, i.e., both in the matrix clause as well as relative clause-internally ((320-a) is from Salzmann 2006a: 42; a similar example is found in Heycock to appear: ex. 40; see Heck 2005, Salzmann 2006a: 42, 118 for examples with variable binding):

- (320) a. I will never forget Somi, his sunken eyes, and the way he crawled into my arms as he_i showed me the [picture of himself_i] [_{CP} that one of my fellow students took ___].¹²⁰
- b. Peyton_i bekommt per Email ein [Foto von sich_i], [das Derek Peyton receive.3SG by e-mail a picture of self which Derek ___ gemacht hat].
take.PTCP have.3SG
'Peyton receives by mail a picture of himself that Derek took.'¹²¹

Standard German

Since the anaphor must be interpreted inside the external head, while for the idiomatic reading to obtain, the RC-internal copy must be interpreted as well, interpreting only one copy will not be sufficient. The only possibility under the HRA to deal with such examples would involve interpreting both copies. However, this leads to serious problems because the anaphor would not be licensed inside the RC as the binder in the matrix clause is too far away. Note that that since the expression *take a picture* only tolerates reflexives, the lower copy must contain an implicit PRO. Given minimality, PRO would be controlled by *one of my fellow students*, but then the reflexive would have to be bound by *one of my fellow students* as well (given that the NP would be the binding domain), contrary to fact. Since picture NPs in English may also allow for logophoric binding (even though this should be blocked in this case because of the PRO, cf. Reinhart & Reuland 1993: 686, note 29), data from English must be taken with care. German is more reliable in this respect, logophoric use of reflexives being impossible, cf. Salzmann (2006a: 85–94) and section 2.3.1.4.1 above. Given the example in (320-b), the prob-

¹²⁰ www.textbooksforafrica.org/19438.html?sessionidkey=sessionidval*

¹²¹ <http://www.myfanbase.de/one-tree-hill/episodenguide/?eid=2596>, accessed September 28, 2012

lem is thus real. Somehow, one would have to prevent the interpretation of the reflexive inside the RC, but it is not clear how this could be done under the raising analysis in a non-stipulative way, even with powerful tools such as distributed deletion (as, e.g., in Fanselow & Cavar 2002).

The matching analysis is generally better equipped to deal with such examples because it allows for the interpretation of both the external and the internal head. This is not sufficient, of course, because if the two occurrences are identical, the reflexive inside the RC could not be bound by the matrix subject, as the disjoint PRO inside the picture NP will block it (recall that it is controlled by *one of my fellow students*). Second, if PRO is also present in the matrix copy, it must have a different index (it must be controlled by the matrix subject *he*). The recoverability approaches by Munn (1994) and Citko (2001) are thus not sufficient because both copies would have to be retained in identical form. The present approach offers an advantage here because of vehicle change. Recall from section 2.5.3.3 that an anaphor in the antecedent can correspond to a pronoun in the ellipsis site. Consequently, the anaphor inside the external head can thus correspond to a personal pronoun inside the RC so that we get [*PRO_j picture of him_i*] RC-internally, which avoids an unbound anaphor. Binding inside the matrix then either requires a PRO with a different index or that PRO be absent altogether, which seems more appropriate given that the NP does not receive an idiomatic interpretation inside the matrix clause. See section 2.5.3.5.2 below for more discussion about the presence of PRO. The resulting LF-representation of (320-b) thus looks as follows:¹²²

122 Henk van Riemsdijk (p.c.) pointed out to me a related case where the head noun receives an idiomatic interpretation both in the matrix clause and relative clause-internally:

- (i) John never pulled [the strings] [that his mother told him should be pulled ____].

Like the examples in the text, (i) is a problem for the raising analysis given that it presupposes that by default only the lower copy is retained (unless the higher is privileged to allow for new binding possibilities). No problem arises for the matching analysis since usually there are always two occurrences that are interpreted (unless exceptional deletion takes place).

Similarly, one can construct examples with an antipronominal context (recall 2.3.1.3) both in the matrix clause and inside the RC, see Pankau (2015: ex. 24). If the ban against pronouns in certain expressions is an LF-requirement, such cases present the same challenge as (i).

The same issue also arises with anaphor binding if the anaphor is licensed both in the matrix clause and inside the RC (note that the subject starts out below the experiencer object so that the anaphor inside the external head can be bound by *ihm*):

- (ii) Das [Spiegelbild von sich_i], [das er_i an der Wand __ sah], beunruhigte ihn_i.
 the reflection of self which he on the wall see.PST.3SG disquiet.PST.3SG him
 ‘The reflection of himself that he saw on the wall made him nervous.’ *Std. German*

Next to the problem of having to interpret both copies, such examples pose an additional challenge for those implementations of the raising analysis where the head of the relative remains

- (321) Peyton_i received a [picture of himself_i] λx. Derek_j took the_x PRO_j picture of him_i.

2.5.3.5 The correlation cases

An important argument in favor of syntactic reconstruction comes from the observation that reconstruction effects usually go together, see Heycock (1995), Romero (1998: 90–101), and Fox (1999: 164–178) for *wh*-movement. The same observation has been made for relative clauses. Concretely, it has been claimed that Condition C effects re-emerge in relatives once reconstruction (and thus head raising) is forced for variable binding, idiom interpretation or scope, cf. Munn (1994: 402, ex. 15), Citko (2001); the following are from Sauerland (2003: 213–215):

- (322) a. *The [letters by John_i to her_j] [that he_i told every girl_j to burn __] were published.
 b. *the [picture of Bill_i] [that he_i took __]
 c. *I visited all [the relatives of Mary's_i] [that she_i said there are __ left].
 d. *The [headway on Mary's_i project] [that she_i had made __ pleased the boss].
 e. *The [many books for Gina's_i vet school] [that she_i needs __] will be expensive.

inside the relative clause, as this would require binding in an A'-position, which German generally disallows. Recall the discussion in section 2.4.1.2 above.

Note that the data in (i) and (ii) do not distinguish between the different versions of the matching analysis since retaining both the external and the internal head is sufficient. The example in the text is thus more interesting in that it additionally requires modification of one of the two occurrences and thus argues in favor of the present version that includes vehicle change.

An alternative to the vehicle change account would involve late merger of the *of*-PP containing the reflexive. As a consequence, there would be a bare NP inside the relative clause. Under this analysis, the facts could also be captured by other versions of the matching analysis. Some evidence that the possibility of late merger must be taken into account comes from examples like (iii):

- (iii) Arthur_i betrachtet ein [wenig schmeichelhaftes Foto von sich_i], [das Major __ von Arthur look.at.3SG a little flattering picture of self which Major of ihm_i gemacht hat].
 him take.PTCP have.3SG
 'Arthur_i is looking at an unflattering picture of himself_i which Major took of him_i.'

<http://www.tvprogramm.sf.tv/details/5fc823f1-666a-4322-b06b-1741b2f72fc8>, accessed September 28, 2012

Standard German

This correlation is expected under the raising analysis: Since reconstruction requires a relative-clause internal copy, the copy will also contain an R-expression so that Principle C effects obtain. The facts also follow under the version of the MA proposed by Munn (1994) and Citko (2001) because reconstruction is modeled by retaining the entire internal copy (while the external head can be deleted without violating recoverability).

Taken at face value, these data provide a serious challenge to the assumptions made here: Suppose that there is an RC-internal copy of the external head (in most of these examples, elements with a positive licensing requirement are involved). Given the possibility of vehicle change with a pronoun corresponding to the R-expression in the antecedent, the Condition C effect should be voided. For instance, (322-c–e) should be just as acceptable as the following simple sentences involving pronouns, contrary to fact:

- (323) a. She_i said that there are relatives of her_i left.
 b. She_i made headway on her_i project.
 c. She_i needs many books for her_i vet school.

2.5.3.5.1 Irrelevant cases

However, as I will show in what follows, most (and perhaps all) of these examples are ungrammatical for independent reasons: I will start with (322-b): As discussed in section 2.3.1.4.1, such semi-idiomatic expressions involve an implicit PRO inside the NP for the agent/creator of the picture (cf. *He_i took a picture of himself_i/*him_i*). Consequently, even if there is vehicle change, there is still a Principle B violation inside the picture NP:¹²³

- (324) *the [picture of John_i] [that he_i took [picture PRO_i of him_i]]

Note that the example improves to full grammaticality once a level of embedding is added. This strongly argues in favor of vehicle change:

- (325) the [picture of Bill_i] [that he_i thinks I_j took [PRO_j picture of him_i]]

123 This objection applies to many of the data in the literature suggesting that there is reconstruction for Principle C in relatives, cf., e.g., Schachter (1973: 32).

Note that the example will also be ungrammatical for independent reasons if there is a silent PRO inside the higher copy as it would trigger a Principle C violation inside the picture NP. This conclusion is inevitable under the raising analysis, where the copies have to be identical. In fact, I will argue in section 2.5.3.5.2 below that in examples where the NP receives an idiomatic interpretation in only one position, PRO must be absent in the occurrence without idiomatic interpretation. This is another mismatch that can only be handled by the MA.

Examples with existential *there* like (322-c) are usually argued to require scope reconstruction as they involve amount readings (cf., e.g., Bhatt 2002). However, the ungrammaticality of such examples is contested. Safir (1999: 613, note 22), for instance, judges the following example acceptable:

- (326) the [number of pictures of Diana_i] [that she_i thought there were ___ in the envelope]

German equivalents of (326) and (322-c) seem well-formed (to the extent that they can be constructed, see Salzmann 2006a: 115–116). Given vehicle change, the RC in (326) contains *that she_i thought there were pictures of her_i in the envelope*, which is, of course, grammatical. I will thus assume that these are only putative counter-examples.

The examples (322-d) and (322-e) are ungrammatical for a very different reason: The constituency of the head noun is simply wrong. The PPs are not complements of the noun but rather depend on the verb under the relevant reading; i.e., they do not restrict the head noun. Consequently, the head noun in (322-d) and (322-e) consists of 2 separate constituents, which necessarily leads to ungrammaticality. Evidence for this comes from the fact that under passivization, the PP cannot be moved with the head noun as would be expected if it were a subconstituent (for unclear reasons, not all speakers find (327-a) fully ungrammatical):

- (327) a. ??Much headway on this project was made.
b. Much headway was made on this project.

Since the PP depends on the entire expression *make headway* rather than just on *headway*, it cannot move together with the noun.¹²⁴

It should be mentioned that this reanalysis seems to be refuted by the observation in Sauerland (2003: 214, ex. 24b) that (322-d) becomes grammatical if the R-expression is replaced by a pronoun:

- (328) The [headway on her_i project] [Mary_i had made ___] pleased the boss.

However, I have found several speakers who still find this sentence strongly degraded, arguably for the above-mentioned reasons. A much more natural variant is (329), where the PP is left inside the relative clause:

¹²⁴ Under a different reading such as *The headway on her project was sufficient*, where the PP restricts *headway*, the two form a constituent and consequently can be moved together under passivization:

- (i) The headway on her project was considered sufficient.

(329) The [headway] [that Mary_i had made __ on her_i project] pleased the boss.

The contrast is very clear in German, consider the following pair (for unclear reasons, (330-a) is not fully ungrammatical for all speakers):

- (330) a. ??Die [Fortschritte bei ihrem Projekt], [die Maria __ machte],
 the progresses at her project which Mary make.PST.3SG
 waren beträchtlich.
 be.PST.3PL remarkable
- b. Die [Fortschritte], [die Maria __ bei ihrem Projekt machte],
 the progresses which Mary at her project make.PST.3SG
 waren beträchtlich.
 be.PST.3PL remarkable
 ‘The progress that Mary made on her project was remarkable.’

Standard German

Furthermore, it has been pointed out to me (Alain Rouveret, Nicolas Guillot, p.c.) that the same holds for French. I therefore conclude that (322-d) does not provide any evidence for a full relative clause-internal representation of the external head.¹²⁵

The same constituency problem accounts for the ungrammaticality of the example with the amount reading in (322-e). The string *need something for something* as such is structurally ambiguous; *for something* can be dependent on the first noun and restrict it, or it can be independent, i.e., a VP-adjunct. Depending on the context, both construals are felicitous or just one of them. Consider the following sentence:

(331) I still need a present for Mary.

Depending on what is focused, the speaker either needs a present, and this present has the purpose of being for Mary so that the PP is independent, or the

125 The empirical facts as reported in (322) above have recently been challenged to some extent. Heycock (2012, to appear) gives the following as grammatical (which under our assumptions would be expected to be ungrammatical as it contains an illicit external head):

(i) This represents the [only headway on Lucy_i's problem] [that she_i thinks they made __ so far].

Bhatt & Iatridou (2012: 6, ex. 22) on the other hand judge a minimally different version of (i) (where *she* and the reconstruction site are clause-mates and the referent of the pronoun is the one who makes headway) as ungrammatical. Heycock suggests that this may be due to an implicit PRO, which is disjoint in (i) but not in the example provided by Bhatt and Iatridou. German equivalents of (i) and Bhatt and Iatridou's examples all seem equally degraded as equivalents of (322-d).

speaker needs a present of a particular type, namely one that is characterized by being for Mary. Consider now the following base sentence of the relative in (322-e):

(332) Gina still needs many books for her vet school.

The most natural construal of this sentence is that Gina needs many books and she needs them for her vet school. The other construal with the PP dependent on books is unlikely here. But the unlikely construal is exactly what the constituency underlying (322-e) corresponds to. Evidence that the degradedness of (322-e) is due to an illicit external head again comes from the fact that the sentence does not improve markedly if the R-expression is replaced by a pronoun:

(333) ??the [many books for her_i vet school] [that she_i needs __]

Again, the only really natural way of expressing such a content would be to leave the modifier inside the relative clause:

(334) the [many books] [that she_i needs __ for her_i vet school]

Similarly, if we passivize the sentence, moving just *many books* is much more acceptable than moving *many books* + the *for*-PP:¹²⁶

- (335) a. Many books are needed for vet school these days.
b. ??Many books for vet school are needed these days.

126 The same reanalysis is possible for examples based on verbs of creation like *build*, which force a reconstructed reading, cf. Heycock (1995), Fox (1999). They have been used in the literature to show that Condition C effects pattern with scope reconstruction in *wh*-movement, but in my view, like the examples in the main text, they are ungrammatical because of an illicit external head; the same holds for the corresponding relatives:

- (i) *the [many houses in John_i's city] [that he_i thinks you should build __]

think > many; many > think

In (i), *John's city* cannot restrict *many houses* because the houses do not exist yet. Passivization as in (ii) shows again that *many houses in John's city* cannot form a constituent under this reading:

- (ii) a. *Many houses in John's city should be built this year.
b. Many houses should be built in John's city this year.

Furthermore, replacing the R-expression by a pronoun does not lead to an improvement. There is a clear preference to keep the PP-modifier inside the RC:

- (iii) a. ??the [many houses in his_i city] [that John_i thinks you should build __]
b. the [many houses] [that John_i thinks you should build __ in his_i city]

Bhatt & Iatridou (2012: p. 8, ex. 28–29) present an example similar to (i) as grammatical and minimally different ones (where the binder and the reconstruction site are clause-mates) as ungrammatical. I find the German equivalents of their examples strongly degraded.

German patterns exactly the same: The PP is strongly preferred inside the RC; replacing the R-expression by a pronoun inside the external head does not lead to an improvement:

- (336) a. ??die [vielen Bücher für ihr Medizinstudium], [die sie __ braucht]
 the many books for her medical.degree which she need.3SG
 b. die [vielen Bücher], [die sie für ihr Medizinstudium __ braucht]
 the many books which she for her medical.degree need.3SG
 ‘the many books that she needs for her medical degree’ *Std. German*

Under the construal where the PP is dependent on the N(P), however, N+PP can move to SpecTP under passivization and form an external head:

- (337) a. [Many books for vet school]₁ are sold __₁ in this bookshop.
 b. The [books for vet school] [that are sold __ in this bookshop] are very expensive.

Taken together, this clearly shows that upon closer inspection (322-d) and (322-e) are ungrammatical for independent reasons.

2.5.3.5.2 Further evidence for vehicle change

The examples discussed in the literature thus do not provide any evidence for a full RC-internal representation of the external head and therefore do not argue in favor of the raising analysis. As I will now show, when properly construed, examples of this type actually provide an argument against the raising analysis and in favor of the matching analysis.

The ungrammaticality of (322-a) cannot be explained by means of an illicit external head as nothing seems to be wrong with its constituency. While I have nothing to offer regarding the English example, I would like to point out that corresponding German examples are grammatical. See Heck (2005) for the original observation and the following example from Salzmann (2006a: 109, 112):

- (338) das [Buch von Peter_i über ihre_j Vergangenheit], [das er_i jeder
 the book of Peter about her past which he every.DAT
 Schauspielerin_j __ sandte]
 actress send.PST.3SG
 lit.: ‘the book by Peter_i about her_j past that he_i sent every actress_j’
Standard German

The data in (338) follow directly under the present approach: Since the bound pronoun is an element with a positive licensing requirement, the RC-internal copy

cannot be deleted. A Condition C effect is avoided by means of vehicle change, relating the R-expression in the external head to a pronoun inside the RC. The LF of (338) thus looks as follows:

- (339) das [~~Buch von Peter_i über ihre_j Vergangenheit~~], [λx .
 the book of Peter about her past which
~~Buch von ihm_i über ihre_j Vergangenheit~~] er_i jeder Schauspielerin_j
 book of him about her past he every.DAT actress
 [the_x Buch von ihm_i über ihre_j Vergangenheit] sandte
 x book of him about her past send.PST.3SG
 ‘the book by Peter_i about her_j past that he_i sent every actress_j’

A similar argument can be made when idiom reconstruction and Principle C are combined in German. Consider first the following pair from German:

- (340) a. *Der [Streit über Maria_i], [den sie_i __ vom Zaun gebrochen
 the fight about Mary which she off.the fence break.PTCP
 hat], nervt mich.
 have.3SG annoy.3SG me
 lit.: ‘The fight about Mary_i that she_i started annoys me.’
 b. Der [Streit über Peters Kritik an Maria_i], [den sie_i __ vom
 the fight about Peter’s criticism of Mary which she off.the
 Zaun gebrochen hat], nervt mich.
 fence break.PTCP have.3SG annoy.3SG me
 ‘The fight about Peter’s criticism of Mary_i that she_i started annoys
 me.’ *Standard German*

The idiom *einen Streit vom Zaun brechen*, lit. ‘break a fight off the fence’, meaning ‘start a fight’ is arguably of the same type as *take a picture*: There is evidence for an implicit PRO because in simple sentences only the reflexive is possible within the NP, while the pronoun is ungrammatical:

- (341) Sie_i hat einen [PRO_i Streit über *sie_i/sich_i] vom Zaun
 she have.3SG a fight about her/self off.the fence
 gebrochen.
 break.PTCP
 ‘She_i started a fight about *her_i/herself_i.’ *Standard German*

The implicit PRO will lead to a Condition C effect in (340-a) irrespective of vehicle change, i.e., even if *Maria* corresponds to *sie* ‘her’ because that would correspond to the ungrammatical variant of (341). If, however, a level of embedding is added

as in (340-b), the example becomes grammatical. This is expected under the vehicle change account because (340-b) then essentially corresponds to the following simple sentence where the pronoun is grammatical:

- (342) Sie_i hat einen [PRO_i Streit über Peters Kritik an ihr_i] vom
 She have.3SG a fight about Peter's criticism of her off.the
 Zaun gebrochen.
 fence break.PTCP
 'He_i started a fight about Peter's criticism of her_i.' *Standard German*

The sentences in (340) thus receive the following LFs:

- (343) a. *the fight about Mary_i λ_x. she_i started the_x PRO_i fight about her_i
 b. the fight about Peter's criticism of Mary_i λ_x. she_i started the_x PRO_i
 fight about Peter's criticism of her_i

Under the raising analysis, both sentences would be expected to be ungrammatical because the silent PRO should invariably trigger a Condition C violation.¹²⁷ Such data thus support the present version of the matching analysis with vehicle change and provide an argument against the implementation in Munn (1994) and Citko (2001), where a full copy of the internal head has to be retained if it contains material that has to be reconstructed; like the raising analysis, they thus incorrectly predict a Condition C effect in both examples in (340).¹²⁸

What remains to be clarified is the precise content of the external head in examples like (340). Since the interpretation is not idiomatic, there should be no

127 Note that in approaches like Safir (1999) and Henderson (2007) where vehicle change and thus the lack of Principle C effects is considered a general property of A'-chains, the German facts would be expected as well. However, it remains to be explained how, on such approaches, a general vehicle change mechanism can be implemented given that normally, vehicle change is limited to ellipsis contexts.

128 Citko (2001: 144) tries to argue against vehicle change by means of a semi-idiomatic example with an implicit PRO that is coreferential with the subject:

(i) *He_i/Picasso_i painted [PRO_i self-portraits of him_i] in the Blue period.

There is no doubt that this sentence is ungrammatical. In a next step, she uses such an idiomatic DP with an R-expression instead of a pronoun and tests reconstruction for Principle C. According to her, the following sentence is grammatical:

(ii) The [self-portraits of Picasso_i] [that he_i had painted ___ in the Blue period] are in the Met now.

She argues that under a vehicle change approach, (ii) should be equally ungrammatical as (i): The lower copy inside the relative clause would be retained and *Picasso* would be turned into *him* but would still be c-commanded by the implicit PRO so that a Principle B effect should obtain as in (i), a prediction that is not borne out according to her:

implicit PRO. Consequently, the external head should be retained. That this is the correct solution is shown by the example in (344):

- (344) *Er_i hat den [Streit über Peter_i] gehört, [den Maria ___
 he have.3SG the fight about Peter hear.PTCP which.ACC Mary ___
 vom Zaun gebrochen hat].
 off.the fence break.PTCP have.3SG
 ‘He_i heard the fight about Peter_i that Mary started.’ *Standard German*

The head noun receives an idiomatic interpretation inside the RC and thus needs to be represented there with an implicit PRO. It additionally contains an R-expression that is c-commanded by a coreferential pronoun in the matrix clause. This leads to ungrammaticality irrespective of reconstruction. However, if the external head could be deleted, the ungrammaticality could no longer be derived as the R-expression inside the RC could be vehicle-changed to a pronoun, thereby bleeding Condition C inside the RC. Note that this implies that ellipsis licenses the mismatch between an NP with and one without an implicit PRO.

In conclusion then, the correlation data, which were originally intended as an argument for the raising analysis, actually turn out to be an argument in favor of the MA proposed here with deletion under recoverability and vehicle change. See also Heycock (2012, to appear) for more evidence that reconstruction effects can be dissociated (she discusses dissociation of low readings of adjectives with Condition C and anaphor binding).¹²⁹

- (iii) %The [self-portraits of Picasso]_j [[Op [PRO_i self-portraits of him_i]_j]₁ that he_j had painted
 [x PRO_i self-portraits of him_i]₁ in the Blue period] are in the Met now.

Under her recoverability approach, however, things are different because the lower copy can be deleted under identity with the external head so that not even a Principle B effect obtains:

- (iv) The [self-portraits of Picasso]_j [[Op [~~PRO_i self-portraits of Picasso_i~~]_j]₁ that he_j had painted
 [x ~~PRO_i self-portraits of Picasso_i~~]₁ in the Blue period] are in the Met now.

This seems indeed to argue in favor of Citko's approach. However, I do not think that the argument goes through because the speakers I have consulted do not share the judgment that (ii) is grammatical. Rather, the example patterns with (340-a) above.

For the speakers that find the sentence acceptable, *of Picasso* is arguably treated as an adjunct and can thus be merged late (see the next subsection). This seems reasonable for the relative clause example, where *of Picasso*, unlike in the baseline sentence in (i), can only be interpreted as a possessor/creator but not as a theme.

129 There are aspects of reconstruction for Principle C that remain ill-understood. One the one hand, there is a non-syntactic component affecting the acceptability: For instance, stress on the coreferential pronoun within the relative clause or focus particles associated with it makes coreference much more acceptable, even in *wh*-movement, see Salzmann (2006a: 29) for German and

English and Bianchi (1999: 109–115) for Italian; for more discussion of information structural factors, see Krifka (2011).

On the other hand, there are cases where vehicle change does not seem to be sufficient. Consider the following examples involving possessors from Krifka (2011: p. 2, ex. 15; 4, ex. 44b):

- (i) a. *the [responsible guardian of Bill_i's sister] [that he_i claims to be __]
- b. *the [(dozens of) stories about Diana_i's brother] [that she_i is likely to invent __]

The external should not be problematic in these examples as the PP restricts the head noun. Through vehicle change, the R-expressions would correspond to possessive pronouns inside the relative clause as in (ii):

- (ii) a. he_i claims to be [_{XP} PRO_i [_{X'} [_{DP} guardian of his_i sister]]]
- b. she_i is likely to invent dozens of stories about her_i brother

Consequently, Principle C should be bled and the sentences would be expected to be grammatical, contrary to fact. Interestingly, both examples improve drastically if a level of embedding is added:

- (iii) a. Bill is not the [responsible guardian of Mary_i's daughter] [that she_i was hoping he would be __].
- b. No one will want to hear the [(dozens of) stories about Diana_i's brother] [that she_i thinks people will invent __].

This may at first suggest the presence of an implicit PRO and a vehicle change effect, and at least in cases with verbs of creation like (iii-b), this has been argued for, see Fox (1999: 167, fn. 24) (cf. *he invented stories about himself/*him*, but see Heycock 1995: 558, note 15 for a different view). However, an implicit PRO would still not cause a Binding violation under vehicle change in the examples without extra embedding in (i) since the possessive pronoun can be bound locally:

- (iv) She_i invented [PRO_i stories about her_i brother].

Thus, a different explanation must be sought. The Principle C effect in (i-a) may perhaps be due to independent factors since there seems to be no possibility to turn the fragment into a full sentence without *Bill* or *he* as the subject so that the Principle C effect already obtains in the matrix clause:

- (v) He_i/Bill_i is not the [responsible guardian of Bill_i's sister] [that he_i claims to be __].

Consequently, while (i-a) may eventually turn out to be irrelevant, (i-b) remains unaccounted for under the present approach. The facts suggest that embedding plays an crucial role in ways that are not fully understood yet. See Fischer (2002) for an interesting proposal in this respect.

It may also be the case that possessors are generally special. The following examples, which arguably contain licit external heads, seem rather degraded, although they should be fine if the R-expression is changed to a (possessive) pronoun ((vi-c) probably contains an implicit PRO):

- (vi) a. ??The [few coins from Bill_i's pocket] [he_i could spare __] weren't enough for all the needy. (could > few), cf. Sauerland (2003: 214)
- b. ??The [many bottles of Peter_i's Merlot] [that he_i drank __ that evening] would suffice to flood my living room. cf. Romero (1998: 94, ex. 40a)
- c. ??Die [Rede über Peters_i Mutter], [die er_i gestern __ geschwungen hat], the speech about Peter's mother which he yesterday swing.PTCP have.3SG fanden alle toll.
find.PST.3PL all great
lit.: 'Everyone liked the speech about Peter_i's mother that he_i gave yesterday.'

As a final point, predicate headed relatives as in (i-a) have been argued to display Condition C effects quite generally, see Sportiche (2016: ex. 71b). I have to leave these issues for future research.

2.5.3.6 Late merger

In this subsection, I will discuss the implications of late merger for the matching analysis before turning to relative clause extraposition. Recall first the argument-adjunct contrast with external heads containing quantifiers:

- (345) a. *[Pictures of anyone_i] [which he_i displays __ prominently] are likely to be attractive ones.
 b. [Pictures on anyone_i's shelf] [which he_i displays __ prominently] are likely to be attractive ones. Safir (1999: 611–612)

As discussed in section 2.3.6 above, the contrast can be derived under the matching analysis if matching/deletion precedes late merger (under the reverse ordering, the NPs would differ too much in (345) so that matching would fail). Things are somewhat different if the RC itself is to be merged late, as in the data discussed in 2.3.7 above, repeated for convenience ((346-a,b) are from Henderson 2007, (346-c) is from Sportiche 2006):

- (346) a. [What headway]₁ [that John_i made] did he_i later regret [what headway]₁?
 b. [Which picture of himself]_j [that John_j gave to Mary_i] did she_i take home [which picture of himself]_j?
 c. [Which pictures of each other]_j [which Jane_i showed the boys]_j does she_i think you like [which pictures of each other]_j?

The following German example illustrates the same problem (note that for the argument to go through, the experiencer verb must be unaccusative so that the topicalized DP originates below the coreferential pronoun):

- (347) [Das Spiegelbild von sich_i, das Peter_i an der Wand sah]₁,
 the mirror.image of self which Peter on the wall see.PST.3SG
 beunruhigte ihn_i ___₁.
 disquiet.PST.3SG him
 'The reflection of himself_i that Peter_i saw on the wall made him_i nervous.'

As discussed in section 2.3.7 above, even if late merger and reconstruction/raising can be reconciled, there is a problem with the copy of the *wh*-phrase in the theta-position since it contains material that is not licensed there, viz., an idiom chunk or an anaphor. Furthermore, on standard assumptions, the same arguably holds for the upper copy of the *wh*-chain (the example in (347) is slightly different in that the anaphor is licensed in the bottom copy). I repeat Henderson's representation of (346-a) with regular LF-deletion of the higher copy inside the RC:

- (348) [What [[headway]₂ [~~headway~~_T that John_i made headway₁]]]₃ did he_i later regret [what headway₂]₃?

Except in Takahashi & Hulsey's (2009) wholesale late merger approach (which was discarded because of the results in Stanton 2016), the problem with unlicensed material arises in all approaches that have tackled Henderson's paradox: In the approach by Nunes (2001) described in footnote 80, which reconciles late merger with raising/complementation, the idiom chunk/anaphor in the bottom copy of the restriction of the *wh*-phrase is not licensed either (the higher instance can arguably be reduced according to the Preference Principle). In his discussion of (347-c), Sportiche (2006: 65) assumes that the RC is merged cyclically and is thus present in the bottom copy. A Condition C effect is nevertheless avoided since the RC can be deleted under identity with the copy of the RC that modifies the upper copy of the *wh*-restriction:¹³⁰

- (349) [Which pictures of each other_j] [which Jane_i showed the boys_j] does she_i think you like [which pictures of each other_j] [~~which Jane_i showed the boys_j~~]?

What Sportiche does not address, however, is what happens to the restrictors of the two *wh*-phrases, which both contain material (viz., the reciprocal *each other*) that is not licensed there.

I believe that the MA as implemented here offers an interesting solution: First, since the RC can be treated as an adjunct, normal late merger is not a problem so that the RC is not represented in the theta-position of the *wh*-chain and no Condition C violation obtains. Second, given the assumptions about (exceptional) deletion, reconstruction into the relative clause is also possible under matching. Third, the recoverability perspective on deletion can deal with the unlicensed restriction of the *wh*-phrase in the bottom-copy of the *wh*-chain: I propose that exceptional LF-deletion of material with a positive licensing requirement should be extended to *wh*-movement: Deletion of the *wh*-restriction is exceptionally possible here be-

130 Note that there may be complications w.r.t. LF-deletion, especially in those versions of the raising analysis where the head noun remains inside the RC: LF-deletion may have to target a non-constituent, recall section 2.3.3.2.4 on constituency problems surrounding the raising analysis. Furthermore, it is not clear to me how such a structure is supposed to be interpreted. Under the raising analysis, it is usually assumed that the entire RC is a derived predicate with the head noun interpreted in its base-position, but the representation Sportiche uses in (349) instead suggests that the RC is intersected with the head noun; but that usually presupposes the constituency of the matching analysis or the HEA. See Zwart (2000), however, who argues that an intersective interpretation under raising is possible if the head noun moves to a higher position as, e.g., in Bianchi (1999).

cause it is recoverable from inside the relative clause. Normally, such deletion is not possible in *wh*-movement as this would mean that no copy of the restriction survives (and deletion would thus be irrecoverable). But once the *wh*-restriction is additionally modified by a relative clause into which it reconstructs, an additional copy is available for the purposes of recoverability:

- (350) What headway λx . [λy . ~~headway~~ that John_i made the_y headway] did he_i later regret the_x ~~headway~~

There remains one issue under the current analysis: The upper copy of the *wh*-restriction, which corresponds to the external head of the late-merged RC, is still present. Without additional assumptions, the restriction is not interpretable there as it contains an anaphor/an idiom chunk without the required binder/verb. Given the logic so far, the restriction of the top *wh*-copy should thus be deleted. Given that there is an instance of it inside the RC, deletion should be recoverable (i.e., the external head of the RC is exceptionally deleted under the same conditions as in 2.5.3.1). However, if it is deleted, it is not clear what happens to the RC as its adjunction site has been removed.

I propose that if the head noun is deleted the RC directly composes with the D-element. Note that this leads to the same semantics as under the raising analysis, where the entire RC denotes a predicate and there is no intersection with the head noun. In fact, this mode of composition holds for all the instances discussed in section 2.5.3.1, i.e., whenever the external head can only be interpreted relative clause-internally. The resulting interpretation will thus be as in (351) (note that this is the same result as under the WLM analysis in Takahashi & Hulseley 2009):¹³¹

- (351) What ~~headway~~ λx . [λy . ~~headway~~ that John_i made the_y headway] did he_i later regret the_x ~~headway~~

131 Deletion of the restriction of the higher *wh*-copy is also unproblematic if the RC is not directly attached to it. This is the case in the proposal by Sternefeld (2006: 377), where the RC is merged with D' recall (87). Similarly, in Hornstein et al. (2005: 279, ex. 76d) the RC seems to be adjoined to the (entire) *wh*-phrase. In the version of the sideward movement approach by Nunes (2001: 316–317) where raising is combined with adjunction, the *wh*-phrase and the relative clause are merged in a very different way: The *wh*-phrase undergoes sideward movement from the theta-position, is adjoined to the RC, and then the CP containing the *wh*-phrase is inserted into SpecCP:

- (i) [_{CP1} [_{CP2} [_{DP} which claim]^k [_{CP2} Op₁ that John_i made ___₁]] C was he_i willing to discuss [_{DP} which claim]^k]

In all three cases it is possible to delete the *wh*-restriction in the top-copy without removing the attachment site for the RC. However, in all three cases there will be unlicensed material in the bottom copy of the *wh*-phrase.

Note that the same result could be obtained under the representational approach by Sportiche (2006) if the RC is cyclically merged (as an adjunct) and later LF-deleted under identity with the RC in the top copy:

- (352) [What [[~~headway~~] [[Op ~~headway~~] that John_i made [x headway]]]]₁ did he_i later regret [x [[~~headway~~] [[Op ~~headway~~] that John_i made [x headway]]]]₁

Interestingly, there are examples where the RC has to be merged late, while the *wh*-restriction has to undergo reconstruction. Consider (353) from Sportiche (2006: 64–65, ex. 80):¹³²

- (353) [Which pictures of each other_j which John_i likes]₁ does he_i think they_j like __₁?

Reconstruction of the *wh*-phrase is necessary to ensure binding of the reciprocal. At the same time, the RC must not be interpreted attached to the lower copy as this would trigger a Principle C violation. Sportiche proposes that the RC is merged cyclically but LF-deleted (to capture the late merger effect), while the *wh*-restriction is retained in the bottom copy:

- (354) [Which pictures of each other_j] [which John_i likes] does he_i think they_j like [Which pictures of each other_j] [~~which John_i likes~~]

Under the present account, the restriction of the higher *wh*-copy and the copy of *pictures of each other* inside the RC would undergo deletion as well as they contain material with a positive licensing requirement that is not licensed there (this has the somewhat peculiar effect that the reciprocal is not interpreted at all within the RC, the reverse of (351), where the relevant restriction is only interpreted inside the RC). Note that this interpretation is easier to obtain under the matching analysis than under some variant of the raising analysis combined with WLM since WLM

¹³² Stepanov (2001: 100) uses the example in (i) to argue that adjuncts must always be merged late:

- (i) * [What evidence [that each other_i's friends brought up at court]]₁ did the lawyers_i refuse to talk about __₁?

If the RC could reconstruct together with the *wh*-phrase, the reciprocal would be bound and the sentence should be well-formed (Stepanov shows that the reciprocal can be bound in the non-*wh*-equivalent of (i)). Since the sentence is ungrammatical, Stepanov concludes that the RC cannot have been merged cyclically.

However, that clashes with the observations in Fox (1999: 172–174) that late merger is blocked once the adjunct contains material that is only licensed in a position below the landing site of *wh*-movement.

would remove the entire RC, including the head noun/the *wh*-restriction, from the lower copy so that the reciprocal could not be bound.¹³³

In conclusion, then, the paradoxical late merger data from Sportiche (2006) and Henderson (2007) provide an argument for the matching analysis developed in this chapter because they require exceptional deletion in *wh*-chains under recoverability. This fits naturally with a theory that independently has a strong recoverability component.¹³⁴

Extraposed RCs provide a similar challenge, recall the data from Hulsey & Sauerland (2006) introduced in section 2.4.1.3 above:

- (355) a. *I was shocked by the [advantage] yesterday [that she took of her mother].
 b. *I saw the [picture of himself_i] yesterday [that John_i liked ____].

133 The assumption that the higher *wh*-restriction is deleted in (354) seems to conflict with the claim in the literature that the position where the restriction of the *wh*-quantifier is interpreted determines the possible attachment site of the modifier, cf., e.g., Fox (1999: 167–172, 190). Interestingly, Sportiche (2006: 78) makes the same claim. Unfortunately, he does not discuss the fate of the higher *wh*-restriction w.r.t. (354). While this may seem paradoxical, as far as I can tell, the requirement that restriction and modifier must be interpreted together only holds if scope reconstruction is involved.

Note that it has also been proposed that the higher instance of the *wh*-restriction has to be retained under reconstruction, see Safir (1999: 592–593). Recall also that Henderson (2007: 216) assumes that the higher copy is licensed because it is part of a chain whose lower link can be interpreted.

134 Note that the example (241-b) by Takahashi & Hulsey (2009) discussed above does not follow under the current version of the matching analysis because the restriction containing the R-expression, viz., *corner of John's room* would have to be merged cyclically. Furthermore, there does not seem to be any independent justification to delete the *wh*-restriction in the bottom copy as no element with a positive licensing requirement that is not licensed there is involved. Note, though, that the grammaticality of the example is not undisputed: A structurally equivalent example is judged ungrammatical in Sauerland (1998). Its German translation strikes me as rather deviant (which may be related to the fact that it seems a bit strange to only repaint the corner of a room; in the English example, the attachment site of the relative clause is ambiguous, it could modify both *corner of John's room* or only *John's room*; no such ambiguity arises in German because the relative pronoun covaries with the gender of the head noun):

- (i) [In welcher [Ecke von Peters_i Zimmer]]₁, [die ich neu gestrichen habe], hat
 in which corner of Peter's room which I new paint.PTCP have.1SG have.3SG
 er_i __₁ gesessen?
 he sit.PTCP
 'Which corner of Peter's room that I repainted was he sitting in?' *Standard German*

I will leave this for further research.

The absence of reconstruction is unexpected under my version of the matching analysis because late merger of the RC should not block reconstruction into the RC given that it is possible in (346) (nor should cyclic merger of the RC in case extraposition involves cyclic movement, which is arguably the case in German, see Buring & Hartmann 1997, as extraposed clauses usually reconstruct). Furthermore, given the recoverability perspective adopted here, deletion of *advantage* or *picture of himself* in the theta-position (where it is not licensed) should also be possible. As was already pointed out in section 2.4.1.3 above, it is not the case that extraposition always bleeds reconstruction. Rather, there is some indication that the degradedness of examples like (355) can be related to parsing difficulties. This perspective receives additional support from the observations in Henderson (2007: 215), who notes that the examples in (355) improve once the copy in the theta-position is also licensed by a binder or a verb with which it can form an idiomatic expression (to facilitate discussion, I have slightly modified his examples):

- (356) a. John paid the [same heed] last year [that Mary paid ____].
 b. John_i saw the [picture of himself_i] last year [that he_i painted ____].

Obviously, such examples are also much easier to parse than those in (355), which suggests again that the offending copy is the one in the theta-position. A coherent interpretation of all the facts is possible if one assumes that reconstruction is not blocked under extraposition and that the degradedness of the examples in (355) is related to parsing. Under a late merger approach to extraposition, the bottom-copy of the QR-chain can then be exceptionally deleted because it is recoverable from inside the extraposed RC, exactly as proposed for the *wh*-movement cases in (346). Note that under a late merger approach to extraposition the restriction of the top copy of the QR chain will also be uninterpretable, as in the *wh*-movement cases in (346) (only the bottom copy inside the extraposed RC is licensed). Thus, the same intricate issues concerning interpretation and deletion obtain as well.

The raising analysis is not a possibility if extraposition involves late merger because wholesale late merger is inapplicable: QR involves the head noun and not just a quantifier/D-element to which the entire RC could attach. Consequently, to capture reconstruction effects under extraposition, the raising analysis requires extraposition to involve movement of the RC (and thus a derivation where the head noun moves to a higher position as, e.g., in Bianchi 1999). The matching analysis is thus at an advantage since it is compatible with both implementations of extraposition, viz., late merger and cyclic movement. Note that the traditional movement account of extraposition would also have the advantage that the material in the theta-position in the main clause can be deleted by the regular means

(deletion of the topmost copy inside the RC under raising, exceptional deletion of the external head under the matching analysis). As a final point, the examples in (356), like those discussed in section 2.5.3.4, imply that more than one copy needs to be interpreted. Again, this provides an argument for the matching analysis and against the raising analysis, where it is presupposed that only one copy is interpreted, which is normally the lower one.

In conclusion, reconstruction under extraposition does not provide any clear arguments in favor of either raising or matching. The matching analysis is at a slight advantage in that it is compatible with both implementations of extraposition, while under the raising analysis, extraposition must involve cyclic movement for the facts to come out right. Furthermore, only the matching analysis can account for the examples in (356), where more than one copy needs to be interpreted.

2.5.4 Intermediate summary: the matching analysis

The previous subsections have shown that the matching analysis has a number of serious advantages over the raising analysis: First, it avoids nearly all of the problems of the raising analysis since it adheres to the more traditional constituency and does not involve raising of the head. Second, it also straightforwardly captures the phenomena that require a relative clause-internal representation of the external head. This does not only apply to the treatment of head-internal relative clauses, the selection effects and the antipronominal contexts but crucially also to reconstruction: The version of the matching analysis I have proposed here provides the hitherto best empirical coverage of the reconstruction phenomena in relative clauses that have been discussed in the literature. In this respect, it is not only superior to the raising analysis, which requires the matching analysis in addition to capture a large part of the empirical domain (and still fails to account for certain crucial aspects) but also to previous versions of the matching analysis.

The only problematic issue that seems to remain for the matching analysis and that it shares with the raising analysis concerns the phenomena showing that relative pronouns do not always behave like determiners, recall section 2.3.3.2.10. Perhaps the most serious problem seems to be the fact that the relative pronoun inflects like the demonstrative pronoun rather than like the demonstrative determiner. However, this does not necessarily argue against treating it as a transitive element. Rather, following Wiltschko (1998) and Pankau (2016), one can assume that both the relative pronoun and the demonstrative pronoun are in fact transitive and take a silent NP complement. The morphological differences w.r.t. the demonstrative determiner, i.e., the longer endings in the genitive singu-

lar/plural and in the dative plural, can then be related to the licensing of the silent NP. The analysis would then basically be the same as with indefinite determiners/pronouns (e.g., *kein* vs. *keiner* ‘no’). In all these cases, the extra morphology corresponds to adjectival morphology, see Murphy (2016) for a recent proposal. Note also that in Middle High German, the demonstrative determiner was identical to the demonstrative pronoun and, crucially, was also used in relativization, see Paul et al. (2007: 217–224). Given this perspective, treating relative pronouns as transitive no longer appears as problematic as it may initially seem.

Concerning the deletion/matching operation, questions arise w.r.t. the notion of identity. Since RCs allow for vehicle change and tolerate mismatches w.r.t. Case and adjectival inflection, strict morpho-syntactic identity cannot be at stake. This tends to favor a semantic identity criterion as in Merchant (2001), but depending on one’s assumptions (especially concerning the morphology-syntax interface), a structural account may be conceivable as well. Since this is an ongoing discussion in the literature on ellipsis, I will leave this for further research.¹³⁵

With respect to the connectivity problem, this chapter has thus provided strong evidence in favor of the matching analysis. The implications for the modification problem are less clear. I will start with the attachment site of the RC: As discussed in 2.2.2.1 above, several syntactic (constituency) and semantic (scope) arguments favor a position below D. However, given certain assumptions, the restrictive reading may also obtain if the RC occurs in a higher position; furthermore, the constituency tests are not watertight. The hydra-facts tend to favor a higher attachment site, e.g., D’ as in Sternefeld (2006) unless the multidominance approach by Grosz (2015) is adopted. The force of the hydra-argument is eventually not fully clear, though, because the data are arguably somewhat marginal.

135 Given that ellipsis is involved, one might expect mismatches in phi-features as well. While the ellipsis mechanism as such could license that, such a derivation would also presuppose that the relative operator differs in phi-features from the head noun. Such a mismatch would lead to a semantically ill-formed representation and is thus independently ruled out. Furthermore, if as argued in section 5.4.2.3 below, there is an Agree relationship between N and the relative operator, such mismatches will also be ruled out syntactically.

Since NP-ellipsis allows for split-antecedents, see Elbourne (2001: 276–280) on E-type pronouns, NP-deletion in the matching analysis may perhaps also be able to accommodate relative clauses with split antecedents as in (i):

(i) Mary met a [man] and John met a [woman] [who know each other well].

However, since the antecedent of the operator normally has to be the local head noun, this would arguably lead to overgeneration. The E-type use of relative pronouns has mainly been documented for non-restrictive relatives, which allow split antecedents more readily than restrictive RCs, see Cinque (2008b).

Concerning the mode of attachment, as discussed in section 2.2.2.2.2 above, there are no compelling empirical arguments in favor of D-complementation. The selection-like effects that have been documented can arguably also be accounted for semantically; furthermore, the data suggesting that the RC is directly combined with D lose their force once a silent NP is postulated. Treating RCs as adjuncts, on the other hand, does facilitate the treatment of late merger (while the raising analysis combined with WLM eventually runs into difficulties).

Nevertheless, in section 5.4.2.3 below, where I will discuss Case attraction, I will argue – largely on theory-internal grounds – that relative clauses must be treated as complements of N because there is Case-Agree between the head noun and the relative pronoun, which requires c-command. Given that Case-Agree takes place cyclically, the RC must also be merged cyclically. To capture the effects of late merger, the representational approach by Sportiche (2006) with LF-deletion of the lower copy of the RC must be adopted. Furthermore, to ensure that the structure is interpretable, a certain syntax semantics mismatch is unavoidable: While the RC is introduced as a complement, it must not be interpreted as an argument of N; rather, it still composes with it by predicate modification. In other words, the RC is treated as a selected adjunct.

2.6 Summary

In this chapter, I have argued that the matching analysis provides a better account of the properties of relative clauses than the raising analysis, which is much more prominent in the literature. I have shown that the raising analysis is confronted with numerous serious technical problems related to fundamental aspects of syntax such as constituency, Case and locality. The modifications and alternative implementations that have been proposed in the last twenty years leave several of the crucial problems unsolved and usually require special assumptions and imply a complication of the syntax. The question thus arises what could justify the high costs that arise from an adoption of the HRA. It is usually argued that the raising analysis is required to capture phenomena such as reconstruction effects that show that there is a relative clause-internal representation of the external head.

I have instead argued in favor of the matching analysis. In my view, it offers significant advantages: First, by adhering to the classical constituency and not employing raising of the head noun, it avoids the numerous technical problems of the raising analysis. Second, since there is a relative clause-internal representation of the external head, reconstruction effects and other phenomena such as head-internal relatives can be captured as well. In addition, I have shown that the matching analysis displays better empirical coverage when it comes to recon-

struction effects in that it can also be applied to cases of non-reconstruction. While proponents of the raising analysis have to resort to the matching analysis in these cases, the version of the matching analysis I have proposed in this chapter can be applied to the entire empirical domain of reconstruction in relative clauses and thus emerges as a much more economical solution.

One interesting result of this discussion is that reconstruction effects in relative clauses are not handled by means of the interpretation of a lower link of a movement chain, at least not directly. Rather, deletion plays a crucial role in linking the external head to the position where it is semantically interpreted. As we will see in the remainder of this book, the explanatory force of deletion/matching will play an important role in other constructions as well.¹³⁶

136 Ellipsis/deletion also plays a central role in accounting for asymmetric reconstruction effects in ATB-movement, see Salzmann (2012a,b, 2013a).

There are additional phenomena showing that reconstruction is a phenomenon that goes beyond movement dependencies: First, there are connectivity effects in the absence of a lower copy. In the following Dutch contrastive left dislocation example from Boef (2012a: 143), an anaphor inside the topicalized VP is bound by the subject, cf. (i-a). However, the putative underlying source with the VP in-situ is ungrammatical, cf. (i-b) (perhaps, (i-b) is out for independent reasons, e.g., because *do*-support is not available without VP-topicalization):

- (i) a. [Elkaar_i helpen] dat doen ze_i hier niet ____
 each other help.INF that do.PL they her niet
 ‘Help each other, they don’t do that here.’
 b. *Ze_i doen hier niet [elkaar_i helpen].
 They do.PL here not each other help.INF
 ‘They don’t help each other here.’

Standard Dutch

For another example with contrastive left-dislocation, see Boef (2012b: 169, ex. 289). A similar case are sentential subjects, which show reconstruction for variable binding but not Principle C; see Moulton (2013) for a base-generation analysis. Yet another example of this type is reconstruction in pseudoclefts, see den Dikken et al. (2000: 42):

- (ii) What nobody_i bought was a picture of his_i house.

A syntactic solution is unlikely because *nobody* and the bound pronoun *his* are not part of the same clause and there is no obvious movement relationship that could reconstruct *nobody* into the same clause as *his* (see den Dikken 2006b: chapter 6 for an overview of possible analyses). Finally, a fact that will play an important role in the following chapters, reconstruction is also found in resumptive relatives (e.g., Salzmann 2006a, Rouveret 2008). Crucially, this also holds for cases where the resumptive is inside an island and a movement analysis is thus unlikely:

- (iii) de [Abschnitt vo sim_i Läbe], [won i < d Bhauptig, dass jede Politiker_i stolz **d**ruf
 the period of his life C I the claim that every politician proud there.on
 isch > nöd cha gläube]
 be.3SG not can.1SG believe.INF
 lit.: ‘the period of his_i life that I cannot believe the claim that every politician_i is proud
 of it’

Swiss German

The following table summarizes the pros and cons of the various approaches to (headed) relative clauses and clearly shows the advantages of the matching analysis proposed in this section over previous versions of the matching analysis and the different implementations of the raising analysis. For the purposes of this comparison, I am assuming that the matching analysis is combined with adjunction. As for the abbreviations, D&C refers to Donati & Cecchetto (2011), MA-S refers to the Sauerland's implementation of the MA (Sauerland 2003), MA-C refers to the version of the matching analysis proposed by Munn (1994) and Citko (2001), and MA in the last column refers to my own proposal.

Some of the pluses and minuses in the table require explanation: Donati & Cecchetto (2015) get +/- in the domain of reconstruction because they can only capture reconstruction of the head noun itself but not of constituents contained inside the head noun. Sauerland (2003) gets a +/- for non-reconstruction because he cannot capture non-reconstruction of idioms. I have split reconstruction under extraposition in two because there is both evidence against and for reconstruction. As for reconstruction under late merger, those raising analyses that are compatible with wholesale late merger only get a +/- because of the intrinsic problems of the WLM approach. Bianchi gets a +/- for constituency because only her analysis of *wh*-relatives is unproblematic. As for the extraction asymmetry, Bhatt (2002) and Henderson (2007) get a +/- because there is extraction from a moved constituent, but the constituent is in a position from where extraction is otherwise possible. As for the trigger, only those approaches get a + where the trigger is directly selection- or feature-checking related. As for locality, finally, some approaches get a +/- because they violate only a subset of the constraints.

Table 2.1: Comparison of approaches

| | HEA | Kayne | Bianchi | de Vries | Bhatt | Henderson | D&C | MA-S | MA-C | MA |
|--|-----|-------|---------|----------|-------|-----------|-----|------|------|----|
| reconstruction normal (130)–(137) | – | + | + | + | + | + | +/- | – | + | + |
| non-reconstruction (272), (285), (286), (287) | + | – | – | – | – | – | +/- | +/- | – | + |
| no Condition C correlation (338), (340-b) | – | – | – | – | – | – | – | – | – | + |
| reconstruction confl. requirements (320) | – | – | – | – | – | – | – | + | – | + |
| non-reconstruction under extraposition (294) | + | – | – | – | – | – | – | + | – | – |
| reconstruction under extraposition (295), (296) | – | – | +/- | – | + | + | + | – | + | + |
| reconstruction under late merger (230) | – | +/- | +/- | +/- | – | + | – | – | + | + |
| argument-adjunct asymmetry w.r.t. quantifiers (224) | – | + | + | + | + | + | – | +/- | – | + |
| head-internal RCs (121) | – | + | + | + | + | + | + | + | + | + |
| selection effects (125), (126) | – | + | + | + | + | + | + | + | + | + |
| antipronominal contexts (128) | – | + | + | + | + | + | + | + | + | + |
| RPs unlike determiners (204), (206), (208), (209) | + | – | – | – | – | – | – | – | – | – |
| constituency (coordination, extraposition, deletion) | + | – | +/- | – | + | + | + | + | + | + |
| head NP outside of RC: clitic placement (194) | + | – | – | – | + | + | + | + | + | + |
| head NP outside of RC: extraction asymmetry (196) | + | – | – | – | +/- | +/- | + | + | + | + |
| obeys cyclicity | + | – | + | + | + | + | + | + | + | + |
| good trigger NP-mvt | | +/- | +/- | + | +/- | + | +/- | | | |
| selection D-N = head-complement | + | – | – | – | – | + | + | + | + | + |
| respects locality (CED, LBC, PP-island) | + | +/- | – | +/- | – | +/- | – | + | + | + |
| correct Case/adj. inflection | + | – | – | +/- | – | – | – | + | + | + |

3 The syntax of resumption

The term resumption refers to a non-local and potentially unbounded dependency between a dislocated constituent and a pronoun. It is usually assumed that the dislocated constituent occupies an A'-position and thus establishes an A'-dependency similar to movement; resumptive constructions also roughly have the semantics of movement dependencies, but they crucially do not terminate in a gap. An example from Hebrew was already introduced in chapter two, repeated here (from Shlonsky 1992; in this example, the dislocated constituent would be the silent relative operator):

- (1) ha-ʔiš še raʔiti ʔoto
the-man that saw.1SG him
'the man that I saw' *Hebrew*

Resumption is most frequent with relativization and clefts and constructions based on them but rarer with *wh*-movement. It is also widespread in left- and right-dislocation constructions as familiar from Romance languages (Arregi 2003: 31):

- (2) Estos libros_i, Juan **los**_i leyó ayer.
these books Juan them read yesterday
'These books, Juan read yesterday.' *Spanish*

I will come back to the unbalanced distribution of resumption across A'-dependencies in 3.2.1.

Whether resumption also exists in A-movement dependencies is a matter of definition. An obvious candidate from the realm of A-movement is the so-called copy-raising construction, an instance of what looks like raising from a finite clause where the tail of the chain is occupied by a pronoun, see, e.g., Potsdam & Runner (2001), Řezáč (2011), Asudeh & Toivonen (2012):

- (3) Richard_i seems like **he**_i is in trouble.

There are two (possibly related) types of resumptives that are usually thought to constitute a separate, not fully grammatical phenomenon. First, so-called intrusive pronouns occur in positions from where regular movement (leaving a gap) is not possible, i.e., they are a repair device that alleviates the violation of locality constraints (e.g., a subjacency- or Empty Category Principle (ECP)-violation in traditional terms), but the result is usually not considered fully grammatical. They predominantly occur in languages that do not make productive use of resumptives, an example being English, see Chao & Sells (1983: 48):

- (4) a. This is the man that Mary couldn't remember if she had seen **him** before.
 b. Which man do they think that if Mary marries **him**, then everyone will be happy?

Apart from the limited acceptability, one fact that is claimed to set apart intrusive resumptives in English is that they are incompatible with quantificational antecedents:¹

- (5) *I'd like to meet every linguist that Mary wondered if she should invite **him** to the party.

A different repair device are so-called processing resumptives. They occur in positions from where movement is generally possible (and thus a gap would be expected). Their acceptability increases the further away they are from their antecedent, see, e.g., Erteschik-Shir (1992: 89):

- (6) a. This is the girl that John likes __/***her**.
 b. This is the girl that Peter said that John thinks that Bob likes __/?**her**.

The two repair devices will not play any role in the remainder of this book as the phenomena to be investigated only involve resumptives that are a regular grammatical device of the language.²

In the rest of this chapter, I will present a detailed overview of the syntax of resumption, focusing on those aspects that will play a major role in subsequent parts of the book. For other (shorter) overviews, see, e.g., McCloskey (2006, to appear) and Rouveret (2011). In section one, I will address the fundamental question any approach to resumption has to answer, viz., whether resumption involves movement or base-generation. I will argue that island-insensitive resumption is best analyzed as base-generation. In section two, I investigate the distribution of gaps and resumptives, both within a language, crosslinguistically as well as across the different A'-dependencies. I will show that one can distinguish two major perspectives on resumption: Either resumption is treated as a last resort

¹ However, as we will see in 3.1.2.5 below, resumptives in proper resumption languages also frequently impose restrictions on the antecedent so that this property should not be used to argue for a different status of English resumptives. For example, Shlonsky (1992: 448, fn. 3) judges a Hebrew example with a quantificational antecedent ungrammatical.

² It should be pointed out that the claims about the ameliorating effect of intrusive pronouns and the general acceptability of processing resumptives has been called into question by various experimental work, see, e.g., Asudeh (2012: chapter 11), the contributions in Sprouse & Hornstein (2013) and McCloskey (to appear) for discussion and references.

that only comes into play if everything else fails; consequently, one only expects resumption in restricted environments; alternatively, resumption is treated as a general option of the grammar, in which case one expects resumptives to be freely available in most contexts. Section three summarizes the main results of the chapter.

3.1 Movement or base-generation?

The fundamental question that has shaped the discussion on resumption is what syntactic means are used to establish the non-local dependency between antecedent and pronoun.

As a first approximation, it is important to notice that resumptives differ from normal anaphoric and bound pronouns in that they are obligatorily bound (I am using English data for convenience):

- (7) a. This is the student_i that I was wondering why he_{i/*j} wanted to leave.
 b. He_i/[every student]_i said he_{i/j} would leave.

While in (7-a), *he* has to be bound by the antecedent, *he* in (7-b) can also refer freely to an antecedent available in the discourse. In other words, resumptives are obligatorily bound. They thus resemble gaps in this respect (the content of the gap is identified by means of the information provided by the antecedent/filler). At the same time, resumptives are also pronouns and thus anaphoric elements. This hybrid nature is reflected in the two major competing approaches to resumption, viz., movement vs. base-generation. As we will see shortly, different analyses may be required for different languages, and even within the same language, different derivational histories may underlie what at the surface looks like the same phenomenon.

3.1.1 Two types of resumption languages

A crucial division has to be made between languages where resumption is sensitive to locality and those where it is not. While the latter have arguably been more prominent in the literature, more recent work has drawn attention to languages where resumptives seem to behave like gaps with respect to locality.

3.1.1.1 Island-sensitive resumptives

Languages where resumption is island-sensitive can be further subdivided into languages where resumption is blocked from strong islands only and those where it is also barred from weak islands. According to Boeckx (2003: 110–113), languages where resumption is only sensitive to strong islands are among others Modern Greek,³ Romanian, Welsh (Rouveret 2008),⁴ and Scottish Gaelic. Another case is Slovene, see Hladnik (2015: 30).⁵ The contrast is illustrated by means of data from Scottish Gaelic. (8-a) illustrates a *wh*-island, while (8-b) shows the ungrammaticality of a resumptive inside an adjunct island:

- (8) a. ?Siud am [boireanach] nach eil fhios agam < ciamar a
 that the woman not be knowledge at.me how C
 phòsadh duine sam bith i).
 marry.COND anyone her
 lit.: ‘That’s the woman who I don’t know how anyone could marry her.’
- b. *Dè an [t-òran] nach eil duine sam bith ag èisdeachd ri Iain <
 which song C-REL/NEG is anyone listening to Iain
 ged a tha e ga sheinn).
 although C is he singing it
 lit.: ‘Which song isn’t anyone listening to Iain even though he is singing
 it?’ *Scottish Gaelic*

³ The same empirical claim is found in Alexopoulou (2006: 85–86) and Daskalaki & Mavrogiorgos (2013: 337–338). According to Merchant (2004: ex. 26/27), however, resumptives in Greek are also well-formed inside strong islands.

⁴ The case of Welsh is somewhat intricate. As long as the resumptive is a silent *pro* or a clitic, resumption is island-sensitive; if, instead, an independent pronoun is used, islands can be voided, see Rouveret (2002: 130) and Rouveret (2008: 179). According to Rouveret, this argues for different derivations in the two contexts, see 3.1.3.4 below. For discussion of differences between literary and colloquial Welsh, see Willis (2000).

⁵ However, it should be pointed out that in Slovene *wh*-movement (with gaps) is also insensitive to *wh*-islands, suggesting that resumption is sensitive to the same islands as regular movement, i.e., that it is generally island-sensitive.

Languages where resumption is barred from all islands include Vata (cf. Koopman & Sportiche 1986: 369–370)⁶ and Serbo-Croatian, illustrated in (9) (cf. Goodluck & Stojanovic 1996: 291–292 and Boeckx 2003: 114):⁷

- (9) a. *[čovek] što se sećam (gde sam **ga** upoznala)
 man C REFL remember.1SG where be.1SG him met
 lit.: ‘the man that I remember where I met him’
 b. *[čovek] što si otišao (zato što **ga** je Petar otpustio)
 man C be.2SG left because C him be.3SG Petar fired
 lit.: ‘the man that you left because Peter fired (him)’ *Serbo-Croatian*

Similarly, in Swedish, resumptives only occur in the embedded subject position but otherwise (i.e., in other positions) do not improve locality violations, cf. Engdahl (1985: 10):^{8, 9}

- (10) ?*[Vilken bil] åt du lunch med (någon som körde __/ ***den**)?
 which car ate your lunch with someone that drove it
 lit.: ‘Which car did you have lunch with someone who drove it?’ *Swedish*

6 The extraction data in Vata are remarkable in that object extraction from a *wh*-island without a resumptive is well-formed, while subject extraction from a *wh*-island is ungrammatical despite the presence of a resumptive. This clearly suggests that subject resumptives pattern with subject gaps in other languages.

7 The status of Serbo-Croatian or, to use a more recent language description, Bosnian-Croatian-Serbian (BCS), in this typology is contested. See, e.g., Gračanin-Yuksek (2013: 32–33) for the claim that resumption is insensitive to islands in these languages.

8 Since Scandinavian languages are generally less sensitive to subadjacency, they do not easily fit into the groups introduced above. What is crucial in the current context is that resumptives do not affect island-sensitivity. Interestingly, Zaenen et al. (1981: 681) report an example as grammatical where a resumptive in direct object position occurs inside a sentential subject (which itself is embedded within a *wh*-island). However, there is reason to believe that object resumptives are just processing resumptives. Asudeh (2012: 35–36) shows that object gaps are equally acceptable in this context; the same observation can be found in Engdahl (1982: 154, 165). Engdahl also shows that object resumptives are completely unacceptable if the filler is closer. The unacceptability of the example in the text is a bit surprising in this light. Perhaps it is due to the fact that the extraction site is within a CNPC island which in turn is within a PP.

9 Palauan seems to be somewhat similar to Swedish in that gap and resumptive structures are equally insensitive to subadjacency, cf. Georgopoulos (1985: 72–75). Georgopoulos argues that gaps in Palauan extraction should be reanalyzed as silent *pros* (indeed, there is always agreement that would license a *pro*). In Georgopoulos (1991: 115–116, 127–128), however, it is shown that resumptives are barred from adjunct islands so that the language might have to be grouped with those where resumption is sensitive to strong islands.

Mandarin Chinese, finally, is subject to strong islands (Pan 2016: 35–40, only in relativization but not in left-dislocation); I have no information about the behavior in weak islands, unfortunately.

Sensitivity to locality is surely the best argument for a movement account. The challenge for a movement account is then to explain how a resumptive comes to occupy the extraction site and above all why this process happens in the first place. The two major technical solutions in the literature are spell-out of the trace and a Big-DP-structure. Both will be discussed below when we discuss island-insensitive resumption, see sections 3.1.3.2 and 3.1.3.3. As for the motivation for the resumptive in the first place, locality constraints cannot be at stake, or at least they must be different from those governing the opacity of weak and/or strong islands. I will come back to the possible factors that trigger the appearance of resumptives in 3.2.2 below.

There is an analytical alternative, originally proposed in Adger & Ramchand (2005) for Scottish Gaelic, developed for Welsh in Rouveret (2008) and applied to Mandarin Chinese in Pan (2016): The basic idea is that the locality effects emerge not because of movement but because of Agree. There is no movement; rather, the pronoun is generated in its theta-position and enters an Agree relationship with a probe on a C-head.¹⁰ More concretely, Rouveret assumes (following the original idea by Adger & Ramchand) that both the C-head as well as the pronoun depend on each other; recast in featural terms this means that each has a feature to be valued by the other element and a feature capable of valuing a feature of the other. Concretely, the feature specifications are as follows:

- (11) a. C: μphi , $i\text{Rel}$, EPP (which triggers Merge of an empty operator)
 b. resumptive: $i\text{phi}$, $u\text{Rel}$

Agree between the two will value the respective uninterpretable features.

The motivation for an Agree-only approach comes from so-called non-identity effects: Unlike what would be expected under movement and especially the copy theory of movement, one does not find the usual connectivity effects, viz., there is no or only limited evidence that the displaced constituent has ever occupied the position where the resumptive is located. This includes selection effects (Case and definiteness) and lack of idiom reconstruction and reconstruction for Principle C in Scottish Gaelic and lack of reconstruction for Principle C in Welsh. While

¹⁰ It should be pointed out that all the examples discussed in Adger & Ramchand involve gaps so that the resumptive is actually *pro*; their account is thus rather abstract, while there are at least some overt resumptives in Welsh and also in São Tomense Creole, which seem closest to Scottish Gaelic in most respects, see section 3.1.3.4 below.

these properties might (to some extent) also be compatible with a null operator analysis (combined with the head-external analysis of relatives), Adger & Ramchand (2005: 184) argue against this option because of the lack of parasitic gaps in Scottish Gaelic (see subsection 3.1.2.1 on parasitic gaps as a diagnostic for the nature of resumption). Furthermore, Rouveret (2008: 186) points out that, while there is some reconstruction in Welsh, there is no reconstruction into intermediate positions, contrary to what would be expected under a movement account (for reconstruction without movement, see section 3.1.3.5 below). The lack of identity effects under displacement can be illustrated by the following pair: While a definite in-situ complement triggers definite agreement on the preposition, a definite *wh*-phrase does not; instead, we find default third singular agreement on the preposition, see Adger & Ramchand (2005: 168–169):

- (12) a. Chuir thu am peann anns a’bhocsa.
 put.PST you the pen in.DEF the.box.DAT
 ‘You put the pen in the box.’
- b. Dè am bocsa a chuir thu am peann ann/ *anns.
 which the box C.REL put.PST you the pen in.3SG in.DEF
 ‘Which box did you put the pen in?’ *Scottish Gaelic*

One objection that can be raised against this type of approach is that the resumptive bears a special feature that distinguishes it from regular pronouns, viz., *uRel*. Consequently, one might expect it to be morphologically differentiated. As we will see in the next subsection, in the vast majority of languages, this is not the case; resumptives are identical to regular pronouns. Importantly, the data discussed in Adger & Ramchand (2005) are much more amenable to such an analysis because the resumptives are indeed different from anaphoric pronouns. I will come back to these special resumptives in section 3.1.3.4 below.

While a movement account, or one based on Agree, of island-sensitive resumptives is straightforward, the treatment of island-insensitive resumption has become rather contested. I will therefore focus on the latter, also because the phenomena to be discussed later in the book involve island-insensitive resumption.

3.1.1.2 Island-insensitive resumptives

Languages where resumption is island-insensitive seem to constitute the majority, at least given our current knowledge. Among them are, e.g., Irish (McCloskey 1990), Breton (Guilliot 2006: 1891), Hebrew (Shlonsky 1992), Lebanese Arabic (Aoun et al. 2001), Jordanian Arabic (Guilliot & Malkawi 2006), Bulgarian

(Krapova 2010), Polish (Bondaruk 1995: 41–42, Lavine 2003),¹¹ Colloquial Czech (Toman 1998), French (Guilliot & Malkawi 2006), Akan (Saah 2010), Tuki (Bantu, cf. Biloa 1990, 2013), Kinande (Schneider-Zioga 2007: 436),¹² Swiss German (van Riemsdijk 1989, Salzmänn 2006a), Dinka (van Urk 2016) and many more. Here is an example from Hebrew involving relativization into a complex NP island (from Givón 1979: 35):

- (13) ze ha ish she raiti < et ha kélev she nasháx **oto** >
 this the man that see.PST.1SG ACC the dog that bit him
 lit.: ‘This is the man that I saw the dog that bit him.’ *Hebrew*

At least until the early 1990ies, there was a consensus that resumption in these languages involves base-generation. The relationship between the operator and the pronoun is not established in syntax but rather via binding in the semantics, which is insensitive to locality. In other words, resumption is assimilated to variable binding, which is similarly unconstrained. This assumption is not only directly compatible with the locality facts but trivially accounts for the presence of a resumptive and the fact that resumptives are always identical to regular (personal) pronouns of the language; to put it differently: Languages do not have a special set of pronouns designated for resumption (see Asudeh 2011, 2012, McCloskey to appear, see also Adger 2011 and the discussion about hybrid approaches in 3.1.3.4 below for an important qualification).¹³ Resumptives are usually drawn from the unmarked series of the personal pronoun paradigm, thus usually the weak/clitic forms. In pro-drop languages, resumptives can be zero: In the following example from Modern Standard Arabic, the function of the head noun in the RC is indicated by the object agreement suffix *-ha* (which does not occur in simple clauses with an object DP, cf. Wu 2011: 592):

- (14) ?al-qiššatu llati: qara?a-**ha**:
 ART-story REL read.PST.3SG.M.SBJ-3SG.F.OBJ
 ‘the story that he read’ *Modern Standard Arabic*

¹¹ A different view can be found in Hladnik (2015: 33–34).

¹² For unclear reasons, while compatible with adjunct and *wh*-islands, resumptive dependencies are ungrammatical across relative clauses and clefts, see Schneider-Zioga (2007: 437, fn. 45).

¹³ One exception I am aware of is Vata: As pointed out in Koopman (1983: 368–369), the resumptive pronouns in Vata differ from regular anaphoric pronouns in that they bear a low tone instead of a mid tone. However, the description in Koopman & Sportiche (1982: 144) suggests that this is not just a property of resumptive pronouns but perhaps holds more generally of bound pronouns; unfortunately, the issue is left open in the article.

Silent resumptives have also been posited for Tuki, where only [+human] constituents are resumed overtly, see Biloa (2013: 236, 238); their presence is suggested by the fact that relativization can reach into strong islands.¹⁴

The position occupied by resumptive pronouns typically corresponds to the position which their non-resumptive equivalents occupy; for instance, if in some language weak pronouns are fronted, then the corresponding resumptives undergo fronting as well. For instance, Daskalaki & Mavrogiorgos (2013: 326–328) show that in modern Greek resumptive clitics are placed in the same way as regular (doubling) clitics. In other words, resumptive pronouns behave like regular pronouns.¹⁵ Similarly, if the language requires an overt/strong form of a pronoun in a certain environment, a resumptive in the same position will be overt/strong as well. For instance, Czech requires strong pronouns rather than clitics after prepositions; the same holds for resumptives that are governed by prepositions, while resumptives in other positions – in and outside of relativization – are weak/clitic, see Toman (1998: 305–306). Other contexts that require an overt/strong form of the resumptive include coordination or focus particles, see, e.g., Toman (1998: 311–312) for Czech, Hladnik (2015: 42) for Slovene and McCloskey (1990: 215) for Irish.

Another advantage of the base-generation account is that it accounts for the fact that as in binding, other resumptive elements such as strong pronouns or epithets are possible. The following pair illustrates a resuming epithet occurring with variable binding (Hornstein & Weinberg 1990: 134), cf. (15-a), and resumption (Aoun & Choueiri 2000: 8), cf. (15-b):

- (15) a. John criticized every senator_i in private, while praising **the bastard**_i in public.
 b. ʃəft l-bənt yalli btiftikro ʔənnə **ha-l-habiile** ma rafi
 saw.1SG the-girl that think.2PL that this-the-idiot NEG FUT
 tərbafi s-saba?
 win.3SG.F the-race
 lit.: 'I saw the girl that you think that this idiot will not win the race.'

Lebanese Arabic

¹⁴ There is an inconsistency between Biloa (1990) and Biloa (2013) in that in the older reference, the 'overt' resumptives are actually object markers as familiar from Bantu languages, while in the newer reference, there are separate pronouns in addition to the object marker. Crucially, though, with [-human] arguments, there is neither an object marker nor an overt pronoun.

¹⁵ At first sight, pronoun fronting in Hebrew seems more reminiscent of the movement of relative pronouns, see Borer (1984); however, pronoun fronting can also be analyzed as regular topicalization, see the discussion in 3.1.3.1 below.

In the Government and Binding-literature, base-generation was modeled as follows (cf., e.g., McCloskey 1990): An operator is directly merged into SpecCP and binds a pronoun merged in the argument position:

(16) $[_{CP} \text{ wh-XP}_i \text{ C} \dots \text{pron}_i]$

In the minimalist literature, base-generation has been recast as follows: McCloskey (2002: 203) proposes that the difference between movement and base-generation is encoded on the matrix C-head: While the C involved in movement has both an $u\text{Op}$ -feature and an EPP-feature, the C involved in resumption only has an EPP-feature:

(17) Complementizers in Irish

| | | |
|----|--------------------|--------------------------------|
| a. | $u\text{Op}$, EPP | movement complementizer |
| b. | EPP | base-generation complementizer |

Consequently, while Agree is involved in movement derivations (which thus entails sensitivity to locality constraints), the EPP under base-generation can be checked by External Merge. Again, as in the traditional account, the link between operator and pronoun is established semantically, accounting for the island-insensitivity. An alternative is the feature-system proposed by Abels (2012: 124–134): Movement languages would possess a C-head that requires mutual c-command between probe and goal, viz., $[\text{uF}_{\downarrow\uparrow}]$, while base-generation languages require a probe that searches upward, viz., $[\text{uF}_{\uparrow}]$.

A strong argument for approaches that locate the difference in the features of C comes from a well-known property of Irish: The (topmost) complementizers involved in movement and base-generation, respectively, differ morphologically (McCloskey 1990: 205–206):

(18) a. an fear a bhuail tú —
 the man aL struck you
 ‘the man that you struck’
 b. an fear ar bhuail tú é
 the man aN struck you him
 ‘the man that you struck’

Irish

Of course, this solution is less attractive for languages where there is no morphological differentiation between gap and resumptive relatives (such as Hebrew or Swiss German) as one will have to postulate two homophonous complementizers. It may therefore be more attractive to capture the difference by means of different specifications of operators. There is reason to believe that this is indepen-

dently necessary: Base-generation has consequences for the features of the operator: Since on standard assumptions it does not enter an Agree relationship with a Case-probe, it must not have an *uCase*-feature; rather, it must either be Case-less or bear some default Case. This may also account for the fact that operators under base-generation are usually silent or invariant, see Merchant (2004). Moving operators, however, must have *uCase* as they originate in the theta-position and enter Case-checking on their way to the operator position. Once the distinction between movement and base-generation is thus located on the operator, it becomes possible to use the same C-head in both constructions – under the assumption that *uOp* can be checked by External Merge, as proposed in Salzmann (2013b: 84–85). The question of where to encode resumptivity will become important in the discussion about variation between languages with resumption and those without in sections 3.2.1 and 3.2.5 below. An alternative treatment of base-generated operators will be proposed in section 5.4.2.3 below.

While locality is a phenomenon that clearly separates resumption languages into two types, some of the other properties that have been investigated with respect to the movement/base-generation dichotomy provide equivocal results. Particularly puzzling is the fact that some of the movement diagnostics do not correlate. This affects in particular the analysis of island-insensitive resumption, where some diagnostics suggest that movement may be involved after all.

3.1.2 Further movement diagnostics

3.1.2.1 Parasitic gaps

One possible argument in favor of a movement analysis of resumption is parasitic gap-licensing. Among others, it has been observed for Slovene, see Hladnik (2015: 35), Polish (Bondaruk 1995: 52) and Swedish, see Engdahl (1985: 7, 38–39):

- (19) Det var den fången som läkarna inte kunde avgöra om **han**
 it was that prisoner that doctors.the not could decide if he
 verkligen var sjuk [utan att tala med __ personligen]
 really was ill without to talk with in.person.
 lit.: ‘This was the prisoner that the doctors couldn’t determine if he really
 was ill without talking to in person.’ *Swedish*

There has been rather little work on parasitic gap-licensing under resumption (partly related to the general lack of parasitic gaps in many languages). Languages where parasitic gaps do not seem to be licensed under resumption in-

clude Mooré (cf. Tellier 1989) and Hebrew (cf. Shlonsky 1992: 462–463).¹⁶ Even in this small sample there is no clear pattern since PGs seem to be available with island-sensitive (Slovene) and island-insensitive (Polish) resumption.^{17, 18}

3.1.2.2 Resumptives as variables in ATB-contexts

Another possible diagnostic for movement is the occurrence of resumptives in ATB-configurations. If ATB-“movement” is possible with resumption, resumptives pattern with movement derived variables. Indeed, as expected, resumptives in ATB-contexts are found in languages where resumption does not affect locality such as Palauan (Georgopoulos 1985: 88, Georgopoulos 1991: 107–109), Mandarin Chinese (Pan 2016: 283) and Swedish, see Zaenen et al. (1981: 681):

- (20) Där borta går en man som [jag ofta träffar ___] men [inte minns
 there goes a man that I often meet but don't remember
 vad **han** heter].
 what he is.called
 lit.: 'There goes a man that I often meet but don't remember what he is
 called.' *Swedish*

However, resumptives in ATB-contexts also occur in languages where resumption is island-insensitive such as Hausa (cf. Crysmann (2012: ex. 9/10)), Hebrew (cf. Sells 1984: 78–85), Polish (cf. Bondaruk 1995: 52) and Swiss German (which will be discussed in detail in chapter 5 of this book). The following example illustrates an ATB-context where the resumptive occurs inside a CNPC island:

¹⁶ For a different view on PG-licensing in Hebrew, see Borer (1984), Sells (1984) and Demirdache (1991).

¹⁷ Given current Minimalist assumptions, it is not fully clear that parasitic gaps should only be licensed by movement. Under an approach as in Nunes (2004), pg-licensing under base-generation may be possible as well as long as the base-generated operator can form chains with the copies inside the adjunct (that create the PG). Perhaps the lack of Case of such operators is what prevents PG-licensing. I leave this for further research.

¹⁸ According to Chomsky (1982: 57–58), English resumption does not license parasitic gaps:

(i) *A man [whom [everyone who meets ___ pg] knows someone who likes him].

- (21) de Autor, wo [de Hans __ vereert] und [d Susi ⟨jedes Buech list
the author C the John adore.3SG and the Susi every book read.3SG
won **er** schriibt)]
C he write.3SG
lit.: ‘the author that John adores and Susi reads every book that he writes’
Swiss German

The compatibility with ATB-contexts thus does not correlate with locality. More generally, it has been observed that the well-formedness of ATB-constructions does not necessarily depend on there being movement from all conjuncts but rather on there being a variable in each conjunct that is bound by a single element. In other words, ATB-constructions are compatible with asymmetric extraction as long as the extracted element binds not only its own trace but also a variable in the other conjunct(s), which can also include pronouns, see Salzmann (2012b: 359–361) for discussion. In other words, the occurrence of resumptives in ATB-contexts does not tell us anything about the underlying derivation and therefore cannot serve as a diagnostic to differentiate between movement and base-generation.¹⁹

3.1.2.3 Cyclicity effects

Another possible diagnostic are cyclicity effects. If resumption involves movement (or Agree), one might expect reflexes on the path between the pronoun and the final landing site, viz., reflexes of successive-cyclic movement/cyclic Agree (see Georgi 2014, to appear for a recent overview and analysis). In island-sensitive resumption, such effects have been claimed to exist for Scottish Gaelic, see Adger & Ramchand (2005: 166), and (written) Welsh, see Rouveret (2008: 174).²⁰ In island-insensitive resumption, cyclicity effects have been investigated in Irish, where the pattern is very clear: A'-movement based on gaps shows cyclicity effects, i.e., the complementizer *aL* appears in all C-positions crossed by A'-movement, see (22-a). In resumption, however, cf. (22-b/c), only the topmost C appears as *aN*, the complementizer used in resumptive dependencies, while declarative complementizer is used in intermediate clauses. Importantly, intermediate complementizers are always declarative under resumption, irrespective of whether the resumptive is in an island (22-c) or not (22-b), cf. McCloskey (2002: 185, 190, 196):

¹⁹ According to Chomsky (1982: 102–103, fn. 31), resumptives are also (marginally) possible in English ATB-contexts, but only if all conjuncts contain a resumptive:

(i) the man who_i a friend of his_i likes Bill and one of his_i brothers hates Tom

²⁰ See also Willis (2011: 197–198) for reflexes in colloquial Welsh.

- (22) a. an t-ainm **a** hinnseadh dúinn **a** bhí __ ar an áit
 the name aL was.told to.us aL was on the place
 ‘the name that we were told was on the place’
- b. an t-ór seo **ar** chreid corr-dhuine **go** raibh sé ann
 the gold DEM aN thought some-people go was it there
 ‘this gold that some people thought was there’
- c. achan rud **a** rabh < dóchas aca **go** dtiocfadh sé)
 every thing aN was hope at.them go come.COND it
 ‘everything that they hoped (that it) would come’ *Irish*

Selayarese (cf. Finer 1997) patterns the same, i.e., only shows a reflex in gap-dependencies (complementizer deletion and *wh*-agreement, which involves the absence of absolutive agreement on the embedding verb). However, I have not been able to ascertain whether resumption in Selayarese is fully island-insensitive. In Dinka, where resumption is island-insensitive, movement reflexes (V2 and *ke*-copying) are only found under movement, cf. van Urk (2016).

Palauan shows *wh*-agreement both with “gaps” and resumptives, see Georgopoulos (1985: 71, 77–83), crucially even if the resumptive is within an island (p. 71). However, the island-(in)sensitivity of Palauan is not quite clear-cut; see Georgopoulos (1991: 115–116, 127–128) for evidence that resumption is barred in adjunct islands, the implications of the data are thus unclear. Resumption does show cyclicity effects, but it is not clear whether this correlates with locality.²¹ The most interesting case I am aware of is Akan, where resumption is island-insensitive. As shown in Korsah & Murphy (to appear) for the Asante Twi dialect,

²¹ Intermediate *wh*-Agreement in Hausa is absent under resumption according to Tuller (1986: 127–128., ex. 169/170) and Haik (1990: 361–362). However, since reflexes of movement in intermediate positions are optional (and probably disfavored), see Tuller (1986: 120–121, 145), they will also be difficult to diagnose in resumption. Furthermore, with respect to the crucial example on p. 128, ex. 170 (and another one, ex. 106a on p. 81), while there is no *wh*-agreement inside the island (a sentential subject), there is also no *wh*-agreement in the matrix clause (which is otherwise present in resumption dependencies, see ex. 169), casting doubt on the relevance of the example. To make things worse, of the 3 examples illustrating a resumptive dependency across on non-bridge verb on p. 169, ex. 221, 2 have a reflex in the embedded clause and one does not. The data on Kikuyu are similarly incomplete: Haik (1990: 361, fn. 14), citing Clements (1984: 44–45), argues that there are reflexes under resumption. However, the only example with resumption that displays a reflex does not involve embedding so that it remains unclear whether this also holds for intermediate positions. Unfortunately, in the other examples in Clements (1984) the reflex could not be seen even if it were present for independent tonal reasons. The Hausa and Kikuyu data thus so far only show that resumptive dependencies can show movement reflexes, but they do not provide evidence for intermediate reflexes and thus cyclicity. I am very grateful to Siri Gjersøe for help with the Kikuyu data.

in *A'*-dependencies, there are tonal reflexes on all verbs between operator and resumptive: Low-toned syllables of verbs become high-toned. Crucially, the movement reflex is also found if the resumptive is inside an island. Diagnosing the reflex requires some care since certain islands (*wh*-islands, relative clauses, adjunct islands) independently involve an *A'*-dependency so that the reflex need not be due to the resumptive dependency that reaches into the island. The following examples provided by Sampson Korsah involving a noun-complement clause avoid this complication as in this case there is no reflex without an *A'*-dependency (the resumptive is the possessive pronoun; note that CD = clausal determiner):²²

- (23) a. Me-te-e [atetésém] bí sé Kofi fe-e n' anó
 1SG-hear-PST rumor INDF C Kofi kiss-PST 3SG.POSS mouth
 'I heard a rumor that Kofi kissed her (lit.: her mouth).'
- b. [ɔbáá nó] áa me-té-e < atetésém bí sé Kofi fé-e
 woman DEF REL 1SG-hear-PST rumor INDF C Kofi kiss-PST
 n' anó nó >
 3SG.POSS mouth CD
 lit.: 'the woman that I heard a rumor that Kofi kissed her (lit: her
 mouth)' *Akan*

Obviously, our current state of knowledge about resumption is very scarce so that no firm conclusions can be drawn from the available data. But this surely constitutes an important area for future research.²³

²² At first sight, pronoun fronting in Hebrew (cf. Borer 1984) seems to be a cyclicity effect as well. However, most likely it simply illustrates cyclic topicalization of the pronoun itself and not of the antecedent, see section 3.1.3.1 below.

²³ Some languages, including Irish, Selayarese and Dinka, possess so-called mixed chains, which, pretheoretically, consist of a movement and a base-generation part. This is most clearly visible in Irish (McCloskey 2002), where the shape of the complementizers suggest that an initial movement step can be followed by base-generation (i.e., the moved operator gets bound from a higher operator in the scope position, i.e., aL followed by aN) or initial base-generation can be followed by movement (i.e., the base-generated operator undergoes movement to the final landing site, aN followed by aL); Selayarese only seems to have the type where base-generation is followed by movement, cf. Finer (1997); Dinka also only has mixed chains where base-generation is followed by movement. It differs from the other two languages in that movement dependencies can be initiated from both the edge of vP and CP, see van Urk (2016). See also Iatridou (1995) for an analysis of clitic left-dislocation in terms of mixed chains.

McCloskey takes mixed chains to provide an argument for a base-generation analysis of resumption (because without the fundamental difference between movement and base-generation the mixed patterns are hard to account for). However, Boeckx (2003: 119–125) provides a reanalysis in terms of movement, more precisely, in terms of iterative relativization. He argues that movement

3.1.2.4 Crossover effects

Crossover effects are another diagnostic that has played an important role in the discussion. Strong crossover effects normally obtain if there is A' -movement across a c -commanding pronoun bearing the same index as the moved constituent as, e.g., in (24):

(24) *Who_{*i*} does he_{*i*} like __?

Traditionally, they are subsumed under Principle C: The trace left behind by A' -movement counts as a variable, which is subject to Principle C. If it is A -bound as in (24), a violation of Principle C ensues. Importantly, SCO effects have been observed under resumption as well. Diagnosing them requires some care in the construction of the example, though, because one has to rule out the possibility that the pronoun that is putatively crossed functions as a resumptive, as shown in McCloskey (1990: 211–212):

(25) Cé_{*i*} ar shíl tú gur dhúirt sé_{*i*} go bpósfadh Máire é_{*i*}?
 who aN thought you C said he C would.marry Mary him
 ‘Who_{*i*} did you think that he_{*i*} said that Mary would marry him_{*i*}?’ Irish

(25) is well-formed because the first – putatively crossed – co-indexed pronoun can be analyzed as the resumptive, while the second pronoun is just coreferential and thus not a variable. In other words, the example is equivalent to (26):

(26) Who_{*i*} di you think ___{*i*} said that Mary would marry him_{*i*}?

To diagnose crossover effects, one has to make sure that the crossed element cannot function as the resumptive. One possibility consists in using a position where resumptives are independently ruled out (such as the highest subject position, which often bars resumptives, see sections 3.2.2 and 5.2.2 below, where this is shown by means of Swiss German data). An alternative is pursued in McCloskey

is involved in both types of chains, the difference in the form of the complementizer resulting from the fact that constituents of different sizes move (NP, i.e., stranding/resumption vs. DP, i.e., gap). What seems problematic for Boeckx’ approach is the fact that in the sequence aL followed by aN there is no visible stranding in the matrix clause and more generally, there is no visible relativization structure; the external D of the intermediate clause would necessarily have to be silent. Apart from that I think that it is not possible to make a decisive argument for either movement or base-generation just on the basis of the complementizers; in both cases, an A' -dependency stops in a non-scope position and another one begins in a non-thematic position. Neither is expected given that a single non-mixed A' -dependency (movement or base-generation) would be available instead.

(1990: 211–212), who instead employs epithets as co-indexed elements which – at least in Irish – cannot function as resumptives. Indeed, SCO effects then emerge:

- (27) **Sin an fear_i ar dhúirt an bastard_i go maródh sé_i muid.*
 that the man aN said the bastard C kill.COND he us
 lit.: ‘That is the man_i that the bastard_i said he_i would kill us.’ *Irish*

The same effect has been observed for Hebrew in Shlonsky (1992: 460–461), for Welsh in Rouveret (2002: 134), for Lebanese Arabic in Aoun & Choueiri (2000: 5–6), for Jordanian Arabic in Demirdache & Percus (2011: 378), for Mandarin Chinese in Pan (2016: 66–67) and for Palauan in Georgopoulos (1991: 192, 197). Whether SCO-effects also obtain if the resumptive is inside an island has not been discussed in the literature; importantly, the Swiss German data discussed in section 5.2.2 below will show that crossover effects do obtain with resumptives inside islands. Consequently, crossover effects do not pattern with locality.

Whether SCO effects constitute a movement diagnostic is not clear. Under a movement approach to resumption presupposing the copy theory of movement and possibly the Trace Conversion mechanism by Fox (2002), there will be a definite description in the c-command domain of a co-indexed pronoun. Given this, it is straightforward to subsume SCO effects under Principle C (but of course this requires a mechanism that allows movement to escape islands under resumption). Under base-generation, this is less clear because all there is at the tail of the dependency is a pronoun. Surely, it is A'-bound and in pre-minimalist accounts this is sufficient for an element to qualify as a variable for the purposes of binding theory (see, e.g., McCloskey 1990, to appear, Shlonsky 1992).²⁴ But in contemporary Minimalist work which attempts to capture all binding effects with the copy theory, this is no longer obvious as there is only a pronoun in the c-command domain of the crossed coreferential element (note that notions like ‘variable’ no longer have a clear status). To subsume SCO effects in base-generated resumption under Condition C, it seems that the definition of Condition C would have to be complicated in non-trivial ways. As we will see in section 3.1.3.5 below, the problem also arises in those proposals that attempt to capture reconstruction under base-generation by means of NP-ellipsis. More discussion of SCO-effects under resumption can be found in sections 4.5.2.3, 5.2.2 and 5.4.3 below. Note finally that the subsump-

²⁴ Note, though, that this assumption is not innocuous given the fact that A'-moved pronouns across their antecedents do not trigger SCO effects (as long as there is no Principle B violation), see Postal (2004: 212). Given that their trace is A'-bound, they should be subject to Condition C according to this logic, contrary to fact.

tion of SCO effects under Principle C is not without problems, see Postal (2004) for critical discussion.

As for weak crossover (WCO) effects, they are a somewhat problematic movement diagnostic because even in bona fide movement dependencies they are not always felt equally strongly. For instance, while they are robust in English *wh*-movement, they have been argued to be much weaker if not absent in topicalization, and even the status of WCO effects in restrictive relatives is contested, see Lasnik & Stowell (1991: 689, 691, 698):

- (28) a. *Who_i does his_i boss dislike __?
 b. [This book_i]₁, I expect its_i author to buy __₁.
 c. the man_i [who_i [his_i mother loves __]]

Given that resumption is particularly frequent in relative clauses, WCO effects under resumption are not expected to be very robust, irrespective of whether movement is involved or not. In addition, as with SCO effects, one has to rule out alternative analyses where the crossed pronoun functions as a resumptive. With possessives as in (28), the alternative analysis is frequently available given that many languages have resumptives in these positions. If the appropriate configurations can be established, the results seem to be mixed.²⁵ On the one hand, WCO effects have been observed both in island-sensitive resumption languages like Vata, see Koopman & Sportiche (1982: 143–147) and Mandarin Chinese, see Pan (2016: 59), as well as in languages like Hebrew (Shlonsky 1992: 461, but see Sichel 2014: 667 for a different judgment), Jordanian Arabic (Demirdache & Percus 2011: 378) and French (cf. Pan 2016: 61), where resumption is island-insensitive. On the other hand, in Irish, no WCO effects obtain with an example that is structurally parallel to the Hebrew one presented in Shlonsky (1992: 461), see McCloskey (1990: 212, ex. 35). The facts are thus somewhat inconclusive, especially because it is unclear what the language variation should be due to.²⁶

²⁵ Next to the two configurations to diagnose crossover mentioned above, viz., using a pronoun in positions where resumption is impossible or using an epithet that cannot function resumptively, Demirdache (1991: 56) proposes a third one: She observes that WCO effects can be triggered in Hebrew by fronting the resumptive across the co-indexed possessive.

²⁶ Safir (1996) shows that WCO effects disappear under resumption in colloquial English. He argues that if an operator A' -binds more than one variable, they have to be of the same type, viz., be both established either derivationally (movement) or representationally (binding). Mixed chains are not allowed, which is supposed to account for SCO and WCO effects under movement and their absence under resumption. However, he does not discuss configurations where the putatively crossed pronoun cannot be resumptive. Given this, the absence of crossover effects under resumption must be taken with care. The same caveat applies to the absence of WCO effects re-

3.1.2.5 Reconstruction

The movement diagnostic that surely has received the most attention in recent years are reconstruction effects. As in the literature on relative clauses, they are usually interpreted as showing that there is a transformational relationship between the surface position of the antecedent and the position where it is interpreted.

Given the prevailing base-generation perspective until the early nineties, reconstruction effects were hardly discussed because their absence was usually taken for granted, the only systematic exception being the crossover facts discussed in the previous subsection. Another exception I am aware of is Zaenen et al. (1981: 681), who argue that there is reconstruction for Principle A in Swedish resumption.²⁷ With the advent of movement approaches to resumption, however, this has changed quite drastically.

One would arguably expect reconstruction to be most likely in languages where resumption is island-sensitive. Indeed, Rouveret (2002: 132, 138–139), Rouveret (2008: 181–182, 185) shows that resumptive relatives in Welsh show reconstruction for Principle A (on this see also McCloskey to appear: fn. 15), variable binding and scope (more precisely: functional readings). While there are SCO effects (Rouveret 2002: 134), there is no reconstruction for Principle C unless reconstruction is forced by variable binding (recall the discussion about the correlation cases in section 2.5.3.5 above). (29) illustrates reconstruction for variable binding (from Rouveret 2008: 182):²⁸

- (29) Mae gan Siôn [farn ar ei_i lyfr] [y mae [pob awdur]_i yn ei
is with Siôn opinion about his book C is each author PROG it
pharchu]
respect
'Siôn has an opinion about his_i book that each author_i respects.' *Welsh*

ported for Breton resumption in Guilliot (2006: 1989), the absence of WCO effects in Palauan, see Georgopoulos (1991: 197–203), the absence of WCO effects in Tuki, see Biloa (1990, 2013), the absence of WCO effects in Kinande, see Schneider-Zioga (2007: 437), and the absence of WCO effects in Modern Greek, see Daskalaki & Mavrogiorgos (2013: 329–330), who all fail to provide the relevant test case where the crossed element cannot be resumptive.

²⁷ However, as already mentioned above, their example 6 is puzzling since it involves a direct object resumptive, although according to other descriptions, i.e., Engdahl (1985), only embedded subject resumptives are well-formed; consequently, the resumptive may be of the processing type. Consequently, reconstruction may be felicitous here not because of the resumptive but because extraction is in principle licit in this configuration.

²⁸ Reconstruction for idiom interpretation is apparently degraded for independent reasons, see Rouveret (2008: 189, fn. 9).

Pan (2016: 155, 169, 179–180, 184–185) shows that resumptive relatives in Mandarin Chinese, which are sensitive to strong islands, exhibit reconstruction for scope (distributive readings), variable binding, Principle A and Principle C.

However, as already mentioned above, island-sensitivity does not necessarily imply reconstruction: Adger & Ramchand (2005) provide evidence that there is no reconstruction in Scottish Gaelic.

As for island-insensitive languages, the possibility of reconstruction is argued for in a number of publications: Demirdache (1991: 96–97) provides an example from Hebrew with reconstruction for Principle A:²⁹

- (30) Zo-hi [ha-tmuna ha-yexida šel ?acmo_i] [še Dani_i lo zaxar
 this-is the-picture the-only of himself that Dani not remembered
 ?im hi mudbeket heitev ba-?albom].
 whether it glued well in-the.album
 lit.: ‘This is the only picture of himself_i that Dani_i did not remember if it is
 glued well in the album.’ *Hebrew*

Another example is resumption in Breton, which allows for reconstruction for variable binding and anaphor binding (where logophoricity may play a role, though), according to Guillot (2006: 1894), while there is no reconstruction for Principle C. He does not discuss any cases where the resumptive is located inside an island. It is precisely this question that is most relevant from a theoretical perspective.

Probably the most influential publication w.r.t. reconstruction effects was Aoun et al. (2001), who discuss reconstruction effects in Lebanese Arabic. They argue that one should distinguish two types of resumption even within the same language. The crucial observation is that reconstruction effects (for variable binding) only obtain if the resumptive is in a position from where movement is in principle possible; no reconstruction is found, however, if the resumptive is located within an island. They provide the following minimal pair involving left-dislocation (Aoun et al. 2001: 392–393):³⁰

²⁹ Note that *wh*-islands in Hebrew are very weak if not absent altogether; consequently, the example does not provide evidence for reconstruction into a domain that is inaccessible for movement. See also Safir (2004: 117) for arguments that the example does not instantiate reconstruction proper.

³⁰ Aoun & Li (2003: 16) illustrate the same contrast for resumption under *wh*-movement.

- (31) a. [təlmiiz-[a]_i l-kəsleen]_i ma baddna nyabbir [wala mʕallme]_i ʔanno
 student-her the-bad NEG want.1PL tell.1PL no teacher that
 l-mudiira ʃaħatət-o_j mn l-madrase
 the-principal.SG.F expelled.3SG.F-him from the-school
 ‘Her_i bad student, we don’t want to tell any teacher_j; that the principal
 expelled from school.’
- b. *[təlmiiz-[a]_i l-kəsleen]_i ma zəʕlit [wala mʕallme]_i < laʔanno
 student-her the-bad NEG upset.3SG.F no teacher because
 l-mudiira ʃaħatət-o_j mn l-madrase >
 the-principal.SG.F expelled.3SG.F-him from the-school
 lit.: ‘Her_i bad student, no teacher_j was upset because the principal
 expelled him from school.’ *Lebanese Arabic*

The authors interpret the facts as showing that, while (31-a) involves movement, (31-b) involves base-generation. Consequently, resumption in (31-a) is termed ‘apparent resumption’, while they call resumption as in (31-b) ‘true resumption’. In other words, reconstruction effects pattern with locality.³¹ The same empirical claim can be found in Agüero-Bautista (2001: 172, 188), who observes that in Spanish, when *wh*-movement interacts with universal quantifiers, reconstruction with the dative resumptive *le* is possible in transparent contexts, but not if *le* is located within a strong island. Further evidence for the split between true and apparent resumption comes from an empirical study on resumption in *wh*-dependencies in Brazilian Portuguese and Hebrew by Panitz (2014): Panitz investigates the interaction between *wh*-quantifiers and universal QPs and finds reconstruction, viz., pair-list readings, if the resumptive is located in a transparent domain, but not if it is located inside a strong island (adjunct island and relative clause island). In the following pair (from Panitz 2014: 24), (32-a) allows for a pair-list reading, while (32-b) does not (note that there are also speakers in his survey that do not allow any reconstruction under resumption):

³¹ Essentially the same distinction is adopted in Bianchi (2004). She shows that there is no reconstruction into islands but seems to presuppose that reconstruction is in principle possible under resumption as long as the resumptive is in a transparent position; unfortunately, however, she does not provide any examples apart from scope reconstruction with obligatory resumptives, a complication discussed towards the end of this subsection.

- (32) a. [Qual poema]_i que o organizador disse que cada um dos
 which poem C the organizer said that each one of.the
 professores vai falar sobre ele_i?
 professors will talk about it
 ‘Which poem did the organizer say that each of the professors will talk
 about?’ wh>∀; ∀>wh
- b. [Qual poema]_i que você vai sair (antes que cada um dos
 which poem C you will leave before that each one of.the
 professores fale sobre ele_i)?
 professors talks.SBJV about it
 lit.: ‘Which poem will you leave (the lecture) before each of the pro-
 fessors talks about it?’ wh>∀; *∀>wh
- Brazilian Portuguese*

The position by Aoun et al. and Panitz is challenged in Guillot & Malkawi (2006: 170). They argue that examples from Jordanian Arabic that are parallel to (31-b) do allow for reconstruction. Furthermore, they provide examples from French showing reconstruction for variable binding into strong islands (essentially the same point is made in Guillot & Malkawi 2009, 2011):

- (33) a. [La photo de sa_i classe]_j, tu es fâché (parce que [chaque
 the picture of his class you are furious because each
 prof]_i l_j’ a déchirée).
 teacher it has tear.apart.PTCP
 lit.: ‘The picture of his_i class, you are furious because each teacher_i
 tore it.’
- b. [Quelle photo de lui_i]_j es-tu fâché (parce que [chaque
 which picture of him are-you furious because every
 homme]_i l_j’ a déchirée?)
 man it has tear.apart.PTCP
 lit.: ‘Which picture of him_i are you furious because each man_i tore it?’
- French*

The situation in Jordanian Arabic is in fact more complicated according to the authors. Reconstruction into islands is only possible with weak resumptives but blocked with strong resumptives/epithets (which otherwise do allow for reconstruction). Furthermore, they show that, while there is never reconstruction for Principle C with weak resumption, Condition C effects obtain with strong resumption. Reconstruction for variable binding into islands also seems to be possible in

Tuki resumptive *wh*-movement, see Biloa (2013: 249) (unfortunately, the discussion is somewhat confusing so that this may have to be taken with care).

Abstracting away from the fine-grained crosslinguistic differences, the facts so far suggest that resumption shows at least some reconstruction effects. There is one very clear exception that I am aware of, viz., Bulgarian, which according to Krapova (2010: 1248–1249) does not show any reconstruction effects under resumption (while gap relatives do).³² As for the various reconstruction tests, in light of the fact that reconstruction for Principle C is largely absent in headed relative clauses, recall the discussion from section 2.4.1.1, it is little surprising that Condition C effects are often absent in resumption as well, at least if the resumptive occurs in relativization (it should be added, though, that in some languages, e.g., Welsh, cf. Rouveret 2008, there is apparently a contrast between gap- and resumptive relatives in this respect). Reconstruction for variable binding and anaphor binding, however, are robustly attested (of course with the general provisos about reconstruction effects discussed in section 2.3.1.4 above; see also the refinement by Sichel w.r.t. optional vs. obligatory resumptives discussed in section 3.1.3.4 below).

One issue that has received rather little attention are cyclicity effects in reconstruction, viz., reconstruction into intermediate positions. They are potentially relevant because they would provide rather convincing evidence for movement. I am only aware of two short discussions: Rouveret (2008: 186) shows that there are no cyclicity effects in Welsh: If the external head of the relative contains both a bound pronoun and an R-expression, coreference between the R-expression and an embedded subject pronoun is impossible even if the QP is located in the matrix clause. This suggests that the external head can only be interpreted in the theta-position but not in an intermediate position between the QP and the pronoun:

³² Resumptive relatives in Croatian also do not allow for reconstruction according to Gračanin-Yuksek (2013). However, since this is a more general property of headed relative clauses in the language, it does not reveal much about the nature of resumption. Absence of reconstruction under resumption (as well as in *wh*-relatives) has also been observed in Polish (cf. Szczegliński 2004: 2–26, 33, 62) and Slovene (Hladnik 2015: 100–101.)

For what it's worth, Aoun & Li (2003: 244, fn. 16) argue that there is no reconstruction under resumption in English; the same claim can be found in Safir (2004: 116–117).

- (34) [barn yr athro ar ei_i mab] [y gŵyr [pob mam]_i] y mae ef
 opinion the teacher on her son that knows each mother that is he
 yn ei chuddio]
 PROG it conceal
 ‘the teacher_j’s opinion on her_i son that each mother_i knows that he_j con-
 ceals’
 Welsh

A different pattern is reported for Breton anaphor binding in Guilliot (2006: 1911): There, binding is only possible by the matrix subject but not by an embedded subject, suggesting that the external head is interpreted in an intermediate position. Obviously the two data points conflict and require further investigation.

While reconstruction as such is thus well-established under resumption, there is an important interpretive restriction that has been observed in several resumption languages: Resumptives require their antecedent to be specific/ref-ferential/D-linked.³³ For instance, resumption in Hebrew *wh*-movement is only possible with D-linked *wh*-phrases, see Sharvit (1999b: 591):^{34, 35}

- (35) a. *mi nifgašta ito?
 who you-met with.him
 ‘Who did you meet with?’
 b. eyze student nifgašta ito?
 which student you-met with.him
 ‘Which student did you meet with?’
 Hebrew

Similarly, quantified, especially negatively quantified heads of RCs will often be degraded unless they quantify over a presupposed set.³⁶ As a consequence of these semantic restrictions, resumptive pronouns usually block scope reconstruction. This was first pointed out in Doron (1982). She observed that, while Hebrew gap relatives allow for both a *de dicto* (non-specific) and a *de re* (specific) reading in intensional contexts, only the *de re* reading is possible in resump-

³³ Possible systematic exceptions seem to be Bulgarian, see Krapova (2010: 1264) and Yiddish, see Prince (1990). Furthermore, non-specific interpretations seem to be possible in Hebrew in more narrowly-defined contexts, viz., in specificational sentences and under modal subordination, see Sharvit (1999b: 588, 593, fn. 5).

³⁴ As Ivy Sichel has reminded me, it is important to stress that the acceptability of resumption under *wh*-movement in Hebrew is subject to considerable speaker-variation.

³⁵ The same restriction has been observed for Lebanese and Standard Arabic, see Aoun et al. (2010: 139–143); see also Hoekstra (1991: 71–72) for a similar contrast in Frisian.

³⁶ See Shlonsky (1992: 448, fn. 3), Suñer (1998: 357) and Sharvit (1999b: 592–593, fn. 4) for examples and partly conflicting judgments possibly related to individual differences in contextual accommodation of quantified expressions.

tive relatives; in (36-b), there is thus a particular woman familiar to Dan that he is looking for (the *de dicto* reading in (36-a) obtains by reconstructing the antecedent/interpreting it in the scope of the intensional verb):

- (36) a. Dani yimca et ha-[iša] [še hu mexapes ____].
 Dani find.FUT ACC the-woman C he seeks ✓de re; ✓de dicto
 b. Dani yimca et ha-[iša] [še hu mexapes ota].
 Dani find.FUT ACC the-woman C he seeks her ✓de re; *de dicto
 ‘Dani will find the woman he is looking for.’ Hebrew

The same holds for Spanish according to Suñer (1998: 357–358); she points out that, while distributive readings are possible in gap relatives, they are blocked under resumption:³⁷

- (37) a. los [tres estudiantes] [a los que cada profesor debe entrevistar ____]
 the three students A whom every professor must interview
 ‘the three students that every professor must interview’ 3>∀; ∀>3
 b. los [tres estudiantes] [que cada profesor debe entrevistar=los]
 the three students that every professor must interview=them
 ‘the three students that every professor must interview’ 3>∀; *∀>3
 Spanish

Similarly, resumptive relatives usually block amount readings, as in the following example from Hebrew, see Bianchi (2011: 332):³⁸

- (38) [kamut ha-šeleg] [še-raiti (*ota) be-Montreal]
 quantity the-snow that-saw.1SG it in-Montreal
 ‘the quantity of snow I saw in Montreal’ Hebrew

Similarly, Šimík (2008) shows that resumption in Czech is incompatible with amounts, predicates and superlative expressions. More data from other languages illustrating the same point can be found in Bianchi (2004: 92–93). For further discussion see also Boeckx (2003) and Bianchi (2011).

Interestingly, it has been argued that the semantic restrictions only obtain with so-called optional resumptives but not with obligatory resumptives, an obser-

³⁷ Similarly, Guillot & Malkawi (2009: 163–165) observe that in French resumptive *wh*-constructions the distributive reading is blocked. Importantly, though, the functional reading is available, suggesting that there is some reconstruction after all.

³⁸ The prohibition actually affects maximalizing relatives quite generally; as a consequence, resumption in free relatives is usually blocked as well. See 3.2.1 for more discussion about the compatibility of various types of *A'*-dependencies with resumption.

vation first put forward in Bianchi (2004: 95–96). Optional resumptives are those that alternate with gaps in the same position; an example would be resumptives for direct objects in Hebrew or Irish, where gap relatives are just as unmarked. Obligatory pronouns are those that do not alternate with a gap. The positions Bianchi has in mind are indirect objects (which in many languages require resumptives) and complements of prepositions but crucially not positions within islands. Obligatory resumptives thus allow for *de dicto* readings, amount readings and distributive readings (and also occur in free relatives, which are maximalizing) according to Bianchi, at least in Brazilian Portuguese, Spanish, Hebrew and Irish. Here are a few examples:

- (39) João vai encontrar certamente a [mulher rica] [que ele quer casar
Joao will find surely the woman rich that he wants marry
com ela].
with her
'João will surely find the woman he wants to marry.' ✓*de re*; ✓*de dicto*
Brazilian Portuguese
- (40) los [tres estudiantes] [que cada professor debe hablar con ellos]
the three students that every professor must speak with them
'the three students that every professor must talk to' 3>V; V>3
Spanish
- (41) an buaireamh uilig [aN ndeachaigh sé fríd]
the trouble all C went he through.it
'all the trouble that he went through' *Irish*

The same lack of semantic effects with obligatory resumptives is documented for Modern Greek in Alexopoulou (2006: 80–84) and in Daskalaki & Mavrogiorgos (2013: 332–333). Sichel (2014: 659–672) extends Bianchi's observations. She argues for Hebrew that optional resumptives not only block scope reconstruction but in fact any kind of reconstruction, including idiomatic readings, Principle A and variable binding. Importantly, the claim does not hold for particular positions but rather only for optional resumptives. For instance, Sichel shows that in Lebanese Arabic, where direct objects require resumptives, reconstruction is possible in this context. Similarly, even within Hebrew, not all DO-resumptives pattern the same. While normal DO-resumptives are optional and thus block reconstruction, resumptives for inherent accusatives (with experiencer verbs) are obligatory and as a consequence allow for reconstruction. This suggests that the

reconstruction properties do not depend on properties of the pronoun itself (I will come back to this in 3.1.3.4 below).³⁹

Before concluding this subsection, it should be stressed that there is no consensus w.r.t. the semantic behavior of obligatory resumptives. For instance, Sharvit (1999b: 595) shows for resumptives in Hebrew *wh*-questions that the relevant distributive reading is blocked both when a direct object and the object of a preposition is questioned.⁴⁰ Conversely, Pan (2016: 175, 231, 233) observes for Mandarin Chinese that both obligatory and optional resumptives allow for *de dicto* readings, distributive readings and are compatible with quantified antecedents. Consequently, while there are clear crosslinguistic tendencies suggesting an influence of resumptives on the referential properties of the antecedent, individual languages and resumptives in certain positions may deviate from this general trend.

3.1.2.6 Movement diagnostics: summary

The picture that emerges from the literature is rather mixed, not the least because not all putative movement diagnostics reliably diagnose movement dependencies. Furthermore, there is arguably not a single language which has been tested for all movement diagnostics. In other words, the empirical picture is quite incomplete. As a general tendency, resumptive dependencies display fewer movement effects than filler-gap dependencies, but at the same time they display more movement properties than would be expected under a traditional base-generation account. What seems clear is that different languages will require (partly) different analyses. In my view, the clearest cut is still between languages where resumption is island-sensitive and those where it is not. While a movement approach (or one based on Agree like Adger & Ramchand 2005 or Rouveret 2008) is obvious for island-sensitive resumption, it is much less clear how a movement approach can be reconciled with island-insensitive resumption. This will be addressed in the next subsection, where previous movement approaches are discussed in detail.

³⁹ The distinction between obligatory and optional pronouns seems to have a similar effect on reconstruction in Jordanian Arabic, cf. Rouveret (2011: 47–48).

⁴⁰ Aoun & Li (2003: 127–128) show that reconstruction for scope and variable binding is possible in the resumptive relativization of direct objects and objects of preposition in Lebanese Arabic. Since both types of resumptives are obligatory, the availability of reconstruction effects confirms Bianchi's and Sichel's proposals.

3.1.3 Movement approaches

There are three types of movement approaches. First, there is the LF-movement approach by Demirdache (1991), second, there are spell-out approaches (see Zaenen et al. 1981, Pesetsky 1998, Hornstein 2001, Bianchi 2004, Müller 2014b, Sichel 2014, Hladnik 2015: 96), and finally there are approaches where resumption involves stranding (Aoun et al. 2001, de Vries 2002, Boeckx 2003, Belletti 2006, Boeckx & Hornstein 2008, Donati & Cecchetto 2011, Chidambaram 2013, Klein 2014, 2016a).

Apart from this difference in implementation, the approaches also differ in whether they posit movement for all resumptives or not: There are pure movement approaches like Demirdache (1991), Pesetsky (1998), Boeckx (2003), Müller (2014b) and Klein (2016a), where all resumptives, even those within islands, are derived this way (Pesetsky and Müller do not discuss optional resumptives, though). On the other hand, there are hybrid approaches which posit movement only for some resumptives. For instance, Rouveret (1994), Aoun et al. (2001), Bianchi (2004) and Sichel (2014) do not assume movement for resumptives inside (strong) islands (nor does Sichel 2014 for optional pronouns). The various types of proposals will be discussed in turn. Next to their general pros and cons I will focus on how they account for island-insensitivity (in those cases where a movement account is adopted for resumptives inside islands).

3.1.3.1 Resumptives as in-situ operators

Demirdache (1991) proposes that resumption should be related to *wh*-in-situ. She argues that resumptives are operators that undergo movement at LF. Since LF-movement is subject to weaker locality constraints than overt movement, it is unsurprising that resumptives are often found inside islands (just like in-situ *wh*-operators).

One of Demirdache's most important arguments is resumptive pronoun fronting in Hebrew. Unlike in most other languages, resumptives can undergo long-distance fronting across clause-boundaries, see Sells (1984: 92–93) (citing data from Tanja Reinhart):⁴¹

⁴¹ Pronoun fronting does not only obtain with resumptives inside PPs but is also found with DO-resumptives, see Borer (1984: 229–230).

- (42) a. Ha-ʔiš še ʔani xošev še ʔamarta še sara katva **ʔalav**
 the-man that I think that said.2SG that Sarah wrote about.him
 šir.
 poem
- b. Ha-ʔiš še ʔani xošev še ʔamarta še **ʔalav** sara katva
 the-man that I think that said.2SG that about.him Sarah wrote
 šir.
 poem
- c. Ha-ʔiš še ʔani xošev še **ʔalav** ʔamarta še sara katva
 the-man that I think that about.him said.2SG that Sarah wrote
 šir.
 poem
- d. Ha-ʔiš še **ʔalav** ʔani xošev še ʔamarta še sara katva
 the-man that about.him I think that said.2SG that Sarah wrote
 šir.
 poem
- e. Ha-ʔiš **ʔalav** ʔani xošev še ʔamarta še sara katva šir.
 the-man about.him I think that said.2SG that Sarah wrote poem
 ‘The man that I think that you said that Sarah wrote a poem about.’

Hebrew

pronoun fronting to intermediate positions is interpreted as partial movement, thereby strengthening the parallel with *wh*-movement. Perhaps most interesting in this context is (42-e), where the fronted PP replaces the complementizer and thus indeed seems to function like an operator.

The approach is elegant and has a number of interesting consequences. The sensitivity to (strong) crossover in many languages follows straightforwardly in that there is movement across a c-commanding co-indexed element (cf. crossover effects triggered by quantifier raising). It also predicts resumption to be (largely) island-insensitive. Finally, given that resumptives are operators in-situ, they are expected to be incompatible with overt operators. Indeed, resumptives and overt operators are often in complementary distribution. Consequently, resumption is expected to be absent in *wh*-movement unless *wh*-movement is based on a cleft-structure or if what looks like a resumptive is a spelled-out trace. In the latter, the construction is predicted to be island-sensitive, a prediction which is borne out in Standard Arabic, according to Demirdache (1991: 42–48); I will come back to the (in-)compatibility of resumption with overt operators and *wh*-movement in 3.2.1 below.

However, the approach also has a number of serious disadvantages: First, it is far from clear whether the locality restrictions on resumption match those of covert movement: While resumption in island-insensitive languages is completely unaffected by any locality constraint, this is not always the case for covert movement. Although there may be a pretty good match with *wh*-in-situ in languages like Chinese, the parallel does for instance not work for French, where covert movement is less liberal than overt movement, see Cheng & Rooryck (2000). Since there are many more examples of covert movement that are more constrained than island-insensitive resumption, the island-insensitivity of resumption cannot easily be made to follow from covert movement. Furthermore, Demirdache's proposal crucially relies on a separate LF-cycle, an assumption that is at odds with recent Minimalist work adopting the single-output-syntax hypothesis (essentially since Chomsky 2000). A related architectural issue are reconstruction effects. Given that there is only an operator moving, reconstruction effects cannot be captured by means of the copy-theory (unless the operators contain more structure than meets the eye, e.g., a silent NP, see 3.1.3.5 below). Questions may also arise w.r.t. parasitic gaps, which at least according to some generalizations cannot be licensed by covert movement (but see Nissenbaum 2000). Another issue concerns the form of resumptives: Why should in-situ operators in relativization always happen to be identical to definite personal pronouns and not, for instance, indefinite pronouns? Given that resumptives are just operators, it is also unclear why they should restrict the interpretive possibilities of their antecedent (as is the case with optional pronouns, see section 3.1.2.5 above); some of these issues are discussed in Demirdache (1991: 97–101). Resuming epithets also seem problematic in that it is unclear how they could be analyzed as operators. The issue is addressed in Demirdache & Percus (2011), who argue that epithets are always complex, consisting of a pronoun and an expressive term; the assumption is justified by the observation that in Jordanian or Lebanese Arabic there is indeed an overt pronoun in addition to the epithet. Since there is a pronoun in the structure and thus an operator, nothing should rule out LF-movement. While certainly ingenious, it remains to be seen if this idea can be extended in a non-stipulative way to languages where no overt pronoun occurs with resumptive epithets. As for pronoun fronting, while the interpretation in terms of partial movement is a possibility, an alternative interpretation in terms of topicalization is just as viable because that process is independently attested, see Borer (1984: 225). As a last point, one might expect resumption to be particularly frequent in languages that have other operators in-situ. However, resumption is widely attested in *wh*-ex-situ languages, showing that there is no such link whatsoever. In conclusion, then, while the approach is surely creative and seems attractive at first sight, it does not seem to be compatible with more recent assumptions about the architecture of

(Minimalist) syntax and furthermore does not seem to fully capture some of the central properties of island-insensitive resumption.

3.1.3.2 Spell-out approaches

Spell-out approaches assume that resumptives are the lexicalization of a trace, i.e., it receives phonetic content by insertion of a pronoun at PF. Given the copy theory of movement, resumption can then be related to other cases where more than one chain link is overtly realized, as, e.g., in German *wh*-copying (see, e.g., Nunes 2004):

- (43) **Wer** glauben Sie eigentlich **wer** Sie sind?
 who.NOM believe.3PL you really who.NOM you are.3PL
 ‘Who do you think you are?’ *Standard German*

The fact that only a pronoun rather than a full DP is realized is usually related to (structural) economy: The pronoun is the smallest unit available in the lexicon of a language to realize the features of a copy/trace (it realizes Case- and ϕ -features).⁴² Since regular movement is involved in spell-out approaches, all the movement facts (crossover, reconstruction, PG-licensing etc.) fall out directly.

Although attractive at first sight, there are several problems with spell-out approaches (see also Asudeh 2011: 134–135 for criticism): First, concerning implementation, the relationship with the copy theory of movement is rather spurious because pronouns only realize a small part of the copy. Ensuring that only a pronoun is inserted seems to require modification of the internal structure of the lowest copy; without modification, the copy would be identical and therefore marked for non-pronunciation by the linearization algorithm. Furthermore, it is unclear why the realization happens in the first place because the contexts in which resumptives appear do not seem to have anything in common with the contexts allowing for the realization of multiple copies identified in Nunes (2004: 38–50): These contexts usually involve some restructuring, viz., adjunction to a head and subsequent Morphological Merger, which exempts the copy from the Linear Correspondence Axiom so that more than one copy can be realized without leading to conflicting linearization requirements. In fact spell-out approaches bear more similarities to the idea of shadow pronouns by Perlmutter (1972): In those days, movement was assumed to always leave a pronoun behind which would be deleted in certain configurations. Resumptives are then simply pronouns that fail to be

⁴² An obvious alternative would be a determiner; the fact that a pronoun is chosen follows if pronouns are determiners with a silent NP-complement, see 3.1.3.5 below.

deleted.⁴³ In other words, conceptually, spelled-out traces are not directly compatible with current assumptions about the phonetic realization of chain links.⁴⁴

Quite apart from these problems relating to the implementation of spelling-out a lower copy, even more serious issues arise when the properties of resuming elements are taken into account: For instance, it is completely unclear how a spell-out approach can be extended to resumptive epithets. And given that spell-out of more than one chain link is a marked process one might expect languages to possess/develop designated lexical items for resumption; however, as already pointed out above, resumptives are (almost, see 3.1.3.4) always identical to regular personal pronouns. Another issue concerns context-dependent realization: As pointed out in 3.1.1.2, resumptives may appear in different shapes depending on the syntactic context, e.g., as full pronouns after prepositions and as clitics otherwise, as in Czech. Under a spell-out approach, these forms (more precisely, their size, given a late-insertion approach to syntax) must necessarily be determined at PF; a consequence which may not be innocuous. Similarly, as shown in Daskalaki & Mavrogiorgos (2013: 328–329), certain Greek predicates are incompatible with cliticization/clitic-doubling and, as a consequence, also with resumption. This is unexpected unless it can be shown that the relevant selectional relationship is of a PF-nature. Similarly, the authors (pp. 330–332) show that as in clitic-doubling genitive resumptives void intervention effects induced by experiencers. If, as is standardly assumed, the intervention effect is part of narrow syntax, then the resumptives also have to be present in narrow syntax, which is at odds with a PF-perspective on resumption. Furthermore, if resumptive pronouns only arise at PF, instances of pronoun fronting as in Hebrew above (and in many other languages, see, e.g., the clitic placement facts in Greek resumption discussed in Daskalaki & Mavrogiorgos 2013: 326–328) must necessarily be treated in terms of PF-movement because they only come into existence after the syntactic derivation. While this need not be problematic for all instances of pronoun fronting (see the discussion of Alemannic resumptives in section 5.2.4.1 below), it surely becomes highly du-

⁴³ See also the copying rules of Ross (1967). Some discussion of these early approaches to resumption can be found in McCloskey (to appear: section 2).

⁴⁴ Things may be somewhat different under the Trace Conversion approach by Fox (1999, 2002), where the bottom copy is converted into a definite description (recall section 2.3.1.4). The pronoun could then be treated as a realization of such a copy if personal pronouns are generally treated as the spell-out of definite determiners with a silent NP-complement as, e.g., proposed in Elbourne (2001, 2005). Note, however, that Trace Conversion is a process that applies at LF; on standard assumptions, the output of an operation affecting the final LF-representation should not be accessible to the PF-branch. The same criticism applies to the approach by Bianchi (2004) discussed below, where resumptives realize structures that have been manipulated by LF-operations (link-shrinking).

bious in those cases, e.g., Hebrew, where pronoun fronting is subject to regular syntactic (locality) constraints (see Borer 1984).

A further problem concerns interpretation: As discussed above, at least optional resumptives impose semantic restrictions on their antecedents/block scope reconstruction. This is unexpected under spell-out since resumptive structures have the same syntax as gap-structures. Bianchi (2004: 91–95) addresses the issue in some detail. She argues that resumptive pronouns spell-out the referential index of the tail of a movement chain (which on her approach also includes Case- and ϕ -features). Simplifying somewhat, subject to crosslinguistic variation, languages can only spell-out referential indices with certain properties, viz., definite indices. While this is supposed to account for optional resumptives, spell-out of obligatory resumptives is insensitive to the featural make-up of chain links and their indices. Rather, spell-out must be triggered by other factors. This then raises the general question of what leads to spell-out. For optional pronouns such as DO-resumptives in Hebrew or Irish, one can assume that spell-out of the definite chain link is simply optional. Optionality is necessary here because gap relatives can also receive specific/wide-scope interpretations (recall (36)). In other words, specific chain links are not spelled out by default, at least not in the languages under discussion. This touches upon the issue of the distribution of gaps and resumptives that I will address in 3.2.2 below. Note that Bianchi's approach must make reference to LF-representations, which, as pointed out in fn. 44, raises non-trivial questions about the architecture of grammar.⁴⁵ Furthermore, it is not exactly clear to me how vocabulary insertion can proceed in the case of obligatory resumptives, i.e., how they can be insensitive to the feature-content of chain links. If, for instance, a chain link contains a feature [–def], insertion of a definite pronoun should be blocked. As for the distribution, I will only focus on resumptives inside islands at this point. Here, spell-out must be obligatory and furthermore, the resumptive must void the locality violation. Pesetsky (1998: 365) essentially adopts the shadow pronoun analysis of Perlmutter (1972) and argues for the following reinterpretation of island-constraints:

(44) Island constraints

* $\alpha \dots$ [_{island} $\dots \beta$] where β is the trace of α and unpronounced.

In other words, the spell-out approach to resumption necessarily entails a PF-theory of locality. Constraints as in (44) are observationally adequate but simply

⁴⁵ The fact that in some languages resumption cancels WCO effects also implies that reference to an LF-representation is inevitable under a spell-out approach. Otherwise, the semantic effect would be unexpected.

restate the facts. To my knowledge there is no worked out PF-theory of locality that explains why certain domains are penetrable only in the presence of a resumptive. It does not help to point out that there is an important strand of work in the domain of ellipsis which has shown that ellipsis ameliorates/saves island violations, see, e.g., Merchant (2008) on sluicing. This work is also based on a PF-theory of islandhood, but crucially, in these works, locality violations are voided through *deletion* of offending syntactic structure. Resumption, however, is the very opposite: A violation appears to be ameliorated by making the offending trace overt. Why that should help is never made clear.⁴⁶ Perhaps the most devastating fact for a PF-theory of locality comes from silent resumptives: Languages that license *pro* often also license resumptive *pro*. These *pros*, like overt resumptives can also amnesty island violations, as shown by the following examples from Irish and Italian: In (45-a), a *pro* is licensed by the inflected preposition. In (45-b), a silent *pro* in subject position is licensed by the verbal inflection (see McCloskey 1979: 34, Engdahl 1985: 16):⁴⁷

- (45) a. [amharc áilleachta] ... nachN bhfaca mé < mórán riamh aL
 a.sight of.beauty C.NEG saw I much ever C
 bhéarfadh bua air **pro** >
 would.take victory on.it
 lit.: ‘a sight of beauty that I have never seen much that would surpass
 it’ *Irish*
- b. Ecco la [ragazza] che mi domando < chi crede che **pro**
 here the girl C me ask.1SG who believe.3SG C
 possa cantare >.
 can.3SG sing.INF
 lit.: ‘Here is the girl that I wonder who thinks she may sing.’ *Italian*

In the examples in (45) one could still argue that there is an overt pronoun after all if the inflection is reinterpreted as an incorporated pronoun. However, this logic will fail in languages where silent pronouns are not accompanied by inflection markers as, e.g., in Tuki, see Biloa (2013: 236):⁴⁸

- (46) tévére ódzu Mbárá a-m-údza < mǎru áamá ée Putá a-m(u)-ófa **pro**>
 table C Mbara SM-PST2-tell story this that Puta SM-PST1-throw
 lit.: ‘the table that Mbara told the story that Puta threw it away’ *Tuki*

⁴⁶ This equally applies to the discussion in Hornstein (2001: 178).

⁴⁷ See also the discussion on Swiss German in section 5.2.4.2 below.

⁴⁸ In Hausa, null resumptives can also void strong islands, see Tuller (1986: 84, ex. 109).

A more convincing and especially consistent approach to the island-voiding nature of resumptives is presented in Müller (2014b). He proposes that the choice between gap and resumptive is free. Resumption involves immediate realization of the lowest position of the operator as a pronoun. Crucially, the choice for resumption leaves a diacritic, more precisely, a structure-building feature, on the moving operator which needs to be discharged. By assumption, this is only possible if the operator crosses an island. More concretely, in Müller's theory of locality, island effects obtain when a moving element is contained in a last-merged specifier. The phase head is thus inactive at this point so that (by assumption) insertion of an edge-feature is no longer possible. Consequently, movement out of the last-merged specifier via the specifier of the phase head is blocked. Crucially, in resumption the diacritic on the moving element acts like an edge-feature and thus makes movement via the inactive phase head possible (an instance of *Münchhausen-movement*).

The attractive part of the proposal is that the assumptions about resumption are embedded within a more general theory of locality (that of Müller 2011) and thus do not have the ad-hoc character of other accounts. There remains a certain asymmetry, though, in that in resumption it is a feature on the moving element itself that triggers movement rather than a feature on the relevant phase head as in all other cases of edge-feature-driven movement. The logic for the diacritic may also be called into question: The idea is that resumption is costly and therefore leads to a temporary defectivity of the moving item. That resumption is marked in some way has been assumed for quite some time (see also 3.2.2.1 below on proposals why gaps are more economical than resumptives). However, the markedness is usually located in the resumptive itself (it violates structural economy) rather than the moving element (which never bears any traces of the diacritic). Thus, there remains the impression that the analysis is somewhat tailored around the phenomenon. As a final point, this theory of resumption, like last-resort approaches more generally, is not obviously compatible with optional resumptives in non-island positions such as subjects and direct objects, see section 3.2.2 below.

3.1.3.3 Big-DP-/stranding approaches

In Big-DP-approaches, the antecedent and the resumptive form a constituent at the beginning of the derivation: The resumptive is the head of a DP, while the operator is either located in the specifier or in the complement position of the resumptive. In the course of the derivation, the operator strands the resumptive. In Aoun et al. (2001: 392) and Daskalaki & Mavrogiorgos (2013: 340), the antecedent/operator is analyzed as a DP, cf. (47-a), while it is just an NP in Boeckx (2003: 28), see (47-b):

- (47) a. $\begin{array}{c} \text{DP} \\ \diagdown \quad \diagup \\ \text{D} \quad \text{DP/OP} \end{array}$ b. $\begin{array}{c} \text{DP} \\ \diagdown \quad \diagup \\ \text{D} \quad \text{NP/OP} \end{array}$

There are two related intuitions underlying the structure: First, Boeckx draws a parallel with D-linking. The structure he proposes is very close to that proposed for *which*-phrases by Rullmann & Beck (1998).⁴⁹ Second, the structure is similar to that often adopted for clitic-doubling, see Cecchetto (2000). As in resumption, clitic and antecedent start out as a constituent but are separated in the course of the derivation. An abstract derivation in these approaches then looks as follows:

- (48) $\begin{array}{c} \text{CP} \\ \diagdown \quad \diagup \\ \text{Op}_1 \quad \text{C}' \\ \quad \quad \diagdown \quad \diagup \\ \quad \quad \text{C} \quad \text{TP} \\ \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \text{T} \quad \text{VP} \\ \quad \quad \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \quad \quad \text{V} \quad \text{DP} \\ \quad \quad \quad \quad \quad \quad \quad \diagdown \quad \diagup \\ \quad \quad \quad \quad \quad \quad \quad \text{D} \quad \text{—}_1 \end{array}$
-

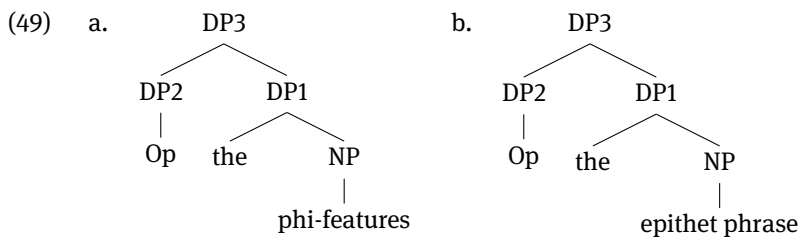
Like the spell-out approach, this approach is straightforwardly compatible with the various movement effects (PG-licensing, crossover, reconstruction etc.). The stranding account may also explain why resumptives usually occur close to the theta position and not in intermediate positions (abstracting away from pronoun fronting in Hebrew for the moment): Since stranding involves subextraction, doing so will be blocked in all derived positions because of the Freezing Principle/the CED (Huang 1982).⁵⁰ Furthermore, since a separate pronoun is present in the syntactic derivation, pronoun fronting can be handled as well (although to respect cyclicity, a chain-interleaving derivation will be necessary). For the same reason, capturing the semantic effects of resumption also seems to be straightforwardly possible. There are two provisos to be made, though: While this may work for optional resumptives, it is unclear if the absence of semantic restrictions with

⁴⁹ Boeckx' proposal presupposes that definite determiners and pronouns are both D-elements. They are spelled-out as determiners if their complement is non-null and as pronouns otherwise. See Elbourne (2001, 2005) and the discussion about reconstruction under base-generation in 3.1.3.5 below.

⁵⁰ Interestingly, Boeckx (2003: 25–28) explicitly draws a parallel with quantifier floating; however, since quantifier floating is possible in various intermediate positions, it should arguably be treated as a different phenomenon.

obligatory pronouns (as within PPs) can still be captured if they involve the same derivation as optional pronouns such as DO-resumptives, recall the discussion in 3.1.2.5 above. Furthermore, Bianchi (2011: 324–328) points out a number of asymmetries in the semantic effects between resumption and clitic-doubling (which in general also requires specific antecedents). Furthermore, she argues that at least under Boeckx' structure one would not expect gap relatives to allow for specific interpretations if the doubling structure necessarily underlies such interpretations. Problems for the clitic-doubling approach also arise in those cases where the putative source of resumption is ungrammatical, as, e.g., in the resumption of Greek possessors: While a resumptive is obligatory for possessors in relativization, clitic-doubling a possessor is ungrammatical, see Daskalaki & Mavrogiorgos (2013: 343, fn. 16).

There are a number of other issues that arise: At least in Boeckx' structure, strong pronouns and epithets, which are normally analyzed as full DPs, cannot easily be accommodated (see Boeckx 2003: 146–149 who treats strong pronouns and epithets as instances of intrusion and argues that they are only compatible with base-generation; interestingly, Boeckx avoids discussing the reconstruction effects observed with epithets in Lebanese Arabic documented in Aoun et al. 2001). In Aoun et al. (2001: 385), they are treated as appositions to the antecedent in an adjunction structure (it does not become clear in their notation whether the antecedent is adjoined to the epithet or vice versa because the structure is exocentric ...). Strong pronouns are illustrated in (49-a), epithets in (49-b):



Given these structures, epithets and strong pronouns can be accommodated, but at the cost of postulating different structures for weak and strong resumption.

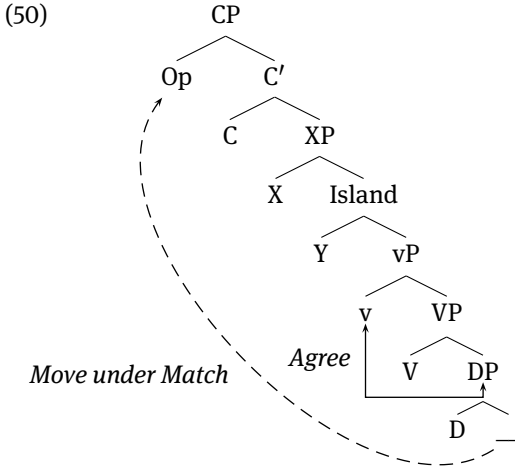
Questions also arise with respect to semantic interpretation (I am grateful to Gereon Müller for pointing this out). Since there is extraction of an operator, one expects it to leave a variable (or a copy converted into a variable at LF). At the same time, there is a resumptive in the structure that may act as a variable as well. In other words, there is the danger of too many variables, an issue that has not been addressed by the proponents of the stranding analysis; Elbourne 2005: chapter 3.5.3 claims that such structures cannot be semantically interpreted.

At least in Boeckx' approach, questions also arise w.r.t. the category of the antecedent. Since it is an NP, movement of the antecedent should display detectable differences with respect to DP-movement. Recall from section 2.3.3.2.1 that Borsley (1997) provided convincing arguments against the NP-raising analysis of relatives proposed in Kayne (1994). To make concrete example, movement of an NP should not be able to license parasitic gaps. Adopting an NP-structure for the antecedent also fails the capture the parallelism with clitic-doubling, which involves full DPs (see Bianchi 2011: 325). As a final general problem, the Big-DP-approach requires postulating a clitic-doubling structure for many languages where this structure is not independently instantiated overtly, i.e., that do not have clitic-doubling outside of A'-movement.

Turning to the account of the insensitivity to islandhood, I will focus on Boeckx (2003) and Klein (2016a), which are the most explicit attempts to reconcile a movement approach with island-insensitivity:⁵¹ Starting with Boeckx (2003), the underlying idea (motivated on the basis of certain Left Branch- and subject-extraction facts) is that non-agreement between a probe and the goal facilitates extraction, see Boeckx (2003: 42–46, 71–72). Technically, the distinction between Match and Agree is crucial: Match, which precedes Agree, involves the probe searching its c-command domain for matching features. Agree then involves valuation of certain features of the probe. Crucially, Agree is restricted to phi-features, other features may be checked under Match. By assumption, Agree is sensitive to locality, while Match is not. Movement out of an island then works as follows: Movement can take place under pure Match (i.e., without prior Agree) so that a probe C can reach into islands to get its *uOp* feature checked – as long as the phi-features of the operator (i.e., the goal) are not activated. This is exactly what happens under resumption: The entire Big-DP checks the ϕ -features of *v*, while the operator can subextract under pure Match:⁵²

⁵¹ Stranding accounts are also proposed by de Vries (2002: 165–169) and Donati & Cecchetto (2011: 529–530); however, they do not discuss why and how resumption can void islands. Belletti (2006: 132), who also adopts a big-DP-structure, simply argues that there is no locality violation in island contexts because some part of the Big-DP remains there. But why this should have an effect on the movement of the antecedent is not made clear. There seems to be some appeal to overtness, but this has been shown to be inadequate, recall section 3.1.3.2 above.

⁵² Another important side-effect of resumption in Boeckx' theory is that this avoids chains with too many strong occurrences, by which he understands chains that contain more than one position where a strong/EPP-feature is checked.

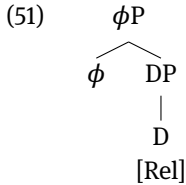


Crucially, movement under pure Match is only possible with so-called non-agreeing Cs, i.e., Cs without a phi-probe, which in practice corresponds to invariant complementizers with zero operators. It is impossible with agreeing Cs, i.e., generally those that allow overt phrasal relative operators. With agreeing Cs, movement is sensitive to locality.

While Boeckx must be given credit for attempting to provide an explanation for the island-insensitivity of resumption in many languages, the analysis seems to be largely tailored around the facts and raises several pressing questions: First, the status of movement under Match in syntactic theory is unclear. The only other candidate that comes to mind is purely EPP-driven movement as in movement to the subject position; but it is unlikely that it is insensitive to locality. Second, the notion agreeing/non-agreeing complementizer is not well-defined and in many cases the classification of individual operators ends up being circular: Non-agreeing complementizers are those that co-occur with resumptives. In a sense, the definition largely restates the observation (to be discussed in 3.2.1 below) that resumptives generally occur with silent operators, while gap-relatives are found with overt operators. Under Boeckx' approach, if resumption is island-sensitive, the complementizer must necessarily be of the agreeing type. However, this entails that some invariant complementizers have to be classified as non-agreeing (e.g., those in Hebrew), while other invariant complementizers (e.g., those in Serbo-Croatian) must be of the agreeing type; the property of being an agree-

ing complementizer is thus so abstract that it amounts to a diacritic for being island-sensitive and thus essentially restates the facts.⁵³

In the stranding account by Klein (2016a), a separate ϕ P-projection is located above the operator DP, which bears the feature [Rel]:



Both gap and resumptive derivations are based on this structure: If ϕ P pied-pipes DP, a gap derivation results and the entire ϕ P can be realized as a relative pronoun, while resumption obtains if DP subextracts and strands ϕ , which is spelled out as a resumptive (this is essentially the same analysis as in Chidambaram 2013). The choice between the two orders depends on rule ordering between Agree and Internal Merge: The starting point is that ϕ P is taken to be a phase. Movement of DP via the Spec of ϕ P is blocked by anti-locality (Abels 2003). To make subextraction possible, it is proposed that head-movement from ϕ to v, which is modeled in terms of Agree (Roberts 2010), leads to phase extension (den Dikken 2007). Consequently, DP can subextract via SpecvP; crucially, subextraction is only possible, if Agree v- ϕ precedes Internal Merge. Under the reverse ordering, DP must pied-pipe ϕ P.

To account for the fact that in many languages a resumptive is required if the extraction site is within an island, only the resumptive derivation may converge. This is achieved by means of a locality theory that is based on maraudage, cf. Georgi et al. (2009): The basic idea is that certain domains become islands because the to be extracted constituent checks features in an intermediate position on its way to the final landing site which were intended for a different A'-element – the one that is normally thought to erect the island. Concretely, in *wh*-islands, suppose that a RelP attempts to move via the [+wh]-specifier; if it moves before the *wh*-phrase, it will check the features that were intended for the *wh*-phrase. Even if RelP can move on and reaches its final landing site, the *wh*-phrase will be stuck because there are no features left to check on the [+wh]-head. The derivation thus crashes. Exceptional movement out of weak islands (e.g., topicalization from *wh*-islands in German) is possible if the extractee bears a subset of the features of the element that erects the island. Consequently, if the RelP/topic moves via the [+wh]-specifiers, not all features will be checked, leaving some for the *wh*-

⁵³ See Boeckx & Hornstein (2008: 210–216) for an attempt to reconcile movement out of islands with the lack of reconstruction into islands observed in Aoun et al. (2001).

phrase. To connect *maraudage* with resumption, the analysis is formulated in a way such that only the resumptive derivation involves a subset of the features of the island-erecting head. This is achieved by locating an additional operator feature on ϕ : If the entire PhiP were to move from the island, it would check all features on the [+wh]-head, therefore rendering movement of the *wh*-phrase impossible. Under the resumptive derivation, however, only DP moves, which only bears [Rel] but crucially not [Op]. Consequently, the Rel-DP can move out of the *wh*-island, while leaving the [Op]-feature for the *wh*-phrase to check. Essentially the same analysis is proposed for relative clause islands and adjunct islands. In the latter case, an operator is externally merged into the specifier of the head of the adjunct. While ϕ P-movement would check this feature and thus make merge of the operator impossible (which would lead to an uninterpretable structure), DP-movement/resumption still allows for merger of the operator.

The analysis is quite original and provides a fresh look at resumption and its influence on locality. However, it also raises quite a number of serious issues: First, the analysis seems to be somewhat tailored around the facts: A DP-structure is proposed that is largely designed for resumption but does not seem to have much independent motivation. Furthermore, this extra level is added to create a problem for extraction, which in turn necessitates further operations that would normally not be necessary (head-movement of ϕ to v). Thus, the syntax is complicated to motivate resumption. Second, a number of technical aspects do not seem to work: Roberts-style head-movement is normally only possible if the head that is to be moved has a subset of features of the higher head, but this is not obviously the case here (note that ϕ has Case). Moreover, with this type of head movement, realization of the copied features below (i.e., on ϕ) is usually not possible; but this is crucially necessary if resumption results in a free-standing pronoun rather than a verbal clitic. Perhaps most problematic is the postulation of an Op-feature on ϕ as this only seems to be necessary for the *maraudage* account. Furthermore, once such a feature is present, it is no longer clear why the stranded ϕ is realized as a personal pronoun rather than as a relative pronoun. Third, not all island types are addressed. Consequently, resumptives inside subjects (subject islands), resumptives for possessors (Left Branch extraction) and resumptives inside noun complement clauses (if they do not involve operator movement) remain unaccounted for. Resumptives inside PPs result if P is a phase-head and DP subextracts (under the order Agree > Merge). However, since P-stranding results from the reverse ordering of Agree and Internal Merge (viz., Merge > Agree), one would expect it to be much more widespread; i.e., the rule ordering approach does not seem to be appropriate to capture the frequent opacity of PPs.

In sum, while this is certainly a thought-provoking new approach to resumption, there remain quite a number of problematic issues showing that movement out of islands under resumption is difficult to motivate.

3.1.3.4 Hybrid approaches

As mentioned at the beginning of this subsection, not all movement approaches posit movement across the board. Aoun et al. (2001), Bianchi (2004), and Sichel (2014) only adopt a movement derivation when there is reconstruction. For the authors, this implies base-generation in island-contexts. While I cannot dispute the reconstruction facts, it remains surprising that – in the vast majority of languages – resumptives always look the same, whether derived by movement (outside of islands) or base-generation (inside islands). While unproblematic for doubling approaches (as a pronoun is present in the syntax in both derivations), this is particularly puzzling for spell-out approaches, where what looks like the same element on the surface has completely different derivational histories. To be fair, Adger (2011) has recently drawn attention to a number of languages where locally bound pronouns are featurally and morphologically differentiated from anaphoric pronouns. These bound pronouns fail to agree with their antecedent, usually appearing in the default 3rd person singular form.⁵⁴ What is crucial in the current context is that resumptives appear in their agreeing/anaphoric form when located inside islands, as illustrated by the following pair from São Tomense Creole (see Adger & Ramchand 2005: 185):

- (52) a. inen faka se ku n va mpon ku-e/*ku-inen
3PL knife DEM REL 1SG cut bread with-**3SG**/with-**3PL**
 ‘these knives that I cut the bread with’
- b. Inen migu se ku bo che di fesa < se fla
3PL friends DEM REL 2SG leave of party without talk
 ku-inen/*ku-e > sa n’ai.
 with-**3PL**/with-**3SG** are in.here
 lit.: ‘The friends that you left the party without talking to them are here.’
São Tomense Creole

However, while these facts suggest that resumptives outside islands should be treated differently than resumptives inside islands, they are not obviously compatible with movement approaches, at least not with spell-out approaches as the putatively spelled-out form does not realize the ϕ -features of the trace. Adger (2011)

⁵⁴ See also Willis (2011: 197–198) for non-agreement in colloquial Welsh.

actually argues that they are base-generated and do not have any phi-features underlyingly, i.e., they are bare. The phenomenon is treated in some detail in Alexandre (2012), who also points out that the phenomenon does not easily follow under the Copy Theory of Movement (although she ends up analyzing the phenomenon as a defective copy). Crucially, she also points out that the non-agreeing elements should be distinguished from resumption proper, which is also available in the language and behaves quite differently, i.e., as in other resumption languages.^{55, 56}

Apart from the pervasive lack of morphological differentiation, hybrid approaches are also hard pressed to account for the absence of other potential differences. For instance, in Irish, there are never any cyclicity effects under resumption, irrespective of whether the resumptive is inside an island or not; in all intermediate positions, the declarative complementizer is used, see (53-b/c), while in gap-derivations as in (53-a), the movement complementizer is found in all C-positions, see McCloskey (2002: 185, 190, 196), repeated from 3.1.2.3 above:⁵⁷

- (53) a. an t-ainm **a** hinnseadh dúinn **a** bhí __ ar an áit
 the name aL was.told to.us aL was on the place
 ‘the name that we were told was on the place’
- b. an t-ór seo **ar** chreid corr-dhuine **go** raibh sé ann
 the gold DEM aN thought some-people C was it there
 ‘this gold that some people thought was there’
- c. achan rud **a** rabh < dóchas aca **go** dtiocfadh sé >
 every thing aN was hope at.them C come.COND it
 ‘everything that they hoped (that it) would come’ *Irish*

⁵⁵ Non-agreement is thus similarly problematic for Big-DP/stranding approaches, although Boeckx (2003: 46–50) argues that non-agreement plays a crucial role in resumption quite generally. However, he only presents very little data most of which are coming from Celtic languages, which, as Adger & Ramchand (2005) have shown, indeed happen to allow for non-agreement. Some of the cases putatively illustrating non-agreement also involve relative clauses with first or second person singular heads which in many (non-resumptive) languages allow for 3rd singular agreement, see Heck & Cuartero (2012). Lack of agreement between antecedent and resumptive thus rather argues against treating such cases in terms of doubling/stranding because without agreement the justification of such a structure seems to be lacking.

⁵⁶ Rouveret (1994, 2002) is another approach that argues for a hybrid theory, based on data from Welsh, where clitics and agreement affixes function as resumptives, which he analyzes as resulting from movement/stranding. Inside islands, however, strong pronouns or doubled pronouns must be used, which Rouveret argues are bound and not movement-derived. In this case, a hybrid theory seems to be much more justified since the pronouns involved are actually different.

⁵⁷ There are examples with several resumptive complementizers within a sentence, but these involve several separate instances of base-generation leading to a combined A'-dependency, according to McCloskey (2002).

Another problematic issue concerns the derivation of obligatory resumptives in Bianchi (2004) and Sichel (2014). Both assume that resumptives inside PPs and possessor resumptives involve movement. This clashes with the fact that these are positions from which movement is normally thought not to be possible; i.e., gap derivations crash in these environments. These accounts thus imply that the resumptive somehow makes movement out of such opaque domains possible. One then wonders why resumption does not make movement from other strong islands (CNPC, adjunct islands) possible; or conversely, if there is no movement out of strong islands but rather base-generation, why is there no base-generation when the resumptive is a possessor or inside a PP? Unfortunately, the underlying theory of locality is not made explicit in these works. But what the approaches imply is that the presence of resumption in the two types of intransparent domains does not receive a uniform explanation.⁵⁸

3.1.3.5 Movement effects under base-generation

The advantage of movement approaches to resumption surely consists in providing a possibility to account for the movement effects. However, as discussed in section 3.1.2, the empirical evidence for movement is limited, the only clear movement effects being crossover effects and reconstruction effects. The biggest drawback of movement approaches to resumption in my view is that there is no convincing theory of locality yet that would explain why resumption makes movement out of islands possible (the problems of hybrid approaches were discussed in the previous subsection). In other words, movement approaches are in conflict with the evidence from the best understood empirical domain, viz., locality.

It is thus in order to approach movement effects from the opposite angle and ask whether base-generation accounts have anything to say about them. Crossover effects have been noted in the early literature (McCloskey 1990, Shlonsky 1992) and have usually not been considered problematic for base-generation as there would be an A' -chain crossing a co-indexed element. However, as pointed out in the section on crossover effects in section 3.1.2.4 above, this is no longer obvious given Minimalist assumptions. As for reconstruction effects, they remain unaccounted for if the tail of the A' -dependency is only occupied by a pronoun (under the assumption that reconstruction requires an instance of the external head in the relevant position). A possibility to capture reconstruction under base-generation was proposed in Guillot & Malkawi (2006, 2009, 2011) and Rouveret

⁵⁸ As we will see in 3.2.2.1 below, resumptives inside PPs are frequently related to a ban on preposition stranding. However, in most of the relevant languages, PPs constitute opaque domains more generally.

(2008): They adopt the NP-ellipsis theory of pronouns by Elbourne (2001, 2005) and apply it to resumption. In brief, pronouns are analyzed as the realization of definite determiners whose NP-complement has been elided. Motivation for the NP-ellipsis theory comes among other things from so-called paycheck pronouns like *it* in (54), where there is co-variance without c-command:

(54) John gave his paycheck to his mistress. Everybody else put **it** in the bank.

Crucially, the pronoun *it* is interpreted as *his paycheck*, where *his* is bound by *everybody else*. The NP-ellipsis theory captures this reading straightforwardly (for independent reasons, possessors are assumed to originate in the complement of the head noun):

(55) John gave [_{DP} the [_{NP} paycheck of him]] to his mistress. Everybody else put [_{DP} it [_{NP} paycheck of him]] in the bank.

Under resumption, the NP-ellipsis theory opens up the possibility for the pronoun to contain additional material, viz., an instance of the antecedent, which then derives the reconstruction effects. Crucially, since ellipsis is insensitive to locality, it can be used to model reconstruction into islands. Consider the following French example (repeated from above) involving variable binding reconstruction into an island:

(56) [Quelle photo de lui]_i es-tu fâché < parce que [chaque homme]_i l'_j'
 which picture of him are-you furious because every man it
 a déchirée? >
 has tear.apart.PTCP
 lit.: 'Which picture of him_i are you furious because each man_i tore it?'

French

The reconstruction effect can be readily captured if the NP-part of the external head *photo de lui* 'picture of him' is represented within the resumptive pronoun *l'*:

(57) [_{DP} Which [_{NP} picture of him]_i] ... [_{islandP} QP_i [_{DP} the [_{NP} ~~picture of him~~]_i]]

It is not clear whether the crossover effects can also be derived under the NP-ellipsis theory: As pointed out in Elbourne (2005: chapter 7), even if pronouns are re-interpreted as definite descriptions, this does not imply that they behave like R-expressions in every respect. In fact, to capture the external distribution of pronouns, they must not be subject to Principle C; consequently, the definite determiners posited for pronouns must be crucially different from other determiners in this respect so that the representation we obtain under NP-ellipsis should not

trigger Condition C effects. I will come back to crossover effects in sections 4.5.2.3, 5.2.2 and 5.4.3 below.^{59, 60, 61}

Since base-generation involves a regular pronoun, the semantic restrictions under resumption can be captured straightforwardly as well; in fact, the representation above is very close to the result of Trace Conversion as proposed in Fox (1999), which leads to specific interpretations of copies. What does not follow, though, is the lack of these restrictions with obligatory resumptives as described in section 3.1.2.5 above. In section 5.2.3.4.4 below, I will argue that at least in some cases these asymmetries can be attributed to independent properties of the pronouns, viz., whether they are compatible with semantic types other than ⟨e⟩.

Base-generation approaches make one very clear prediction that in principle helps distinguish them from movement approaches: They predict the absence of all cyclicity effects, both with respect to reconstruction effects as well as morphological/syntactic reflexes of movement. Unfortunately, there is very little information available on reconstruction into intermediate positions. As discussed in section 3.1.2.5 above, while Rouveret (2008: 186) provides evidence against reconstruction into intermediate positions for variable binding, Guilliot (2006) provides such evidence for anaphor binding. Given the scarcity of the data, however, no conclusions can be drawn. The situation with other reflexes of movement is similarly inconclusive, recall section 3.1.2.3. In several languages, reflexes of movement are absent under resumption; one possible counter-example is Palauan, but given that neither the distinction between gap-dependencies and resumptive dependencies nor the island-(in)sensitivity of resumption is fully clear, the evidence remains equivocal. The most important language in this context seems

59 The absence of Principle C effects involving R-expressions inside the head noun that has been noted for some of the languages above can be accounted for by means of the matching analysis, which allows for vehicle change (recall the discussion in section 2.4.1.1) or an alternative structure of pronouns where the definite determiner only takes an index as its argument, see Guilliot & Malkawi (2006: 172–173).

60 Whether base-generation accounts can handle reconstruction with strong pronouns and epithets (as in Lebanese or Jordanian Arabic, see Aoun et al. 2001 and Guilliot & Malkawi 2006) depends on their syntactic representation. Since they are full DPs, there does not seem to be enough space to accommodate the antecedent unless there is additional silent material. Guilliot & Malkawi (2006) observe that there is no reconstruction into islands with epithets, which they relate to movement, but given the lack of data from other languages, no firm conclusions can be drawn.

61 One may object that adopting the NP-ellipsis theory of resumption implies that resumptives are treated as special elements after all, in conflict with the observation made at the beginning of this chapter that resumptives generally look like ordinary personal pronouns. Importantly, though, as the payback example above shows, the NP-ellipsis theory is not limited to resumptives but has been applied to bound pronouns more generally.

Akan, where reflexes are even found within islands. But given the preliminary status of the data, the results must be taken with caution.

3.1.3.6 Movement effects in island-sensitive resumption

Before concluding this section, I would like to briefly come back to island-sensitive resumption. It seems clear that an account in terms of movement or at least in terms of Agree is inevitable. However, given that movement approaches to resumption have been shown to be confronted with intrinsic problems, the question arises whether they fare better with island-sensitive resumption. The LF-movement approach by Demirdache (1991) is obviously not an option given that it implies island-insensitivity; as for spell-out approaches, apart from their intrinsic shortcomings, one would have to stipulate that in these languages, spelling-out the trace does not alleviate the violation of locality constraints. While possible, this amounts to a restatement of the facts. Big-DP-approaches seem more viable as they are generally more compatible with the empirical facts. They are particularly attractive for languages that independently have clitic-doubling such as Modern Greek. Unfortunately, island-sensitivity does not always pattern with clitic-doubling: Bulgarian has clitic-doubling but resumption is island-insensitive. Conversely, resumption in Serbo-Croatian is island-sensitive, but there is no clitic-doubling. In other words, under the Big-DP-approach, one will have to postulate a doubling structure for languages where it is not independently available. A further issue that so far has not received much attention is that what looks like a resumptive may actually just be an agreement element, especially in languages where resumptives are silent *pros* licensed by inflection on the verb. It is well-known that at least in some languages, such affixes can have a double function as pure agreement elements (grammatical agreement) and as *pro*-licensors (anaphoric agreement), see, e.g., Bresnan & Mchombo (1987) on object agreement in Bantu.⁶² However, as with the clitic-doubling structure, this will not work for all island-sensitive resumptives; Serbo-Croatian, for instance, does not have object agreement.

The base-generation alternative proposed in Adger & Ramchand (2005) or Rouveret (2008) avoids some of these pitfalls and, at least in Rouveret's implementation, where the pronoun has a silent NP-complement, also manages to capture the majority of the movement effects such as reconstruction/crossover and

⁶² An account along such lines may explain the contrast between direct object resumptives and resumptives inside PPs in Hebrew, see the free relative example in (65) below.

cyclicity effects (since there is cyclic Agree involving intermediate phase-heads); the only movement effect it cannot derive are parasitic gaps.

In conclusion, then, the general problems of movement approaches to resumption also manifest themselves when applied to island-sensitive resumption. A base-generation alternative by means of Agree seems at least as viable.

3.2 Distribution of gaps and resumptives

In this subsection I will discuss the distribution of gaps and resumptives from different perspectives. This will provide important insights into the nature of resumption. On the one hand, it is striking that resumption is much more prominent in certain A' -dependencies than in others. On the other hand, within a construction, resumptives and gaps are normally not equally distributed but usually occupy different parts of the accessibility hierarchy. What further complicates things is that, while in some languages gaps and resumptives alternate in certain positions, in other languages they are in strict complementary distribution.

3.2.1 Resumptives in different A' -constructions

As was mentioned at the beginning of this chapter, resumption is most frequent in relative clauses and relative-like constructions such as clefts but less frequent in other A' -dependencies such as *wh*-movement. In some languages, it is completely barred from *wh*-movement. A case in point is Swiss German, which I will discuss in detail in chapter 5, where resumption is possible in relativization but blocked in *wh*-movement. To give a concrete example, while indirect objects require resumptives in relativization, the corresponding *wh*-question requires a gap (see van Riemsdijk 1989 and chapter 5 below):

- (58) a. de Bueb, wo mer *___/ em es Velo versproche händ
 the boy C we he.DAT a bike promise.PTCP have.1PL
 ‘the boy we promised a bike’
 b. Wem₁ häsch ___₁/ *em es Buech ggëe?
 who.DAT have.2SG he.DAT a book give.PTCP?
 ‘To whom did you give a book?’ *Swiss German*

There are a priori two possible explanations. First, the incompatibility could be semantic in nature. Recall from 3.1.2.5 that resumption usually imposes semantic restrictions on its antecedent (specificity, D-linking). Consequently, resumption will be impossible in A' -dependencies where the antecedent does not have the rel-

evant features. This would automatically rule out resumption in *A'*-dependencies such as non-D-linked questions, comparatives, amount relatives and free relatives. In fact there is an interesting parallel (first pointed out in Bianchi 2004) with the so-called antipronominal contexts discovered by Postal (1994, 1998): He observed that *A'*-dependencies differ from each other in their ability to occur in constructions where a definite pronoun is impossible in the trace position (recall also section 2.3.1.3). Constructions that are compatible with such contexts are termed A-constructions, while those incompatible with such contexts are referred to as B-extractions. For instance, definite pronouns are not possible in the existential-*there* construction, which is thus an antipronominal context. Interestingly, while certain *A'*-dependencies such as negative preposing can occur in existential sentences, others such as topicalization cannot (see Postal 1994: 163):

- (59) a. *There are them on the table.
 b. He knew that there were (no) such chemicals in the bottle.
- (60) a. [No such chemicals]₁, did he know that there were __₁ in the bottle.
 b. *[Such chemicals]₁, he knew that there were __₁ in the bottle.

Other constructions that are compatible with existential-*there* are comparatives, free relatives, as well as certain questions and certain restrictive relative clauses, while clefts, *non*-restrictive relatives and null operator constructions (*tough*-movement, parasitic gaps) are not. Postal argues that constructions that are incompatible with antipronominal contexts obligatorily involve a silent resumptive pronoun (see also Cinque 1990). Based on this distribution, one expects that only these construction types are compatible with overt resumptives. The expectation seems to be borne out: Resumptives are largely ruled out in A-extractions but possible in B-extractions. Bianchi (2004) reinterprets the classes of constructions in terms of types of chains: While A-extractions involve non-specific chains, B-extractions involve specific chains and only specific chains allow for resumptives. Questions and restrictive relative clauses are ambiguous according to Postal: They optionally allow for a silent resumptive. This corresponds quite neatly to a distinction independently established: Relatives can receive a restrictive or a maximalizing/amount interpretation; similarly, *wh*-questions involve variables that can be interpreted as definite (Fox 1999) and indefinite (Agüero-Bautista 2001). Both constructions only allow resumptives in the first case; an example for the split are the

wh-movement data from Hebrew discussed in 3.1.2.5 above, where only D-linked questions allow for resumption.^{63, 64}

The semantic approach clearly goes a long way of accounting for the restricted distribution of resumption across A'-constructions. It is also compatible with the observation that resumption is quite frequent in languages where *wh*-movement and focus constructions (which otherwise would be classified as an A-construction) involve clefts or relativization and thus arguably represent a B-construction; see, e.g., McCloskey (1990) on Irish or Saah (2010) on Akan.

However, the semantic approach does not work for all languages. In Zurich German, for instance, semantic factors do not seem to be at work. Resumption in *wh*-movement does not improve under D-linking:

- (61) [Welem Bueb]₁ häsch ___₁/ *em es Buech ggëë?
 which.DAT boy have.2SG he.DAT a book give.PTCP?
 'To which boy did you give a book?' Swiss German

There thus seems to be a more general ban on resumption in some languages. In Merchant (2004) it is proposed that resumption is incompatible with (overt) case-marked operators, crucially including relative operators (suggesting that the restriction cannot be semantic in nature). Assuming that resumption involves base-generation, there is no way for the operator to enter a Case-checking operation. Consequently, it can only be base-generated if it is Case-less, which in turn is only possible if the operator remains silent. Importantly, there can thus be splits within the same construction: In Modern Greek, *that*-relatives allow for resumptives (in fact require them for genitive objects according to Alexopoulou 2006), but *wh*-relatives do not, cf. Merchant (2004: ex. 24–25):⁶⁵

63 Given that obligatory resumption often does not entail semantic restrictions, one expects A-constructions to be compatible with resumption in those positions. Next to the data with amount relatives from Bianchi (2004) discussed in 3.1.2.5 above, see also the free-relative example (65) below as well as McCloskey (1990: 239) for an Irish example with comparative deletion.

64 Bianchi (2004: 89) establishes an implicational relationship between resumption in restrictive and non-restrictive relatives: If a language allows for resumption in restrictive relatives, it also allows it in non-restrictives. In other words, appositives are the most resumption-friendly construction. A reflex of this tendency can, for instance, be seen in Bulgarian, where object resumptives are optional in restrictive but obligatory in non-restrictive relatives, see Krapova (2010: 1244). The same tendency can be found in Modern Greek according to Alexopoulou (2006: 62), who notes that, while in restrictive relatives only indirect objects require resumption, non-restrictive relatives also require resumptives for direct objects.

65 However, according to Kotzoglou & Varlokosta (2005: 44), *wh*-relatives are grammatical with resumptives as well; the same claim can be found in Daskalaki & Mavrogiorgos (2013: 335). A different generalization is reported in Alexopoulou (2006: 69–70). She argues that, while the *that*-

- (62) a. o andras **tou opiou** (*tou) edhosa ta klidhia mou
 the man the which.GEN him.GEN gave.1SG the keys.ACC mine
 ‘the man to whom I gave my keys’
- b. o andras **pou** (tou) edhosa ta klidhia mou
 the man that him.GEN gave.1SG the keys.ACC mine
 ‘the man that I gave my keys to’ *Modern Greek*

Merchant’s constraint is meant to apply especially to island-insensitive resumption. This predicts that Case-marked operators should be acceptable in those cases where resumption could involve movement, viz., in non-island context: Since the *wh*-operator starts out below the Case-assigner, it can be Case-marked.⁶⁶ Tellier (1991: 47) arrives at a very similar prediction (starting from different premises, though): She argues that *wh*-structures cannot be base-generated so that resumptive pronouns inside islands only occur in relativization but not with *wh*-questions.⁶⁷ Consequently, if there is a resumptive in *wh*-movement, it must be movement-derived and will then be sensitive to locality. A language illustrating the *wh*-/relativization contrast is Standard Arabic as described in Demirdache (1991: 43–46). She also predicts resumptives in *wh*-movement to behave differently as they cannot be operators moving at LF (recall section 3.1.3.1): Indeed, resumption under *wh*-movement is possible in both *wh*-movement and relativization, but only in relativization is it insensitive to locality ((64-b) is from Aoun et al. 2010: 174).⁶⁸

/wh-asymmetry is correct for restrictive relatives, it is not observed in non-restrictives, where resumptives are claimed to be compatible with both *that*- and *wh*-relatives. Interestingly though, she mentions (p. 86) that in non-restrictives the relative pronoun may appear in the nominative irrespective of the position relativized on. This may, of course, be an indication of a default-Case used under base-generation.

What makes things even more complex is that in free relatives, *wh*-operators can co-occur with resumptives, a fact everyone seems to agree on, see, e.g., Alexopoulou (2006: 63), Spyropoulos (2011: 33) and Daskalaki & Mavrogiorgos (2013: 324).

66 However, see the Hebrew topicalization examples in Asudeh (2012: 40), where case-marking on the topic is not possible in the presence of a direct object resumptive in a transparent position. This strongly suggests that base-generation is involved.

67 Importantly, D-linked *wh*-operators are exempt from this restriction.

68 The presentation in Demirdache (1991) is rather confusing. On p. 46 she argues that Case-marking on the *wh*-phrase plays a role, although the *wh*-phrase is always invariant. With D-linking, viz., with *which*-questions, the island-sensitivity apparently disappears, which Demirdache relates to left-dislocation of the *wh*-phrase. In Boeckx (2003: 158), where the examples are minimally modified, resumption with D-linked operators is only felicitous with nominative *wh*-elements, but not if they bear accusative, a fact indeed suggestive of base-generation. In Lebanese

- (63) a. man₁ raʔayta ___₁ b. man_i raʔayta-hu_i
 who saw.2SG who saw.2SG-3SG
 ‘Who did you see?’ ‘Who did you see?’ *Standard Arabic*
- (64) a. *man_i raʔayta < l-fataata llatii ɖarabat-hu_i >
 who saw.2SG the-girl that hit-3SG
 lit.: ‘Who did you see the girl that hit him?’
 b. haDarna [(l-)masrahiyyata] (allati) taʔrifuuna < S-Saħaaʔiyya llaði
 saw.1PL (the-)play (that) know.2PL the-journalist that
 ʔaxbara-na ʔan-ha >
 told.3SG.M-us about-it
 lit.: ‘We saw a/the play that you know the journalist that told us about
 it.’ *Standard Arabic*

The same *wh*-relativization contrast has been observed for Hausa, see Tuller (1986: 80–85, 157–159), and Bulgarian (see Krapova 2010: 1249, fn. 15, who shows that resumptive *wh*-movement – like non-resumptive *wh*-movement – displays Condition C effects, while relative clauses – resumptive or non-resumptive – do not).⁶⁹ Another interesting contrast is found in Hebrew. As has been illustrated above, resumption in Hebrew relativization is island-insensitive. Things are different in free relatives, though: As shown in Borer (1984: 238–239), free relatives are only compatible with obligatory resumptives (e.g., within PPs) but not with optional (DO-) resumptives; as discussed in 3.1.2.5 above, this is related to the semantic constraints that (optional) resumptives impose on their antecedents. Interestingly, obligatory resumptives in free relatives become ungrammatical once they are embedded within a strong island, suggesting that movement is involved in the derivation of resumptive free relatives.⁷⁰

- (65) a. kaniti ʔet mai₁ she-raʔit ___₁/ *ʔoto
 bought.1SG ACC what that-saw.2SG it
 ‘I bought what you saw.’
 b. kaniti ʔet mai_i she-hexlatet ʔalav_i
 bought.1SG ACC what that-decided.2SG on.it
 ‘I bought what you decided on.’

Arabic, resumption under *wh*-movement, which is restricted to referential *wh*-operators, is island-insensitive, according to Aoun et al. (2010: 143–147).

⁶⁹ See Crysmann (2012) for an HPSG-analysis where the contrast is derived by different filler-head structures for relativization and *wh*-movement, respectively.

⁷⁰ Importantly, obligatory resumptives in resumptive *restrictive* relatives are island-insensitive, see Borer (1984: 221, ex. 3).

- c. *ze mai_i she-pagashti ⟨ʔet ha-ʔish she hexlit ʔalav_i⟩
 this what that-met.1SG ACC the-man that decided on.it
 lit.: ‘This is what I met the man who decided on it.’ *Hebrew*

These facts are particularly interesting because they suggest that resumptives in the same language can have different properties/different derivational histories depending on their antecedent. Borer in fact treats the resumptive clitics as agreement elements in (65-b/c), which implies that there is regular extraction.⁷¹

Note that neither the *wh*-operator in Arabic in (64-a) nor the free relative pronoun in Hebrew in (65-c) are overtly case-marked. To account for the impossibility of base-generation (and thus island-sensitivity), one is forced to assume that they must bear Case nevertheless given the logic of Merchant’s (2004) generalization.

What the generalization does not capture is the ban on resumption with overt operators in non-island contexts as in the Swiss German and the Greek examples above. In other words, in some languages, there is a more general ban against resumption with Case-marked operators. In fact, in many languages, the ban holds quite generally of all *overt* operators, even in languages where they are invariant as in some Romance languages: In these languages, there are usually two complementary relativization strategies: Overt operator + gap or silent operator + resumptive (for direct objects, the resumptive is optional in the null-operator construction), see Suñer (1998: 337):⁷²

- (66) a. una cierta senadora a quien Luis llamó ___
 a certain senator A whom Luis called
 b. una cierta senadora que Luis la llamó
 a certain senator that Luis her called
 ‘a certain senator whom/that Luis called’ *Spanish*

Even if the overt operators undergo movement, it is not clear what rules out resumption given that some of these languages (Spanish, Greek) are clitic-doubling languages so that a Big-DP-structure would not seem unreasonable. The distri-

⁷¹ Tellier (1991: 55) also mentions Yiddish as a language where only resumptive relatives but not *wh*-resumption is island-insensitive. However, according to Prince (1989), there are no resumptives in Yiddish *wh*-movement, which implies that the *wh*-example 52b that Tellier provides is ruled out for independent reasons.

⁷² The situation is similar in Slavic languages, where *wh*-relatives (with Case-marked operators) require gaps, while *that*-relatives allow for resumptives, see Goodluck & Stojanovic (1996), Lavine (2003). Szczeglielniak (2005: 167, 181), on the other hand, claims that *wh*-relatives in Polish and Russian are compatible with resumption as long as the resumptives are embedded, i.e., are not clause-mates of the antecedent.

bution in these languages could be accounted for by assuming that resumption involves base-generation of silent operators, while overt operators bear a Case-feature so that they have to undergo movement. But since these two properties are not directly related, the complementary distribution of the two strategies appears accidental.^{73, 74}

I will come back to the crosslinguistic availability of resumption in section 3.2.5. In section 5.4.2.5 I will make a new proposal to account for the asymmetry between relativization and *wh*-movement w.r.t. their compatibility with resumption.

3.2.2 Accessibility hierarchy

As shown in section 2.1.2.4, gaps and resumptives are distributed quite differently over the accessibility hierarchy: While gaps predominate in higher functions, resumptives are more prominent in lower functions. I repeat a simplified version of the hierarchy proposed in Cole et al. (1977):

(67) SU > DO > IO > OBL > GEN > OC > (strong) islands

As discussed in section 2.1.2.4, while the hierarchies are descriptively interesting, they leave much unaccounted for, a fact that was pointed out quite early: For instance, Cinque (1981: 307) mentions: “within such a system, there is no principled way to predict at which point a given strategy will cut off (in a given language)”. Similarly, Lehmann (1986) argues “It (the AH) does not tell us at which point a

73 In practically all the European languages where the two strategies are in complementary distribution, they belong to different registers, with the resumptive variant being standard/colloquial/dialectal. This may be another factor why overt operators do not co-occur with resumptives. Still, this does not liberate the syntactician from providing an explicit analysis of the contrast.

74 Murelli (2011: 222–228) finds as many as 12 European languages in his sample that allow the combination of relative operator and resumptive, in several instances contradicting the claims of the above-mentioned literature: Albanian, Bulgarian, Catalan, English, French, Greek, Italian, Macedonian, Polish, Portuguese, Romanian, Spanish. He observes that many (but not all: e.g., Polish, French, Italian and English) allow for clitic-doubling so that in these languages resumptive *wh*-relatives may involve movement. Evidence for this comes from the fact that both in Bulgarian (Krapova 2010: 1263, fn. 41) and Romanian (Boeckx 2003: 11) they are sensitive to strong islands.

It should be added, though, that in some of these languages, what looks like a relative-operator may have developed into an invariant relative marker/particle. Consequently, further research is necessary in this area.

given strategy will break off or start inserting representatives (= resumptive pronouns)". After all, one would like to know which grammatical principles govern the distribution of gaps and resumptives, but this is something the hierarchies do not explain.

There are essentially two perspectives on the issue. Either resumptives are considered a repair device that comes into play when gap derivations crash; this is the last resort view of resumption, which predicts that resumptives should only occur to avoid the violation of some grammatical principle. Alternatively, resumptives are considered a general possibility of the grammatical system. Under this view, resumptives could in principle occur in every position and the task is to explain why they do not occur in certain positions. Importantly, the two perspectives are orthogonal to the various possibilities of implementing resumption (movement or base-generation). Both perspectives will be discussed in turn.

3.2.2.1 Last resort resumptives

In section 2.1.2.4, I argued that one part of the distribution of resumptives on the AH can be understood in terms of locality because the resumptive strategy is most prominent in configurations where movement derivations (based on the gap or relative pronoun strategy) fail. Note that this does not necessarily imply that resumption must involve base-generation, the facts also follow under movement approaches to resumption if resumption is crucially involved in voiding island constraints. While locality certainly motivates resumptives inside islands, there are remarkable crosslinguistic differences in higher positions that remain to be accounted for: In Keenan & Comrie (1977: 93), the following cut-off points can be found for resumptives (a language representing each of the patterns is on the right):

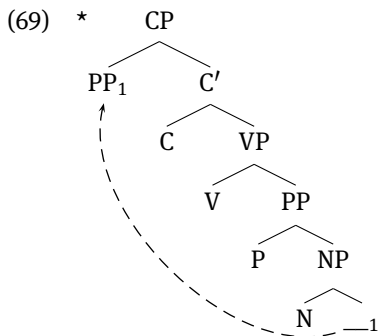
| | | |
|------|---------------------------|--------------------|
| (68) | from the SU on downwards | Urhobo |
| | from the DO on downwards | Palestinian Arabic |
| | from the IO on downwards | Welsh |
| | from the OBL on downwards | Minangkabau |

In what follows, I will go through each position and discuss possible motivations for the occurrence of resumptives.

Resumptives inside PPs (OBL)⁷⁵ and for possessors can in principle also be subsumed under locality because extraction from these positions is prohibited in many languages: Possessor extraction is blocked by the Left Branch Condition

⁷⁵ The object of comparison often patterns with OBL because both are frequently expressed by means of PPs.

(LBC); gaps inside PPs can either be related to a ban on preposition stranding, which is only allowed in some Germanic languages, or to locality more generally since PPs constitute islands for extraction beyond the mere ban on preposition stranding. As we saw in the discussion about reconstruction above, however, in some approaches (Bianchi 2004, Sichel 2014), movement is assumed for resumptives in these positions, suggesting that they are not subsumed under (strong) islands. This immediately raises the question of why there should be resumptives in the first place (recall that in these hybrid approaches there is no movement out of strong islands). The approaches are usually not very explicit. With respect to PPs, they sometimes allude to preposition stranding. The overtness of the trace then somehow circumvents the constraint, but why this should be the case is not made explicit. The underlying assumption seems to be that the ban on preposition stranding is essentially a PF-phenomenon. While this may work for simple PP-cases, this fails to account for the islandhood of PPs once they contain more structure, e.g., if a PP is extracted from a PP, but there remains a complement of P:



It seems that accounts motivating resumptives inside PPs by means of preposition stranding need a separate explanation for cases like (69), which is not particularly economical. Unfortunately, such cases are never discussed in the literature. In section 5.4.2.1 below, I will show that in (Swiss) German, PPs are islands quite generally so that resumptives inside PPs receive the same explanation as resumptives inside strong islands. An alternative account of resumptives inside PPs is to assume that prepositions assign inherent Case (in most languages) and that inherent Case is subject to special licensing/recoverability requirements (see also Boeckx 2003: 79–80), a proposal I will discuss below w.r.t. indirect objects. Essentially the same assumption must then be made for possessors, whether they are encoded as PPs or as NPs bearing an oblique Case.

Before turning to indirect objects, it should be pointed out that there may be advantages in not subsuming resumptives inside PPs and for possessors under

locality because in some languages they are indeed treated differently: First, recall the facts from Hebrew free relatives in (65), where resumptives are possible inside PPs, but not if the PP is inside an island (if the resumptive clitic is just an agreement element, this observation loses its relevance, of course). Second, in Serbo-Croatian, which, as illustrated in (9) above, does not allow resumptives inside strong islands, resumptives can appear inside PPs and for possessors (see Goodluck & Stojanovic 1996: 291):⁷⁶

- (70) čovek što sam sa *(njim) putovala
 man C be.1SG with him.INST traveled
 ‘the man who I traveled with’

Serbo-Croatian

I will now turn to resumptives for indirect objects (and other oblique Cases like genitive and instrumental objects). They will be discussed in somewhat more detail as they will play a prominent role in the discussion of Swiss German in sections 5.4.2.2 and 5.4.2.3 below. A frequent motivation for resumptives for IOs is the notion of inherent Case: According to traditional assumptions, indirect (and other oblique) objects differ from direct objects in that they bear inherent (and not structural) Case. This in itself does not yet explain why they should be treated differently by resumption. One strand of research has linked the special behavior of inherent Cases to structural differences: Inherent Cases are taken to involve additional layers of structure (as in van Riemsdijk 1989, Bayer et al. 2001), e.g., a KP- or a PP-layer. If these additional layers induce opacity (the PP-layer would turn them into islands), the presence of a resumptive does not come as a surprise. Importantly, this approach is thus not about the surface Case form but about the underlying structure. Support for it comes from the observation that some languages treat Cases differently w.r.t. resumption based on the structural/inherent dichotomy. As we have seen several times, accusative/direct objects in Hebrew can be rendered as gaps or resumptives in relativization. However, once a direct object experiencer is relativized, a resumptive is obligatory, see Landau (2010: 5, 31):^{77, 78}

⁷⁶ The same holds for Modern Greek, see Alexopoulou (2006), and Welsh. In the base-generation approach by Rouveret (2011: 21–22) it is assumed that Agree can look into DPs and PPs, apparently presupposing that Agree is subject to different locality constraints than movement, as proposed in Bošković (2007b).

⁷⁷ A similar pattern is found in Greek: While DO-relatives allow for gaps, accusative experiencers, like indirect objects in the genitive, require resumptives, see Landau (2010: 28).

⁷⁸ A categorial difference between direct objects and indirect objects plays a role in Willis (2000), Rouveret (2002) and probably also Alexopoulou (2006: 79–80) in their attempts to explain why indirect objects require resumptives, while subjects and direct objects do not. In Rouveret (2002),

- (71) a. ze ha-iš še-ha-ma'amar te'er (?oto).
 this the-man that-the-article described (him)
 'This is the man that the article described.'
- b. ze ha-iš še-ha-ma'amar hid'ig *(oto).
 this the-man that-the-article worried him
 'This is the man that the article worried.'

Hebrew

A different motivation for IO-resumptives is semantic in nature: In their analysis of Modern Greek, Daskalaki & Mavrogiorgos (2013: 333–336) argue that inherent Case (viz., genitive) is semantically interpretable and thus relevant for LF. The presence of a resumptive in the relativization of an indirect object ensures that it is visible at LF. Evidence that this is the correct characterization comes from the observation that the genitive resumptive can be missing when the operator bears genitive as in *wh*-questions, *wh*-relatives and free relatives (and in *that*-relatives if the head noun bears genitive as well).

Yet another explanation for IO-resumptives is based on morphological properties of indirect (and oblique) objects: It is argued that inherent Cases are subject to special morphological licensing requirements, viz., they must be phonetically realized, see Pesetsky (1998), Bayer et al. (2001) and Bianchi (2004: 96). Arguably, the notion *oblique Case* is actually more appropriate here. The question, of course, is, why there should be such a constraint. There is, to my knowledge, no straightforward answer to this question. But at least in some languages there is some rather convincing evidence for it. A particularly interesting case is resumption in Colloquial Czech (Toman 1998: 305), where we find the following distribution of resumptives: Gaps for subjects and direct objects but resumptives for indirect and oblique (instrumental) objects:

- (72) a. To je ten nůž, co __ byl_{nom} na stole.
 this is the knife C was on table
 'This is the knife that was on the table.'

IOs cannot be relativized by gaps because only elements that are accessible to C can be attracted by movement, viz., elements in SpecvP or above. This will work for subjects and those objects that undergo object shift. IOs, however, are PPs and do not undergo object shift so that they are inaccessible for C. In Willis (2000), resumptives for IOs are possible because they are PPs and thus include an extra layer that protects them from the A'-disjointness requirement, see section 3.2.2.2 below. In Alexopoulou (2006: 79–80) the categorial feature of the operator, which is necessary to identify phi-features on C, is not visible when it bears inherent Case. I will come back to disjointness in section 3.2.2.2 and to the SU/DO- vs. IO-split in sections 5.4.2.2 and 5.4.2.3 below.

- b. To je ten nůž, co Petr našel_{acc} __ na stole.
 this is the knife C Peter found on table
 ‘This is the knife that Peter found on the table.’
- c. To je ten chlap, co *(mu) každěj pomáhá.
 this is the guy C he.DAT everyone helps
 ‘This is the guy everyone helps.’
- d. To je ta váza, co *(jí) zatřás.
 this is the vase C it.INST shook
 ‘This is the vase that he shook.’

Colloquial Czech

So far, the facts are compatible with both a syntactic (inherent Case) as well as a morphological perspective (oblique Case). However, the following data strongly argue in favor of the morphological perspective. First, there is no resumption with temporal accusatives even though they are arguably inherent/semantic cases, see Toman (1998: 312–313):

- (73) a. Tu noc nejezdilo metro.
 the.ACC night didn’t.run subway
 ‘In the night the subway didn’t run.’
- b. ta noc, co __ nejezdilo metro
 the.NOM night C didn’t.run subway
 ‘the night that the subway didn’t run’

Colloquial Czech

The final piece of evidence comes from direct objects, concretely from animate masculine singular objects: Unlike other direct objects, they require a resumptive, see Toman (1998: 310):

- (74) To je ten chlap, co *(ho) viděli v tramvaji.
 this is the guy C him.ACC saw in streetcar
 ‘This is the guy they saw in the street car.’

Colloquial Czech

While this pattern may be surprising at first sight, it makes perfect sense from a morphological perspective because accusative and genitive are syncretic for animate singular masculine nouns (in several Slavic languages). It seems thus, that the direct object is treated as bearing genitive case and consequently has to be realized (see Pesetsky 1998: 375 for the same observation).⁷⁹

⁷⁹ Implementing the facts from Colloquial Czech will be non-trivial, though: One question concerns the representation of temporal accusatives: They must be DPs and not PPs because otherwise one might expect resumptives. Their inherent character thus has to be expressed differently in the grammar. Secondly, the resumptives for animate masculine objects will be difficult to

Having treated indirect and oblique objects, I will now turn to direct objects. They are more difficult to motivate since they do not obviously involve additional structure which would allow for assimilating them to PPs. One proposal, viz., Fox (1994), however, does exactly that: He argues that the Hebrew accusative Case pronoun *?oto* actually consists of the particle introducing specific definite objects *?et* plus the pronoun *hu* ‘he’. The particle *?et* is then analyzed as a preposition of some sort so that the DO resumptive can be subsumed under PP-resumption more generally. Other approaches motivate DO-resumptives on the basis of semantic properties of the object. Concretely, they treat DO-resumptives as an instance of differential object marking (DOM): Because the object bears certain features (animacy, specificity), it has to receive special morphological coding. This is explicitly proposed in Bošković (2009), who shows that the distribution of DO-resumptives in Serbo-Croatian closely mirrors the contexts where typologically differential object marking is most prominent. For instance, animate objects require resumptives, while they are optional with inanimates, see Goodluck & Stojanovic (1996: 291):⁸⁰

- (75) a. *čovек što sam *(ga) upoznala*
 man C be.1SG him met
 ‘the man that I met’
 b. *auto što sam (ga) kupila*
 car C be.1SG him bought
 ‘the car that I bought’

Serbo-Croatian

According to Bošković (2009: 84–85), almost the same distribution of resumptives is found in Bulgarian. Similarly, Lavine (2003) points out that masculine animates require DO-resumptives in Polish and Ukrainian as well; with other DPs, DO-resumptives seem to be optional. Under the DOM-approach, resumptives for DOs seem to be PF-motivated (like the resumptives in Colloquial Czech above).^{81, 82}

trigger because in the syntax, the DP arguably bears accusative so that (unlike with datives and instrumentals which bear these Cases in syntax) there is no direct connection with their morphological obliqueness.

80 Animacy is thus an alternative explanation for the DO-resumptive in Czech in (74) above.

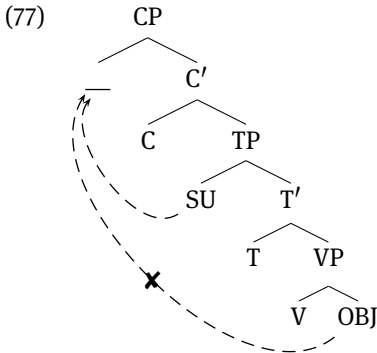
81 In Hladnik (2015), all resumptives in Slovene (and Slavic more generally) are motivated by recoverability of case features, i.e., in the absence of an overt relative pronoun, the tail of the A'-chain must be realized as a pronoun. This accounts for resumptives in all oblique positions as well as for direct objects. The absence of subject resumptives is argued to be due to the fact that nominative instantiates the absence of Case so that no realization is necessary to respect recoverability.

82 According to Gračanin-Yuksek (2013) and Hladnik (2015: 67–69), the distribution of direct object resumptives in Bosnian-Croatian-Serbian and Polish crucially depends on the Case of the

The DOM-approach is not suitable for languages where direct objects categorically require resumptives. A case in point is Palestinian Arabic as discussed in Shlonsky (1992). In this variety of Arabic, matrix subjects require gaps, while all other positions, including DOs, require resumptives, see Shlonsky (1992: 445):

- (76) l-bint ʔilli šufti-*(ha)
 the-girl C saw.2SG.F-her
 ‘the girl that you saw’ *Palestinian Arabic*

In Shlonsky’s system, DO-resumptives are derived as follows: He assumes that the complementizer turns its specifier into an A-position, which implies that relativization is actually A-movement. Movement of the subject is unproblematic, but movement from all lower positions is blocked by Minimality: The subject, being in a Case-position, intervenes. Consequently, only base-generation and thus resumption is possible when relativization targets lower positions:



Turning finally to subject resumptives, one has to distinguish between matrix subjects and embedded subjects. While matrix subjects are rare (but by no means universally ruled out), embedded subjects are much more frequent (cf. also Comrie 1989: 160–162). In fact, I am not aware of a single language which has resumptives for matrix subjects but not for embedded subjects while the reverse distribution holds in many languages. From the point of view of locality, this is surely not accidental since embedded subjects are difficult to extract in many languages, viz., they trigger *that*-trace effects (cf. **Who do you think that came*). While the proper analysis of the *that*-trace effect is still a matter of debate (especially with older ECP-based accounts no longer available), there is in principle solid motivation for the appearance of resumptives in this position whether related to locality or to

head noun and its exact morphological form (see also Salzmann 2006b). The role of Case matching in resumption will be discussed in detail in sections 5.3 and 5.4.2.3 below.

the EPP (see, e.g., Rizzi & Shlonsky 2007, Salzmann et al. 2013). Languages which allow embedded but not matrix resumptives are among others Irish, Hebrew and Polish (cf. Bondaruk 1995: 41). Swedish has a somewhat peculiar distribution of resumptives in that it only allows them in embedded subject position, see Engdahl (1985: 8):⁸³

- (78) Vilket ord visste ingen hur *(det) stavas?
 which word knew no.one how it is.spelled
 lit.: ‘Which word did no one know how it is spelled?’ Swedish

Resumptives for matrix subjects cannot be motivated this way. Possible causes are anti-locality (the movement step from SpecTP to SpecCP is too local) or by criterial freezing (Rizzi & Shlonsky 2007): After reaching the subject position, the operator is frozen.⁸⁴ Whether this works for all instances is unclear, especially in languages where subject resumptives are optional (as in Yiddish and Spanish, see section 3.2.2.2). Consequently, a different perspective may be necessary, which will be provided in the next subsection.⁸⁵

A locality-only perspective on resumptives is proposed in Rouveret (2002) and van Urk (2016), who argue that resumption occurs in exactly those positions from where movement is not available. While this is trivial in the case of islands, they argue that resumptives in other positions such as inside DPs, PPs, as direct objects and subjects, result from the fact that the various phase heads do not have an EPP-feature. Consequently, the moving element will be trapped inside a phase so that base-generation is the only alternative, i.e., resumption follows from the Phase Impenetrability Condition (PIC, Chomsky 2001). For instance, a language like Dinka that bans resumptives for matrix subjects and direct objects but optionally allows them in embedded contexts would have obligatory edge features on matrix C and *v* and an optional edge-feature on the embedded C. Potential problems arise for this type of approach if, for instance, in a given language, resumptives are allowed in subject and direct object position but only if contained within an island. This would suggest that the movement triggers on *v*/C are optional after all (as they couldn't be checked if there is no movement from the island), but then one would

83 Most Swedish examples with resumptives involve *wh*-islands; they are much rarer in declarative complements, see Engdahl (1986: 98–99).

84 Adesola (2010) argues that (matrix and embedded) subject resumptives in Yoruba are necessary to satisfy the EPP (which by assumption null operators cannot).

85 While it is thus difficult to motivate DO and SU-resumptives in transparent position, it should be stressed that DO- and SU-resumptives occur frequently if the variable is within an island even if the language otherwise bars SU or DO-resumptives. For instance, Polish does not have (overt) SU-resumptives but requires them in NP-coordination, see Bondaruk (1995: 41).

expect resumptives outside of islands in these positions as well. This is essentially the problem that the distribution of gaps and resumptives in Swiss German poses, as discussed in detail in chapter five.

Before concluding this subsection, I would like to briefly discuss the approach by Boeckx (2003), who also aims at a unified account of the distribution of resumption. He motivates resumptives by stipulating a principle, the Principle of Unambiguous Chain (p. 13, 72–73), which prohibits chains that involve more than one so-called Strong Occurrence, viz., a position where a strong/EPP-feature is checked, e.g., a chain containing a position where a Case-feature is checked, e.g., SpecvP, and a position where an operator feature is checked, viz., SpecCP (resumptives inside PPs or possessors are also assumed to check some EPP-feature). Such chains can be disambiguated (= repaired) in two ways. First, by an Agree relationship between the two positions or by means of resumption: Under resumption, the Big-DP checks one EPP-feature (e.g., Case), while the subextracting operator checks the other. There are several problems with this approach: First, the notion of unambiguous chain does not seem to play a role elsewhere in the grammar; it has more the flavor of an ad hoc principle whose function it is to derive the facts. The same holds for the putative Agree operations between the positions/the relevant heads. Perhaps apart from C and T, such a relationship usually does not play much of a role in grammar. Second, the major problem of this type of approach is that it is neither verifiable nor falsifiable: Usually, when we find a resumptive in a certain position, it is concluded that two EPP-positions must be involved. If there is no resumptive, but there is reason to believe that an EPP-feature is involved, an Agree relation between the two positions is posited. In very few instances does the author provide independent evidence for either the EPP-position or Agree between the relevant heads. Third, it can be shown that the approach fails in very concrete contexts: For instance, if a language has scrambling/object shift, one would expect it to have resumptives. However, Swiss German, for instance, has scrambling of objects but does not have DO-resumptives (resumptives are restricted to IOs, see section 5.1 below). Conversely, Akan, which does not have object shift or scrambling, does have DO-resumptives. This strongly suggests that the distribution of resumptives is unrelated to EPP-features along the movement path. Another problem, to be discussed in detail in section 5.1, concerns patterns as in Breton or Swiss German where one finds resumptives in all positions within islands but not for subjects and direct objects in non-island positions. Since the same EPP-positions are involved, both contexts should be treated the same, contrary to fact; note that since movement is island-insensitive in Boeckx' system, resumptives inside islands cannot be motivated by locality. This brief discussion should suffice to make it clear that more needs to be said to capture the complex distribution of gaps and resumptives.

In this subsection, I have looked at the distribution of resumptives from the perspective of *last resort* (see Shlonsky 1992 for one of the first explicit approaches in these terms): Under this view, resumptives are motivated as a repair device that comes into play to save an otherwise crashing derivation. In many instances, resumptives avoid a violation of locality constraints; in some cases, they seem to be motivated by more surfacy constraints, e.g., PF-constraints requiring morphological expression of certain cases or features of the relativized element. While very successful in accounting for resumptives in lower positions of the accessibility hierarchy, the last resort perspective usually does not have much to say about resumptives for direct objects and especially matrix subjects, which are transparent positions from which (local) movement is generally unproblematic and which usually bear structural Cases that are not subject to any special recoverability requirement that might require overttness. For such resumptives, the reverse perspective seems to be needed: Resumptives are a possibility of the grammatical system. Consequently, one does not have to explain why there are resumptives in certain positions but rather why resumptives are barred from certain positions. Such a perspective will be discussed in the following subsection.

3.2.2.2 Resumptives as a possibility of the grammatical system

If resumptives are simply a possibility provided by the grammatical system, one expects them to occur in every position. This also includes the lower positions; that resumption avoids the violation of some grammatical principle in that case is then simply a side-effect. The major advantage of this perspective is that it has no difficulties in accounting for resumptives in high positions of the accessibility hierarchy. This is particularly true of matrix subject resumptives. Although for some time it was assumed that they do not exist (see, e.g., McCloskey 1990), it has become clear over the years that this is not correct. Languages that have resumptives for matrix subject are among others Urhobo (Keenan & Comrie 1977), Yiddish and (varieties of) Spanish (optionally, cf. Suñer 1998), Mandarin Chinese (optionally, see Pan 2016: 294), Edo (Boeckx 2003: 32), Akan (Saah 2010) as well as five languages in the sample of the World Atlas of Language Structures (Comrie & Kuteva 2005), viz., Kayah Li, Baka, Babungo, Ngemba, and Yoruba (for which see also Adesola 2010). According to Murelli (2011: 206, 219f.), the following European languages allow for SU-resumptives: Russian, Czech, Italian, Portuguese, Polish, Belarusian and (non-standard) English.⁸⁶ Vata also has resumptives for matrix as well as embedded subjects (Koopman 1983, Koopman & Sportiche 1986),

⁸⁶ Some of these SU-resumptives only seem to occur under focus and in none of these languages do SU-resumptives seem to be obligatory, unlike, e.g., in Akan.

but there is some reason to believe that these resumptives have a special status because only gaps are found in other positions (see also Boeckx 2003: 88–89). The same goes for Yoruba, which has resumptives inside islands and for subjects but not for direct objects, see Adesola (2005: 88–95, 153–160). The following pair illustrates resumptives for subjects and direct objects in Yiddish (gap and resumptives alternate in these positions), see Prince (1990: ex. 2b/c):⁸⁷

- (79) a. a yid vos (er) iz geven a groyser lamdn un a gvir
 a Jew C he is been a big scholar and a rich.man
 ‘a guy who was a big scholar and a rich man’
 b. mentshn vos a shlang hot (zey) gebisn
 people C a snake has them bitten
 ‘people whom a snake bit’

Yiddish

Once resumptives are a general possibility, e.g., because resumption involves base-generation, the question arises how resumptives can be blocked in certain positions. Again, the relevant relations are (matrix) subjects and direct objects. Resumptives for matrix subjects tend to be rarer than direct object resumptives, a fact that calls for an explanation. One has to be careful here, though, because at least in *pro*-drop languages what looks like a gap in subject position may also be a silent *pro* as, e.g., in the Italian example in (45-b) above.⁸⁸ Nevertheless, there are a number of languages that have direct object resumptives but no matrix subject resumptives (and no resumptive *pros*), e.g., Irish, Palestinian Arabic and Hebrew. For languages of this type, McCloskey (1990: 215) proposes that resumptives are subject to a disjointness requirement. The basic idea is that resumptives, like A-bound pronouns, must not be bound too locally, the only difference being that in this case A'-binding is involved:

- (80) A pronoun must be A'-free in the least complete functional complex (CFC) containing the pronoun and a subject distinct from the pronoun.

This constraint has the effect that matrix subject resumptives are blocked: The least CFC includes the matrix TP in which the RC is embedded. Since the pronoun is A'-bound in this domain (the binding operator is included in this domain), the pronoun is ruled out. Embedded subjects, however, are allowed because their CFC is the TP of the relative clause, which, however, does not contain the binder

⁸⁷ Palauan may be another language with subject resumptives if all gaps are re-interpreted as silent pronouns, as suggested in Georgopoulos (1985, 1991).

⁸⁸ Overt resumptives are then blocked by the Avoid Pronoun Principle, see Chomsky (1981), or the Overt Pronoun Constraint by Montalbetti (1984).

(which is in the highest SpecCP of the relative clause). Furthermore, the constraint is compatible with the observation that in Irish (and other languages without matrix subject resumptives) it is still possible to have resumptives inside subjects (i.e., for possessors). Furthermore, it may account for the fact that subject resumptives become possible in some languages if topicalization places a constituent between the antecedent and the subject, see, e.g., Shlonsky (1992: 449) on Hebrew (because greater distance may affect the CFC). The constraint is well-established, but it is questionable for both empirical as well as conceptual reasons: First, as McCloskey points out himself, it probably wrongly rules out subject resumptives in coordination. Second, it is essentially an arbitrary filter that seems operative in some but not all languages. The same criticism can be leveled against the following version of A'-disjointness proposed in Rouveret (1994: 408) and adopted in Willis (2000):

- (81) A pronoun must be A'-free in the functional projection, or, if it exists, in the extended projection, of the head L to which the site of the pronoun is lexically linked.

This constraint has the effect that it blocks resumptives for both subjects and direct objects, a pattern that is, for instance, found in Welsh, Breton, Swiss German, and arguably in many more: The relevant extended projection for SU- and DO-resumptives is CP. However, apart from its arbitrariness, it is unclear whether this makes the correct empirical cut as embedded subjects/direct objects do not seem to be affected because the relevant extended projection would be the embedded CP, where the resumptives would be unbound. This may be a welcome result for Welsh, Breton and Swiss German, which do not have gaps in embedded clauses, but the constraint in (81) would fail for languages which prohibit SU and DO resumptives across the board (but allow them in oblique positions).⁸⁹

A more systematic account of the distribution of gaps and resumptives is proposed in Klein (2014, 2016a,b), recall the discussion in 3.1.3.3: He argues that the choice between gaps and resumption (which in his analysis involves movement) depends on the order of operation-inducing features on phase-heads: Concretely, if Agree between v/C and ϕ precedes Internal Merge, resumption obtains. Under

89 Under last resort based approaches like those by Rouveret (2002) or van Urk (2016), the ban on resumptives in these high positions is simply due to the obligatory presence of a movement trigger on the phase heads v/C. Thus, the highest subject restriction obtains if matrix C obligatorily carries a movement trigger.

While such an account is equally arbitrary as those based on disjointness constraints, it relies on an independently necessary distinction between phase heads that have EPP-/edge-features and those that do not.

the order Merge > Agree, movement of ϕ P is necessary, leading to gap derivations. The approach is actually more refined in that, following Georgi (2014, to appear), it distinguishes between final and intermediate movement steps. This has the advantage that it can treat the local subject differently than both the embedded subject as well as all direct objects: While local SU-relativization involves a final movement step, the relativization of direct objects and embedded subjects involves an intermediate movement step via SpecvP/SpecCP. Under the ordering FM > IM > Agree, gaps result for all subjects and direct objects. If, however, Agree precedes both movement operations, resumptives appear in all these positions. Finally, if final movement precedes Agree, but Agree precedes intermediate movement, we get the Irish pattern with gaps for local subjects and resumptives for the other positions. With an additional factor, the point of External Merge of the subject, which interacts with Agree in some cases, six different patterns can be derived, see Klein (2016a: 116–117):

(82)

| Pattern No | Su | emb. Su | Obj | emb. Obj |
|------------|-----|---------|-----|----------|
| 1 | gap | gap | gap | gap |
| 2 | res | res | res | res |
| 3 | gap | res | res | res |
| 4 | gap | res | gap | gap |
| 5 | res | res | gap | gap |
| 6 | res | gap | gap | gap |

The advantages of this system is that it treats all patterns the same and can dispense with arbitrary filters. The biggest drawback of the approach in my view is that it does not provide a linguistic rationale for the different patterns; rather, they are derived in very mechanical manner without taking the properties of individual languages into account. Thus, while patterns 1–3 are crosslinguistically well-established, the others are much rarer and in some cases the surface pattern may arise for reasons unrelated to rule ordering. For instance, the only language instantiating the pattern 4 with resumptives only for embedded subjects in Klein’s sample is Colloquial Welsh (Swedish, which has the same pattern, is excluded from the discussion). However, as discussed in the previous subsection, resumptives for embedded subjects may be related to other factors than the PIC so that it is not obvious that they should be accounted for in the same way. Furthermore, the approach predicts the existence of the hitherto unattested pattern six with resumptives only in matrix subject position but gaps in embedded subject and all object positions. Perhaps this gap is only due to our current incomplete knowledge of the empirical situation, but perhaps there are good reasons that such a system does not exist: The matrix subject position is the position closest to the operator position and thus arguably the position one would expect to be most

easily extractable. At any rate, the approach is an improvement over previous approaches and further typological work will have to reveal if the predicted patterns are linguistically reasonable.⁹⁰

A very different possibility to block resumptives is economy: Movement is taken to be more economical than resumption. I will discuss this issue in the next subsection in some detail. Before doing so, let me briefly recap: It should have become clear that the challenging positions on the AH are (matrix) subjects and direct objects. The advantage of the last resort perspective is that gaps in these positions tend to be unproblematic because nothing requires them (although there is an economy issue here, see the next subsection). However, resumptives in these positions are unexpected. Conversely, under the view that resumptives are a possibility of the grammatical system, resumptives in high positions are unproblematic; rather, their absence constitutes a problem. This state of affairs may suggest that different distributional patterns require different approaches to resumption. This may be the case for languages where both subjects and direct objects are treated the same: A last resort approach suggests itself for gap-languages, while the languages with resumptives in both positions would favor a treatment of resumptives as a grammatical option of the language. Unfortunately, as the table in (82) has already shown, the situation is much more complicated in that there are intermediate cases (gaps for matrix SU but resumptives for DOs and embedded SUs) as well as languages where gaps and resumptives alternate in certain positions. This is addressed in the next subsection.

3.2.3 Optionality vs. complementary distribution

For obvious reasons, the distribution between gaps and resumptives is generally strict when we look at positions low on the hierarchy: If a language fails to have relative pronouns and pied-piping, resumptives will often be the only possibility to relativize positions inside islands, PPs as well as oblique objects. Languages differ, however, once we look at direct objects and subjects: Here we find both languages where gaps and resumptives are in complementary distribution and languages where the two strategies alternate (in at least one of the positions).

⁹⁰ A further problem of the approach is that it sometimes does not distinguish between silent and overt resumptives. This is particularly crucial for the subject position in *pro*-drop languages, where the ‘gap’ may actually be a silent *pro*. Furthermore, Tuki is analyzed as a language that allows gaps in object position. However, there is good reason to believe that these are actually silent resumptives as they are insensitive to locality; recall example (46) in section 3.1.3.2 above.

Famous examples where resumptives alternate with gaps are, once again, Irish and Hebrew: While matrix subjects require gaps, the other positions allow both gaps and resumptives. The following pair illustrates this for Irish matrix direct objects, see McCloskey (1990: 205–206):⁹¹

- (83) a. an fear a bhuaíl tú ___ b. an fear ar bhuaíl tú é
 the man aL struck you the man aN struck you him
 ‘the man that you struck’ ‘the man that you struck’ *Irish*

The choice between the two strategies is thus in principle free (although the resumptive version will impose semantic restrictions, as discussed in 3.1.2.5 above). In Yiddish (cf. Prince 1990) and certain varieties of Spanish (cf. Suñer 1998) resumptives and gaps alternate in both subject and direct object position (in *that*-relatives).

Capturing the optionality can be done in various ways. As we will see shortly, optionality is much easier to derive than complementary distribution. The most frequent strategy is to postulate complementizers with different features. This is most obvious in languages like Irish, where the complementizers co-vary with the relativization strategy. Recall from section 3.1.1.2 that McCloskey (2002: 205) proposes that the movement complementizer *aL* bears an EPP-feature and an *uOp*-feature, while the complementizer occurring with resumption *aN* bears an EPP-feature only. This will lead to two different numerations and consequently two different reference sets so that the strategies do not compete and optionality results. This basic idea has been adopted for other languages even if there is no complementizer alternation. See, e.g., Shlonsky (1992) or Alexopoulou (2006: 102) for Hebrew. Suñer (1998: 346–348) argues for languages of this type that gaps result if C has a strong attracting feature (the relative pronoun undergoes overt movement), while resumptives obtain if the feature is weak (the relative operator then stays in situ, is bound by a base-generated operator and is realized as a resumptive). Sichel (2014) argues for Hebrew direct objects that the optionality arises because different relativization structures underlie the two strategies (*viz.*, gap-derivations involve head raising, while resumptives arise in a base-generation derivation based on the head-external analysis). Essentially the same is proposed for Slavic by Hladnik (2015: 96). Elomari (1998) also posits different derivations to capture the optionality between gap/resumptive in direct object position in Mo-

⁹¹ This pattern is also found in Persian (Keenan & Comrie 1979: 343), Brazilian Portuguese (Grolla 2005), in various Italian varieties (Bianchi 2004: 78–79) as well as in several Slavic languages, although as pointed out above, in many, resumptives for DOs tend to be limited to specific contexts (animacy) so that one may be dealing with pseudo-optionality.

roccan Arabic: While the gap derivation is the usual movement derivation, the resumptive derivation is based on clitic left-dislocation. Again, since different numerations are involved, optionality results. Finally, in the rule-ordering system proposed by Klein (2014, 2016a,b), optionality can be handled by means of underspecified ordering statements. Concretely, movement can be ordered before or after Agree, thus leading to either gaps or resumptives.⁹² Accounting for the distribution of gaps and resumptives is thus rather straightforward in these languages (I abstract away from the highest subject restriction that is operative in some of these languages).⁹³

Languages with complementary distribution pose much more serious problems. There are two frequent patterns: In some languages, all positions except for (matrix) subjects require resumptives. Examples are Palestinian Arabic (Shlonsky 1992: 445) and Kera (Afroasiatic, see Keenan & Comrie 1979: 340). In other languages, resumptives are blocked for both subjects and direct objects, e.g., Welsh (Willis 2000), Breton (Guilliot 2006), and Swiss German (Weber 1987, van Riemsdijk 1989).⁹⁴ The challenge posed by the first group is to explain why gaps are required for matrix subjects, while resumptives are obligatory in all other positions. In the rule ordering approach by Klein (2014, 2016a,b), this can be done quite easily by ordering final movement but not intermediate movement before Agree. Only one derivation converges per context so that the complementarity follows. In other approaches, this may not be as straightforward; while one could appeal to A'-disjointness to block subject resumptives, it is not trivial to block gaps for direct objects. The only other approach I am aware of that derives the complementarity

92 There is one non-trivial problem for Klein (2014, 2016a,b), though: In a case of optionality as in Irish above where the operator is zero, it is not obvious why PhiP is realized as a resumptive when stranded but unrealized when it is pied-piped. One would rather expect the operator to be realized as a relative pronoun in gap derivations, which is at least not true in languages with null operators. While one could argue for Irish that this is simply a lexical gap, this line of reasoning does not work for languages like those Slavic languages which do have relative operators but do not necessarily use them in gap-derivations, i.e., the operator can be silent in the presence of a complementizer.

93 Shlonsky (1992: 452–453) also posits two different complementizers. However, in his analysis, resumptives for DOs emerge as a last resort because one of the complementizers turns SpecCP into an A-position, blocking movement from non-subject position, see the discussion w.r.t. (77) above. If the other complementizer is chosen, SpecCP is an A'-position so that movement is possible from subject and direct object position and gap relatives result.

94 A similar complementarity has been claimed for modern Greek, see, e.g., Alexopoulou (2006) and Daskalaki & Mavrogiorgos (2013), according to whom DO resumptives are categorically ruled out in restrictive relatives. However, this clashes with the claims in Merchant (2004) and Kotzoglou & Varlokosta (2005) and further sources cited in these papers according to whom DO-resumptives are optionally possible in restrictive relatives as well.

is Shlonsky (1992), where, as discussed in (77) above, relativization in Palestinian Arabic is A-movement so that only subjects can move, while all lower positions require resumption to avoid intervention by the subject (to block subject resumptives, he appeals to economy, see p. 449 and below).

The second group with obligatory gaps in both subject and direct object position is probably even more challenging because in these languages two grammatical relations rather than just one very local position are singled out. What makes such patterns particularly challenging is that once the variable is located inside an island (or in an embedded clause; the clause-boundary arguably constitutes an island as well), we do find resumptives for these positions as well, see the following pair from Breton (Timm 1988: 83 and Guillot 2006: 1891):

- (84) a. Ar plac'h yaouank a weles ___ dec'h
 the girl young PRT you.saw yesterday
 'the girl whom you saw yesterday'
- b. An den a anevéz ⟨ an dud o deus gwelet anezhañ ⟩
 the man PRT you.know the people PRT have seen him
 'lit.: the man that you know the people who saw him' *Breton*

For many approaches, including also the PIC-based ones by Rouveret (2002) and van Urk (2016), the problem is the following: Since resumption is in principle available for SU/DO given (84-b), it has to be blocked in local relativization as in (84-a). A solution that works would be to adopt the A'-disjointness formulation proposed in Rouveret (1994), see (81) above, as this only blocks local resumptives. Under this approach, only gap derivations converge for matrix SU/DO. Given the stipulative character of the condition, though, a more systematic approach would be desirable. Alternatively, under a PIC-based approach one can posit obligatory edge features on *v* and *C*, which will also derive gap relatives for SU and DO. However, it is unclear what happens to the edge features if extraction is supposed to take place from an island. If they are present, some will remain unchecked and the derivation would be expected to crash, contrary to fact. The approach in Müller (2014b) derives the complementarity in a systematic way: As described in 3.1.3.2 above, resumption leaves a diacritic on the moving operator that can only be discharged if an island is crossed. This implies that resumptives will only be grammatical in island-contexts but crash in non-island contexts. This nicely derives the complementary distribution and works for the pattern under discussion if indirect and oblique objects constitute islands (e.g., because they are PPs). Again, there is just one converging derivation per context.

A further alternative to capture the complementarity is to appeal to economy: Gaps (movement) are taken to be more economical than resumption. The econ-

omy perspective implies that the two strategies compete and thus belong to the same reference set. Since on standard assumptions the reference set is based on identical numerations, resumptives cannot be present in the numeration for gap and resumptive derivations to compete – unless the gap derivation is based on a numeration that involves a resumptive as well as in van Riemsdijk (1989).⁹⁵

Suppose that the numeration does not contain a resumptive. Consequently, it has to be added during the derivation. One concrete proposal along these lines is Aoun et al. (2001): They argue that resumption in terms of base-generation is more complex, involving more steps than movement. Concretely, they assume that when an operator attempts to move out of an island, an operation *Bind* applies. Under *Bind*, the operator is demerged from the phrase marker and remerged in the operator position, and a resumptive pronoun is substituted for the demerged expression in the thematic position. Since *Bind* is in principle available, it has to be blocked in non-island contexts. Aoun et al. (2001: 398) argue that *Bind* is blocked by *Move* because it involves more operations. Concretely, while *Move* involves *Copy + Merge*, *Bind* involves *Demerge (Copy + Delete) + Merge + Pronominalize*. In other words, resumption is blocked by transderivational economy, viz., the principle of *Fewest Steps*. A very similar perspective is proposed in Rouveret (2002: 153–154).⁹⁶

The alternative to derivational economy is representational economy. The intuition seems clear at first sight: Resumptives somehow involve more structure than gaps (irrespective of whether they arise by movement or base-generation). However, upon closer inspection, all implementations fail: Pesetsky (1998) proposes an OT-constraint *SILENTTRACE*, which favors gaps over resumptives, which are analyzed as spelled-out traces. An alternative is the *Avoid Pronoun Principle* from Chomsky (1982: 63–64) as employed in van Riemsdijk (1989) and Heck & Müller (2000: 34–35); it normally favors zero pronouns over overt pronouns (as in *John would much prefer PRO/*his going to the movie.*). However, since both constraints refer to overtiness, neither of them can deal with silent resumptives,

⁹⁵ Shlonsky (1992: 445) argues that subject resumptives in Hebrew/Irish are blocked by economy simply because they are a last resort that only comes into play when movement fails. However, since he adopts a base-generation approach to resumption, it is not a priori obvious how gaps and resumptives can compete. In section 5.4.2.4.1 below I will argue that the reference set should be based on identical LFs so that movement and base-generation can compete (see Salzmann 2009b, 2011, 2013b for earlier claims to this effect). I will also show that appealing to last resort is not sufficient to capture the preference for movement.

⁹⁶ This type of approach is confronted with a number of non-trivial problems, among others that whether resumption emerges as more costly crucially depends on the specific implementation of base-generation. Under alternative implementations as, e.g., in McCloskey (2002), things may be the other way around. These and further problems will be taken up again in section 5.4.2.4 below.

recall the discussion in section 3.1.3.2 above. In other words, they fail to single out pronouns/resumptives.⁹⁷ The constraint RES proposed in Müller & Sternefeld (2001: 41) does exactly that and provides the right result but at the expense of restating the facts: After all, one would like to know what is wrong with pronouns vis-a-vis gaps. Sichel (2014: 678–679) argues, controversially, that gaps and pronouns belong to the same class and that gaps contain less structure than pronouns. Unfortunately, she does not make it clear which representation she refers to. Since she adopts a spell-out approach, it would seem that she has to refer to the PF-representation. Then the question arises what the representation of the gap-structure looks like. If there is a silent copy of the antecedent (under the matching or the raising analysis), it is far from clear why this should constitute less structure than a pronoun. Given that in many analyses pronouns are just PhiPs, one might actually predict the reverse preference. Unfortunately, the issue is not discussed in much detail. Again, it seems that the problem is that the account fails to distinguish between gaps and pronouns. Summarizing then, while blocking resumption by economy has an intuitive appeal, it is quite difficult to come up with a straightforward constraint that prefers traces over resumptives. There are two more general problems for an economy perspective on resumption: First, as we have seen in section 3.2.2, there are languages where resumptives are found in all positions, including matrix subjects. In some of these languages, arguably in Akan (Saah 2010), perhaps also in Palauan and arguably in a few more, resumption is the dominating strategy. I will come back to Akan in 5.4.2.4.3 below. Since economy constraints are normally taken to be universal and not subject to parameterization (Müller & Sternefeld 2001: 29), the Akan facts would be unexpected. Second, resumptive strategies are often the first strategy acquired by children, even in languages with relative pronouns in the adult language, cf., e.g., Labelle (1990) on Canadian French or Goodluck & Stojanovic (1996) on Serbo-Croatian (see, however, Guasti & Cardinaletti 2003 for a different result). Again, this casts doubts on the assumption that resumption is intrinsically marked.

Summarizing this subsection, it should have become clear that it is a far from simple matter to derive the distribution of gaps and resumptives, both within a language and crosslinguistically. What seems particularly challenging for a uni-

⁹⁷ Things are different in van Riemsdijk (1989), who assumes that gap derivations are based on resumptive derivations with the resumptives undergoing PF-deletion. In that case, AVOIDPRONOUN can apply; however, if gap derivations always involve resumptives underlyingly, there is no possibility to distinguish between traces and silent resumptives. In some languages, though, such a distinction seems crucial: In Irish, for instance, silent resumptives inside PPs are possible (as shown by the resumptive complementizer), while gaps are not, recall the facts from 3.1.3.2 above. I will come back to the approach by van Riemsdijk (1989) in section 5.4.2.2.1.

form approach to resumption is that some patterns lend themselves to a last resort-perspective, while others favor a view of resumption where it is treated as a general possibility of the language. See section 5.4.2.4.3 below for further discussion of this issue.

3.2.4 Resumptives, semantic types and adjuncts

So far we have seen two interpretive consequences of (optional) resumption: Resumptives impose a specificity/D-linking requirement on their antecedent; as a side-effect, they block scope reconstruction and more generally do not occur in A'-dependencies that do not meet the specificity requirement, viz., comparatives, non-D-linked *wh*-questions, amount relatives, free relatives and others. As pointed out in 3.1.2.5 above, there is a close match with the antipronominal contexts identified by Postal (1994). Since resumptives are definite pronouns, these restrictions do not come as a surprise.

A different way of capturing the generalization is to say that (optional) resumption is only compatible with a certain semantic type, viz., ⟨e⟩. Interestingly, as pointed out in Boeckx (2003: 37, 91–97), although languages usually possess proforms for other semantic types, cf. English *that* for predicates, *thus* for manners, *therefore* for reason adjuncts, they never seem to occur as resumptives. In other words, there is no resumption with true adjuncts (according to Boeckx, things are different with quasi-argumental temporal and locative expressions).

Since some adjuncts have been argued to be base-generated (e.g., *why*, see Rizzi 1990), this seems all the more surprising. Boeckx argues that the absence of resumption with adjuncts is related to the fact that they are not involved in phi-feature- and Case-checking, which is a prerequisite for resumption in his system: Recall that resumption is a strategy to avoid chains with more than one EPP-position. More generally, the absence of adjunct resumptives can be related to the last resort view of resumption: Resumptives are crucially involved in the checking of theta-roles, phi-features and Case-features that would otherwise remain unsatisfied. Adjuncts are not involved in similar feature-checking/valuation operations so that it seems straightforward that they do not occur with resumptives. However, under the perspective that resumption is simply a grammatical possibility of the language, one might expect adjunct resumptives to be possible nevertheless.⁹⁸

⁹⁸ McCloskey (2002: 206–213) argues in favor of null temporal, locative and manner resumptives in Irish adjunct extraction based on the presence of the resumptive complementizer *aN* (which alternates with *aL*, thus showing that movement and base-generation are both freely

3.2.5 The resumptive pronoun parameter

The last issue I would like to address is the question of what makes a language a resumption language. Is there something like a general resumption-parameter? Given that languages with resumption are not all created equal (pace Boeckx 2003), it is not so clear where the cut would have to be made. Since all languages have pronouns that can be bound, the locus of variation is unlikely to be the pronoun itself (but see the proposal by Adger & Ramchand 2005 and Rouveret 2008 discussed below). In McCloskey (2002), the variation is encoded on the complementizer: While the movement complementizer *aL* has an *uOp*-feature that will attract a corresponding operator, the base-generation complementizer *aN* lacks such a feature. In Abels (2012), the difference is also located in the properties of the complementizer. Languages without resumption could be argued to lack a base-generation complementizer. The third logical possibility would be to locate the difference in the operator; as argued in Merchant (2004), discussed in 3.2.1 above, base-generated operators cannot have an *uCase*. Consequently, languages without resumption could be argued to lack this type of operator; they would not necessarily have to differ w.r.t. the complementizer if a base-generated operator can check unvalued features. This would have the advantage that one does not have to postulate two homophonous complementizers in those languages where movement and base-generation use the same complementizer (e.g., Hebrew, Swiss German, Greek). Furthermore, the difference w.r.t. *uCase* would be needed in McCloskey's system anyway so that Merchant's proposal may be more economical. What remains somewhat unsatisfactory is that one will have to postulate two different silent operators, one with and one without *uCase* in languages that have both gaps/movement and resumptives/base-generation.

Both proposals would arguably work to capture languages like Akan which do not seem to have gap-/movement-derivations. It would simply lack the relevant movement operator/complementizer. Such a "parameter" would be in line with the Borer-Chomsky-conjecture according to which language variation reduces to differences in the featural make-up of functional heads/lexical items.

Interestingly, capturing the language variation works best if resumption involves base-generation, which may be understood as an independent argument for base-generation. However, for languages where resumption is locality-sensi-

available, as in other contexts). The extraction of reason adverbials requires *aN*, which suggests base-generation of the adverbial in SpecCP. No adverbial resumptives are posited for frequency and durative adverbials, where only the movement complementizer *aL* is found under extraction. If correct, this suggests that resumption is not generally restricted to expressions of type (e); the precise limits of adverbial resumption remain a topic for future research.

tive, something else needs to be said. The combination base-generation + Agree as in Adger & Ramchand (2005) and Rouveret (2008) seems promising, not the least because movement theories of resumption are all faced with serious problems. Its major drawback is the fact that resumptives must bear special features for the proposal to work; since resumptives usually just look like normal personal pronouns (unlike in the languages studied by Adger & Ramchand), this frequent property of resumption would be accidental.

Clearly, the question about what makes a language a resumption language is still rather unresolved at this point and can only be addressed once the variation among resumption languages is better understood.

3.3 Summary

The many years of intensive research on resumption have accumulated an impressive array of facts. However, it seems that the once simple picture has become increasingly complex and several aspects of the phenomenon remain poorly understood. The overview in this chapter has shown that there are quite a number of crosslinguistic tendencies and generalizations, e.g., that resumptives are often island-insensitive, that they look like ordinary pronouns, that they impose semantic restrictions and that they are more likely to be found in lower positions of the accessibility hierarchy. This state of affairs would be directly compatible with a last resort view of resumption involving base-generation, a rather traditional perspective. However, the many fine-grained differences that can be observed make it very difficult (in my view) to come up with a unified theory of resumption that captures the core underlying all resumption and as well as the major areas of parametric variation.⁹⁹

The empirically best established point of variation is island-sensitivity. Since locality is not only a well-understood theoretical concept but also an empirically rather solid area, it is preferable in my view to focus on this aspect. That island-sensitive resumption must involve movement or at least Agree seems undisputed. In the case of island-insensitive resumption, rather little speaks in favor of a movement analysis in my view. A base-generation account is most directly compatible

⁹⁹ Pace Asudeh (2011, 2012), who proposes an LFG analysis that is argued to unify languages where resumption is island-sensitive (“syntactically active”) and those where it is island-insensitive (“syntactically inactive”). However, since he only discusses rather few languages and thus only takes into account a restricted part of the variation discussed in this chapter, I remain skeptical as to whether a unified theory will be possible once the full empirical picture is considered.

with island-insensitivity, while a movement account has to provide an explanation of why resumption should void locality constraints. As argued in sections 3.1.3.2 and 3.1.3.3 above, there is to date no convincing proposal in that area. The other possible diagnostics for movement do not strike me as solid enough to warrant a movement analysis: While reconstruction effects can be observed under resumption, they often do not pattern with locality. Additionally, they can alternatively be captured rather straightforwardly by means of the NP-ellipsis theory of resumption (Guilliot & Malkawi 2006, Rouveret 2008). The occurrence in ATB-contexts only indicates the presence of an A'-dependency and consequently turns out to be an irrelevant diagnostic. Parasitic gaps are a problematic diagnostic as well because they are generally rare; furthermore, since the proper analysis of PGs is far from clear in recent Minimalist work, the implications one can draw if a language licenses PGs under resumption are not fully clear. This leaves us with cyclicity effects. Unfortunately, this is a heavily underresearched area with only a handful of languages having been studied. At this point, the evidence for phonological/morphological/syntactic reflexes of movement under (island-insensitive) resumption is scarce at best (Palauan), with one interesting exception: Akan. Since such effects should be diagnosable rather easily, this is surely an important area of future research.

Even if we abstract away from the lack of convincing movement effects, movement approaches, especially spell-out approaches, are faced with serious intrinsic problems (note that this implies that such approaches are also unattractive for languages where resumption is island-sensitive). The base-generation account is technically unproblematic and seems compatible with most of the facts, perhaps apart from the lack of semantic effects with obligatory resumption. Given this, base-generation strikes me as the more attractive solution for island-insensitive resumption, and consequently, my proposal for prolepsis in chapter 4 and Swiss German in chapter 5 will involve base-generation. I hasten to add that the many fine-grained differences that have been observed (especially in the domain of reconstruction) cannot be captured by a single proposal. Much of that variation consequently requires further study.

One area that has received very little attention in the literature are differences in the distribution of gaps and resumptives, especially the contrast between languages where resumptives are best viewed as a last resort and occur in complementary distribution with gaps, and languages where resumption is a grammatical device that is generally available in a language. Apart from my earlier work in Salzmann (2009b, 2011, 2013b), I am not aware of any proposals that capture this parametric variation in a systematic fashion. This will also be an important issue to be addressed in section 5.4.2.4.3 below.

As a final point, a good theory of resumption should not only capture the variation among resumption languages but should also be able to separate resumption from non-resumption languages in a straightforward way. A base-generation account can do so quite elegantly in that all that needs to be added for a language to have resumption is a base-generated operator (and possibly a corresponding complementizer). The variation is thus essentially lexical. Movement approaches to resumption, however, would have to locate the variation in very different areas of grammar: perhaps in the possibility to spell-out traces, the availability of a clitic-doubling structure or the possibility of pronouns acting as in-situ operators. None of this seems impossible, but it would be a kind of parameterization that does not seem to play an important role in other domains of language variation.

4 Prolepsis – an alternative to long A'-movement

In this chapter I will investigate a construction that functions as an alternative to long A'-movement in German and other languages, viz., prolepsis with resumption as in (1):

- (1) ein Maler, von dem ich glaube, dass Maria ihn mag
a painter of who.DAT I think.1SG that Mary him like.3SG
'a painter of whom I think that Mary likes him' *Standard German*

In this construction, which I will henceforth refer to as 'resumptive prolepsis', a dislocated constituent is preceded by the preposition *von* 'of' and semantically related to a position in the complement clause that is occupied by a coreferential pronoun. What makes this construction particularly intriguing are its conflicting properties: On the one hand, there is evidence that the A'-moved constituent originates in the matrix clause; at the same time, there are good reasons to posit an A'-dependency linking it with the coreferential pronoun in the complement clause. I will argue that the conflict can be straightforwardly resolved by an indirect dependency where predication in the complement clause licenses an extra constituent in the matrix clause, the proleptic object. Ellipsis plays a crucial role in relating the proleptic object to the pronoun, which is analyzed as a resumptive.

This chapter is organized as follows. In section one, I will introduce the phenomenon and provide some background information on A'-movement in German. Section two discusses an initial hypothesis under which the proleptic object originates in the matrix clause, while the coreferential pronoun is just anaphoric. In section three, I will show that this simple account cannot be upheld because there is strong evidence for an A'-dependency between the proleptic object and the pronoun. In chapter four, I present my proposal. Section five discusses extensions to other languages and similar constructions, and section six summarizes the main results of the chapter.

4.1 Long A'-movement in German

German, or more precisely, certain varieties of German, disfavor A'-movement across a finite clause boundary. Consequently, for many speakers, the following examples involving *wh*-movement, relativization and topicalization, respectively, will be degraded to various degrees:

- (2) a. #Wen₁ glaubst du, dass Maria __₁ liebt?
 who.ACC think.2SG you that Mary love.3SG
 'Who do you think that Mary loves?'
- b. #ein Maler, den₁ du glaubst, dass Maria __₁ liebt
 a painter who.ACC you think.2SG that Mary love.3SG
 'a painter who you think that Mary loves'
- c. #[Den Maler]₁ glaubst du, dass Maria __₁ liebt.
 the.ACC painter think.2SG you that Mary love.3SG
 'The painter, you think that Mary loves.' *Standard German*

The reduced acceptability of long A'-movement has been a controversial topic since the early eighties of the last century. It was noted in Andersson & Kvam (1984) and experimentally verified in Featherston (2005). It has frequently been claimed that the degradation of long A'-movement is characteristic of more Northern varieties of German, including the standard language, while there is no such restriction in Southern German varieties, see, e.g., Haider (1983: 97–99) and Grewendorf (1988: 126).¹ Indeed, in Salzmann et al. (2013), we present experimental evidence that long extraction is less acceptable in the North than in the South. It is still not quite clear whether a dialectal contrast is involved or whether the unacceptability is just a phenomenon of the standard language. What is clear is that long A'-movement is well-attested in dialects. For instance, one can find examples in the traditional descriptions of the dialects of Basel, Bern, Lucerne and Zurich, see, e.g., Binz (1888: 63), Hodler (1969: 646–647), Fischer (1989: 434), Suter (1992: 186), and Weber (1987: 307). Since several of the linguists who have worked on the topic happen to come from the South and additionally are dialect speakers, what they describe as Southern varieties of German (or Southern versions of the standard language) may be heavily influenced by their native dialect. Evidence that it may be a restriction of the standard language comes from Lühr (1988: 79), who cites several sources that suggest that there was explicit prescriptive pressure in the 19th century in Germany against long A'-movement: It was considered “illogical” or “sloppy”. This accords nicely with the fact that long A'-movement is more productive in dialects, which are usually immune to such pressure.

Whatever may ultimately turn out to be the correct characterization for long A'-movement in German, the focus of this chapter is resumptive prolepsis, a construction that can be regarded as an alternative to long A'-movement: In this construction, the extracted constituent is preceded by the preposition *von* 'of' and the

¹ An exception is Müller (1995: 34), who argues that there is no such contrast, long extraction being acceptable in all varieties of German.

putative extraction site, i.e., the position it is semantically related to, is occupied by a pronoun that is coreferential with it (I indicate the relationship by means of co-indexation in the following examples but will not mark them in the rest of the chapter):²

- (3) a. Von [welchem Maler]_i glaubst du, dass Maria ihn_i mag?
 of which.DAT painter think.2SG you that Mary him like.3SG
 'Of which painter do you think that Mary likes him?'
- b. ein Maler, von dem_i du glaubst, dass Maria ihn_i mag
 a painter of who.DAT you think.2SG that Mary him like.3SG
 'a painter of whom you think that Mary likes him'
- c. Von [diesem Maler]_i glaubst du, dass Maria ihn_i mag.
 of DEM.DAT painter think.2SG you that Mary him like.3SG
 'Of this painter, you think that Mary likes him.' *Standard German*

Resumptive prolepsis is semantically very similar to long movement (apart from a systematic difference w.r.t. scope reconstruction, see section 4.4.3 below) and is acceptable for all speakers of the standard language. Importantly, it is most natural and most frequent with relativization but also occurs with topicalization and to a lesser extent with *wh*-movement. This distribution is arguably not co-incidental: While long *wh*-movement and topicalization are still acceptable for some speakers, long relativization is generally completely unacceptable, see Lühr (1988: 75–77).³ The alternative construction in (3-b) thus fills this gap and can be considered to be grammaticalized.⁴

² The translation shows that the construction occurs in English as well, cf., e.g., Khalaily (1997). However, it is by no means as frequent and natural as in German and some of the other languages mentioned below. Nevertheless, I will translate all prolepsis examples by means of prolepsis to make the structure more transparent even if the result may occasionally sound a bit awkward.

³ Long-distance relativization appears to have been more acceptable in earlier stages of German (cf. Lühr 1988: 78–79). Whether there has been a shift from long-distance relativization to the alternative proleptic construction in (3-b) is not quite clear since they seem to have coexisted for quite some time; but this is a plausible scenario given the prescriptive pressure against long A'-movement mentioned above; see Lühr (1988: 79, fn. 24) for discussion.

⁴ (Standard) German has two more strategies for long A'-movement: The scope-marking construction, see Lutz et al. (2000), and extraction from V2-complements, which, however, may actually be an instance of short extraction with the V2-clause functioning as a parenthetical, see Reis (1995) and Bayer & Salzmann (2013). There is a clear consensus that both constructions are fully acceptable for all speakers. Scope-marking is only found with *wh*-movement, extraction from V2-clauses only with *wh*-movement and topicalization (relativization requires a V-final structure and is thus independently ruled out). The two constructions will not play any role in this book and will therefore not be discussed any further.

Similar alternatives to long A'-movement exist in other languages as well. As in German, it is most frequent with relativization and at least in the following languages it can be considered to be grammaticalized, viz., in Dutch *waarvan*-relatives as in (4-a) (cf. Hoeksema & Schippers 2012 and Schippers 2012 for details including the diachronic development), in French *dont*-relatives, cf. (4-b) from Teller (1991: 98), and in Serbo-Croatian *za koga*-relatives as in (4-c) from Bošković (2009: 89):

- (4) a. Kort geleden had ik deze “droom”, waarvan ik denk
 small ago have.PST.1SG I this dream where.of I believe.1SG
 dat hij belangrijk is.
 that it important be.3SG
 ‘Not long ago I had this dream of which I think that it is important.’⁵
Dutch
- b. un professeur dont les parents savent que les élèves lui
 a professor of.whom the parents know.3PL that the pupils he.DAT
 font confiance
 make.3PL trust
 ‘a professor of whom the parents know that the students trust him’
French
- c. čovjek za koga znaš da ga Marija voli
 man for whom know.2SG that him Marija loves
 ‘the man of whom you know that Mary loves him’
Serbian

I will henceforth focus on Standard German and will only occasionally use Standard Dutch examples since the languages pattern alike.⁶ Prolepsis in other languages will be addressed in section 4.5.1 below (since most examples in this chapter are taken from German, I will only indicate the language if the example is from a language other than German).

⁵ <http://www.jancvanderheide.com/vragen-aan-jan/144-mb-te-a-kort-geleden-had-ik-deze-droom-waarvan-ik-denk-dat-hij-belangrijk-is>, accessed September 9, 2016

⁶ Although long relativization is generally possible in Dutch, there are certain indications that it may be restricted nevertheless. Many speakers accept or in fact prefer the alternative construction in (4-a). The situation in the dialects is particularly interesting, see Boef (2012b): Some of the observed patterns could perhaps be analyzed as not involving long extraction. Barbiere et al. (2005) explicitly suggest that long-distance relativization is impossible in many dialects.

4.2 A first hypothesis: base-generation + anaphoric binding

Since resumptive prolepsis is semantically very close to regular long A'-movement, the question arises whether the two constructions should also receive a similar syntactic analysis (ignoring at this point the presence of the preposition and the coreferential pronoun). Interestingly, even though resumptive prolepsis can be found in many languages, this question has not been addressed in much detail in the literature. This is probably related to the fact that the analysis of resumptive prolepsis seems straightforward once it is realized that there is a variant of the construction with the PP in-situ:

- (5) Ich glaube von ihm, dass er ein ganz guter Trainer ist.
 I believe.1SG of he.DAT that he a quite good coach be.3SG
 'I believe of him that he is a pretty good coach.'⁷

This is a classic instance of prolepsis. As the name suggests, in this construction there is a constituent in the matrix clause, viz., the PP or, more precisely, the DP inside the PP, that anticipates information that will be semantically integrated later on. In what follows, I will refer to the matrix constituent as the proleptic object (sometimes it is also referred to as 'prothetic object' in the literature). It is semantically related to a coreferential pronoun inside the complement clause (the term coreferential is intended as a neutral description at this point in order not to prejudge the analysis).

The semantics of the construction is very similar to that of regular complementation (as in *I believe that he is a good coach*), the major difference being that the proleptic constituent takes obligatory wide-scope with respect to the matrix verb, a fact I will come back to in 4.4.3 below.

Given the existence of (5), it seems straightforward to relate the versions of prolepsis with the antecedent in an A'-position in (3) and (4) to it: The proleptic object is base-generated in the matrix clause and undergoes short A'-movement (*wh*-movement, topicalization, relativization). The coreferential pronoun can then be treated as purely anaphoric. In other words, despite its semantics, the proleptic construction only involves a short A'-dependency under this hypothesis. In what follows, I will show that there is indeed initial evidence for such an analysis. I will first discuss evidence that the proleptic object is base-generated in the matrix clause before presenting arguments that speak in favor of an anaphoric dependency.

7 <http://www.austriansoccerboard.at/index.php/topic/96343-sk-sturm-graz-wac/page-4>, accessed August 29, 2016

4.2.1 Arguments for a base-position in the matrix clause

As already mentioned, the first and most obvious argument for the base-generation of the proleptic object in the matrix middle field comes from the existence of the in-situ construction in (5). In all likelihood, the ex-situ construction is derived from it by short A'-movement. Direct evidence comes from Dutch, which allows preposition stranding: When the preposition is stranded in the ex-situ construction, it surfaces exactly in the position that it occupies in the in-situ construction:⁸

- (6) a. het boek waarvan₁ ik __₁ denk, dat Piet het leuk vindt
 the book where.of I think.1SG that Peter it cool find.3SG
 'the book of which I think that Peter likes it'
- b. het boek waar₁ ik van __₁ denk, dat Piet het leuk vindt
 the book where I of think.1SG that Peter it cool find.3SG
- c. dat ik van dit boek denk dat Piet het leuk vindt
 that I of this book think.1SG that Peter it cool find.3SG
 'that I think of this book that Peter likes it' *Standard Dutch*

The second argument for a base-position in the matrix clause comes from the fact that the position in the matrix-middle-field has the properties of an A-position. This will be shown by means of anaphoric binding and the lack of superiority effects.

The following examples show that anaphors can be bound in the matrix middle-field-internal position both if the proleptic object is in-situ, (7), and if it

8 There are a number of interesting and poorly understood differences between the in-situ and the ex-situ construction in German, see Salzmann (2006a: 309–316). The most striking one is the fact that the in-situ construction is much more lexically restricted than the ex-situ variant. This may have to do with the fact that the ex-situ variant is a close to grammaticalized alternative to long relativization, while the in-situ construction does not have a comparable function in the language. The same asymmetry seems to hold in French, cf. Godard (1988) and Koopman & Sportiche (2009), and to a much lesser extent in Serbo-Croatian, cf. Bošković (2009: 88–89).

This state of affairs is somewhat reminiscent of exceptional ECM as with English *wager* and French *croire* and Case Switch in English (cf. Kayne 1984: 5 *the man whom I believe has left*) and in Hungarian (see 4.5.2.2 below). In all these constructions, Case assignment by the matrix verb to the embedded subject is only possible under long A'-extraction but not if the subject stays in the complement clause.

There is also a certain similarity to parasitic gaps, which require an A'-moved antecedent in the matrix clause. However, a PG-analysis of prolepsis fails for several reasons, see Salzmann (2006a: 314–315).

At this point, it is unclear whether a syntactic explanation is adequate to account for the in-situ/ex-situ-asymmetry in prolepsis.

undergoes short A'-movement (relativization, *wh*-movement, topicalization) as in (8):⁹

- (7) a. dass Peter_i von sich_i denkt, dass er der Größte ist
that Peter of self think.3SG that he the greatest be.3SG
'that Peter_i thinks of himself_i that he is the greatest'
- b. dat Piet_i van zichzelf_i denkt dat hij de grootste is
that Peter of self think.3SG that he the greatest be.3SG
'that Peter_i thinks of himself_i that he is the greatest' *Std. Dutch*
- (8) a. der [Wesenszug von sich_i], [von dem Peter_i glaubt, dass ich
the trait of self of which.DAT Peter think.3SG that I
ihn noch nicht kenne]
it still not know.1SG
'the side of himself_i of which Peter_i thinks I still don't know it yet'
- b. Von [welchem Wesenszug von sich_i] denkt Peter_i, dass ich ihn
of which.DAT trait of self think.3SG Peter that I it
noch nicht kenne?
still not know.1SG
'Of which side of himself_i does Peter_i think that I don't know it yet?'
- c. Von [diesem Wesenszug von sich_i] hofft Peter_i, dass ich ihn noch
of this.DAT trait of self hope.3SG Peter that I it still
nicht kenne.
not know.1SG
'Of this side of himself_i, Peter_i hopes that I don't know it yet.'
- d. Von sich_i denkt Peter_i immer, dass alle Menschen ihn mögen.
of self think.3SG Peter always that all people him like.3PL
'Of himself_i, Peter_i always believes that everyone likes him.'

This observation is crucial because unlike English, cf. (9-a), (10-a), German and Dutch do not allow for binding into A'-positions, neither into final, cf. (9-b/c), nor intermediate landing sites, (10-b) ((10-b) is from Kiss 2001: 186, see also Frey 1993: 136; for Dutch, see van de Koot 2004: 187):¹⁰

⁹ Note that by choosing an unaccusative noun in the examples with A'-movement, a possible confound that may arise because of an implicit coreferential PRO can be avoided; recall the discussion about reconstruction for Principle A in section 2.3.1.4.1 above.

¹⁰ See Pollard & Sag (1992: 296) and Reinhart & Reuland (1993: 683–685) for arguments that the multiple binding options in English are due to the logophoric nature of reflexives and do not provide any evidence for reconstruction into intermediate positions. The absence of binding into

- (9) a. John_i wonders [_{CP} [which picture of himself_i]₁ I like __₁ best].
 b. Hans_i fragt sich, [_{CP} [welches Foto von *sich_i/ihm_i]₁ ich am John ask.3SG self which picture of self/him I the besten __₁ mag].
 best like.1SG
 ‘John_i wonders which picture of himself_i/him_i I like best.’
 c. Peter_i denkt, [_{CP} [dieses Buch über *sich_i/ihn_i]₁ fände ich Peter thinks this book about self/him find.SBJV.1SG I __₁ interessant].
 interesting
 ‘Peter_i thinks that this book about himself_i/him_i, I find interesting.’
- (10) a. [Which picture of himself_{i/j}]₁ did John_i think Fred_j likes __₁?
 b. [Das Buch über sich_{*i/j}]₁ glaubt der Gernot_i mag der the book about self believe.3SG the Gernot like.3SG the Ulrich_j __₁ .
 Ulrich
 ‘This book about himself, Gernot thinks that Ulrich likes.’

Notice thus that a regular long-distance variant of (8-d) is sharply ungrammatical:

- (11) *Sich_{i1} denkt Peter_i immer, dass alle Menschen __₁ mögen.
 self think.3SG Peter always that all people like.3PL
 ‘Himself_i Peter_i always thinks that everyone likes.’

A comparable contrast is found with Principle B: In the proleptic construction, the topicalized pronoun leads to a Principle B effect, whereas no such effect obtains in regular topicalization:

- (12) a. *Von ihm_i denkt Peter_i immer, dass alle Menschen ihn mögen.
 of him think.3SG Peter always that all people him like.3PL
 lit.: ‘Of him_i, Peter_i always thinks that everyone likes him.’
 b. Ihn_{i1} denkt Peter_i immer, dass alle Menschen __₁ mögen.
 him think.3SG Peter always that all people like.3PL
 ‘Him_i, Peter_i always thinks everyone likes.’

intermediate positions in German and Dutch may then be due to the fact that neither language allows for logophoric binding, recall the discussion from section 2.3.1.4.1 above.

All these facts clearly show that the middle-field-internal position of the proleptic object cannot be a derived A'-position.¹¹

The same point against a derived A'-position can be made with superiority effects: While German is well-known not to have short-distance superiority effects, see (13-a), it is equally well-established that superiority effects re-emerge under long-distance movement (irrespective of D-linking), see (13-b) from Fanselow (2004: 78):

- (13) a. [Welchen Studenten]₁ hat welcher Professor ___₁
 which.ACC student.ACC have.3SG which.NOM professor.NOM
 eingeladen?
 invite.PTCP
 'Which student did which professor invite?'
 b. *[Welchen Studenten]₁ hat welcher Professor
 which.ACC student.ACC have.3SG which.NOM professor.NOM
 gehofft, dass Irina ___₁ einlädt?
 hope.PTCP that Irina invite.3SG
 'Which student did which professor hope that Irina would invite?'

Importantly, if the proleptic object consists of a *wh*-phrase and is moved across another *wh*-phrase in the matrix clause, the result is perfectly grammatical:

- (14) Von [welchem Studenten] denkt welcher Professor, dass
 of which.DAT student.DAT think.3SG which.NOM professor.NOM that
 Irina ihn eingeladen hat?
 Irina him invite.PTCP have.3SG
 'Of which student does which teacher think that Irina invited him?'

¹¹ The proleptic construction thus crucially differs from Dutch focus scrambling, which can involve long A'-movement to the matrix middle field:

- (i) dat Jan [zulke boeken]₁ zelfs onder vier ogen niet zegt dat hij ___₁ gekocht
 that John such books even under four eyes not say.3SG that he buy.PTCP
 heeft
 have.3SG
 'that John would not even admit in private that he bought such books' *Std. Dutch*

As discussed in Neeleman (1994b: 398–400) and Barbiers (2002: 57–58), the derived position bears all the hallmarks of an A'-position: The displaced constituent obligatorily reconstructs for binding. Quite apart from that, A'-movement from the embedded clause is unlikely in the proleptic construction given that it is possible with verbs that normally disallow long A'-movement, i.e., non-bridge verbs, cf. section 4.3.1 below.

If the proleptic object were to originate in the complement clause, this asymmetry would be highly mysterious. The fact that the proleptic object behaves like a clause-mate of the *wh*-subject with respect to superiority very much suggests that it is generated in an A-position in the matrix middle field.¹²

4.2.2 Arguments for an anaphoric dependency

There are several arguments that the relationship between proleptic object and coreferential pronoun is anaphoric in nature. First, the coreferential pronoun can bear any grammatical relation, viz., subject, object, possessor, object of a preposition etc. (adjunct relations are only possible if individuals are involved, true adverbials being ruled out, a restriction I will discuss in 4.4.4 below):

- (15) a. der Mann, von dem ich glaube, dass **er** Maria heiratet
 the man of who.DAT I believe.1SG that he Mary marry.3SG
 ‘the man of whom I believe that he will marry Mary’
- b. der Mann, von dem ich glaube, dass Maria **ihn** heiratet
 the man of who.DAT I believe.1SG that Mary him marry.3SG
 ‘the man of whom I believe Mary will marry him’
- c. der Mann, von dem ich glaube, dass **seine** Mutter alt
 the man of who.DAT I believe.1SG that his mother old
 ist
 be.3SG
 ‘the man of whom I believe that his mother is old’

¹² There is one analytical alternative: The facts above are also compatible with an analysis where the proleptic object occupies a derived A-position. The following raising to object-cases illustrate this for anaphoric binding and superiority:

- (i) a. dass Peter_i sich_i gestern ein Lied pfeifen hörte
 that Peter self yesterday a song whistle.INF hear.PST.3SG
 ‘that Peter_i heard himself_i whistle a song yesterday’
- b. Wen₁ sah wer gestern __₁ ein Auto stehlen?
 whom see.PST.3SG who yesterday a car steal.INF?
 lit.: ‘Whom did who see steal a car yesterday?’

While raising to object involves direct A-movement from the embedded clause, things would be different in prolepsis, where, given current assumptions about locality, there would have to be an intermediate A'-movement step to the embedded SpecCP followed by A-movement. This would, however constitute a violation of improper movement, cf., e.g., Müller & Sternefeld (1993) and Müller (2014a,b). I will come back to Improper-Movement-like analyses in 4.5.2.3 below.

- d. der Mann, von dem ich glaube, dass jeder stolz auf **ihn**
 the man of who.DAT I believe.1SG that everyone proud on him
 ist
 be.3SG
 'the man of whom I believe that everyone is proud of him'

Second, the construction is not only unbounded but also insensitive to any kind of locality constraint. As the following examples illustrate, the coreferential pronoun can occur inside CNPC islands, noun complement clauses, adjunct islands, *wh*-islands and in DP-coordination (recall that islands appear in angled brackets):

- (16) a. der [Mann], von dem ich denke, dass Marie < jedes Buch
 the man of who.DAT I think.1SG that Mary every book
 liest, das **er** schreibt >
 read.3SG which he write.3SG
 'the man of whom I think Mary reads every book that he writes'
- b. der [Mann], von dem ich glaube, dass < die Behauptung,
 the man of who.DAT I believe.1SG that the claim
 dass Maria **ihn** liebt, > nicht stimmen kann
 that Mary him love.3SG not be.correct.INF can.3SG
 'the man of whom I believe that the claim that Mary loves him cannot
 be correct'
- c. das [Bild], von dem ich fürchte, dass alle lachen, <
 the picture of which.DAT I fear.1SG that everyone laugh.3PL
 weil ich **es** gezeigt habe >
 because I it show.PTCP have.3SG
 'the picture of which I fear that everyone laughs because I showed it'
- d. der [Mann], von dem ich glaube, dass niemand weiß, <
 the man of who.DAT I believe.1SG that no.one know.3SG
 wie **er** heißt >
 how he be.called.3SG
 'the man of whom I think that no one knows what he is called'
- e. der [Mann], von dem ich vermute, dass ich < **ihn** und seine
 the man of who.DAT I suspect.1SG that I him and his
 Frau > schon gesehen habe
 wife already see.PTCP have.1SG
 'the man of whom I suspect that I have seen him and his wife before'

Dutch behaves the same. The following example illustrating a CNPC island should suffice to make the point:

- (17) de [man] waarvan ik denk dat Marie ⟨ elk boek leest dat **hij**
 the man where.of I think.1SG that Mary every book read.3SG that he
 schrijft ⟩
 write.3SG
 ‘the man of whom I think Mary reads every book that he writes’ *Std. Dutch*

Third, the coreferential element shows the same range of possibilities that we find in anaphoric dependencies. It is normally a weak pronoun and thus occurs in the Wackernagel position, i.e., right below TP and thus at the left edge of the middle field, as weak pronouns generally do in German. But the pronoun can also be strong (rendered in capitals), e.g., if it occurs in coordination as in (16-e) or if modified by a focus particle as in (18) (again, this behavior of the pronoun is independent of prolepsis):

- (18) der [Mann], von dem ich glaube, dass Maria wahrscheinlich nur
 the man of who.DAT I believe.1SG that Mary probably only
IHN liebt
 HIM love.3SG
 ‘the man of whom I think that Mary probably loves only him’

Furthermore, demonstratives and epithets are possible as well:

- (19) a. der [Typ], von dem ich vermute, dass **der** Maria heiraten
 the guy of who.DAT I suspect.1SG that DEM Mary marry.INF
 will
 want.3SG
 ‘the guy of whom I suspect he wants to marry Mary’
 b. der [Typ], von dem ich weiß dass **der Idiot** sein Vermögen
 the guy of who.DAT I know.1SG that the idiot his fortune
 verprasst hat
 squander.PTCP have.3SG
 ‘the guy of whom I know that the idiot squandered his fortune’

Finally, one can also use resuming forms with more content:¹³

¹³ The following types of resuming elements are in principle no different in nature from epithets, but since the term epithet is usually used with a restricted meaning in the literature, it is important to point out that anaphoric elements with a non-derogatory meaning can also be used.

- (20) Das ist ein [Schweinchen], von dem ich glaube, dass alle
 this is a piglet of which.DAT I believe.1SG that all
 hoffen, dass niemand **das putzige Tierchen** essen will.
 hope.3PL that no.one the sweet little.animal eat.INF want.3SG
 'This is a piglet of which I believe that everyone hopes that no one wants
 to eat the sweet little animal.'

Cases where the antecedent is subsumed by the class denoted by the anaphoric form are familiar from discourse, of course. There are also cases where antecedent and resuming element disagree in phi-features:

- (21) a. eine [Brücke], von der ich finde, dass man **solche Dinge**
 a.SG bridge of which.DAT I find.1SG that one such thing.PL
 nicht mehr bauen sollte
 not anymore build.INF should.3SG
 'a bridge of which I think that one should not build such things any-
 more'
 b. der [Mann], von dem ich glaube, dass **das Arschloch**
 the.M man of who.DAT I believe.1SG that the.N asshole
 mich betrogen hat
 me betray.PTCP have.3SG
 'the man of whom I believe that the asshole betrayed me'

In (21-a), the antecedent is singular but the resuming element plural. In (21-b), there is disagreement in gender: The antecedent is masculine, while the epithet is neuter.¹⁴ There are even more drastic mismatches: In some cases the resuming element only partially refers to the antecedent. Consider the following examples ((22-c) is inspired by Pullum 1985: 292, ex. 1a/c; according to Benjamin Spector, p.c., such mismatches are not possible in French prolepsis):

- (22) a. Ich habe eine [Frau] kennen gelernt, von der ich
 I have.1SG a.SG woman get.to.know.PTCP of who.DAT I
 glaube, dass **wir** ein gutes Paar wären.
 believe.1SG that we a good match be.SBJV.1PL
 'I met a woman of whom I think that we would be a good match.'

¹⁴ Such mismatches are frequent in regular anaphora in texts:

- (i) Siehst du den Mann da? Das Arschloch hat mich jahrelang betrogen.
 see.2SG you the.M man there that.N asshole have.3SG me many.years betray.PTCP
 'Do you see the man over there? That asshole betrayed me for many years.'

- b. Das ist das [einziges Mädchen in meiner Klasse], von dem ich weiß, dass sie zuhause noch mit Holz heizen.
 that is the.SG only girl in my grade of who.DAT I know.1SG that they at.home still with wood heat.3PL
 ‘This is the only girl in my class of whom I know that they still use wood to heat at home.’
- c. ein [Ehepaar], von dem ich glaube, dass sie die Hosen anhat, er aber das Geld verdient
 a couple of who.DAT I believe.1SG that she the pants wear.3SG he but the money earn.3SG
 ‘a couple of whom I think that she wears the pants, but he earns the money’

In all three examples, there is only a partial reference relationship between anaphor and antecedent(s). In (22-a/b), the proform subsumes the antecedent, while in (22-c), there are two resuming elements that by referring together back to the antecedent exhaust its reference.

Given these properties, treating the proleptic constituent as an argument of the matrix verb (optionally undergoing short A'-movement where it appears *ex situ*) that is anaphorically referred to by a proform in some dependent clause seems very straightforward. Arguably, this is the tacit assumption in the literature, which may explain why there are no detailed accounts of prolepsis.¹⁵ However, as I will show in what follows, several facts call this simplistic analysis into question: There is evidence both against treating the proleptic object as an argument of the lexical verb and against a purely anaphoric relationship.

4.3 Evidence against argumenthood + anaphoric binding

There are several arguments that clearly show that the obvious solution which treats the proleptic object as an argument of the matrix verb and the pronoun as anaphoric is insufficient: First, the construction does not show any lexical restrictions, which argues against the proleptic object being an argument of the matrix

¹⁵ The little literature that there is (see 4.5.1 below for references) generally only discusses few properties of the construction and generally arrives at the conclusion that (i) the simple solution discussed in this section cannot be on the right track and that (ii) the proleptic object is base-generated in the matrix clause (rather than raised from the complement clause). But no attempt is made to provide an explicit account of how the object is licensed and related to the embedded clause.

verb. Second, a coreferential element in the complement clause is obligatory; this shows that more than anaphoric binding must be involved (which is always optional). Third, prolepsis displays movement effects (opacity of the complement and reconstruction effects), which indicate the presence of an A'-dependency.

4.3.1 Absence of lexical restrictions

As opposed to long A'-movement, which is largely limited to bridge-verbs, resumptive prolepsis is extremely productive: While it is most frequent with epistemic and desiderative verbs and verba dicendi, a quick search on the internet reveals that prolepsis occurs with nearly every verb (or adjective + copula/noun + verb combination) selecting a CP-complement. This includes factives, finite control verbs, reflexives, verbs taking *wh*-complements and even the prime examples of non-bridge verbs such as *flüstern/fluisteren* 'whisper'. At this point there do not seem to be any CP-selecting predicates that are incompatible with prolepsis. The following examples that illustrate the various verb types are all taken from the Internet or from television:

- (23) a. Ihr ist ein einzigartiges Buch gelungen, von dem
she.DAT be.3SG a unique book succeed.PTCP of which.DAT
ich **hoffe**, dass ihm neue weitere folgen werden.
I hope.1SG that it.DAT new further follow.INF will.3PL
'She succeeded in putting out a book of which I hope that it will be followed by others.'¹⁶
- b. Letzteres hat [...] einen Adapter, von dem ich
latter have.3SG a adapter of which.DAT I
bezweifle, dass er in Deutschland zulässig ist.
doubt.1SG that it in Germany allowed be.3SG
'The latter has an adapter of which I doubt that it is allowed in Germany.'¹⁷
- c. Jeder hat einen Traum von dem es **scheint**, dass er nie
everyone has a dream of which.DAT it seem.3SG that it never
in Erfüllung geht.
become.3SG true
'Everyone has a dream of which it seems that it never becomes true.'¹⁸

¹⁶ <http://www.traumapaedagogik.de/?p=36>, accessed September 9, 2016

¹⁷ https://www.thomann.de/de/rolls_du_30b.htm, accessed September 9, 2016

¹⁸ <http://eltern-forum.kinder.de/archive/index.php/t-18132.html>, accessed October 15, 2013

- d. Das ist das Stichwort, von dem ich **mich frage** warum der
 this is the keyword of which.DAT I me ask.1SG why the
 Autor es nicht mal erwähnt.
 author it not even mention.3SG
 ‘This is the keyword of which I ask myself why the author does not
 even mention it.’¹⁹
- e. Frohen Mutes legte ich also meinen Reisepass vor, von
 happy.GEN spirit.GEN lay.1SG I PRT my passport PRT of
 dem ich **mich** noch **gefremt** hatte, daß er nun
 which.DAT I me still be.happy.PTCP had.1SG that it now
 endlich doch noch zum Zuge kommen würde.
 finally PRT still to draw come.INF would.3SG
 ‘I happily presented my new passport of which I was happy that it
 would finally be put to use.’²⁰
- f. Das ist dann sicherlich eine Sache, von der ich **bedauere**,
 this be.3SG then surely a thing of which.DAT I regret.1SG
 daß ich sie sehr wahrscheinlich nie mehr machen kann.
 that I it very probably never again do.INF can.1SG
 ‘This is surely something of which I regret that I will in all likelihood
 never again be able to do it.’²¹
- g. entweder ist etwas passiert, von dem ich das
 either be.3SG something happen.PTCP of which.DAT I the
Gefühl habe, dass man darüber schreiben kann ...
 feeling have.1SG that one it.about write.INF can.3SG
 ‘either something has happened of which I think that one can write
 about it’²²

¹⁹ <http://www.spiegel.de/auto/aktuell/bmw-setzt-maximal-laufleistung-von-150-000-km-voraus-a-855355.html>, accessed October 10, 2013

²⁰ www.mzillekens.de/Reiseberichte/Taiwan/seoul.html

²¹ <http://www.dagmarschatz.com/2015/09/19/odessa-mythen-dekonstruiert/>, accessed September 12, 2016

²² <http://www.hallo-muenchen.de/muenchen/mitte/schwabing-maxvorstadt-ort559046/harald-martenstein-ich-lasse-mich-gerne-ablenken-4622205.html>, accessed August 29, 2016

- h. Es fehlte irgendwie immer DAS Werkzeug, von dem ich
 It lack.PST.3SG somehow always the tool of which.DAT I
mir versprach, dass es alles einfacher machen
 me promise.PST.1SG that it everything simpler make.INF
 würde.
 would.3SG
 'Somehow, I was always missing THE tool of which I was hoping that
 it would make everything simpler.'²³
- i. beim al-Qaida-Terrornetzwerk, von dem gleichzeitig
 at.the al-Qaida-terror.network of which.DAT simultaneously
 sämtliche Experten augenzwinkernd **flüstern**, dass es überhaupt
 all experts with.a.wink whisper.3PL that it at.all
 nicht mehr existiert
 not anymore exist.3SG
 'with the Al-Qaida terror network of which all experts simultaneously
 whisper with a wink that it does not exist anymore'²⁴

As shown by the following examples, Dutch displays the same lexical flexibility:

- (24) a. Ik bied iets aan waarvan ik **hoop** dat het de lezers
 I offer.1SG something PRT where.of I hope.1SG that it the readers
 zal interesseren.
 will.3SG interest.INF
 'I offer something of which I hope that it will be interesting to the read-
 ers.'²⁵
- b. Het is geen geheim dat dat één van de dingen is waarvan ik
 It is no secret that this one of the things be.3sg where.of I
betreur dat we er niet meer hebben kunnen aan doen.
 regret.1SG that we there not more have.1PL can.INF at do.INF
 'It is no secret that this is one of the things of which I regret that we
 have not been able to do more about it.'²⁶

²³ <https://bananalana.wordpress.com/category/handarbeiten-und-werkeln/modellieren/page/9/>, accessed September 9, 2016

²⁴ www.uni-kassel.de/fb5/frieden/themen/Terrorismus/mellenthin.html

²⁵ <http://anneprovoost.be/nl/index.php/Auteur/Openbaar160501>, accessed September 12, 2016

²⁶ <http://www.voetbalnieuws.be/news/166175/>, accessed September 12, 2016

- c. het jaar waarvan hij ons allemaal **beloofd** heeft dat het
 the year where.of he us all promise.PTCP have.3SG that it
 een bijzonder mooi jaar gaat worden
 a particularly nice year come.3SG become.INF
 ‘the year of which he promised us all that it would become a particu-
 larly nice year’²⁷
- d. een naam waarvan ik **mij afvraag** of die nou het ei van Columbus
 a name where.of I me ask.1SG of that PRT the egg.of Columbus
 is
 be.3SG
 ‘a name of which I ask myself whether it really is the egg of Colum-
 bus’²⁸
- e. een boek waarvan ik **me kan herinneren** dat het juist na
 a book where.of I me can.1SG remember.INF that it just after
 50 paginas een prachtig boek wordt
 50 pages a wonderful book become.3SG
 ‘a book of which I can remember that it became a really good book
 after 50 pages’²⁹
- f. ... kom ik vaak liedjes tegen waarvan ik niet meer
 come.1SG I often songs against where.of I not anymore
weet waarom ik ze ooit heb gekocht.
 know.1SG why I them ever have.1SG buy.PTCP
 ‘... I often find songs of which I do not know anymore why I ever
 bought them’³⁰
- g. Naast Felipe Massa, is er nog een coureur waarvan
 next.to Felipe Masse be.3SG there still a pilot where.of
gefluisterd wordt dat hij onder zware druk staat.
 whisper.PTCP become.3SG that he under heavy pressure stand.3SG
 ‘Next to Felipe Massa there is another pilot of whom people whisper
 that he is under heavy pressure.’³¹ *Standard Dutch*

²⁷ <http://borsato.nl/media-nieuws/2187/marco-borsato-20-jaar-in-het-vak.html>, accessed September 12, 2016

²⁸ <http://www.hartvoordezaak.nl/actueel/2011/03/trademarketing-winkelvloer-krijgt-online-dimensies/>, accessed September 12, 2016

²⁹ NOS Journaal Nederland 1, 20:00, October 1, 2005

³⁰ <http://blog.seniorennet.be/goldenoldie2/>, accessed September 12, 2016

³¹ <http://www.gpupdate.net/nl/f1-nieuws/183833/kolles-sutil-blijft-gewoon-rijden/>, accessed September 12, 2016

The examples above increase in markedness, but the fact that one can find numerous examples on the Internet shows that there are in principle no restrictions. Verbs taking infinitival complements seem to be even more marked, but even for those, examples can be found. The following pairs give examples with epistemic and control verbs. The first pair is from German, the second from Dutch:

- (25) a. Und doch hab ich jemanden kennen gelernt, von dem ich
and still have.1SG I someone get.to.know.PTCP of who.DAT I
glaube, ihn zu lieben.
believe.1SG him to love.INF
'Still, I met someone who I believe I love.'³²
- b. den heiligen Geist, von dem Jesus versprochen hat, ihn
the holy spirit of who.DAT Jesus promise.PTCP have.3SG it
den Jüngern nach seiner Himmelfahrt zu senden
the.DAT disciple.PL.DAT after his ascension to send.INF
'the holy spirit that Jesus promised to send to his disciples after his
ascension'³³
- (26) a. een oude schoolgenoot waarvan ik dacht hem genoeg te
an old schoolmate where.of I think.PST.1SG him sufficiently to
kennen
know.INF
'an old school mate I thought I knew well enough'³⁴
- b. Het zijn sporadische slordigheden waarvan Ubisoft belooft
It be.3PL sporadic negligences where.of Ubisoft promise.3SG
ze aan te pakken.
them at to grasp.INF
'These are sporadic instances of sloppiness that Ubisoft promises to
tackle.'³⁵ *Standard Dutch*

Note that prolepsis is only compatible with extraposed infinitives, suggesting that it only occurs with non-restructuring infinitives, which are usually analyzed as CPs. Restructuring infinitives, on the other hand, are generally taken to contain less structure, i.e., only a VP/vP, see, e.g., Wurmbrand (to appear) for a recent

³² www.lovetalk.de/showthread.php?t=12775, accessed September 12, 2016

³³ www.weltvonmorgen.org/artikel/wig.htm, accessed September 12, 2016

³⁴ <http://www.juridischforum.be/forum/viewtopic.php?t=66484>, accessed September 12, 2016

³⁵ <http://www.insidegamer.nl/recensies/120341/rainbow-six-siege-review-tactiek-spanning-en-samenwerking>, accessed September 12, 2016

overview. Consequently, the class of verbs that are compatible with prolepsis includes all those which select a full CP.³⁶

Given the lack of lexical restrictions, it seems highly implausible that the proleptic object is an argument of all these verbs, at least in the canonical sense of being part of the argument structure. Arguments usually bear rather clearly delimited semantic roles that can be associated only with certain predicates, which is not the case with the proleptic object. One may be tempted to classify it as a vague aboutness argument, but this rather obfuscates than clarifies its function. One can add a diachronic argument here: Hoeksema & Schippers (2012: 159–165) observe for Dutch that the prolepsis construction not only has become much more frequent in the last centuries, the range of verbs it occurs with has also increased drastically. Since there is no indication that the verbs' meaning has changed, it is quite unlikely that their argument structure has changed.

4.3.2 Obligatoriness of the coreferential element

The examples of the previous subsection clearly suggest that the proleptic object is not an argument of the matrix verb. This is further corroborated by the fact that the proleptic object requires a coreferential element in the embedded clause. This is why the following examples are ungrammatical:

- (27) a. *Von Computern finde ich, dass jeder einen PC kaufen
of computers.DAT find.1SG I that everyone a PC buy.INF
sollte.
should.3SG
lit.: 'Of computers, I think that everyone should buy a PC.'
- b. *die erste Weltmeisterschaft, von der ich hoffe, dass
the first world.championship of which.DAT I hope.1SG that
Deutschland nicht schon in der ersten Runde ausscheidet
Germany not already in the first round drop out.3SG
lit.: 'the first world championship that I hope Germany will not drop
out in the first round'

³⁶ The data argue against Lühr (1988: 78–79), who argues that verbs that can take the proleptic construction also allow for long extraction. The data in this subsection clearly show that there is no such correlation.

- c. *ein Wetter, von dem ich hoffe, dass Peter zu Hause
 a weather of which.DAT I hope.1SG that Peter at home
 bleibt
 stay.3SG
 lit.: 'a weather of which I hope that Peter will stay at home'

The proleptic construction thus crucially differs from verbs that take an object next to a sentential complement, which are not subject to such a restriction (setting aside control verbs, which are different for obvious reasons):

- (28) I told Mary that Germany would drop out in the first round of the championship.

For the same reason, the proleptic object cannot simply be classified as a normal adjunct either: Adjuncts that express a pure aboutness relationship, viz., aboutness topics (hanging topics), do not require a coreferential element:

- (29) Was Computer angeht, so finde ich, dass heutzutage jeder
 what computers concern.3SG PRT find.1SG I that today everyone
 einen PC kaufen sollte.
 a PC buy.INF should.3SG
 'As for computers, I think that everyone should buy a PC these days.'

This contrast shows that the proleptic constituent is not independently (semantically) licensed inside the matrix clause. Obviously, there is some obligatory relationship with the embedded clause that is crucially involved in its licensing. Since normal anaphoric dependencies are not subject to such restrictions, the relationship between the proleptic object and the coreferring proform cannot be treated as anaphoric binding.³⁷

4.3.3 Evidence for the presence of an A'-dependency

The previous subsection has provided convincing arguments that there is a special relationship between the proleptic object and the coreferential pronoun. In this subsection, I will show that this relationship bears some of the hallmarks of an

³⁷ A potential solution in terms of finite control as in Salzmann (2005) can be readily dismissed, given the following properties pointed out above: First, the proleptic object is unlikely to be an argument. Second, prolepsis can involve coreferential non-subjects. Third, the coreferential element need not be local to the proleptic object.

A'-movement dependency: Prolepsis displays reconstruction effects suggesting a representation of the proleptic object within the complement clause, and the presence of the proleptic object induces weak island effects as in indirect questions.

4.3.3.1 Opacity of the complement clause

The first remarkable fact is that the presence of the proleptic object significantly degrades extraction from the complement clause. The effect is reminiscent of that of a weak island with argument extraction becoming marginal and adjunct extraction fully ungrammatical (the a-sentences involve regular long extraction, while the b-sentences involve prolepsis):

- (30) a. Wen₁ glaubst du, dass Hans __₁ liebt?
 whom believe.2SG you that John love.3SG
 'Who do you believe John loves?'
 b. ??Wen₁ glaubst du von Hans, dass er __₁ liebt?
 whom believe.2SG you of John that he love.3SG
 lit.: 'Who do you believe of John that he loves?'
- (31) a. [Wie vorsichtig]₁ glaubst du, dass Hans den Brief __₁
 how carefully believe.2SG you that John the letter
 formulieren wird?
 formulate.INF will.3SG
 'How carefully do you believe that John will formulate the letter?'
 b. *[Wie vorsichtig]₁ glaubst du von Hans, dass er den Brief __₁
 how carefully believe.2SG you of John that he the letter
 formulieren wird?
 formulate.INF will.3SG
 lit.: 'How carefully do you believe of John that he will formulate the letter?'

Similarly, adverbials that allow for high and low construal with bridge verbs only allow for the high construal in the presence of a proleptic object:

- (32) a. Warum denkst du, dass Hans Maria liebt?
 why think.2SG you that John Mary love.3SG
 'Why do you think that John loves Mary?' ✓high ✓low
 b. Warum denkst du von Hans, dass er Maria liebt?
 why think.2SG you of John that he Mary love.3SG
 'Why do you think of John that he loves Mary?' ✓high *low

Topicalization displays the same pattern:

- (33) a. [Den Peter]₁ glaube ich, dass die Maria ₁ heiraten
 the.ACC Peter believe.1SG I that the.NOM Mary marry.INF
 will.
 want.3SG
 'Peter, I suspect Mary wants to marry.'
- b. Darum₁ glaube ich, dass die Maria den Peter ₁
 for.this.reason believe.1SG I that the.ACC Mary the.ACC Peter
 heiraten will.
 marry.INF want.3SG
 'For this reason, I suspect Peter wants to marry Mary.' ✓high ✓low
- (34) a. *[Den Peter]₁ glaube ich von Maria, dass sie ₁ heiraten
 the.ACC Peter believe.1SG I of Mary that she marry.INF
 will.
 want.3SG
 lit.: 'Peter, I think of Mary that she wants to marry.'
- b. Darum₁ glaube ich von Maria, dass sie ₁ den Peter
 for.this.reason believe.1SG I of Mary that she the Peter
 heiraten will.
 marry.INF want.3SG
 'For this reason, I suspect of Mary that she wants to marry Peter.'
 ✓high *low

The contrast is reminiscent of the weak-island effect in indirect questions as in (35), thereby suggesting the presence of an A'-dependency:³⁸

- (35) a. ??Who do you wonder whether John likes?
 b. *How carefully do you wonder whether John will formulate the letter?

38 One might argue that the degradation of extraction is not due to a weak island in the complement clause but obtains because there is additional material in the matrix clause. Such effects have indeed been observed, namely when the subcategorization frame of a verb is changed and its semantics are thereby altered, cf. Lühr (1988: 83). For example, once *glauben* 'believe' additionally takes an indirect object, it means 'to believe someone something'. This results in opacity as well. However, there is no indication that this factor is responsible for the ban on extraction in prolepsis: Neither is the proleptic object an (optional) argument of the matrix verb, nor is the semantics of *glauben* altered. Furthermore, the presence of the proleptic object does not affect the possibility of *glauben* to take a V2-complement, a property that is characteristic of bridge-verbs, cf. Featherston (2004). The presence of an indirect object, however, does:

- (i) a. Ich glaubte von Hans erst, er sei faul.
 I believe.PST.1SG of John first he be.SBJV.3SG lazy
 'I first thought of John that he was lazy.'

4.3.3.2 Reconstruction effects

Further evidence for the presence of an *A'*-dependency comes from reconstruction effects: The proleptic object can be interpreted in the complement clause, in the position of the coreferential pronoun. This holds irrespective of the movement type in the matrix clause. The first triple illustrates reconstruction for idiom interpretation:³⁹

- (36) a. Die [Rede], [von der ich denke, dass er sie geschwungen
the speech of which.DAT I think.1SG that he it swing.PTCP
hat], wird niemanden überzeugen haben.
have.3SG be.FUT.3SG no.one.DAT convince.PTCP have.INF
'The speech of which I think that he gave it will not have convinced
anybody.' (lit. swing a speech = 'give a speech')
- b. Von [welcher Rede] glaubst du, dass er sie gestern wieder
of which.DAT speech believe.2SG you that he it yesterday once
einmal geschwungen hat?
again swing.PTCP have.3SG
'Of which speech do you think that he gave it once again yesterday?'
- c. Von [dieser Rede] hoffe ich nicht, dass er sie schon wieder
of this.DAT speech hope.1SG I not that he it once again
geschwungen hat.
swing.PTCP have.3SG
'Of this speech, I dont hope that he has given it again.'

The following triple illustrates reconstruction for variable binding. While, as discussed in section 2.3.1.4 above, reconstruction in relatives is often more acceptable with equatives, a fact that also holds for prolepsis, no such restriction is observed if there is *wh*-movement or topicalization in the matrix clause:

-
- b. Ich glaubte (*Hans), er war zufrieden.
I believe.PST.1SG John he be.PST.3SG satisfied
'I believed (John) that he was satisfied.'

One can conclude from this that the opacity observed in the proleptic construction is not simply due to the presence of the proleptic object.

39 As in relativization more generally (recall section 2.3.1.4), only relatively transparent collocations are possible in the proleptic construction. Since, as we will see in 4.4.3 below, the proleptic object is necessarily specific/referential, reconstructing idiomatic parts with *wh*-movement or topicalization will be similarly restricted.

- (37) a. Die [Periode seines_i Lebens], [von der ich glaube, dass
the period his.GEN life.GEN of which.DAT I believe.1SG that
jeder_i sie gerne vergessen würde], ist die Pubertät.
everyone it likes.to forget.INF would.3SG be.3SG the puberty
'The period of his_i life of which I believe that everyone_i would like to
forget it is puberty.'
- b. Von [welcher Periode seines_i Lebens] denkst du, dass
of which.DAT period his.GEN life.GEN think.2SG you that
jeder_i sie gerne vergessen würde?
everyone it likes.to forget.INF would.3SG
'Of which period of his_i life do you think that everyone_i would like to
forget it?'
- c. Von [dieser Periode seines_i Lebens] denke ich, dass jeder_i
of this.DAT period his.GEN life.GEN think.1SG I that everyone
sie gerne vergessen würde.
it likes.to forget.INF would.3SG
'Of this period of his_i life, I think that everyone_i would like to forget
it.'

Reconstruction for Principle A can be found as well, again irrespective of the type of A'-movement in the matrix clause. All examples are constructed in a way that avoids the confound of a potential coreferential implicit PRO (recall the discussion in section 2.3.1.4.1 above):

- (38) a. Das [Spiegelbild von sich_i], [von dem ich glaube, dass
the reflection of self of which.DAT I believe.1SG that
Peter_i es an der Wand sah], hat ihn sehr beunruhigt.
Peter it on the wall see.PST.3SG have.3SG him very disquiet.PTCP
'The reflection of himself_i of which I think that Peter_i saw it on the
wall made him very nervous.'
- b. Die [Lügen über einander_i], [von denen ich fürchte, dass Hans
the lies about each.other of which.DAT I fear.1SG that John
und Marie_i sie gehört haben], werden sie verletzen.
and Mary them hear.PTCP have.3PL be.FUT.3PL them hurt.INF
'The lies about each other_i of which I think that John and Marie_i heard
them will hurt them.'

- c. Von [welchem Wesenszug von sich_i] denkst du, dass Peter_i ihn
 of which.DAT trait of self think.2SG you that Peter it
 verheimlichen möchte?
 conceal.INF would like to.3SG
 ‘Of which side of himself_i do you think that Peter_i would like to con-
 ceal it?’
- d. Von [welchem Gerücht über einander_i] fürchtest du, dass Hans
 of which.DAT rumor about each.other fear.2SG you that John
 und Marie_i es bereits gehört haben?
 and Mary it already hear.PTCP have.3PL
 ‘Of which rumor about each other_i do you fear that John and Mary_i
 have already heard it?’
- e. Von [diesem Wesenszug von sich_i] glaube ich schon, dass
 of this.DAT trait of self believe.1SG I indeed that
 Peter_i ihn verheimlichen möchte.
 Peter it conceal.INF would like to.3SG
 ‘Of this side of himself_i, I think that Peter_i would like to conceal it.’
- f. Von [diesem Gerücht über einander_i] fürchte ich, dass Hans und
 of this.DAT rumor about each.other fear.1SG I that John and
 Marie_i es bereits gehört haben.
 Mary it already hear.PTCP have.3PL
 ‘Of this rumor about each other_i, I fear that John and Mary_i have al-
 ready heard it.’

Reconstruction is also observed in Dutch prolepsis. I restrict myself to the follow-
 ing triple based on relativization in the matrix clause:

- (39) a. het [spiegelbeeld van zichzelf_i] [waarvan ik denk dat Piet_i het
 the reflection of self where.of I think.1SG that Peter it
 op de muur zag]
 on the wall see.PST.3SG
 ‘the reflection of himself_i of which I think that Peter_i saw it on the
 wall’
- b. de [leugens over elkaar_i] [waarvan ik denk dat Hans en
 the lies about each.other where.of I think.1SG that John and
 Marie_i; ze hebben gehoord]
 Mary them have.3PL hear.PTCP
 ‘the lies about each other_i of which I think that John and Mary_i heard
 them’

- c. De [periode van z'n_i leven] [waarvan ik denk dat niemand;
 the period of his life where.of I think.1SG that no.one
 er graag aan terug denkt] is de puberteit.
 there likes.to to back think.3SG be.3SG the puberty
 'The period of his_i life of which I think that no one_i likes to remember
 it is puberty.' *Standard Dutch*

In the next subsection, I will discuss the consequences of the results obtained so far. Further aspects of reconstruction in prolepsis will be discussed in sections 4.4.2 and 4.4.3 below.

4.3.4 In favor of resumption

The previous subsections should have made it clear that the relationship between the proleptic object and the coreferential element has properties that cannot be accounted for by simply positing an anaphoric dependency. Rather, the dependency bears some of the hallmarks of an A'-dependency. This thus raises the question about the nature of such a dependency. Given that it terminates in a pronominal element, the obvious answer is that prolepsis of the type found in German involves *resumption*.

As discussed in detail in section 3.1.3, there are rather few arguments in favor of a movement approach to resumption, at least in those languages where resumption is island-insensitive. As shown in (16) and (17), the link between proleptic object and coreferential proform is insensitive to locality as well. Given that there is in my view no convincing theory of locality that explains why resumption should make movement out of islands possible (recall the discussion in section 3.1.3), little argues in favor of a movement account of prolepsis. I was also quite skeptical about hybrid approaches like Aoun et al. (2001), Bianchi (2004) and Sichel (2014), where resumption inside (strong) islands receives a completely different analysis from resumption in other positions because in most languages resumptives are not morphologically differentiated in the two contexts. This is a fact that also holds for prolepsis: The resuming element always looks the same. Furthermore, there is little evidence for a reconstruction asymmetry. Although the examples quickly become very complex, there does not seem to be a principled ban against reconstruction into islands. I will start with PPs, which are islands in German. The first triple shows reconstruction for Principle A and variable binding:⁴⁰

⁴⁰ Note that the resumptive is the so-called R-pronoun *da* 'there', which generally replaces the neuter pronoun if (i) it refers to an inanimate antecedent and (ii) it is governed by a preposition).

- (40) a. Das [Spiegelbild von sich_i], [von dem ich glaube, dass the reflection of self of which.DAT I believe.1SG that Peter_i nicht damit zufrieden ist], geht mir nicht aus dem Peter not there.with satisfied be.3SG go.3SG me not out of the Kopf.
head
'I cannot forget the reflection of himself_i of which I think that Peter_i is not satisfied with it.'
- b. Die [Periode seines_i Lebens], [von der ich glaube, dass the period his.GEN life.GEN of which.DAT I believe.1SG that keiner_i gerne an sie denkt], ist die Pubertät.
no.one likes.to at it think.3SG be.3SG the puberty
'The period of his_i life of which I believe no one_i likes to remember it is puberty.'
- c. Von [welcher Periode seines_i Lebens] denkst du, dass keiner_i of which.DAT period his.GEN life.GEN think.2SG you that no.one gerne an sie denkt?
likes.to to it think.3SG
'Of which period of his_i life do you think that no one_i likes to remember it?'

The following examples illustrate reconstruction into a PP which itself is embedded within a PP:

- (41) a. das [Nacktfoto von seiner_i Frau], [von dem ich glaube, dass the nude.picture of his wife of which I believe.1SG that kein Politiker_i < über das Geschwätz darüber > glücklich sein no politician about the gossip there.about happy be.INF kann]
can.3SG
'the nude picture of his_i wife of which I think that no politician_i can be happy with the gossip about it'

The entire complex consisting of preposition and R-pronoun is called a pronominal adverb. The precise distribution of R-pronouns is somewhat more complex, though; see Müller (2000) for empirical details.

- b. Von [welcher Periode seines_i Lebens] denkst du, dass kein
 of which.DAT period his.GEN life.GEN think.2SG you that no
 Politiker_i über das Geschwätz darüber glücklich sein kann?
 politician about the gossip there.about happy be.INF can.3SG
 'Of which period of his_i life do you think that no politician_i can be
 happy about the gossip about it?'

This is an important fact: German not only disallows preposition stranding as shown in (42); rather, it bans extraction from PPs quite generally, as shown in (43) (where the ban on preposition stranding is not violated):

- (42) a. *Sie₁ hab ich nicht an __₁ gedacht.
 her have.1SG I not at think.PTCP
 'Her, I didn't think of.'
 b. [An sie]₁ hab ich nicht __₁ gedacht.
 at her have.1SG I not think.PTCP
- (43) * [Von wem]₁ hast du an [einen Freund __₁] gedacht?
 of who.DAT have.2SG you at a.DAT friend think.PTCP
 lit.: 'Of whom did you think of a friend?'

This implies that not only (41) but also (40) involve reconstruction into a domain from where extraction is impossible, viz., into an island (for the islandhood of PPs in Swiss German, see section 5.4.2.1 below). The following pair illustrates reconstruction into a PP within a *wh*-island in Dutch (note that the R-pronoun *er* 'there' undergoes scrambling):

- (44) a. het [spiegelbeeld van zichzelf_i] [waarvan ik weet waarom Piet_i
 the reflection of self where.of I know.1SG why Peter
 er zo trots op is]
 there so proud on be.3SG
 'the reflection of himself_i of which I know why Peter_i is so proud of it'
 b. de [periode van z'n_i leven] [waarvan ik weet waarom niemand_i
 the period of his life where.of I know.1SG why no.one
 er graag aan terugdenkt]
 there likes.to at remember.3SG
 'the period of his_i life of which I know why no one_i likes to remember
 it' *Standard Dutch*

Finally, reconstruction is also possible into strong islands. Although the sentences admittedly become quite complex and will thus be marked for many speakers for independent reasons, I do not think that there is a significant difference in the

reconstruction possibilities. The first pair illustrates reconstruction for Principle A into an adjunct island and a CNPC island:

- (45) a. Das ist der [Wesenszug von sich_i], [von dem ich glaube, dass du
this is the trait of self of which I think.1SG that you
dich freuen würdest, < wenn Peter_i ihn verheimlichen
self be.happy.INF would.2SG if Peter it conceal.INF
würde >].
would.3SG
'This is the side of himself_i of which I think you would be happy if
Peter_i concealed it.'
- b. Von [welchem Wesenszug von sich_i] findest du, dass < die Art,
of which.DAT trait of self find.2SG you that the way
wie Peter_i ihn in Szene setzt, > widerlich ist?
how Peter it in scene set.3SG disgusting be.3SG
'Of which side of himself_i do you think that the way in which Peter_i
puts a spotlight on it is disgusting?'

The next pair shows reconstruction for variable binding (again both into an adjunct island and a relative clause island):

- (46) a. Von [welcher Periode seines_i Lebens] denkst du, dass man
of which.DAT period his.GEN life.GEN think.2SG you that one
ganz froh ist, < wenn in der Kneipe keiner_i darüber
quite relieved be.3SG if in the bar no.one there.about
redet > ?
talk.3SG
'Of which period of his_i life do you think that one is quite relieved if
no one_i talks about it in the bar?'
- b. Die [Periode seines_i Lebens], [von der ich denke, dass <
the period his.GEN life.GEN of which.DAT I think.1SG that
die Erfahrungen, die jeder Junge_i dabei macht >], ganz
the experiences that every boy there.at make.3SG very
unterschiedlich sind], ist die Pubertät.
different be.3PL be.3SG the puberty
'The period of his_i life of which I think that the experiences every boy_i
makes with it are very different is puberty.'

At least as far as the proleptic construction is concerned, there is thus no reason to posit different derivations based on the location of the resumptive pronoun.

There is another strong argument against a movement relationship: the presence of the preposition *von* 'of'. It cannot originate together with the operator in the complement clause as this would violate the subcategorization requirements of the respective verb: The proleptic object is always related to a DP-position. If the operator starts out without the preposition and the operator moves into its complement position, a violation of the Extension Condition (Chomsky 1995) obtains.⁴¹ Furthermore, at least under a spell-out approach as, e.g., in Pesetsky (1998) or an operator in-situ approach as in Demirdache (1991) (but depending on the implementation also under a Big-DP-approach), the operator would enter two Case-checking operations: both with the embedded verb of which it is an argument and with the preposition 'of'. This would lead to a violation of the Activity Condition (Chomsky 2000 et seq.) according to which a DP is only visible for (Case-)Agree/Case-checking if it has not been involved in a prior Case-Agree operation. In fact, if there were direct movement from the embedded clause into the matrix, the presence of the preposition would become rather mysterious: Next to its contentful uses (meaning 'from'), it functions as a default preposition that serves to case-mark nouns that otherwise fail to receive case (e.g., nouns inside the DP in positions where genitive is not available), basically like English *of*. The very presence of this preposition suggests that the proleptic object is in need of Case, but this motivation would be lost under a direct movement relationship.

Another argument against a direct movement relationship is improper movement: Assuming that long-distance movement proceeds successive-cyclically via intermediate phase edges, viz., SpecCP and SpecvP, there would be movement from an A'-position (SpecCP of the complement clause) to an A-position, i.e., the middle-field-internal 'base-position' of the proleptic object. Such movement violates both the traditional constraint against improper movement (from an A- to an A'-position and then back to an A-position) as well as the Williams's Cycle (Williams 1974, Müller 2014a) according to which any non-initial movement step has to target a position that is higher on the functional sequence than the position where it moves from. Although there have been a few approaches in recent years that propose movement via SpecCP to a matrix-A-position to account for *tough*-movement, we will see in 4.5.2.3 below that such approaches fail to derive a number of central properties of the construction and consequently also cannot be extended to prolepsis.

⁴¹ However, see Postal (2004: 83–108) for arguments for raising to prepositional object.

The last argument against a direct movement relationship comes from the lack of Principle C effects. Crucially, this lack is found with all movement types. The first triple illustrates this for relativization:⁴²

- (47) a. die [Verwandten von Peter_i], [von denen ich weiß, dass er_i
the relatives of Peter of who.DAT I know.1SG that he
sie mag]
them likes.3SG
'the relatives of Peter_i of whom I know that he_i likes them'
- b. der [Wesenszug von Peter_i], [von dem ich fürchte, dass er_i ihn
the trait of Peter of which.DAT I fear.1SG that he it
noch nicht kennt]
still not know.3SG
'the side of Peter_i of which I fear that he_i does not know it yet'
- c. die [Nachforschungen über Peter_i], [von denen ich vermute,
the investigations about Peter of which.DAT I suspect.1SG
dass er_i sie vor mir verheimlichen wollte]
that he them from me conceal.INF want.PST.3SG
'the investigations about Peter_i of which I suspect that he_i wanted to
conceal them from me'

The second triple illustrates *wh*-movement:

- (48) a. Von [welchen Verwandten von Peter_i] denkst du, dass er_i sie
of which.DAT relatives of Peter think.2SG you that he them
mag?
like.3SG
'Of which relatives of Peter_i do you think that he_i likes them?'
- b. Von [welchem Wesenszug von Peter_i] denkst du, dass er_i ihn
of which.DAT trait of Peter think.2SG you that he it
noch nicht kennt?
still not know.3SG
'Of which side of Peter_i do you think that he_i does not know it yet?'

⁴² Note that the R-expressions are contained in an argument so that late merger cannot be used to account for the absence of Condition C effects, recall section 2.4.1.1. This becomes particularly clear once the examples in (62) and (63) below are taken into account, where the co-indexed pronoun is located in the matrix clause and Condition C effects do obtain.

- c. Von [welcher Nachforschung über Peter_i] denkst du, dass er_i
 of which.DAT investigation about Peter think.2SG you that he
 sie vor dir verheimlichen wollte?
 it from you conceal.INF want.PST.3SG
 'Of which investigation about Peter_i do you think that he_i wanted to
 conceal it from you?'

The last triple illustrates the absence of Condition C effects under topicalization:

- (49) a. Von [diesen Verwandten von Peter_i] glaube ich schon, dass
 of these.DAT relatives of Peter believe.1SG I indeed that
 er_i sie mag.
 he them like.3SG
 'Of these relatives of Peter_i, I think that he_i likes them.'
- b. Von [diesem Wesenszug von Peter_i] denke ich, dass er_i ihn noch
 of this.DAT trait of Peter think.1SG I that he it still
 nicht kennt.
 not know.3SG
 'Of this side of Peter_i, I think that he_i does not know it yet.'
- c. Von [dieser Nachforschung über Peter_i] denke ich nicht, dass
 of this.DAT investigation about Peter think.1SG I not that
 er_i sie vor dir verheimlichen wollte.
 he it from you conceal.INF want.PST.3SG
 'Of this investigation about Peter_i, I do not think that he_i wanted to
 conceal it from you.'

This pattern is actually quite remarkable: Recall from section 2.4.1.1 that, while Principle C effects are generally absent in relative clauses (at least according to the majority view), the are usually regarded as robust in *wh*-movement and topicalization. The fact that we do not get any Condition C effects with prolepsis, irrespective of the movement type in the matrix clause, thus strongly argues against a direct movement relationship.

One may be tempted to argue that reconstruction is simply optional. However, apart from the fact that this would have to be an assumption peculiar to prolepsis (while reconstruction would have to be obligatory in regular *wh*-movement/topicalization), it would fail to account for the fact that Principle C effects also fail to obtain if reconstruction is independently forced, e.g., for variable binding:

- (50) a. die [Briefe von Hans_i an ihre_j Eltern], [von denen ich
the letters of John to her parents of which.DAT I
vermute, dass er_i jeder Schülerin_j gedroht hat,
suspect.1SG that he every.DAT student threaten.PTCP have.3SG
sie in der Klasse vorzulesen]
them in the class read out.INF
'the letters by John_i to her_j parents of which I suspect that he_i threat-
ened every female student_j to read them out in class'
- b. Von [welcher Meinung von Hans_i über ihren_j Aufsatz] denkst
of which.DAT opinion of John about her essay think.2SG
du, dass er_i jeder Schülerin_j rät, sie ernst zu
you that he every.DAT student advise.3SG it seriously to
nehmen?
take.INF
'Of which opinion of John_i about her_j essay do you think that he_i ad-
vises every female student_j to take it seriously?'

The facts discussed here strongly argue against a movement analysis of resumption in prolepsis. As will be discussed in 4.4.2 below, the movement effects, including the selective reconstruction effects, can receive a straightforward solution under base-generation.⁴³

43 An approach in terms of resumption also implies that anaphoric elements other than pronouns, recall the data in (19-b), (20), (21), must be analyzed as participating in resumption. In the case of (19-b) and (20), this is unproblematic as these simply represent instances of resumptive epithets. (21) may initially seem problematic because of the mismatches, but if epithets are analyzed as appositions as proposed in Aoun & Choueiri (2000) and Aoun et al. (2001), this problem will arguably vanish since such mismatches occur with appositions as well: compare German *Der Peter, dieses Arschloch ...* = the.M.NOM Peter, this.N.NOM asshole ... While in Lebanese Arabic, there is always an overt demonstrative occurring together with resumptive epithets, one might have to posit a silent resumptive/demonstrative pronoun in German.

The cases with partial/overlapping reference in (22) are certainly more problematic and probably require a more complex representation of pronouns. To my knowledge, such cases of resumption have not been documented before, except for English *such that*-relatives, cf. Pullum (1985: 292). The two constructions generally bear quite a number of similarities such as unboundedness and insensitivity to islands as well as the necessity of a variable, see Higginbotham (1984: 229–230), although this is disputed in Pullum (1985: 292–294) and van Riemsdijk (2008). To what extent mismatches in resumption are possible is poorly understood; given the recent findings in Adger (2011) – recall the discussion in section 3.1.3.4 – the phenomena may eventually be more widespread than has been assumed so far. Note that partial reference is also found in variable binding (Schlenker 2003: 417):

However, since the surface position of the proleptic object bears all the hallmarks of an A-position (recall the discussion in 4.2.1), while the link with the resuming pronoun rather has A'-properties (unboundedness, reconstruction, induces opacity), a direct base-generation relationship is also implausible. More importantly, such a direct relationship would leave unexplained how the proleptic object is licensed in the first place: Recall that there is no evidence that the proleptic object satisfies any selectional or feature-checking requirements in the matrix clause (when located in its middle-field-internal position).

In the next section, I will propose that the proleptic object is licensed by predication and show that this, together with a resumption dependency mediated by ellipsis, accounts for the conflicting properties of the proleptic construction.

4.4 Analysis: predication and ellipsis

The analysis has two major ingredients: First, the proleptic object is licensed by means of predication: There is a base-generated empty operator in the SpecCP position of the complement, which turns the CP into a predicate. The proleptic object saturates the extra slot provided by this predicate. Second, the proleptic object is related to the empty operator by means of ellipsis; the operator in turn is related to the resumptive by means of ellipsis as well, thereby accounting for the selective reconstruction effects. The presence of the resumptive is motivated by means of the binding theory. As a side effect, scope reconstruction is blocked in prolepsis.

(i) Each of my colleagues_i is so difficult that at some point or other we_i've had an argument. Similar mismatches can be found in left-dislocation in Mohawk, where a dislocated element can be resumed by a pronoun that it overlaps in reference with (the pronoun subsumes the reference of the dislocated element), see Baker (1992).

If resumptives are analyzed as involving NP-ellipsis (cf. Guillot & Malkawi 2006), there is an interesting link to (NP-)ellipsis: Elbourne (2001: 276–281) shows that E-type pronouns can have split antecedents and argues that the NP-ellipsis approach provides the necessary means to accommodate them. In other words, the possibility of partial reference/split antecedents in resumption may thus in fact be expected under an NP-ellipsis approach.

Interestingly, resumption in Hebrew does not allow for partial reference/split antecedents, according to Sichel (2015).

For similar mismatches in resumption in Swiss German relativization, see section 5.5.2 below. As a final remark, Bošković (2009: 89) observes that in Serbo-Croatian, prolepsis allows for a wider range of resumptive elements than regular resumption in *that*-relatives.

4.4.1 The CP-complement as a predicate

The first part of the analysis bears many similarities to the traditional *tough*-movement analysis of Chomsky (1977, 1981) (as in *John is tough to please*, see 4.5.2.3 below), as well as to the implementation in Cinque (1990), Mulder & den Dikken (1992: 305–308) and especially Řezáč (2006), Yoon (2007) and Landau (2011).

Given that the proleptic argument is not a thematic argument of the matrix verb, it has to be licensed differently. I propose that this is done by means of predication: Concretely, there is an empty operator in SpecCP of the complement CP that turns the CP into a derived predicate (“an open sentence” in the terms of Cinque 1990). The null operator thus functions as the syntactic equivalent of a lambda operator. Then, the predicative CP composes with the matrix verb. This satisfies the C-selectional requirements of the verb (it requires a CP-complement). However, semantically the matrix verb selects a proposition. In cases of regular complementation, the matrix verb directly combines with a propositional CP. In prolepsis (and *tough*-movement, see 4.5.2.3 below), however, the propositional argument is composed out of a property and an individual: The complement CP is the property and the proleptic object, more precisely, the DP within the PP, is the individual. The proleptic object is thus the subject that satisfies the open slot of the predicate. Consequently, while the meaning of a regular complement-taking verb like *believe* can be characterized as $\lambda x.\lambda p.BELIEVE(x,p)$, the meaning under prolepsis is $\lambda x.\lambda y.\lambda P.BELIEVE(x,P(y))$ (where *p* refers to proposition and *P* stands for predicate). The proleptic construction (like *tough*-movement and copy-raising, see 4.5.2.1 below) therefore shares properties with raising – the matrix verb takes a propositional argument – but also with control – with respect to semantic composition –, cf. Asudeh & Toivonen (2012: 350). While predication is sufficient to license the proleptic object semantically, being a DP, it also needs Case. As a last resort, it is case-marked by the default preposition *von/van* ‘of’. Thereafter, little *v* is merged and the derivation proceeds in the familiar way.⁴⁴

The base-generated empty operator requires some justification: Traditionally, empty operators undergo movement; but given the insensitivity to islands observed in (16) and (17) and the other arguments against a direct movement relationship discussed in 4.3.4, base-generation together with resumption is the obvious solution. The operator is thus directly inserted into SpecCP, from where it binds the resuming element. This is sufficient to turn the CP into a predicate.

⁴⁴ There is a certain similarity with the predication based analysis of clitic left dislocation in Iatridou (1995) except that there the clitic is sufficient to establish a predicate; there is no base-generated operator.

As discussed in Heim & Kratzer (1998: 106–115), movement is not a prerequisite for predicate abstraction. It is for instance also possible with *such that*-relatives (cf. Pullum 1985) that involve resumption and are also island-insensitive (cf. also Landau 2011: 808–810 on the irrelevance of movement for predication):

- (51) the man *such that* Mary reviewed ⟨ the book he wrote ⟩

The derivation of prolepsis is sketched in (52):

- (52) P [DP] V [CP [Op_i] . . . res_i V]
 subject derived predicate
 complex predicate
 predication

Importantly, predication requires c-command between the “subject” and the predicate. This is shown by the following contrast from Dutch (cf. Neeleman 1994a: 217):

- (53) a. dat Jan_i Marie_j naakt_{i/j} ontmoette
 that John Mary nude meet.PST.3SG
 ‘that John_i met Mary_j nude_{i/k}’
 b. dat Jan_i [met Marie_j] naakt_{i/*j} sprak
 that John with Mary nude talk.PST.3SG
 ‘that John_i talked with Mary_j nude_{i/*j}’ *Standard Dutch*

The lexical preposition *met* thus blocks c-command. Functional prepositions like *van/van/of*, however, do not, cf. the following English example from Williams (1980: 204) and the Dutch example provided by an anonymous reviewer of a previous version:

- (54) a. John thinks of Bill_i as silly_i.
 b. dat Jan van Marie_i naakt_i droomt
 that John of Mary nude dream.3SG
 ‘that John dreams of Mary_i nude_i’ *Standard Dutch*

Crucially, the same holds in prolepsis: As shown by the following examples with NPI-licensing and variable binding, the proleptic object c-commands into the complement clause in the presence of the functional preposition *van* ‘of’ (presupposing that there is no QR in German, cf. Sternefeld 2006: 813, fn. 45):⁴⁵

⁴⁵ While complement CPs are arguably extraposed to matrix VP in German, they reconstruct for binding at LF, see Sternefeld (2006: 781).

- (55) a. Ich glaube von keinem Holländer, dass er **auch nur einen**
 I believe of no.DAT Dutchman that he even only a
einzigem Euro verschwenden würde.
 single Euro squander.INF would.3SG
 'I believe of no Dutchman that he would squander even a single Euro.'
- b. Ich weiß von jedem Mitarbeiter_i, dass er seine_i Arbeit
 I know.1SG of every.DAT colleague that he his work
 ordentlich macht.
 decently make.3SG
 'I know of every colleague_i that he does his_i work decently.'

Postulating a base-generated operator that turns the complement CP into a predicate not only accounts for the licensing of the proleptic object but also derives two central properties of the proleptic construction: First, it derives the opacity facts observed in 4.3.3.1. Irrespective of how exactly weak (operator) islands are to be accounted for, the intervention effect induced by an operator in an A'-position does not depend on movement: As shown by the following *wh*-island example, opacity can also be induced by base-generated operators such as *why*:⁴⁶

(56) ??[Which movie]₁ did John ask why Mary liked ___₁?

Second, it explains why there has to be a coreferential element, cf. 4.3.2: Since the proleptic object is licensed via predication, it depends on the operator in SpecCP. Given the ban on vacuous quantification, the operator in turn has to bind a variable, viz., the co-referring element, which I analyze as a resumptive (see also Landau 2011: 808). Questions regarding the overtiness of the variable will be addressed in section 4.4.4 below.

Finally, given that the proleptic object is base-generated in the matrix clause, the analysis also – trivially – accounts for the A-properties (binding and superiority) of the proleptic object discussed in section 4.2.1 above.

⁴⁶ Rizzi (1990: 47–48) provides the following arguments in favor of base-generation of *why*: First, reason adverbials cannot occur in situ in French *wh*-in-situ, contrary to what happens with other VP-adverbials (cf. *Il a parlé comment* vs. *?*Il a parlé pourquoi* 'How did he speak?' vs. 'Why did he speak?' – the same holds for English: **Who did John hit why?*, see Bromberger 1992: 158) and by the observation that French stylistic inversion cannot be triggered by sentential adverbials such as *pourquoi* (*Comment a parlé Jean* vs. *?*Pourquoi a parlé Jean* 'How did you speak?' vs. 'Why did John speak?'). Similarly, in Italian *wh*-questions, T-to-C-movement is optional with reason adverbials but obligatory with other *wh*-words.

4.4.2 Selective reconstruction by means of ellipsis

Let me briefly recapitulate the reconstruction effects observed so far: There is systematic reconstruction for variable binding and anaphor binding as well as idiom interpretation. However, there is no reconstruction for Principle C, even if reconstruction is independently required. As the attentive reader will have noticed, this is exactly the pattern that we observed in restrictive relative clauses, see section 2.5.3 above. The following pair briefly illustrates reconstruction for idiom interpretation and the lack of Principle C effects (repeated from above).

- (57) a. The [headway] [we made ___] was sufficient.
 b. The [picture of John_i] [which he_i saw ___ in the paper] is very flattering.

There I argued in favor of the matching analysis, where there is a relative clause-internal representation of the external head inside the relative clause; the two instances are, however, not related by movement but via ellipsis, i.e., the internal head is deleted under identity with the external head:

- (58) [DP D [NP [NP N] [CP [DP Op NP]₁ ... V ___₁]]] MA

This has two consequences: On the one hand, given that there is a representation of the external head inside the RC, reconstruction effects can in principle be captured. This is illustrated for (57-a) in (59) (recall from section 2.5.3 that the external head can be deleted under identity with the internal head if it contains material with a positive licensing requirement that is not licensed in that position):

- (59) The [~~NP headway~~] [CP DP λx. ~~headway~~ we made [DP the_x headway]] was sufficient.

On the other hand, since ellipsis is involved, certain mismatches are possible (as ellipsis generally allows a certain degree of non-identity, see, e.g., Fiengo & May 1994). It is these mismatches that account for the lack of Condition C effects. Concretely, I proposed that vehicle change allows an R-expression inside the external head to be related to a pronoun inside the RC. The sentence in (57-b) thus receives the interpretation in (60), where vehicle change bleeds Condition C:

- (60) The [picture of John_i] [CP λx. [picture of him_i] he_i saw [the_x picture of him_i] in the paper] is very flattering.

The crucial advantage of the matching analysis is thus that it can capture both regular reconstruction and instances of non-reconstruction, while those approaches

that adopt the raising analysis to capture reconstruction effects need the matching analysis in addition (recall section 2.4.3 and the references cited there).

In what follows, I will show that the matching analysis can be fruitfully applied to prolepsis. In fact, apart from one area, viz., scope, prolepsis patterns like restrictive relatives w.r.t. reconstruction.

The importance of ellipsis is particularly obvious if there is *wh*-movement or topicalization in the matrix clause: Recall from section 4.3.4 that Condition C effects were not only absent with relativization in the matrix clause, see (47) but also with *wh*-movement, see (48), and topicalization, see (49). This crucially argues in favor of an ellipsis operation in all instances of prolepsis. To determine where ellipsis takes place exactly, it is instructive to test for Condition C effects if the coreferential pronoun is located in the matrix clause. Interestingly, Condition C effects are found with *wh*-movement and topicalization, while they are absent with relativization. The first triple provides examples with relativization:

- (61) a. die [Verwandten von Peter_i], [von denen er_i sagt, dass sie
the relatives of Peter of who.DAT he say.3SG that they
dumm sind]
stupid be.3PL
'the relatives of Peter_i of whom he_i says that they are stupid'
- b. der [Wesenszug von Peter_i], [von dem er_i glaubt, dass ich
the trait of Peter of which.DAT he believe.3SG that I
ihn nicht kenne]
it not know.1SG
'the side of Peter_i of which he_i thinks that I don't know it yet'
- c. die [Nachforschungen über Peter_i], [von denen er_i vermutet,
the investigations about Peter of which.DAT he suspect.3SG
dass sie politisch motiviert sind]
that they politically motivated be.3PL
'the investigations about Peter_i of which he_i suspects that they are
politically motivated'

The second triple involves *wh*-movement:

- (62) a. *Von [welchen Verwandten von Peter_i] glaubt er_i, dass sie
Of which.DAT relatives of Peter believe.3SG he that they
dumm sind?
stupid be.3PL
lit.: 'Of which relatives of Peter_i does he_i think that they are stupid?'

- b. *Von [welchem Wesenszug von Peter_i] denkt er_i, dass er
 of which.DAT trait of Peter think.3SG he that it
 peinlich ist?
 embarrassing be.3SG
 lit.: 'Of which side of Peter_i does he_i think that it is embarrassing?'
- c. *Von [welchen Nachforschungen über Peter_i] denkt er_i, dass
 of which.DAT investigations about Peter think.3SG he that
 sie politisch motiviert sind?
 they politically motivated be.3PL
 lit.: 'Of which investigations about Peter_i does he_i think that they are
 politically motivated?'

The last triple illustrates Condition C effects with topicalization:

- (63) a. *Von [diesen Verwandten von Peter_i] glaubt er_i, dass sie
 of these.DAT relatives of Peter believe.3SG he that they
 dumm sind.
 stupid be.3PL
 lit.: 'Of these relatives of Peter_i, he_i thinks that they are stupid.'
- b. *Von [diesem Wesenszug von Peter_i] denkt er_i, dass er
 of this.DAT trait of Peter think.3SG he that it
 peinlich ist.
 embarrassing be.3SG
 lit.: 'Of this side of Peter_i, he_i thinks that it is embarrassing.'
- c. *Von [diesen Nachforschungen über Peter_i] denkt er_i, dass
 of these.DAT investigations about Peter think.3SG he that
 sie politisch motiviert sind.
 they politically motivated be.3PL
 lit.: 'Of these investigations about Peter_i, he_i thinks that they are po-
 litically motivated.'

In other words, with respect to binding in the matrix clause, prolepsis behaves like the constructions behave in short movement: There is a Condition C effect in both *wh*-movement and topicalization but none in relativization. This shows that there is regular short A'-movement in the matrix clause. Condition C effects are absent in relativization because there is ellipsis between the head noun and the proleptic object in SpecCP, which allows for vehicle change. In *wh*-movement and topicalization, however, an identical copy of the displaced constituent is found because no ellipsis is involved: The asymmetry is illustrated by the following sim-

plified LFs (recall from section 2.3.1.4 that according to the Preference Principle, the operator is minimized and the restriction is retained only in the bottom copy):

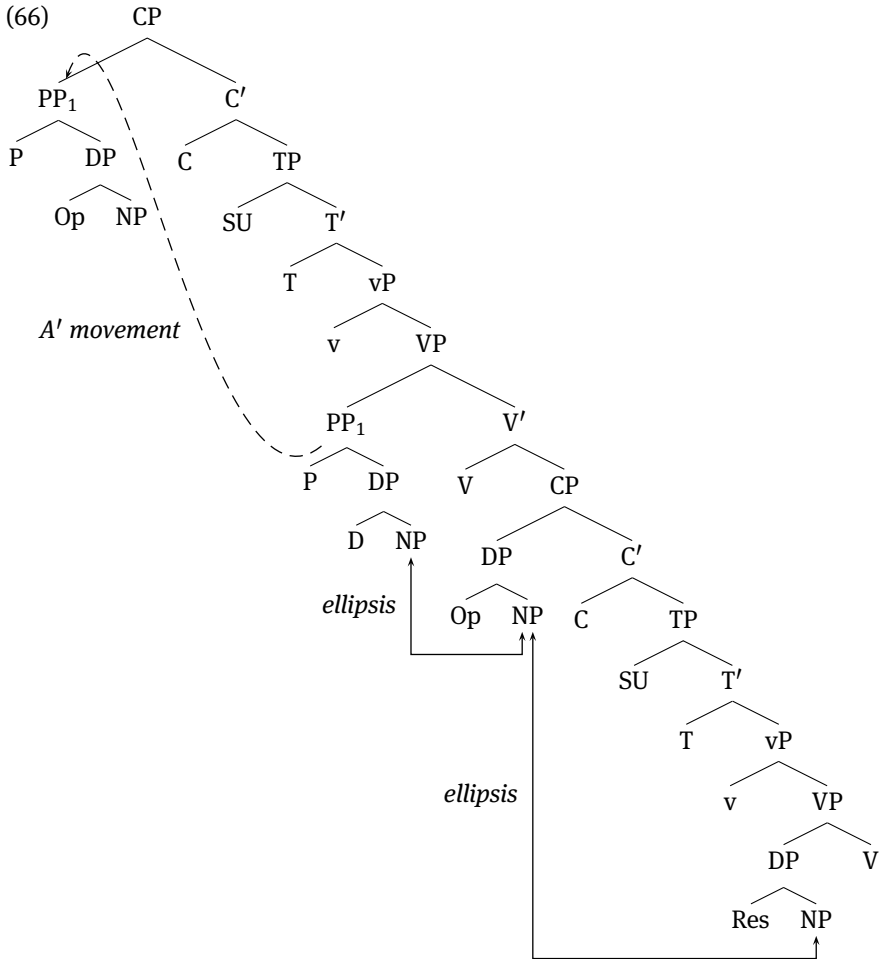
- (64) a. die [_{NP} Verwandten von Peter_i], [_{CP} [_{PP} von λx. [_{NP} Verwandten
the relatives of Peter of who.DAT relatives
~~von ihm_T~~] er_i [_{DP} the_x Verwandten von ihm_i] sagt, dass sie
of him he relatives of him say.3SG that they
dumm sind]
stupid be.3PL
'the relatives of Peter_i of whom he_i says that they are stupid'
- b. * [_{PP} Von which λx. Verwandten von Peter_T] glaubt er_i [_{PP} von
Of which.DAT relatives of Peter believe.3SG he of
the_x Verwandten von Peter_i], dass sie dumm sind?
relatives of Peter that they stupid be.3PL
lit.: 'Of which relatives of Peter_i does he_i think that they are stupid?'

Consequently, the ellipsis operation that is needed to account for the absence of Condition C effects in the complement clause with *wh*-movement and topicalization, see the examples (48) and (49), must apply between the proleptic object and the base-generated operator. As we will see, the relationship between the two is almost the same as that between the external head of relatives and their occurrence in SpecCP of the relative clause.

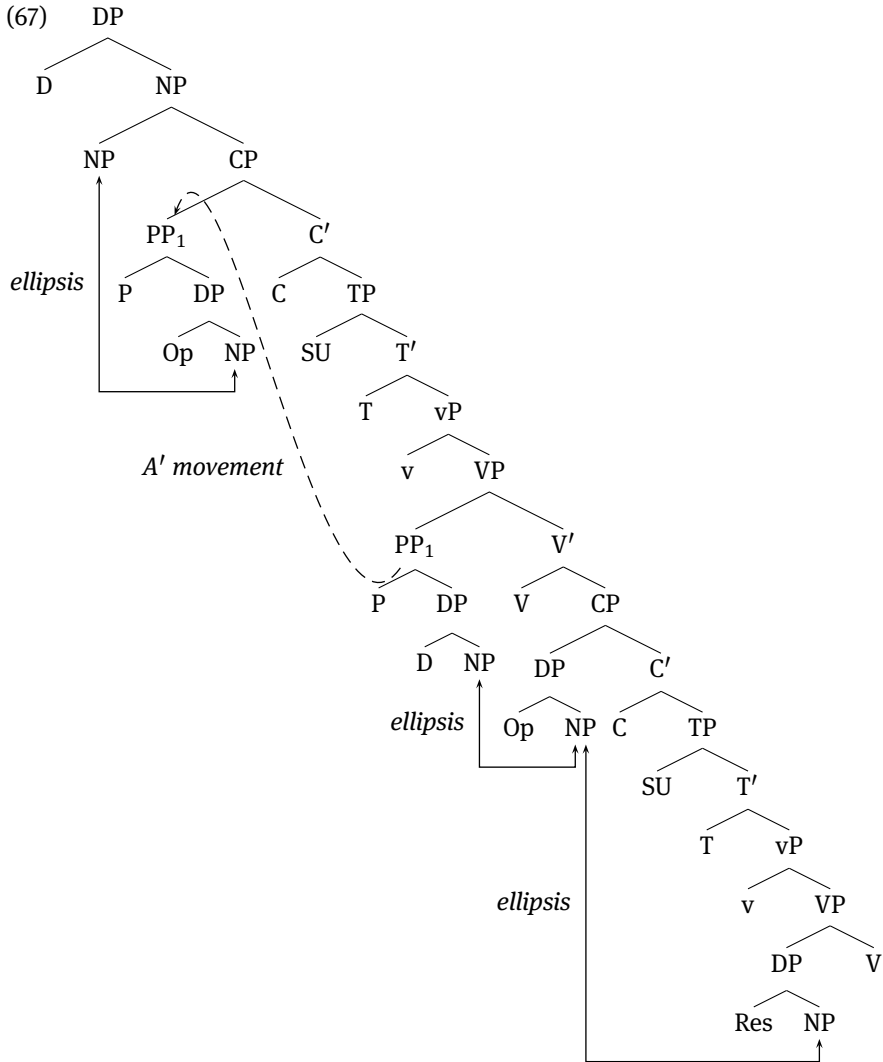
Before we can illustrate how ellipsis voids Condition C effects in the complement clause, we still need to be more explicit about the link between the operator and the resumptive. As shown in section 3.1.3.5, reconstruction can be captured under base-generation if the NP-ellipsis theory of pronouns by Elbourne (2001) is adapted to resumption, as proposed in Guilliot & Malkawi (2006) and Rouveret (2008): The NP-part of the antecedent thus appears in the complement position of the resumptive:

- (65) [_{CP} [_{DP} Op NP_i] . . . [_{DP} Res NP_i]]

This implies that there are two ellipsis operations in prolepsis: One between the proleptic object and the base-generated operator and one between the operator and the resumptive. The derivation of prolepsis with *wh*-movement or topicalization then looks as follows (the proleptic object is related to an object in the complement clause, but as discussed in section 4.2.2 above, any other relation would be possible as well):



With relativization in the matrix clause, there is an additional ellipsis operation (the relative clause is represented as an adjunct; complementation would be a possibility as well, though):



We can now tackle reconstruction. Regular reconstruction into the complement clause, e.g., as in the example with anaphor binding in (38-a), repeated in (68-a), will then receive the (simplified) LF in (68-b):

- (68) a. Das [Spiegelbild von sich_i], [von dem ich glaube, dass
the reflection of self of which.DAT I believe.1SG that
Peter_i es an der Wand sah], hat ihn sehr beunruhigt.
Peter it on the wall see.PST.3SG have.3SG him very disquiet.PTCP
'The reflection of himself_i of which I think that Peter_i saw it on the
wall made him very nervous.'
- b. das [_{NP} ~~Spiegelbild von sich_i~~]₇, [_{CP} [_{PP} von [_{DP} λ_x. [_{NP}
the reflection of self of which.DAT
~~Spiegelbild von sich_i~~]]]₁ ich [_{PP} von [_{DP} the_x [_{NP} ~~Spiegelbild von~~
reflection of self I of reflection of
~~sich_i~~]]]₁] glaube, [_{CP} [_{DP} λ_y. [_{NP} ~~Spiegelbild von sich_i~~]]] dass
self believe.1SG reflection of self that
Peter_i [_{DP} the_y [_{NP} Spiegelbild von sich_i]_j] an der Wand sah]]
Peter reflection of self on the wall see.PST.3SG

The Preference Principle applies in both CPs. Additionally, the copy of the proleptic object in the middle-field is exceptionally deleted because it contains material with a positive licensing requirement that is not licensed there. The same goes for the external head of the relative. This means that only one instance of the proleptic object survives, viz., the instance in the complement position of the resumptive. This shows the importance of deletion under identity.

Instances of exceptional deletion under identity are also found if the proleptic object has to be interpreted in the matrix clause; this is the case if it contains an anaphor that is only licensed in that position as in the cases discussed in (7) and (8). I repeat example (8-b) in (69-a) with its (simplified) LF in (69-b):

- (69) a. Von [welchem Wesenszug von sich_i] denkt Peter_i, dass ich ihn
of which.DAT trait of self think.3SG Peter that I it
noch nicht kenne?
still not know.1SG
'Of which side of himself_i does Peter_i think that I don't know it yet?'
- b. [_{PP} ~~Von~~ welchem λ_x. ~~Wesenszug von sich_i~~]₁ denkt Peter_i [_{PP} von
of which.DAT trait of self think.3SG Peter of
[_{DP} the_x [_{NP} ~~Wesenszug von sich_i~~]_j]]₁, [_{CP} [_{DP} λ_y. [_{NP} ~~Wesenszug von~~
trait of self trait of
~~sich_i~~]]] dass ich [_{DP} the_y [_{NP} ~~Wesenszug von sich_i~~]] noch nicht
self that I trait of self still not
kenne?
know.1SG
'Of which side of himself_i does Peter_i think that I don't know it yet?'

Here, only the copy in the matrix middle-field survives, while the copies inside the complement clause are deleted under identity since they contain material with a positive licensing requirement that is not licensed there. Note that such examples are directly parallel to cases of obligatory non-reconstruction in regular restrictive relatives as discussed in section 2.5.3.3. I repeat a relevant example from above:

(70) Parky pulled the [strings] [that __ got me my job].

Since the idiomatic interpretation only obtains in the matrix clause, the RC-internal copies cannot be interpreted; exceptional deletion again comes to the rescue.⁴⁷

We can now tackle the absence of Condition C effects. Recall that treating reconstruction as being optional in this case is not a possibility because Condition C effects remain absent even if reconstruction is independently required. Rather, vehicle change voids Condition C effects. This is shown for (50-b), repeated in (71-a), which receives the (simplified) LF in (71-b):

- (71) a. Von [welcher Meinung von Hans_i über ihren_j Aufsatz] denkst
 of which.DAT opinion of John about her essay think.2SG
 du, dass er_i jeder Schülerin_j rät, sie ernst zu
 you that he every.DAT student advise.3SG it seriously to
 nehmen?
 take.INF
 ‘Of which opinion of John_i about her_j essay do you think that he_i advises every female student_j to take it seriously?’

⁴⁷ One can construct parallel examples with prolepsis based on relativization where only the external head can be interpreted:

- (i) Peter_i beschrieb einen [Wesenszug von sich_i], [von dem ich denke, dass
 Peter describe.PST.3SG a trait of self of which.DAT I think.1SG that
 du ihn nicht kennen möchtest].
 you it not know.INF would like.3SG
 ‘Peter_i described a side of himself_i of which I think that you would not want to know it.’

Here, the anaphor is only licensed inside the external head. Consequently, all other copies must be deleted under identity. An analytical alternative is vehicle change: The anaphor could correspond to a pronoun inside the relative clause, viz., ‘side of him’, leading to a grammatical result as well, see sections 2.5.3.3 and 2.5.3.4 above.

- b. [_{PP} ~~Von~~ [_{DP} welcher λx . ~~Meinung von Hans_T über ihren_J Aufsatz~~]]₁
of which.DAT opinion of John about her essay
denkst du [_{PP} von [_{DP} the_x [_{NP} ~~Meinung von Hans_T über ihren_J~~
think.2SG you of opinion of John about her
~~Aufsatz~~]]₁, [_{CP} [_{DP} λy . [_{NP} ~~Meinung von ihm_T über ihren_J~~
essay opinion of him about her
~~Aufsatz~~]]_K] dass er_i jeder Schülerin_j rät, [_{DP} the_y [_{NP}
essay that he every.DAT student advise.3SG
Meinung von ihm_i über ihren_j Aufsatz]]_k] ernst zu nehmen]?
opinion of him about her essay seriously to take.INF
‘Of which opinion of John_i about her_j essay do you think that he_i ad-
vises every female student_j to take it seriously?’

Importantly, a copy containing (just) an R-expression as in (64-b) above, repeated in (72), must not be deleted:

- (72) * [_{PP} ~~Von~~ ~~welchen~~ λx . ~~Verwandten von Peter_T~~] glaubt er_i [_{PP} von the_x
Of which.DAT relatives of Peter believe.3SG he of
~~Verwandten von Peter_T~~], dass sie dumm sind?
relatives of Peter that they stupid be.3PL
lit.: ‘Of which relatives of Peter_i does he_i think that they are stupid?’

If deletion under identity were possible, there would be no Condition C effect in the matrix clause; furthermore, ellipsis would license vehicle change so that the R-expression would correspond to a pronoun in the complement clause, thereby also voiding the Condition C effect. The assumption that copies containing elements with a negative licensing requirement must not undergo exceptional deletion thus derives the correct result.⁴⁸ I will discuss one more argument in favor of a

48 There is an interesting twist here: If we modify an example like (71-a) by placing the coreferential pronoun in the matrix clause, the result is ungrammatical:

- (i) *Von [welcher Meinung von Hans_i über ihren_j Aufsatz] denkt er_i, dass jede
of which opinion of John about her essay think.3SG he that every
Schülerin_j sie ernst nimmt?
student it seriously take.3SG
lit.: ‘Of which opinion of John_i about her_j essay does he_i think that every female student_j takes it seriously?’

This suggests that the R-expression cannot be deleted in the matrix clause, although it is part of a copy that also contains an element with a positive licensing requirement that is not licensed there, viz., the bound pronoun. The question then is what this implies for (71-a), where I assumed deletion of the entire copy. A consistent explanation of both examples arguably has to resort to

deletion approach to reconstruction in prolepsis. In section 2.5.3.5, I discussed the reconstruction properties of the idiom *einen Streit vom Zaun brechen*, lit. ‘break a fight off the fence’, meaning ‘start a fight’. I observed that there is evidence for a coreferential implicit PRO because – as in other idiomatic expressions – only the reflexive is possible within that NP if the anaphoric element is to refer back to the subject (recall the discussion in section 2.3.1.4.1):

- (73) Sie_i hat einen [PRO_i Streit über *sie_i/sich_i] vom Zaun
 she have.3SG a fight about her/self off.the fence
 gebrochen.
 break.PTCP
 ‘She_i started a fight about *her_i/herself_i.’

If such an idiomatic expression contains an R-expression and is contained within the external head of an RC, we expect a Condition C effect even if vehicle change is a possibility because this would only turn the R-expression into a pronoun, which would still lead to a Condition B effect inside the relative clause. If, however, the R-expression is more deeply embedded, we expect the Condition B effect to disappear if vehicle change is at work. This prediction was borne out for restrictive relative clauses. Exactly the same pattern can be observed in prolepsis:⁴⁹

- (74) a. *Von [diesem Streit über Maria_i] glaube ich nicht, dass sie_i ihn
 of this.DAT fight about Mary believe.1SG I not that she it
 vom Zaun gebrochen hat.
 off.the fence break.PTCP have.3SG
 lit.: ‘Of this fight about Mary_i, I don’t think that she_i started it.’
 b. Von [diesem Streit über Peters Kritik an Maria_i] glaube ich
 of this.DAT fight about Peter’s criticism of Mary believe.1SG I
 nicht, dass sie_i ihn vom Zaun gebrochen hat.
 not that she it off.the fence break.PTCP have.3SG
 ‘Of this fight about Peter’s criticism of Mary_i, I don’t believe that she_i
 started it.’

distributed deletion (Fanselow & Cavar 2002) with the R-expression being retained and the bound pronoun being deleted. Recall also the discussion in section 2.5.3.4 on conflicting requirements. ⁴⁹ Note that, while there is an implicit PRO inside the complement clause, there is no PRO inside the proleptic object that could lead to a Condition C effect without any reconstruction: Recall from section 2.5.3.5 that implicit PROs are only present in the idiomatic reading. Consequently, the proleptic object does not contain any material that is not licensed in the matrix clause so that it is not deleted.

Thus, while (74-a) is ungrammatical for the same reason as (73) with the pronoun, (74-b) is grammatical for the same reason that (75) is well-formed:

- (75) Sie_i hat einen [PRO_i Streit über Peters Kritik an ihr_i] vom
 She have.3SG a fight about Peter's criticism of her off.the
 Zaun gebrochen.
 fence break.PTCP
 'She_i started a fight about Peter's criticism of her_i.'

Before concluding this section, I briefly need to address the size of the ellipsis site. In the representations above it has been assumed that only the NP-complement of the proleptic object is matched against the NP-complement of the base-generated operator. This seems to predict that DP-specifiers inside the proleptic object cannot reconstruct. Although the facts are somewhat delicate, it seems that they do reconstruct, as the following examples with secondary strong crossover and variable binding suggest (Salzmann 2006a: 258, 260):

- (76) a. *Von [wessen_i Mutter] denkst du, dass er_i sie mag?
 of whose mother think.2SG you that he her like.3SG
 lit.: 'Of whose_i mother do you think that he_i likes her?'
- b. Von [seiner_i Mutter] denke ich, dass kein Teenager_i sie toll
 of his.DAT mother think.1SG I that no teenager her great
 findet.
 find.3SG
 'Of his_i mother, I believe that no teenager_i adores her.'

To capture such data I assumed in Salzmann (2006a) that ellipsis between the proleptic object and the operator in SpecCP involves the entire DP, ellipsis additionally licensing the mismatch between the D-elements (external D vs. operator). However, the scarcity of DP-ellipsis in the relevant languages argues against this (see also section 4.5.2.3 below, where I discuss this issue w.r.t. *tough*-movement). The alternative I will adopt is the following: A possibility to account for reconstruction of DP-specifiers under NP-ellipsis is to follow Elbourne (2001: 271–274), who shows that DP-specifiers can be anaphorically referred to by NP-ellipsis:

- (77) John gave his paycheck to his mistress. Everybody else put it in the bank.

He argues (on the basis of independent evidence) that the possessors occupy NP-internal positions at LF so that the possessive pronoun can be made available in the complement position of the pronoun via NP-ellipsis:

- (78) John gave [_{DP} the [_{NP} paycheck of him]] to his mistress. Everybody else put [_{DP} it [_{NP} paycheck of him]] in the bank.

The same assumption accommodates reconstruction of possessors in prolepsis.

Note that the NP-ellipsis approach requires proper names to be analyzed as NP-complements of a silent D, cf. Elbourne (2005: chapter 6), since they can also constitute a proleptic object (cf. *I believe of John that he is a good coach*). Furthermore, since referential pronouns can function as proleptic objects as in (5), I need to assume that they also consist of definite articles taking an NP-complement. In Elbourne (2005), the NP-complement of referential pronouns corresponds to the index, which will work for our purposes: The index of the proleptic object will then be matched against that of the NP-complement of the operator.

To summarize this section: Ellipsis plays a central role in accounting for the reconstruction pattern. It relates the proleptic object to the base-generated operator in the complement clause, which in turn is related to the resumptive pronoun by ellipsis as well. This captures reconstruction for idioms, Principle A and variable binding as well as the pattern for Principle C: There are Condition C effects in the matrix clause (with *wh*-movement and topicalization) because the copies there are unaffected by ellipsis; but because of ellipsis and the mismatches it licenses no Condition C effects obtain in the complement clause.

4.4.3 Scope

Another area where we do not find reconstruction in prolepsis is scope. This is illustrated by the following examples where an indefinite proleptic object necessarily receive a specific or – in the case of bare plurals – a generic interpretation. In intensional contexts, only a *de re* reading is available:

- (79) prolepsis
- a. Von [einem Mädchen] weiß ich, dass Peter es geküsst
of a.DAT girl know.1SG I that Peter her kiss.PTCP
hat.
have.3SG
‘Of a girl I, know that Peter kissed her.’ *existential/✓specific
 - b. Von [Feuerwehmännern] weiß ich, dass sie verfügbar sind.
of firemen.DAT know.1SG I that they available be.3PL
‘Of firemen, I know that they are available.’ *existential/✓generic

- c. Von [einer neuen Sekretärin] sagte Peter, dass er sie
 of a.DAT new secretary say.PST.3SG Peter that he her
 suche.
 seek.SBJV.3SG
 'Of a new secretary, Peter said he was looking for her.'
 ∃ > seek; *seek > ∃

To appreciate the facts, consider the following examples with regular topicalization, where existential and *de dicto* interpretations are unproblematic (note that extraction across *wissen* 'know' may be somewhat degraded):

(80) regular topicalization:

- a. [Ein Mädchen]₁ weiß ich, dass Peter __₁ geküsst hat.
 a girl know.1SG I that Peter kiss.PTCP have.3SG
 'A girl, I know that Peter kissed.' (✓existential)
- b. Feuerwehrmänner₁ weiß ich, dass __₁ verfügbar sind.
 firemen know.1SG I that available be.3PL
 'Firemen, I know are available.' (✓existential)
- c. [Eine neue Sekretärin]₁ sagte Peter, dass er __₁ suche.
 a new secretary said.3SG Peter that he seek.SBJV.3SG
 'A new secretary, Peter said he was looking for.' (✓de dicto)

As a side-effect of the constraints on the referential properties of the proleptic object, expletives and opaque idioms are also incompatible with prolepsis.⁵⁰

Interaction between quantifiers shows the same behavior: While scope ambiguity obtains if both XPs are in the matrix clause, the distributive reading is ruled out once the universal QP is within the complement clause:

- (81) a. Von [welcher Band] glaubt jeder Lehrer, dass die Studenten
 of which.DAT band think.3SG every teacher that the students
 sie am besten finden?
 it the best find.3PL
 'Of which band does every teacher think that the students like it best?'
 ∀ > wh; wh > ∀

⁵⁰ While opaque idioms are independently ruled out in relativization because the idiomatic NP would receive conflicting interpretations inside and outside the relative, this is not the case with *wh*-movement or topicalization so that the ban on opaque idioms is relevant.

- b. Von [welcher Band] glaubst du, dass jeder Student sie am
 of which.DAT band think.2SG you that every student it the
 besten findet?
 best find.3SG
 ‘Of which band do you think that every student likes it best?’
 *∀ > wh; wh > ∀

Another case in point are amount phrases like *how many*, which normally allow for both a referential (quantifying over a pre-established set) and a non-referential (quantification over amounts) interpretation. The amount reading is usually derived by means of reconstruction (see Heycock 1995, Fox 1999). Crucially, under prolepsis, only the referential interpretation, where there is a pre-established set of a certain cardinality is available, while regular long A'-movement is ambiguous:

- (82) a. Nur von [zwei Patienten] glaube ich, dass der Doktor sie
 only of two patients believe.1SG I that the doctor them
 morgen sehen will.
 tomorrow see.INF want.3SG
 ‘Of only two patients, I believe that the doctor wants to examine them
 tomorrow.’
 *amount; ✓ referential
- b. [Nur zwei Patienten]₁ glaube ich, dass der Doktor __₁ sehen
 only two patients believe.1SG I that the doctor see.INF
 will.
 want.3SG
 ‘Only two patients, I believe the doctor wants to examine.’
 ✓ amount; ✓ referential

The contrast is particularly clear with verbs of creation like *build* or *write* which, if used in the non-past, take non-referential objects (since the object they take does not exist yet). They are ungrammatical in the proleptic construction (i.e., they would have to take narrow scope with respect to the matrix predicate but cannot):

- (83) a. *Von [wie vielen Häusern] denkst du, dass man sie bauen
 of how many houses think.2SG you that one them build.INF
 sollte?
 should.3SG
 ‘Of how many houses do you think that one should build them?’
 *many > think; *think > many

- b. *Von [wie vielen Büchern] denkst du, dass Peter sie 2017
 of how many books think.2SG you that Peter them 2017
 schreiben wird?
 write.INF will.3SG
 'Of how many books do you think that Peter will write them in 2017?'
 *many > think; *think > many

Regular long extraction is not subject to such constraints, see Heycock (1995) and Fox (1999).

Once the predicate is changed to one that allows a referential reading of the object or if a verb of creation is used in the past in which a referential reading is possible as well, the amount expressions are compatible with prolepsis:

- (84) a. Von [wie vielen Häusern] denkst du, dass man sie zerstören
 of how many houses think.2SG you that one them destroy.INF
 sollte?
 should.3SG
 'Of how many houses do you think that one should destroy them?'
 many > think; *think > many
- b. Von [wie vielen Büchern] denkst du, dass Peter sie 2006
 of how many books think.2SG you that Peter them 2006
 geschrieben hat?
 write.PTCP have.3SG
 'Of how many books do you think that Peter wrote them in 2006?'
 many > think; *think > many

The same presuppositional effect can be found with universally/negatively quantified DPs. Consider the following minimal pair:

- (85) a. Ich weiß von jedem Holländer, dass er ein Fahrrad hat.
 I know.1SG of every.DAT Dutchman that he a bike have.3SG
 'I know of every Dutchman that he has a bike.'
- b. Ich weiß, dass jeder Holländer ein Fahrrad hat.
 I know.1SG that every Dutchman a bike have.3SG
 'I know that every Dutchman has a bike.'

In the proleptic construction, the speaker has knowledge about every single Dutchman that he owns a bike. It is as if he actually went to every Dutchman's house to check. That reading is, of course, quite bizarre. No such effect is found in the normal complement clause construction. The speaker might have obtained

this knowledge from statistics etc. The following pair makes the same point with a negative quantifier:

- (86) a. Ich weiß von keinem Mitarbeiter, dass er katholisch ist.
 I know.1SG of no colleague that he catholic be.3SG
 'I know of no colleague that he is catholic.'
- b. Ich weiß, dass kein Mitarbeiter katholisch ist.
 I know.1SG that no colleague catholic be.3SG
 'I know that no colleague is catholic.'

The meaning of the proleptic construction can be paraphrased as follows: There is no colleague such that I happen to know about that colleague that he is catholic. This does not imply that there aren't any catholic colleagues, the speaker just does not know about any of his colleagues that they are catholic. In the regular complement clause, the implication is that there are no catholic colleagues whatsoever. The speaker might have gained this knowledge by looking at the statistics of his company or because it is simply known that Catholics don't work in that company etc.

As a final point, prolepsis is incompatible with comparatives:

- (87) *Es sind [mehr Patienten] gekommen, als der Arzt von ihnen
 there be.3PL more patients come.PTCP than the doctor of them
 dachte, dass sie kommen würden.
 think.PST.3SG that they come.INF would.3PL
 lit.: 'There came more patients than the doctor thought of them that they
 would come.'

Since comparatives involve abstraction over a degree variable and therefore involve an amount reading, the ungrammaticality in prolepsis is little surprising.

To sum up the data, next to the lack of reconstruction for Principle C, there is also no reconstruction for scope in prolepsis.⁵¹

51 Interestingly, low readings of superlative adjectives are also unavailable; only the high reading is possible in (i):

- (i) das [erste Buch], [von dem Peter sagte, dass Tolstoj es geschrieben habe]
 the first book of which.DAT Peter say.PST.3SG that T. it write.PTCP have.3SG
 'the first book of which Peter said that Tolstoj had written it' ✓ high; *low

Given that the reconstruction properties of superlative adjectives are similar to that of *how many*-quantifiers (in that that reconstruction can be blocked by weak islands, recall the discussion in section 2.3.6), this behavior is not surprising and represents another instance of failed scope reconstruction.

The explanation of the scope facts seems obvious: Since I have treated the coreferential element in prolepsis as a resumptive, it does not come as a surprise that scope reconstruction is blocked: Since the tail of the A'-chain is headed by a definite determiner (which is what the resumptive is under the NP-ellipsis theory), the variable must be interpreted as being of type $\langle e \rangle$, which rules out non-specific/de dicto/non-referential interpretations, distributive readings, as well as resumptives in amount relatives and comparatives. As discussed in section 3.1.3.5, the representation we obtain in resumption is thus practically identical to the LF obtained after Trace Conversion as proposed in Fox (1999), which leads to specific interpretations of copies.

However, while the scope facts can thus be related to the presence of a resumptive, this raises the more fundamental question of why resumption is necessary in prolepsis in the first place. This is the topic of the next subsection.

4.4.4 The necessity of resumption

The starting point are cases of improper movement like (88):

(88) *John₁ seems ₁ Mary saw ₁

Traditionally, improper movement, at least those instances that involve movement from an A-position via an A'-position to an A-position, are ruled out by Principle C of the binding theory: The constituent in the landing site c-commands and thus binds the variable left behind by the initial A'-movement step. The question thus arises how a Principle C violation can be ruled out in prolepsis, where given the present implementation the proleptic object c-commands into the complement clause (recall example (55)). Importantly, the fact that two independent chains are involved does not make a difference, see the anti-c-command condition on parasitic gap-licensing on the one hand and the ungrammaticality of examples of the following type on the other (Řezáč 2004: 192–193):⁵²

- (89) a. *Kate_i was asked/wondered/understood who_i Nolwenn saw .
 b. Kate_i asked who_{*i/j} left.

⁵² Recall that according to standard assumptions, parasitic gaps cannot be licensed by A-movement, e.g., movement to SpecTP in the matrix clause: In that case, the antecedent would occupy an A-position and c-command the parasitic gap, which is taken to be a variable given that it results from A'-movement inside the adjunct.

Here, a Condition C violation obtains, although the A-binder is located outside the domain of the operator that binds the variable.

Crucially, in prolepsis, a Condition C violation is avoided by the fact that the tail of the A'-dependency is occupied by a pronoun, viz., the resumptive. In other words, the binding theory motivates one of the central characteristics of the construction. The logic is the same as in *tough*-movement, where the same Condition C issue obtains and for which pronominal elements have been proposed as well, see Řezáč (2006: 300–304) and section 4.5.2.3 below.

Importantly, as discussed in Elbourne (2005), the NP-ellipsis theory of bound pronouns/resumptives does not imply that the pronouns behave like referential expressions in all respects; rather, they still behave like pronouns for the purposes of binding theory. Conversely, R-expressions, which are also reanalyzed as definite expressions in this theory, behave like R-expressions even though their syntactic representation is very similar to that of pronouns.⁵³

Since the resumptive in prolepsis really has to be a pronoun semantically to avoid a Condition C violation, scope reconstruction is ruled out, i.e., although resumption seems obligatory, the necessarily pronominal nature of the pronoun blocks alternative interpretations.

53 The cases where the resuming element is an epithet, cf. (19-b), (20), (21) above, are more problematic because epithets are subject to Principle C of the binding theory according to Lasnik & Stowell (1991: 708–709). One possibility that is consistent with my proposal is to treat resumptive epithets as appositions to a silent pronoun, see Aoun & Choueiri (2000), who show that epithets can only be used as resumptives in Lebanese Arabic when combined with a demonstrative pronoun. See also Demirdache & Percus (2011) for the role of pronouns in resumption based on epithets. Since on some accounts appositions are invisible for binding (cf., e.g., de Vries 2006 on appositive relatives) the absence of a Condition C effect in prolepsis would follow. Treating epithets as appositions to a possibly silent pronoun may be necessary anyway if ellipsis is always at work in resumption. The antecedent of the epithet would then be represented within the NP-complement of the silent pronoun. This might also provide a handle on the cases with non-matching phi-features in (21). Furthermore, a silent pronoun with a silent NP-counterpart would help account for reconstruction with epithets as in (i) (for more examples, see Salzmann 2006a: 306):

- (i) Der [Abschnitt seines_i Lebens], [von dem ich glaube, dass jeder_i den Mist
the period his.GEN life.GEN of which.DAT I believe.1SG that everyone the crap
gerne vergessen würde], ist die Pubertät.
gladly forget.INF would.3SG be.3SG the puberty
'The period of his life of which I believe that everyone would like to forget that crap is
puberty.'

Note that the appositive structure would have to be absent in purely anaphoric (i.e., A-related) contexts, where epithets are sensitive to Condition C. I will leave this issue for further research.

While Principle C enforces the pronominal nature of the tail of the A'-dependency in prolepsis, nothing in principle requires resumption if null operators can also be pronominal, as has been argued for *tough*-movement, see section 4.5.2.3. One therefore in principle expects instances of prolepsis that occur with a gap and display island-sensitivity. However, such cases are not attested in German and Dutch, not even when the complement clause is non-finite. Furthermore, prolepsis in other languages also usually seems to involve resumption and, as a consequence, island insensitivity (see section 4.5.1 below). Whether this points towards a fundamental property of the construction in need of explanation or just an accidental lexical gap is unclear because sufficient information about prolepsis is currently only available for rather few languages.

Since at this point there is no clear evidence that the variation between gap/island-sensitivity and resumption/island-insensitivity is due to fundamental syntactic properties (apart from the availability of resumption), I will treat them as lexical differences, i.e., some languages have movement (and thus gaps) in predicative constructions, while others only have base-generation and thus resumption. There are various ways of capturing this, as discussed in section 3.1.1.2. Either, one assumes that some languages have moving operators, while others have only base-generated ones (i.e., operators with *uCase* or without, cf. Merchant 2004); alternatively, one can adopt the feature-specifications by McCloskey (2002: 203), where the variation is located in properties of the complementizers; languages will then differ whether they have a complementizer with an unvalued feature and an EPP-feature (movement) or just an EPP-feature (base-generation). Another option is the feature-system proposed by Abels (2012: 124–134): Movement languages would possess a C-head that requires mutual c-command between probe and goal, viz., [$uF_{\downarrow\uparrow}$], while base-generation languages require a probe that searches upward, viz., [uF_{\uparrow}]. To restrict base-generation in German to prolepsis, one can postulate a complementizer designated for predication, viz., [$uPred_{\uparrow}$]. However, if future research shows that prolepsis universally occurs with resumption/base-generation, a syntactic explanation will need to be found.

The presence of a personal pronoun at the tail of the A'-dependency in prolepsis has another effect: As discussed in section 3.2.4, it forces its antecedent to be of type ⟨e⟩, i.e., an individual. This not only rules out the amounts and degrees discussed in section 4.4.3 but also predicates and manners, as the following examples illustrate (note that the amount example in (90-b) differs from those discussed in section 4.4.3 in that the proform is compatible with amounts):⁵⁴

⁵⁴ Not all adverbials are ruled out in prolepsis. Specific temporal and locative expressions are acceptable (note that unlike other adverbials they also occur in resumption proper, see Boeckx 2003: 91–97):

- (90) a. *Von [einem Arschloch] glaube ich nicht, dass du **das** bist.
of a.DAT asshole believe.1SG I not that you that be.2SG
lit.: ‘Of an asshole, I don’t believe that you are one.’
- b. *Von [achtzig Kilos] glaube ich nicht, dass Peter **das/so viel**
of eighty kilos believe.1SG I not that Peter that/that.much
wiegt.
weigh.3SG
lit.: ‘Of eighty kilos, I don’t believe that Peter weighs that much.’
- c. *Von [vorsichtig] glaube ich nicht, dass Peter immer **so** fährt.
of careful think.1SG I not that Peter always thus drive.3SG
lit.: ‘Of carefully, I don’t think that Peter always drives thus.’

Crucially, this restriction to individuals holds despite the fact that these languages usually have proforms for other semantic types. Consequently, in non-resumptive anaphoric contexts, the pronouns can be used:

- (91) a. Du ein Arschloch? Nein, das bist du nicht.
you an asshole no, that be.2SG you not
‘You an asshole – no, I don’t think you are one (lit.: that).’
- b. Achtzig Kilo, das habe ich tatsächlich noch nie gewogen.
eighty kilos that have.1SG I indeed still never weigh.PTCP
‘Eighty kilos, that much I have never weighed.’
- c. Sehr vorsichtig, so fährt Peter immer.
very careful thus drive.3SG Peter always
‘Very carefully – Peter always drives like that.’

As I have already discussed in section 3.2.4 above, the restriction to individuals as antecedents is a general property of resumption even though it is not fully understood.⁵⁵

-
- (i) a. Von [Zürich] weiß ich, dass da das Wetter gut is.
of Zurich know.1SG I that there the weather good be.3SG
‘Of Zurich, I know that the weather is good there.’
- b. Vom [Mittelalter] weiß man, dass die Menschen damals gottesfürchtig
of the Middle.Age know.3SG one that the people then pious
waren.
be.PST.3PL
‘Of the Middle Age, one knows that people were pious then.’

This is arguably due to the fact that these proleptic objects are referential expressions.

⁵⁵ Note that one cannot derive the restrictions from the selectional requirements of the matrix preposition as it is only a case marker that would not be necessary with other semantic types,

4.4.5 Restricting prolepsis

It was shown in section 4.3.1 above that prolepsis is possible with just about any matrix predicate. This may suggest that prolepsis is completely unrestricted. However, this is not quite correct. The correct generalization seems to be that prolepsis is possible with verbs that take a CP-complement (finite or non-finite). This accounts for the following asymmetry:

- (92) a. das [Bild], von dem ich fürchte, dass alle lachen, wenn ich
 the picture of which.DAT I fear.1SG that all laugh.3PL when I
 es zeige
 it show.1SG
 'the picture of which I fear that everyone laughs when I show it'
- b. ??das [Bild], von dem alle lachen, wenn ich es zeige
 the picture of which.DAT all laugh.3PL when I it show.1SG
 lit.: 'the picture of which everyone laughs when I show it'

In (92-b), the coreferential pronoun is located in an adjunct clause that modifies the matrix clause headed by an intransitive verb. The result is ungrammatical. Once the adjunct clause is embedded under a verb taking a complement clause as in (92-a), a grammatical sentence obtains.

One therefore has to specify (by a general rule) that verbs taking a CP-complement can optionally take a CP whose head is specified for requiring a silent (base-generated) operator in its specifier. To capture the restriction, I propose that certain C-heads (e.g., *that*) can optionally carry a feature requiring a base-generated operator in their specifier which triggers predicate abstraction. This can be best implemented by the feature types proposed in Abels (2012). Consequently, these C-heads bear the feature [$u\text{Pred}_T$].⁵⁶ Note that similar lexical spec-

which are either not DPs (manners) and therefore do not need Case or, in the case of amounts, could be licensed by semantic Case. Importantly, the examples in (90) do not improve without the preposition.

An alternative would be to try to derive the restriction to individuals from predication, under the assumption that subjects of predication have to be referential entities, cf., e.g., Lappin (1984: 243–244). The subject-predicate relationship is then essentially interpreted as a topic-comment structure, where the same semantic restrictions obtain. However, given that there are also derived predicates of amounts/degrees as in comparatives and amount/degree relatives, it is not obvious that this is sufficient.

56 If one wants to adhere to the assumption that all complements and specifiers must be introduced by structure-building features, one can assume that the rule that introduces the feature [$u\text{Pred}_T$] also adds a structure building feature to the selecting V (which is, however, not linked to a theta-role).

ifications are necessary for other predication constructions like *tough*-movement, cf. Landau (2011: 796–798). Such lexical specifications also accommodate the fact mentioned in 4.3.1 above that prolepsis in Dutch nowadays occurs with a much wider range of verbs than a few centuries ago: As a consequence of the grammaticalization of the construction, a property that was restricted to a few lexical items has become a general property of verbs selecting a sentential complement.

Predicative CPs can thus only occur in certain – lexically restricted – environments. Importantly, this also illustrates an important difference between truly predicative structures like prolepsis and mere aboutness relationships: At first sight, prolepsis (in German) also seems possible with other prepositions, especially *bei* ‘at’, a preposition that can be used for local relations but also to express aboutness like ‘as far as X is concerned’. Crucially, *bei*-PPs differ from the *von*-PPs in that they are not restricted to predicates taking a CP-complement. For instance, replacing *von* with *bei* in (92-b) leads to a perfectly well-formed sentence.

- (93) das [Bild], **bei** dem alle lachen, wenn ich es zeige
 the picture at which.DAT all laugh.3PL when I it show.1SG
 lit.: ‘the picture at which everyone laughs when I show it’

Furthermore, aboutness phrases do not require a coreferential element:

- (94) Wobei ich bei Twilight finde, dass die Filme besser sind, als die
 PRT I at Twilight find.1SG that the movies better be.3PL than the
 Bücher.
 books
 ‘Although, I think concerning Twilight that the movies are better than the
 books.’⁵⁷

The same holds for other aboutness prepositions like *hinsichtlich* and *bezüglich* both meaning ‘concerning’. This shows that these constructions express a mere aboutness relationship between an individual and a proposition. Propositional clauses (as opposed to predicative clauses) only need to be interpreted as being about the topic/the individual, a pragmatic requirement that can be met without a coreferential element.⁵⁸ The same difference can be observed between hanging topics and left-dislocation, cf. Landau (2011: 806–810):

⁵⁷ <http://schreiberwald-und-lesewinkel.phpbb8.de/viewtopic.php?t=228&p=7628>, accessed August 29, 2016

⁵⁸ Nevertheless, this is frequently the case because a statement about X often involves X as a participant.

- (95) a. As for John, something terrible happened (to him).
 b. John, something terrible happened *(to him).

Before concluding this chapter, I will briefly discuss prolepsis in other languages and possible extensions of the analysis developed here to other, similar constructions.

4.5 Possible extensions

In this section, I will briefly summarize information about prolepsis in other languages and related constructions for which a prolepsis analysis seems viable. Towards the end, I will discuss *tough*-movement in some detail because its properties match those of prolepsis to a large extent. I will argue against previous approaches and propose instead that the predication & ellipsis approach pursued here should be extended to *tough*-movement as well.

4.5.1 Prolepsis in other languages

The majority of properties described for prolepsis in German and Dutch can also be found in other languages, which suggests that the predication & ellipsis analysis proposed here can be extended to these languages as well. However, given that information about prolepsis in other languages is rather scarce, closer investigation would be needed before this conclusion can definitely be drawn. None of the sources listed in the following paragraphs includes an very detailed analysis of prolepsis so that the viability of alternatives cannot be assessed.

The most explicit source is Davies (2005), who analyzes prolepsis in English and Madurese (an Austronesian language of Indonesia). He mentions the following properties: The proleptic object is unambiguously located in the matrix clause, a coreferring pronominal element (possible null)/a variable is obligatory, the pronominal/variable can bear any grammatical relation, the construction is insensitive to locality constraints, the proleptic object does not bear a theta-role in any obvious sense, there are semantic restrictions on the proleptic object, viz., it must be referential and opaque idioms are ruled out, and the construction is productive, viz., occurring with many predicates that take a clausal complement. For more information about English, see also Lappin (1984: 250, fn. 10), Massam (1985: 180–185), Farkas (1988: 54), Branigan & MacKenzie (2002: 392) and Landau (2009).

Largely the same properties are documented for Japanese in Tanaka (2002) and Takano (2003: 806–811, 822). Interestingly, while the former argues for a raising analysis, the latter explicitly argues for a prolepsis analysis (in addition, Japanese seems to have two different prolepsis constructions, one where the object bears nominative case and one where it bears accusative case). Korean behaves like Japanese, cf. Yoon (2007), who, however, argues in favor of an analysis where the embedded topic ('major subject') raises into the matrix clause. It seems, though, that most of the facts described also follow under the predication-analysis proposed here. Resumptive prolepsis in French, recall the *dont*-relatives that end in a pronoun mentioned in example (4-b) above (in the non-relative variant, the proleptic object is governed by the functional/genitival preposition *de*), are discussed, e.g., in Godard (1988), Tellier (1991: 96–98) and Koopman & Sportiche (2009). Again, the properties are the same as in the previous languages. Information about other languages is rather scarce. Landau (2011: 808) shows that the proleptic object in Hebrew is governed by a preposition ('about'), that a variable/pronoun is obligatory and that it can have any grammatical relation. Goodluck & Stojanovic (1996) and Bošković (2009) show that in Serbo-Croatian *za koga*-relatives, a coreferential pronoun is obligatory and that the construction is not sensitive to locality. Similar properties are reported for Slovene in Hladnik (2015: 128–131).

The major properties of prolepsis thus seem to cluster, which is what we expect given the analysis proposed in this chapter. Perhaps the clearest (and potentially most puzzling) area of variation is productivity: Indeed, it seems that in some languages, the construction only occurs with a small number of verbs. An example may be the *za koga*-relatives in Serbo-Croatian, cf. Goodluck & Stojanovic (1996), Bošković (2009) and the corresponding construction in Slovene, see Hladnik (2015). In French, on the other hand, *dont*-relatives occur with a relatively large class of verbs (essentially with propositional attitude verbs), cf. Godard (1988) and Koopman & Sportiche (2009). In German, Dutch and Madurese, the class of verbs that occur with prolepsis is even larger, being restricted only by the requirement that they take a CP-complement. Perhaps, the variation documented in the literature is also the result of different empirical methods. Some speakers of German might spontaneously reject prolepsis with some of the verbs in (23). However, with appropriate contextualization (as shown by the naturally occurring examples), prolepsis with such verbs is absolutely felicitous. It remains to be seen, whether similar observations could hold for Serbo-Croatian. To some extent, the variation could also be lexical, which is corroborated by the observation in Hoeksema & Schippers (2012) that in the history of Dutch, prolepsis not only became more frequent but also shows an increase in the number of verbs that it occurs with.

Languages with prolepsis can additionally differ with respect to the following properties: First, the proleptic object also occurs as a direct (accusative) object of the matrix verb in some languages, e.g., in Japanese and Korean (see the references above), in Nez Perce, cf. Deal (2016a), in Ancient Greek and Latin, cf. Fraser (2001), in Biblical English, cf. Massam (1985: 180–181) and in Middle Dutch, cf. van Koppen et al. (2014).⁵⁹ In Madurese, the proleptic object can often either appear as a PP or as a bare NP (in which case it is frequently referenced by the voice system of the language, see Davies 2005: 648, 652), suggesting that it can also receive Case from the matrix verb. Second, in some languages, there is a very prominent ex-situ variant that occurs much more frequently and with more verbs than the in-situ variant (thus unlike in Serbo-Croatian, where there does not seem to be much of a difference). Examples are relative clauses in French, German and Dutch, where the proleptic variant is an almost fully grammaticalized alternative to long relativization.

4.5.2 Similar constructions

In this subsection, I will briefly address constructions that bear close similarities to prolepsis and for which an analysis along the lines proposed in this chapter may therefore be viable. I will first discuss instances of finite raising to object and subject before looking at prolepsis-based reanalyses of long A'-movement.

4.5.2.1 Finite raising

In many languages one finds what seems to constitute finite Exceptional Case Marking; i.e., the subject of a finite complement clause appears with accusative (or absolutive) case, cf., e.g., Massam (1985: 87–88) for a list of languages. Here is an example from Modern Greek, cf. Kotzoglou & Papangeli (2007: 111):

- (96) o petros ithele [ti maria] na traghudhai oli mera
 the Peter.NOM wanted.3SG the Maria.ACC SBJV sing.3SG all day
 'Peter wanted Maria to sing all day long.' *Modern Greek*

The construction is similar to prolepsis in many respects: First, there is little evidence that the object is an argument of the matrix verb (even though Kotzoglou &

⁵⁹ van Koppen et al. (2014) propose an analysis where the proleptic object is a hanging topic base-generated in the left-periphery of the embedded clause that is affected by exceptional Case-marking by the matrix verb. However, in my view they do not show conclusively that the proleptic object really is within the complement clause.

Papangeli 2007 argue for some kind of control analysis). Secondly, we find similar semantic restrictions (such as the impossibility of opaque idioms). Third, syntactically, the accusative object occupies a complement position in the matrix clause and there is solid evidence that it has not raised from the embedded clause. Fourth, extraction from finite exceptional Case marking (ECM) is blocked. Where the construction in Greek differs from prolepsis as described above is that the matrix object has to be related to the subject of the complement clause. Other grammatical relations are not possible, and the construction is not unbounded. Clearly, while base-generation of the object in the matrix clause seems straightforward, the null operator analysis from above has to be modified to account for these properties. One obvious possibility is to assume that the C-head of the complement clause attracts and probes for a nominative goal. Furthermore, to derive the clause-boundedness, one has to stipulate that intermediate C-heads cannot bear this feature. A technical implementation can look as follows: First, we need a formal distinction between final and intermediate movement triggers, which is independently needed anyway, see Georgi (2014, to appear). Unbounded movement can then be blocked if the feature triggering predicate abstraction can only be of the terminal (= criterial) type, while triggers for other movement types need not be similarly restricted and therefore can lead to unbounded/successive-cyclic movement. Thus, in addition to a featural distinction between final and non-final movement steps, we also need intermediate movement steps to be differentiated depending on the nature of the final landing site, viz., the flavored edge features of Abels (2012). Prolepsis of this type will thus be clause-bound, and the sensitivity to Case correctly picks out embedded subjects (to avoid a Condition C violation, the attracted element must be a pronominal operator, see section 4.5.2.3 below). Other cases of finite ECM arguably require a slightly different analysis. In most of the languages described by Massam (1985), as in prolepsis, raising is not restricted to subjects but can involve objects and obliques as well. But as opposed to prolepsis, the construction is not unbounded, it is restricted to constituents of the immediately embedded clause. For such languages, one can posit an attracting C-probe that is not Case-sensitive.⁶⁰

60 Similar restrictions are found in languages with long-distance agreement as in Pasamaquoddy, Innu-aimûn and Tsez, cf. Bruening (2001), Polinsky & Potsdam (2001) and Branigan & MacKenzie (2002). In these languages, the matrix verb agrees with a constituent (not necessarily the subject) of the complement clause. Furthermore, this constituent often or obligatorily (depending on the language) bears a topic interpretation. However, the authors (Bruening 2001: 9–10, Polinsky & Potsdam 2001: 614–620, Branigan & MacKenzie 2002: 398–395) explicitly argue against a prolepsis analysis. Instead, they propose (essentially adopting the analysis of Massam 1985) that the “object” that is agreed with is moved (sometimes covertly) to a high A’-

Another construction that is similar to prolepsis is raising to subject from finite clauses, also known as *copy-raising*, as, e.g., in Turkish, cf. Moore (1998). Here is an example from English copy-raising:

(97) John looks like he is intelligent.

There is quite some evidence that the subject position is non-thematic (although the issue is contested and one has to distinguish two types of copy-raising, see Landau 2009, 2011 and Řezáč 2011). The matrix subject displays similar semantic restrictions like the proleptic object (it must be of type ⟨e⟩ and displays obligatory wide-scope, cf. Řezáč 2011: 252) so that it is likely to be base-generated in the matrix clause. Furthermore, the *like*-clause is a barrier for extraction (Rooryck 2000: chapter 2, ex. 43b), indicating the presence of an A'-dependency. Finally, while there is no scope reconstruction (Potsdam & Runner 2001), there is reconstruction for variable binding and Principle A, see Fuji (2005). Like finite ECM, copy-raising seems to be restricted to constituents of the immediately embedded (finite) clause, i.e., the construction is not unbounded. This requires that the probe which triggers predication be of the terminal type. Given that there is a resumptive, one can assume that C has an Agree probe as in the proposals on island-sensitive resumption, see section 3.1.1.1 above. Depending on the language, the probe may be further restricted to target only constituents with a certain case: While in English, the subject of (non-thematic) copy-raising must be related to the embedded subject, other languages such as Haitian Creole (Deprez 1992) are more liberal and allow the matrix subject to be related to non-subjects in the complement clause as well. With these modifications the predication analysis can thus also be extended to copy-raising; see also Rooryck (2000: chapter 2) and Řezáč (2011) for similar views. For copy-raising in German, see Salzmann (2006a: 289–290).⁶¹

position of the embedded clause where it is accessible for Agree with the matrix verb. Convincing evidence against a matrix clause representation of the “raised object” comes from scope facts, e.g. in Tsez: The object does not interact with matrix clause elements; for instance, it does not behave like a clause-mate of the subject.

For other cases of long-distance agreement a prolepsis analysis seems straightforward, see the data discussed in Polinsky (2003: 283–290) and Bobaljik (2008: 317–317, fn. 25), which suggest that the relationship between the pronominal proxy in the matrix/embedding clause and the putative controller of long-distance agreement is unconstrained. However, the cases discussed by Polinsky differ from the type of prolepsis analyzed in this chapter in that the (putative) controller of long-distance agreement can be a referential expression; this is remarkable given that it is commanded by the pronominal proxy; nevertheless, no Principle C violation obtains.

61 Prolepsis also plays an important role in Koopman & Sportiche (2009), who propose that French pseudo-relatives, exceptional ECM-constructions and long-distance subject extraction involve a predication structure similar to prolepsis. (i) illustrates a pseudo-relative:

4.5.2.2 Prolepsis-based reanalyses of long A'-movement

In recent work, Bošković (2007a), Schneider-Zioga (2009) and den Dikken (2009, 2010), have proposed prolepsis(-like) reanalyses of what looks like successive-cyclic movement through SpecCP. The original motivation for these analyses is more theoretical than empirical: Bošković (2007a) proposes a theory of successive-cyclic movement where only the final movement step to the landing site is feature-driven, while intermediate movement steps via phase edges are not (rather, they are driven by Greed, viz., properties of the moving phrase). Similarly, den Dikken (2010) argues that long-distance movement only makes a stopover in SpecvP, while movement to SpecCP is always terminal. Both proposals run into difficulties when confronted with the large bulk of evidence in favor of successive-cyclic movement via SpecCP (see Georgi 2014: chapter 2 for an overview). For those cases where an operator triggers Agreement in every SpecCP, Bošković (2007a) proposes, citing unpublished work by Cédric Boeckx, that what looks like successive-cyclic movement actually involves iterative prolepsis: There is strictly local movement in every clause with empty operators in non-final clauses and the contentful phrase in the final clause; the operators in non-final clauses are bound by the immediately superior operator (essentially the same assumption is made in Schneider-Zioga 2009):

(98) $[_{CP} Op_i t_i [_{CP} Op_i t_i [_{CP} Op_i t_i]]]$

den Dikken (2009, 2010) proposes that such cases involve iterative full concordial scope marking, a variant of scope marking whereby all syntactic and phonological features of the *wh*-phrase in SpecCP are copied onto the scope marker in the matrix clause. The phrase in SpecCP then undergoes deletion at PF to allow for linearization. This creates the illusion of successive-cyclic movement. Given these assumptions, the Irish English sentence in (99-a) receives the analysis in (99-b):

- (99) a. Who did Mary claim did they meet?
 b. $[_{CP} (Sco+FF_{DP})=who\ did\ Mary\ [_{VP}\ claim\ [_{CP}\ DP_{wh}\ did\ they\ meet\ DP_{wh}\]]]$
-

- (i) J' ai vu [Jean] qui embrassait Marie.
 I have.1SG see.PTCP John who kiss.PST.3SG Mary
 'I saw John kiss Mary.'

French

It is proposed that the head noun and the relative clause form a small clause with *Jean* as the subject and the RC as the predicate. They argue that the head of the relative is not an argument of the matrix verb. Furthermore, the object shows the familiar semantic restrictions such as an obligatory *de re* reading and incompatibility with non-referential idiom chunks, which would be unexpected if it were a normal matrix object.

Applied iteratively, this process creates the illusion of long successive-cyclic movement. For critical assessments of these proposals, see Abels (2012: 51–58) and Georgi (2014: 89–90; 206, fn. 7/8).

A more convincing case for a prolepsis reanalysis of long A'-movement is the Case-switch construction in Hungarian, cf. den Dikken (2009: 11–14). The following example illustrates *wh*-movement (Case switch also occurs with long focus raising and contrastive topics):

- (100) hány lány-t akar-sz hogy eljöjjenek?
 how.many girl-ACC want-2SG.INDF that PREV.come.3PL
 'How many girls would you like to come?' *Hungarian*

On den Dikken's analysis, the *wh*-phrase is generated in the matrix clause and agrees with the matrix verb (which thus shows the so-called indefinite conjugation), thereby receiving accusative case. The gap in the embedded clause is analyzed as a (resumptive) *pro* because unlike traces, silent pronouns allow for notional/semantic agreement, i.e., plural agreement instead of singular agreement that otherwise obtains with quantified antecedents (despite the fact that they are notionally plural). More evidence for resumption comes from the fact that some speakers also allow for an overt pronoun, and even epithets are possible, cf. Gervain (2009: 703). Resumption is thus an indicator of prolepsis. If the "extracted" phrase is related to a non-subject position, the resumptive is optionally overt in the case of direct objects and obligatorily overt with oblique objects, which cannot be *pro*-dropped. The accusative Case on the fronted phrase remains unaffected by the grammatical function of the resumptive, though. The construction is similar to prolepsis in German/Dutch in that it is unbounded and does not display any movement effects such as island-sensitivity (see Gervain 2009: 696–697) and in that the fronted constituent is subject to semantic restrictions: It cannot form an (opaque) idiom together with the embedded verb (Szűcs 2013) and cannot be non-referential (Gervain 2009: 704). The main difference with respect to prolepsis in German/Dutch seems to be that there are more lexical restrictions and there is no in-situ construction (Peter Szűcs informs me that it is marginally acceptable if the verb is stressed). There is a similar construction with the proleptic object appearing in an oblique Case, cf. Jánosi (2013: 77–78; 80–81), but den Dikken (2009: 12–13) and Gervain (2009: 693) argue that it should be kept separate. What remains unclear in these approaches is how the base-generated DP is licensed and why it has to undergo A'-movement. Under the predication analysis proposed in this chapter, most of the properties of the construction fall out automatically (the fact

that fronting of the object is obligatory in Hungarian and not just preferred as in German remains to be explained).⁶²

4.5.2.3 *Tough-movement*

Prolepsis also bears significant similarities to *tough*-movement as in (101):

(101) John is easy to please.

The construction presents a challenge not too different from that posed by prolepsis: The matrix subject is semantically related to the object position of the embedded verb. It seems thus, that it has been raised from object to subject position. While such an analysis was entertained in the early days of generative grammar, it was abandoned at least after Chomsky (1977), not the least because the moved constituent would end up bearing two cases. At that time, the predication analysis was developed: Null operator movement in the complement clause turns it into a predicate. It combines with the adjective to form a complex predicate and then assigns a theta-role to the base-generated subject. Řezáč (2006) provides an updated version within the Agree-framework of Chomsky (2000) et seq.

A'-movement in the complement clause is well-motivated: First, the dependency is unbounded, (102-a), but sensitive to locality, (102-b), see Hicks (2009: 542):

- (102) a. A guy like John is hard to imagine any woman believing she could marry ____.
- b. ??A guy like John is hard to imagine any woman wondering why she would agree to marry ____.

Secondly, this movement creates an island for extraction, see Řezáč (2006: 307–309) for discussion of the various factors involved:

(103) *[How intelligent]₂ is John₁ easy [Op₁ to think of/regard ____₁ as ____₂]?

Furthermore, it licenses parasitic gaps, see Hicks (2009: 542). The predication analysis also accounts for the necessity of a variable, see Cinque (1990: 153):

(104) *This book is tough for the students to pass the exam.

⁶² There is a variant of the Case-switch construction where one finds obligatory formal agreement on the lower verb. Since it shows movement effects, it is either analyzed as involving movement from the embedded clause with the DP receiving two cases or as an instance of (concordial) scope marking. See Jánosi (2013: chapter 4/5) for an overview.

So far, the facts would be compatible with base-generation of the *tough*-subject in the matrix clause. However, the *tough*-subject can be reconstructed into the complement clause (and not just below the matrix clause experiencer), as shown by the following pair illustrating reconstruction for variable binding and Principle A, from Mulder & den Dikken (1992: 310, note 8):

- (105) a. [Pictures of himself_i nude] are tough for me [to think that any man_i would like ____].
 b. [Pictures of his_i wife nude] are tough for me [to think that any man_i would show his friends ____].

The following pair from Pesetsky (2013: ex. 43b/d) shows that c-command is required in the reconstruction of Principle A, thus ruling out logophoric binding:⁶³

- (106) a. [This side of herself_i] was tough [for John to get Mary_i to deal with ____].
 b. *[This side of herself_i] was tough [for John to get Mary_i's father to deal with ____].

These facts cannot be captured by the traditional operator movement analysis as it provides no means to make the content of the *tough*-subject available inside the operator clause. Instead, the facts suggest that there is a representation of the *tough* subject within the embedded clause. At first sight, these facts may favor approaches where there is movement from the embedded clause. If nothing else is said, this implies a derivation in violation of improper movement. This is most obvious in the proposal by Brody (1993), which is largely adopted in Hartman (2011a,b) and Longenbaugh (to appear), where there is A'-movement from the theta-position in the complement clause to SpecCP of the operator clause followed by A-movement to the matrix subject position:

- (107) John₁ is easy [_{CP} ____ to please ____].

⁶³ It is sometimes (wrongly) claimed (Řezáč 2006: 273) that there is no reconstruction into the operator movement clause. It is indeed the case that most of the examples in the literature (cf., e.g., Mulder & den Dikken 1992: 308) only show binding by the experiencer, but as the examples in (105) show, this is probably accidental. The tendency to use cases where the experiencer is the binder has to do with the fact that the deep embeddings needed to construct examples like (105) are independently disfavored in *tough*-movement. For another example that unambiguously shows reconstruction into the operator clause, see Lasnik & Stowell (1991: 701, ex. 42). See also Poole et al. (2016) for the opposite claim, viz., that there is no reconstruction of bound variables and anaphors in *tough*-movement whatsoever.

As discussed in subsection 4.4.4, improper movement was traditionally ruled out by Principle C of the binding theory: In (107), the trace left behind by A' -movement gets bound from an A-position later on. According to Brody (1993: 8–9), the derivation in (107) is assumed to be licit because – by stipulation – the variable only needs to be A-free in the domain of its operator. Given that the trace in SpecCP counts as an operator, no Principle C violation obtains. Intermediate A' -traces in ungrammatical improper movement contexts as in **John₁ seems t₁ Mary saw t₁*, however, do not count as operators so that the structures are correctly ruled out by Principle C (however, note that if the intermediate trace is not an operator, it is unclear why the lowest trace should qualify as a variable).

A somewhat different implementation can be found in Hornstein (2001: 108–113). He proposes a sideward movement derivation whereby the complement CP is treated as an adjunct from which the *tough*-subject is moved to the internal argument position of the matrix adjective before the adjunct is combined with it (i.e., it moves to an unconnected phrase marker). It is thus assumed that the *tough*-subject also receives a theta-role in the matrix clause. Movement to SpecCP is triggered by *wh*-features of the type found in relative clauses (which by assumption can be freely inserted):

- (108) [TP [TP John₁ is [AP John₁ easy]] [CP [DP wh John]₁ [TP pro to please [DP wh John]₁]]].

A Principle C violation is avoided here because the CP containing the variable is adjoined to matrix TP and thus is outside the c-command domain of *John*. Other cases of (true) improper movement are still ruled out because they obtain in complements, where there is c-command between the antecedent and the variable.

A variant of this derivation can be found in Hicks (2009), who argues that the *tough*-subject originates within a complex DP, as a complement of the null operator N. The complex DP then moves to the edge of the CP-complement and the *tough*-subject subextracts and A-moves from there to the matrix subject position to get Case/satisfy the EPP:

- (109) John₂ is easy [CP [DP D [NP Op [DP John]₂]]₁ to please [DP D [NP Op [DP John]]₁]].

Since two distinct movement chains are involved, improper movement is not violated here.⁶⁴ Ruling out improper movement derivations in other contexts (e.g., in hyperraising) can be done by means of selection: Only certain predicates select C-

⁶⁴ At least in the descriptive sense that A-movement may not follow A' -movement. Because of the two separate chains involved, Hicks' proposal is also compatible with the improper move-

heads that trigger terminal operator movement; only with those can subsequent subextraction by A-movement create a second independent chain.

While these movement approaches provide a means to capture the reconstruction effects in a straightforward way, they are confronted with a number of independent serious problems that eventually argue against a direct movement account:

The major problem for the approach by Brody (1993) – apart from the improper movement violation – is that it incurs a violation of the Activity Condition: In his derivation, the *tough*-subject receives Case both from the embedded verb and matrix T. While the Activity Condition is sometimes rejected (e.g., Nevins 2004), it still remains a very useful condition to rule out other instances of improper movement such as hyperraising (**John seems likes Mary*), cf., e.g., Richards (2008b) for discussion. At least given the fact that English normally does not tolerate multiple Case-checking, a direct movement analysis as in Brody (1993) remains problematic.

The discussion in Řezáč (2006: 291–293) shows that the approach by Hornstein (2001) fails as well: There is solid evidence that the complement CP cannot be merged as an adjunct given the lack of entailment relations and the necessity to control the PRO in the complement clause (but the CP may be extraposed during the derivation). Furthermore, the (limited) possibility of idiom chunks in the matrix subject position tends to argue against its being thematic.

The analysis by Hicks (2009) avoids a violation of the Activity Condition (and, of course, improper movement) by splitting the movement into two separate chains. However, there remains one serious general objection: The derivation involves a blatant violation of the Condition on Extraction Domains (Huang 1982)/the freezing principle (Wexler & Culicover 1980). As discussed in Abels (2007), *wh*-movement followed by A-subextraction is strongly ungrammatical:

(110) *Oscar₁ was asked [how likely __₂ to win]₁ it was __₁.

Unfortunately and surprisingly, this issue is not addressed in the paper.

Finally, there are arguments against all three movement approaches: Like prolepsis, *tough*-movement only shows selective reconstruction effects: First, there is no reconstruction for Principle C, as shown in (111-a). Crucially, the lack of Condition C effects persists even if reconstruction is independently required, e.g., for variable binding, see (111-b):

ment account by Müller (2014a). However, since a copy of the antecedent is required inside the complement-CP to account for reconstruction effects, it is not clear why this type of derivation should not be ruled out by Principle C.

The selective reconstruction pattern is thus exactly the same as in prolepsis. The direct movement approaches have little to say about those. The Principle C facts are not addressed; as for scope, Hicks (2009: 553) argues that A-movement generally fails to reconstruct for scope and accounts for this by proposing that only the NP-complement reconstructs, while the D-head remains in its surface position. However, as discussed in Fleisher (2013), it is not generally correct that A-movement does not reconstruct so that the question remains why *tough*-movement should be different in this respect. Hartman (2011b: 137) stipulates that *tough*-movement does not leave copies; while this may explain the absence of scope reconstruction and Condition C effects, it leaves reconstruction for Principle A and variable binding unaccounted for.⁶⁷

Arguably the most devastating argument against the (in-)direct movement approaches comes from the following movement paradox involving a categorial mismatch: As noted in Wilder (1991: 123), there are instances of *tough*-movement where the *tough*-subject is a CP, but this CP cannot occur in the putative base-position inside the operator-clause:

- (116) a. [For him to be top of the class] is hard to believe __.
 b. *I cannot believe for him to be top of the class.

Since *believe* takes a non-finite TP-complement rather than a *for*-CP-complement, (116-a) cannot result from movement of the *tough*-subject from the operator clause to the matrix subject position.

In conclusion, then, approaches to *tough*-movement that posit (indirect) movement from the operator clause to the matrix subject position fail.⁶⁸

⁶⁷ The status of idiom reconstruction in *tough*-movement is somewhat unclear in that some idioms seem acceptable, while others do not. See Řezáč (2006: 291) and Landau (2011: 801–803) for data and references.

⁶⁸ There is one rather prominent argument in the literature in favor of movement from the embedded clause, viz., the intervention effects discovered in Hartman (2011a,b). He notes that once sufficient care is taken, it can be shown that the presence of the experiencer argument is incompatible with raising of the *tough*-subject (to avoid the confound of *for*-PPs acting as subjects of the non-finite complement, Hartman uses experiencers that are introduced by different prepositions):

- (i) a. It is important (to Mary) to avoid cholesterol.
 b. Cholesterol is important (*to Mary) to avoid.

Since *tough*-movement patterns with raising to subject in several languages in this respect, it seems plausible to attribute the ungrammaticality of (i-b) to an intervention effect incurred by A-movement across the experiencer (for the lack of such an effect in English subject raising, see Hartman 2011b).

The predication analysis developed here with ellipsis playing a crucial role has the right properties to account for the pattern in *tough*-movement: The *tough*-subject is base-generated in the matrix clause, where it is Case-licensed. Semantically, it is licensed by predication: It satisfies the open slot of the derived predicate created through operator movement. The reconstruction effects are best captured by means of ellipsis between the *tough*-subject and a position within the Op-clause. This can be done if the matching analysis of relative clauses is extended to *tough*-movement: The operator in the complement clause takes an NP-complement which is deleted under identity with the *tough*-subject. Vehicle change then accounts for the absence of Principle C effects.

Further evidence for ellipsis comes from the categorial mismatch in (116): The movement paradox dissolves if no movement is involved. Under an ellipsis approach, the complement of *believe* in (116-a) can be the TP *him to be top of the class*; since there is no semantic difference, this is a mismatch which can be handled by ellipsis if identity is computed semantically (the precise analysis of this case is not trivial; presumably, *believe* takes an operator as its complement which also hosts the TP *him to be top of the class*). As for the size of ellipsis, reconstruction of specifiers seems possible to some extent, cf. (117), adapted from Mulder & den Dikken (1992: 308) (but see Hicks 2009: 552 for a different judgment):

However, this reasoning has been called into question. On the one hand, Bruening (2014) argues, among others on the basis of the observation that adjuncts have the same effect as experiencers, that the ungrammaticality of such examples is not due to intervention but rather due to independent word order restrictions. On the other, Keine & Poole (2016, to appear), argue that the ungrammaticality of (i-b) is indeed an intervention effect, but not one that is syntactic. After showing that the effect also obtains in constructions that do not involve A-movement, they argue instead that the effect is semantic in nature: Introducing an experiencer PP into these constructions creates an irresolvable semantic-type mismatch, which stems from the embedded clause being a null-operator structure.

Yet another different perspective is taken in Longenbaugh (to appear), who argues that PPs do not generally intervene in *tough*-movement. Rather, he proposes that the ungrammaticality of *tough*-movement with prepositions like *on* and *to* is due to the fact that their predicates take a clausal external argument that thus c-commands the experiencer PP. As a consequence, *tough*-movement is blocked because the *tough*-subject inside the clausal subject is inaccessible to the probe on matrix v (due to the lack of c-command). If correct, this argues against both the syntactic (Hartman 2011a,b) and the semantic (Keine & Poole 2016, to appear) intervention accounts. Importantly, if the structural assumptions in Longenbaugh (to appear) are correct, the ungrammaticality is also expected under the predication approach pursued here since it is unclear how a predicative infinitival clause could be interpreted in the position of the external argument. Since the composite A-/A'-movement approach in Longenbaugh (to appear) can neither account for the selective reconstruction effects nor the categorial mismatch discussed above, the predication approach emerges as the only approach that can deal with all the facts.

- (117) [His_i car] is tough for me to believe that any German_i would be willing to part with ___.

While this could motivate a structure like that proposed in Hicks (2009), where the null operator takes a DP-complement, I will assume, as for prolepsis (see 4.4.2 above), that the relevant specifiers originate DP-internally as proposed in the analysis of paycheck pronouns by Elbourne (2001: 271–274). Consequently, there is no problem to reconstruct specifiers of D.

The lack of scope reconstruction and the restriction to individuals follow from the pronominal nature of the operator, which in turn is necessary to avoid a Principle C violation, see Řezáč (2006: 301):^{69, 70}

Browning (1987) was the first to argue that the null operator is actually *pro*. Cinque (1990) and Řezáč (2006) propose that the gap is in fact a base-generated pronoun that is A'-bound by a base-generated operator or just the C-probe. To

69 Cinque (1990: 193, fn. 33) argues for *tough*-movement and parasitic gaps that the restriction to individuals follows from the fact that the trace in these constructions is actually a null resumptive and that null resumptives only exist for DPs. But given that overt proforms do exist for other semantic types, it is far from obvious that their null counterparts should not exist. In fact, Engdahl (2001) shows that Swedish has non-NP-parasitic gaps and relates this to the fact that Swedish has (overt) definite proforms for these types, the parasitic gaps then involving their silent counterparts.

70 Given that the tail of the A'-chain is a pronoun/pronominal, it may come as a surprise that prolepsis as in (76-a) and *tough*-movement in (ii) below are subject to (secondary) strong crossover. The SSCO case in (76-a) is in fact unproblematic because there the violation occurs because of (the trace of) a quantifier contained within DP; the embedded clause will contain a structure along the lines of

(i) he_j likes [the [mother of who_i]]

While the entire DP is pronominal, the (trace of) the quantifier inside the NP-complement is not, so that a Condition C violation ensues. Note that vehicle change is blocked here because, as discussed in section 2.5.3.2, it generally cannot apply to quantifiers, cf. Safir (1999: 605).

More challenging are crossover effects in *tough*-movement, see Cinque (1990: 150), Řezáč (2006: 313) and Lasnik & Stowell (1991: 709):

(ii) *Sam_i was easy [Op_j to tell him_i [PRO_i to make Mary visit e_j]].

Normally, SCO effects are thought to obtain because the tail of the A'-dependency counts as a variable/R-expression subject to Principle C. This is unexpected if the trace is pronominal, because binding of the empty category by PRO/*him* should be licensed by Principle B. In fact it should not make a difference whether the pronominal variable is bound by the R-expression *Sam* or by PRO/*him*.

This suggests that not all SCO effects can be subsumed under Principle C, a conclusion reached, e.g., in Cinque (1990: 150), Postal (2004), and Řezáč (2006: 313).

Recall that the SCO effects in resumption discussed in section 3.1.2.4 raise similar questions. Even under the NP-ellipsis theory, the resumptive essentially remains a pronoun so that it is not obvious that it should trigger Principle C effects.

capture the locality difference between prolepsis (insensitive to locality) and *tough*-movement (locality-sensitive), I will assume that, while there is only semantic binding in prolepsis, Agree and movement are involved in *tough*-movement. Since silent pronouns in theta-positions in a language like English may seem ill-motivated (as assumed in the approaches by Cinque 1990 and Řezáč 2006), the assumption of a moving pronominal operator with an NP-complement that undergoes deletion under identity strikes me as more adequate (but an approach where the pronominal is treated as a resumptive with a silent NP-complement that has to undergo Agree, e.g., as in Adger & Ramchand 2005, would be nearly indistinguishable).⁷¹

In conclusion then, the predication approach proposed in this chapter proves superior to existing accounts of *tough*-movement. This is crucially related to the ellipsis operation, which derives the selective reconstruction effects. Neither the (in-)direct movement approaches (Brody 1993, Hornstein 2001, Hicks 2009), which predict reconstruction across the board, nor the base-generation accounts (Cinque 1990, Řezáč 2006), which predict the absence of reconstruction altogether, can deal with this pattern straightforwardly.

4.6 Summary

In this chapter, I have argued that prolepsis, which functions as an alternative to long A'-movement in German and a number of other languages, involves a rather complex indirect A'-dependency. This is a remarkable result because at first sight, it seems straightforward to treat the proleptic object as an argument of the matrix verb that is anaphorically referred to by a coreferential pronoun in the complement clause: There is solid evidence that the A'-variant with the proleptic object *ex-situ* is related to an *in-situ* construction where the proleptic object is in the middle-field and clearly occupies an A-position. Furthermore, the construction is completely insensitive to locality constraints and allows for a wide range of anaphoric elements reminiscent of regular anaphoric dependencies. However, upon closer inspection, this simple approach cannot be upheld. First and foremost, the construction is extremely productive in that it is compatible with basically any verb that takes a CP-complement so that it is unlikely that the prolep-

⁷¹ Note that nothing in principle rules out overt resumption in *tough*-movement (e.g., in languages that have resumptive pronouns). At least in English there is a preference for silent moving operators when their landing site is in a non-finite clause, cf. Landau (2011: 797), but it is conceivable that base-generated operators occur in other languages. W.r.t. overtness of the variable, recall also the discussion about copy-raising, which involves a finite clause.

tic object is actually an argument of the matrix verb. Furthermore, the fact that a coreferential pronoun is obligatory is also unexpected if the proleptic object is semantically licensed in the matrix clause. In fact, there is strong evidence for the presence of an A'-dependency: The complement clause is opaque for extraction, suggestive of a weak island, and the proleptic object can reconstruct into the complement clause. The coreferential element is consequently analyzed as a resumptive. What makes the construction particularly challenging is that the reconstruction effects are partial: While there is reconstruction for anaphor and variable binding, there is no reconstruction for Principle C and scope. I have argued that all these partially conflicting properties can be reconciled by means of a predication analysis whereby ellipsis plays a crucial role: As in null operator constructions such as *tough*-movement, an operator turns the complement clause into a predicate. The proleptic object, which is base-generated in the matrix middle-field, saturates the open slot of the predicate. The relationship between the proleptic object and the operator is established by means of ellipsis, which accounts for the absence of Condition C effects; the operator, which, given the island-insensitivity of prolepsis, is base-generated, is related to the resumptive pronoun via ellipsis as well, the resumptive is thus reanalyzed as a definite description with a silent NP-complement, which provides a means of capturing reconstruction effects under base-generation. Finally, the obligatory presence of a (resumptive) pronoun follows from binding theory: Given that the position of the variable is c-commanded by the proleptic object from its base-position, a pronoun prevents a Principle C violation. As a side-effect, reconstruction for scope as well as semantic types other than individuals are blocked.

5 Swiss German relative clauses

In this chapter, I will analyze the syntax of resumptive pronouns in restrictive relatives in Swiss German. Resumption in Swiss German is interesting for several reasons: First, together with Alemannic dialects of German more generally, it is one of the few varieties within Germanic that make productive and grammatical use of resumptive pronouns (to my knowledge, the only other language/variety with systematic use of resumption is Yiddish, see Lowenstamm 1977 and Prince 1989). Second, resumption is only productive in relativization but marginal in *wh*-movement, topicalization and comparatives. Third and most importantly, the distribution of gaps and resumptives produces a pattern that is crosslinguistically rare (though not unique, see, e.g., Willis 2000 for Welsh and Guillot 2006 for Breton) and theoretically challenging:

While resumptives are restricted to oblique positions in local relativization, they occur across the board in long-distance movement. Furthermore, local and long-distance relativization differ in other respects such as the dialectal variation in dative relativization, the sensitivity to the matching effect and the range of resumptive elements. I will take these asymmetries to indicate that we are effectively dealing with two different constructions. While local relativization is standard resumptive relativization, I will argue that long-distance relativization should be re-analyzed as an instance of prolepsis, a somewhat more abstract version of the construction discussed in chapter 4, thereby adapting ideas by van Riemsdijk (2008). The similarities between the two constructions are so striking that they should receive a unified analysis.

The second theoretically intriguing issue is the distribution of gaps and resumptives in local relativization. I will argue that this pattern is best understood if relative clauses in Swiss German involve Case attraction, adapting ideas from Salzmann (2006b) and Georgi & Salzmann (2014, 2017). This will also provide an explanation of why resumptives are distributed so unevenly across the different A'-dependencies. Blocking resumptives from the relevant contexts will be the most difficult task. I will propose that this is due to a preference to check A'-related probes by means of Internal Merge rather than External Merge; this preference is to be interpreted as a parameter and is modeled by means of the ranking of constraints that penalize External Merge and Internal Merge, respectively. This approach in terms of parameters is supported by crosslinguistic variation in the preference for gaps or resumptives in A'-dependencies.

This chapter is organized as follows: I will first present the basic data, including the form of relative clauses and the distribution of resumptives. In section two, I will discuss movement diagnostics such as locality and reconstruction effects

and argue in favor of a base-generation approach to resumption. In section three, I will introduce matching effects in resumption. After concluding that local and long-distance relativization must receive different analyses, I will tackle the distribution in local relativization in section four. Section five presents a prolepsis analysis of long-distance relativization and section six summarizes the major results.¹

5.1 Basic facts

5.1.1 The general form of relative clauses in Swiss German

In what follows, I will exemplify the properties of Swiss German relative clauses largely by means of data from Zurich German (ZG), the High Alemannic dialect spoken in the Canton of Zurich, which is the author's native language. As far as the syntax of relative clauses is concerned, most Swiss dialects as well as the Alemannic varieties spoken in Liechtenstein, in Vorarlberg, in Southern Germany and in the Alsace (Martin & Lienhart 1899: Vol 2, 778–779) pattern the same. There is just one major area of variation, viz., the treatment of dative objects, a fact addressed in section 5.1.2.1 below.²

Swiss German restrictive relative clauses are introduced by an invariant particle *wo*, which appears as *won* before vowel-initial clitics.³ There are no relative pronouns as in Standard German (except in certain adverbial relations, see section 5.1.2.2 below); the operator is thus silent.⁴

1 I will not discuss non-restrictive/appositive relative clauses as they do not differ from restrictives with respect to the distribution of resumptives.

Free relatives are constructed like *wh*-questions: There are overt relative operators drawn from the series of *wh*-pronouns, which are only compatible with gaps. See van Riemsdijk (1989) for discussion.

2 Note that Swabian differs from the other Alemannic varieties in that it allows relative pronouns in oblique relations; furthermore, resumptives seem to be confined to R-pronouns, see Fischer & Pfeleiderer (1904: Volume 6.1, 910–912).

3 This is an instance of the more general process of *n*-epenthesis in ZG, see Weber (1987) and Ortmann (1998) for details.

4 One does find relative pronouns in some of the dialect literature before 1900. Whether they were part of the dialect grammar or just the result of the influence of the written language is contested, cf. the discussion in Dalcher (1963) and Hodler (1964), Hodler (1969: 240–245). In the contemporary language, they are never used for subjects and direct objects, rarely for datives and occasionally in prepositional relations. They tend to be regarded as alien to the dialect (given a certain dialect purism that can also be found in some of the traditional descriptions, cf., e.g.,

Here is an example from Zurich German illustrating local relativization of a direct object (a still very useful source for Zurich German is the traditional description by Weber 1987):⁵

- (1) Das isch s Buech, won i geschter poschtet ha.
 this be.3SG the book PRT I yesterday buy.PTCP have.1SG
 ‘This is the book I bought yesterday.’

The particle *wo*, which does not occur in other clause-types like declarative clauses and (indirect) questions, is best analyzed as a relative complementizer: Not only is it invariant, it also fails to pied-pipe:

- (2) *de Maa, mit won i gredt ha
 the man with C I speak.PTCP have.1SG
 ‘the man I talked to’

Importantly, the relative *wo* needs to be distinguished from two further homophonous *wos*: the relative-*/wh*-adverb meaning ‘where’, see section 5.1.2.2 below, and the temporal complementizer meaning ‘when’.⁶

In certain grammatical relations, a resumptive pronoun appears instead of a gap. Like regular unstressed pronouns in the language, the resumptives are nor-

Weber 1987), but it is not clear what this implies for the grammar of those speakers who do use relative pronouns. Interestingly, in their description of Appenzell German, Sonderegger & Gademmer (1999) provide one example with a relative pronoun next to one with a resumptive for the relativization of obliques.

5 Zurich German – like all Swiss dialects – is merely a spoken language and has no strict orthography. In my transcription, I roughly follow the spelling guidelines of Dieth (1938) and Dieth & Schmid-Cadalbert (1986). I thus generally indicate vowel and consonant length by single (short) or double letter (long), respectively. Given that this is a morpho-syntactic study, I chose not to indicate the vowel qualities (open/closed) except for some of the e-sounds. The letter ⟨e⟩ is used for [e], as well as for schwa, which exclusively appears in reduced syllables, and for [ɛ], while ⟨ä⟩ exclusively corresponds to [æ]. Since the contrast between [e] and [ɛ] is neutralized in many contexts, I usually write it as ⟨e⟩, except in cases where [ɛ] is long, e.g., in (g)gëë ‘give(n)”; here, ⟨ë⟩ corresponds to [ɛ]. There are further minor deviations from the spelling guidelines that serve to facilitate word recognition. Some words will therefore appear in a spelling that is closer to the Standard German conventions. The spelling of other Swiss/Alemannic dialects will be taken over from the cited sources.

6 See Brandner & Bräuning (2013) for arguments that the particle derives from the equative particle *so*. *Wo*-based relatives are not confined to the Alemannic area, see, e.g., Weise (1916) and Fleischer (2004: 224–226): They are, e.g., found in Bavarian relatives, cf. Bayer (1984), where, however, *wo* can be combined with relative pronouns, and in various West- and East-Middle German varieties. *Wo* is also found in certain spoken registers of the standard language. One such instance is *wo*-based long-distance relativization discussed in section 5.5.2 below.

mally fronted to the Wackernagel position or cliticized onto C or, in the case of oblique objects, onto the governing preposition.⁷

The distribution of resumptive pronouns in local relativization follows the accessibility hierarchy by Keenan & Comrie (1977) in that gaps are obligatory for subjects and direct objects,⁸ while all other functions lower on the hierarchy require resumptives, viz., indirect/dative objects,⁹ prepositional/oblique objects,

7 Swiss German has three series of pronouns (strong, weak, clitic). Not all person Case combinations show the full differentiation. While there is always a robust difference between strong and weak, the distinction between clitic and weak can be clear in some person Case combination, e.g., with 3rd person singular neuter *əs* vs. *s*, rather subtle in others, e.g., in the 3rd person singular masculine nominative *ən* vs. *in*, and sometimes even absent as, e.g., in the 3rd person singular feminine *si*.

The resumptives are usually drawn from the clitic series; evidence for clitic-hood comes from the following properties: They show the familiar prosodic restructuring such as liaison, coalescence/deletion; in the second person they show clitic-doubling, see section 5.2.4.2; finally, they are subject to ordering constraints that differ from those of full DPs; see Weber (1987: 155–162) for details.

If the resumptive pronoun is within a PP and the antecedent is neuter and inanimate, the R-pronoun *də* (*dr* before vowels) ‘there’ appears instead of the regular pronoun. See Müller (2000) for more details about the distribution of R-pronouns in German:

- (i) s Tuech, won i s Broot *(**dr**)uf gläit ha
 the cloth C I the bread there.on put.PTCP have.1SG
 ‘the cloth that I put the bread on’

Note that the switch from personal pronoun to R-pronoun is not peculiar to resumption but obtains quite generally in anaphoric relations.

Resumptive pronouns tend to be rare in non-Alemannic varieties of German. Other German varieties with *wo*-relatives tend to allow resumptives only in oblique/prepositional contexts and if the resumptive appears as an R-pronoun, see, e.g., Weise (1916: 67).

8 I am only aware of a single exception in the literature: Hodler (1969: 247) reports for Bernese German that direct objects can be exceptionally relativized by resumptives; however, he only provides a single example with local relativization:

- (i) Vo de schönste Bursche sy s gsi, wo me **se** nit gnue het
 of the handsome.SUP lads be.3PL they be.PTCP C one them not enough have.3SG
 chönne aluege.
 can.INF look.at.INF
 ‘They were some of the most handsome lads that one could not stop looking at.’

The other examples that Hodler provides involve long relativization, where resumptives are required across the board, see below. Unfortunately, it does not become clear to what extent local DO-resumptives are possible. Given that all other sources report that DO-relatives require gaps, this example has to be taken with caution.

9 Importantly, dative resumptives occur with both structural and inherent datives and thus different semantic roles (goals, recipients, beneficiaries, possessors, experiencers). According to Wegener (1985, 1991) and Gallmann (1992), the following datives count as structural: subcategorized

PP-adjuncts,¹⁰ the object of comparison,¹¹ as well as possessors;¹² see Weber (1987) and van Riemsdijk (1989):¹³

datives of ditransitive verbs like ‘give’ or ‘promise’ (thus those with Dat > Acc base order but not verbs with Acc > Dat base order), subcategorized datives of unaccusative verbs like ‘please’ (which have Dat > Nom base order) as well as (non-subcategorized) benefactive and pertinence datives that occur with both transitive and unaccusative verbs (and require Dat > Acc and Dat > Nom order, respectively). (i) illustrates relativization of a dative experiencer and thus a structural dative, cf. Suter (1992: 183):

- (i) dä Maa, won em alles abverheit isch
 the man C he.DAT everything fail.PTCP be.3SG
 ‘the man who failed in every respect’

Datives selected by unergative verbs are usually classified as inherent. Nevertheless, they also require resumptives:

- (ii) Das isch de Bueb, won i *(em) ghulffe ha.
 this be.3SG the boy C I he.DAT help.PTCP have.1SG
 ‘This is the boy I helped.’

See section 5.4.2.2 below for the theoretical implications.

The empirical situation is more complex with datives in that there is dialectal/inter-speaker variation with respect to the obligatoriness of resumptives, see section 5.1.2.1. Furthermore, dative resumptives are subject to a matching effect, see section 5.3.

Next to nominative and accusative, which are morphologically identical except in the personal pronoun paradigm, dative is the only oblique Case; the genitive has been lost in Alemannic varieties (apart from some residues in Highest Alemannic varieties).

10 PPs containing resumptives can optionally be extraposed like PPs more generally in the language.

11 The resumptive must be strong after the comparative particle/preposition *als*. This fact holds independently of resumption.

12 There is reason to believe that the actual resumptive in possessive relativization is a small *pro* in SpecDP, while the possessive pronoun is an agreement element, see Salzmann (2011) and section 5.2.4.2 below. West-Flemish, which otherwise does not have resumptives, treats possessor relativization exactly the same, see Haegeman (2003, 2004). Possessors can also be rendered as PPs headed by *von* ‘of’. Consequently, they also require a resumptive in relativization:

- (i) Das isch de Schüeler, won i geschter de Vatter von *(em) käne gleert
 this be.3SG the pupil C I yesterday the father of he.DAT get.to.know.PTCP
 ha.
 have.1SG
 ‘This is the pupil whose father I met yesterday.’

13 To obtain minimal pairs, the antecedent is always masculine singular; choosing an antecedent with different phi-features would not affect the distribution of gaps and resumptives. Furthermore, to keep the examples short, the external head functions as a predicate in the matrix clause. External and internal relations can in principle be freely combined. In some contexts, viz., in matching contexts, however, they affect the choice of relativization strategy, see section 5.3 below.

- (3) a. Das isch de Maa, wo (*er) immer z spaat chunt.
 this be.3SG the man C he always too late come.3SG
 ‘This is the man who is always late.’ SU
- b. Das isch de Maa, won i (*en) geschter gsee ha.
 this be.3SG the man C I him yesterday see.PTCP have.1SG
 ‘This is the man I met yesterday.’ DO
- c. Das isch de Bueb, won i *(em) es Velo versproche ha.
 this be.3SG the boy C I he.DAT a bike promise.PTCP have.1SG
 ‘This is the boy I promised a bike.’ IO
- d. Das isch de Maa, won i von *(em) es Buech überchoo
 this be.3SG the man C I from he.DAT a book receive.PTCP
 ha.
 have.1SG
 ‘This is the man that I got a book from.’ P-object
- e. Das isch de Maa, won i mit *(em) is Kino ggange bi.
 this be.3SG the man C I with he.DAT in.the movie go.PTCP be.1SG
 ‘This is the man that I went to the movies with.’ P-adjunct
- f. Das isch de äinzig Bueb i de Klass, won i gröösser bin als
 this be.3SG the only boy in the class C I bigger be.1SG than
 *(ëër).
 he
 ‘This is the only boy in my class that I am bigger than.’ OComp
- g. Das isch de Schüeler, won i geschter *(sin) Vatter
 this be.3SG the pupil C I yesterday his father
 käne gleert ha.
 get.to.know.PTCP have.1SG
 ‘This is the pupil whose father I met yesterday.’ Poss

Importantly, gaps and resumptives are thus in complementary distribution in local relativization. Things are slightly more complex with infinitival complements. While resumptives in oblique positions are as obligatory as in local relativization, resumptives for subjects and direct objects are sometimes possible. Gaps are required if the infinitive is restructuring, i.e., if the entire infinitival construction behaves like a monoclausal structure (see, e.g., Wurmbrand to appear for a recent overview of verb clusters and restructuring). In Swiss German, bare infinitival complements are obligatorily restructuring and are thus incompatible with SU/DO resumptives. Infinitival complements with *z* ‘to’ are usually either optionally restructuring (as with *probiere* ‘try’) or non-restructuring (as with *beduure* ‘regret’). If the restructuring variant of a *z*-infinitive is forced, SU/DO-resumptives are ruled out (scrambling of *Petra* entails restructuring):

- (4) de Artikel, won i de Petra probiert ha (*in) z erchlääre
 the article C I the.DAT Petra try.PTCP have.1SG it to explain.INF
 ‘the article that I tried to explain to Petra’

With non-restructuring *z*-infinitives, both gaps and resumptives are possible:

- (5) es Buech, won i beduure (s) noni gläse z haa
 a book C I regret.1SG it not.yet read.PTCP to have.INF
 ‘a book that I regret not having read yet’

The following example from a traditional description also illustrates DO-resumption with a non-restructuring predicate cf. Hodler (1969: 247):

- (6) usdrück, wo si e rächte Möntsch schämti, sen
 expressions C self a decent human.being be.embarrassed.SBJV.3SG them
 i ds Muu z’ näh
 in the mouth to take.INF
 ‘expressions that a decent human being would be embarrassed to utter’

I will come back to infinitival complements in 5.5.3.2 below.

Abstracting away from non-restructuring infinitives, it is rather surprising – given the distribution in local relativization – that resumptives become obligatory in *all* grammatical functions once relativization crosses a finite clause-boundary:¹⁴

- (7) a. Das isch de Maa, won i gsäit ha, dass *(er) immer z
 this be.3SG the man C I say.PTCP have.1SG that he always too
 spaat chunt.
 late come.3SG
 ‘This is the man that I said is always late.’ embedded SU
- b. Das isch de Maa, won i gsäit ha, dass i *(en) no nie
 this be.3SG the man C I say.PTCP have.1SG that I him never
 gsee ha.
 see.PTCP have.1SG
 ‘This is the man that I said I had never seen before.’ embedded DO

¹⁴ For examples in traditional descriptions, see, e.g., Binz (1888: 63) and Staub et al. (1881f.: XV, 16, top).

- c. Das isch de Bueb, won i gsäit ha, dass i *(em) es Velo
 this be.3SG the boy C I say.PTCP have.1SG that I he.DAT a bike
 versproche ha.
 promise.PTCP have.1SG
 ‘This is the boy that I said I had promised a bike.’ embedded IO
- d. Das isch de Maa, won i gsäit ha, dass i von *(em) es
 this be.3SG the man C I say.PTCP have.1SG that I from he.DAT a
 Buech überchoo ha.
 book receive.PTCP have.1SG
 ‘This is the man that I said I had got a book from.’ embedded P-object

Importantly, resumption is essentially restricted to headed relative clauses. *Wh*-movement and topicalization, which involve overt antecedents, thus occur with gaps, both in local and long extraction, irrespective of D-linking. These constructions thus essentially behave as in the standard language (apart from the fact that long extraction is generally more acceptable in Swiss German, recall section 4.1):

- (8) a. Wäär₁/[wele Maa]₁ isch ___₁/*er geschter choo?
 who/which man be.3SG he yesterday come.PTCP
 ‘Who/which man came yesterday?’ SU
- b. Wäär₁/[wele Maa]₁ hät d Susi ___₁/*en küsst?
 who/which man have.3SG the Susi him kiss.PTCP
 ‘Who/which man did Susi kiss?’ DO
- c. Wem₁/[welem Maa]₁ hät d Susi ___₁/*em es Buech
 who.DAT/which.DAT man have.3SG the Peter he.DAT a book
 ggë?
 give.PTCP
 ‘Who/which man did Susi give a book to?’ IO
- (9) a. Wäär₁/[wele Maa]₁ tänksch, dass ___₁ geschter choo isch?
 who/which man think.2SG that yesterday come.PTCP be.3SG
 ‘Who/which man do you think came yesterday?’ SU
- b. Wäär₁/[wele Maa]₁ tänksch, dass d Susi ___₁ küsst hät?
 who/which man think.2SG that the Susi kiss.PTCP have.3SG
 ‘Who/which man do you think that Susi kissed?’ DO
- c. Wem₁/[welem Maa]₁ tänksch, dass d Susi ___₁/*em es
 who.DAT/which.DAT man think.2SG that the Peter he.DAT a
 Buech ggë hät?
 book give.PTCP have.3SG
 ‘Who/which man do you think that Susi gave a book to?’ IO

- (10) a. [Dëë Maa]₁ isch ___₁/*er geschter choo.
 this man be.3SG he yesterday come.PTCP
 ‘This man came yesterday.’ SU
- b. [Dëë Maa]₁ hät d Susi ___₁/*en küsst.
 this man have.3SG the Susi him kiss.PTCP
 ‘This man, Susi kissed.’ DO
- c. [Dem Maa]₁ hät d Susi ___₁/*em es Buech ggëe.
 this.DAT man have.3SG the Peter he.DAT a book give.PTCP
 ‘This man, Susi give a book to.’ IO
- (11) a. [Dëë Maa]₁ tänk i, dass ___₁ geschter choo isch.
 this man think.1SG I that yesterday come.PTCP be.3SG
 ‘This man, I think came yesterday.’ SU
- b. [Dëë Maa]₁ tänk i, dass d Susi ___₁ küsst hät.
 this man think.1SG I that the Susi kiss.PTCP have.3SG
 ‘This man, I think that Susi kissed.’ DO
- c. [Dem Maa]₁ tänk i, dass d Susi ___₁/*em es Buech
 this.DAT man think.1SG I that the Peter he.DAT a book
 ggëe hät.
 give.PTCP have.3SG
 ‘This man, I think that Susi gave a book to.’ IO

As mentioned above, free relatives are constructed like *wh*-movement and thus occur with gaps. In long-distance *wh*-movement and topicalization, subjects and direct objects sometimes allow for resumption as well, a fact also documented in Brandner & Bucheli Berger (to appear). I will come back to resumption in these other types of A'-movement (including comparatives) in section 5.4.2.5 below.

5.1.2 Further empirical details

To complete the empirical picture, I will discuss two further aspects of Swiss German relativization, viz., variation in dative resumption and adverbial relativization.

5.1.2.1 Variation in dative relativization

According to the description in the previous subsection, indirect objects in Swiss German relativization require resumptives. As we will see presently, the empirical situation is more complex: On the one hand, there seems to be dialectal variation in that not all Alemannic dialects require dative resumptives; on the other hand,

even within dialects where dative resumptives are reported to be obligatory, there is pervasive inter- and even intra-speaker variation.

The claim that dative resumptives are obligatory can be found in numerous traditional descriptions of Swiss German dialects, see, e.g., Bossard (1962: 141) on Zug German, Fischer (1989: 141) on Lucerne German, Hodler (1969: 246) and Marti (1985) on Bernese German, Sonderegger & Gadmer (1999) on the dialect of Appenzell, Binz (1888: 61) and Suter (1992: 183) on Basel German and finally Weber (1987: 299) on Zurich German.

A study of (old and new) dialect dictionaries leads to the same result: Dative resumptives are taken to be obligatory. For reasons of space, I will mention only a few sources: Seiler & Heyne (1879: 317–318) on Basel German, Hunziker (1877: 300) on Argovian German, Tobler (1837: 449) on Appenzell German, Greyerz & Bietenhard (1976: 249) on Bernese German and Weber et al. (1983: 256) on Zurich German. Further sources can be found in Dalcher (1963: 127, fn. 29).

Interestingly, there are two sources that report gap relatives for dative relativization. The first one is a grammar of the Low Alemannic dialect spoken in Oberrotweil (Germany), which otherwise has the same resumptive system as the Swiss German varieties. The following examples illustrate relativization of DO, IO and OBL, see Noth (1993: 418–420):¹⁵

- (12) a. *Alli, wun em __ hab wellá machá, sí mr*
 All C he.DAT have.1SG want.PTCP make.INF be.3PL me.DAT
vrgroodá.
fail.PTCP
 ‘All (of them) that I wanted to make for him turned out bad.’ DO
- b. *Sáli Fírmaa, wu dr Sebb noch __ ebis schuldéd, hed*
 that firm C the Sebb still something owe.3SG have.3SG
scho wíder aagruáfa.
already again call.PTCP
 ‘That company to which Sebb still owes something has called again.’ IO

¹⁵ Something similar seems to hold for the variety spoken in Stahringen on Lake Constance as described in Stádele (1927) even though the description is not fully clear: He provides a gap example for an indirect object but notes that for possessors a construction based on a dative object is used (basically ‘whose wife left’ = ‘to whom the wife left’, thus a *dativus (in)commodi*). The dative resumptive that occurs in this context is described as optional.

- c. Dr áinzig, wu si vrhandlá míd **em**, ísch dr Aafiärer.
 the only.one C they negotiate.3PL with him be.3SG the leader
 ‘The only one with whom they negotiate is the leader.’ PP
Dialect of Oberrotweil (Germany)

The same pattern is reported for Glarus German in Bábler (1949: 59–60). All examples with dative relativization that he provides are constructed with gaps. Otherwise, the resumption system is the same as in Zurich German, with gaps for SU/DO and resumptives for more oblique relations. Here is an example with dative relativization:

- (13) Kännscht du der Bueb, ... wo me __de es Breimi gih het?
 know.2SG you the boy C one then a prize give.PTCP have.3SG
 ‘Do you know the boy to whom they then gave a prize?’ *Glarus German*

Importantly, the absence of dative resumptives in the dialects of Oberrotweil and Glarus cannot be related to the types of verbs used in these examples. Both Noth and Bábler list examples with structural and inherent datives, i.e., contexts which are claimed to require resumptives in the other Swiss varieties. In other words, crosslinguistically, both gap and resumptive are grammatical in the same environment. There is definitely no clear geographical pattern as the dialects are far apart from each other (the canton of Glarus is located in Central Switzerland, while Oberrotweil is located close to Freiburg im Breisgau; the distance between the two is approximately 190 kilometers.). It is rather unlikely that the only dialects that pattern identically with respect to dative relativization should be non-adjacent. Consequently, classical dialectal variation seems rather unlikely.

An important hint comes from the so-called *Idiotikon* (Staub et al. 1881ff.: XV, 13–14), a comprehensive dictionary of Swiss German dialects. The entry of the relative particle *wo* contains quite a few examples with dative relatives, some of which are constructed with a resumptive and some without. The examples belong to different dialects and are all taken from reliable written sources such as textbooks, grammatical descriptions and the traditional dialect literature. Crucially, there is no perfect correlation with the claims of the traditional descriptions concerning dative resumptives: The examples without dative resumptives belong to Bernese German, Appenzell German, Glarus German and Wallis (Valais) German, respectively. At least for Bernese and Appenzell German, this clashes with the descriptions mentioned above. The examples with dative resumptives come from the following dialects: Basel German, Bernese German, Zug German and Lucerne German, which is in accordance with the above-mentioned descriptions. For Bernese and Appenzell German, we thus have evidence that dative relatives can occur with both gaps and resumptives. The only sources where both variants are explicitly

mentioned are Dalcher (1963: 127), who mainly cites examples from the *Idiotikon*, and Hodler (1969: 246), who discusses Bernese German. Both regard gaps for datives as the exception but do not comment any further on the issue, i.e., whether this is an instance of variation or whether there are grammatical factors at work.

The data discussed so far suggest that dative resumption is not as robust as previously thought. This has been confirmed by two more recent studies, see Salzmann (2009a) and Salzmann & Seiler (2010). These studies show that not only do speakers of the same variety differ from each other in their use of dative resumptive pronouns, there is also a lot of variation within the grammar of an individual: Many speakers judged both the gap and the resumptive version grammatical in the same grammatical context, so that we may conclude that the use of dative resumptive pronouns is optional for this group of speakers. Importantly, the variation is restricted to short relativization of datives. In other positions, i.e., in the relativization of subjects, direct objects and complements of prepositions, we find a strict categorical distribution: either gap or resumptive but not both. Furthermore, in long-distance relativization, dative resumptives are required for all speakers.

Note that there is no evidence that the variation is related to sociolinguistic factors like age, sex, education, and so on. One cannot simply say that younger people are less likely to use dative resumptive pronouns. In fact, some of the sources in the *Idiotikon* mentioned above without dative resumptive pronouns are 50–100 years old. Conversely, a quick Google search reveals that dative resumptive pronouns do occur in communicative contexts which are most likely to be frequented by younger people like news forums, chat-rooms, and so on. Nor is it the case that the variation can simply be attributed to processing factors, for example, that the resumptive pronoun is dropped in sloppy speech or conversely that the resumptive pronoun is inserted to make the grammatical relations more explicit. Recall that gaps and resumptive pronouns for datives are found in very carefully written sources such as textbooks, grammatical descriptions, dictionaries or in the traditional dialect literature. It is thus highly unlikely that if a speaker uses both variants, one of the variants represents a performance error, quite apart from the fact that there would be no way of determining which of them is the grammatical variant and which one is the performance error. Furthermore, in the questionnaires, many informants explicitly marked both the gap and the re-

sumptive variant as grammatical.¹⁶ I thus conclude that there are speakers whose grammar allows both gaps and resumptives in the same environment.¹⁷

Importantly, while there may be optionality for some speakers in several environments, there are two grammatical contexts that bias the choice towards the gap variant for all speakers: First, gaps are required (or at least clearly preferred) in the matching context, i.e., if the head noun bears dative as well, see section 5.3 below. Second, resumptives are disfavored with inanimate/non-referential head nouns, a general property of resumption, recall section 3.1.2.5.¹⁸

5.1.2.2 Adverbial relatives

While there are no relative pronouns in Swiss German, it uses relative adverbs in the relativization of adverbial relations. As in English, the relative adverbs are identical to their *wh*-counterparts. They only occur with gaps (except for locative relatives, see below). The first pair illustrates reason and manner relatives:

16 The strongest argument against the performance argument normally comes from transparent geographical distribution, cf., e.g., Seiler (2004: 383). This is not the case in dative relativization and probably holds more generally for relativization strategies in the German language area, cf. Fleischer (2006: 233). However, see Salzmann & Seiler (2010), who point out that there is a dialectal pattern, albeit one based on preferences rather than categorical differences: The resumptive variant is more frequently preferred in Western dialects than in Eastern dialects.

17 Brandner & Bucheli Berger (to appear) report very low acceptability of dative resumptives in Baden-Württemberg. As the authors point out, this is arguably related to the fact that the relative pronoun variant is available in this area. Given that this is also the variant of the standard language, which has a strong influence on contemporary dialect speakers, it is not too surprising that many speakers choose the relative pronoun strategy rather than the resumptive strategy.

18 It is not a priori clear whether the two environments should be treated the same and whether the factors involved should be considered syntactic in a narrow sense. For some discussion of the second issue, cf. Salzmann (2009a: 153–154) and Salzmann & Seiler (2010). In what follows, I will treat the matching effect as a grammatical phenomenon. The influence of the semantics of the head noun, on the other hand, I will treat as a soft processing-related constraint given that the variable acceptability can plausibly be attributed to the difference to what extent speakers can construct a context-relevant set over which the negative quantifier can quantify. Note also that one can find several examples of dative resumptives with indefinite heads in traditional descriptions (cf., e.g., Hodler 1969: 246–247, Weber 1987: 299 and Fischer 1989: 429–430). In Staub et al. (1881ff.: XV, 13, 3b), there is even an example with a negatively quantified head, drawn from a novel from the 19th century.

- (14) a. De Grund, wurum er z spaat __ choo isch, hät er
 the reason why he too late come.PTCP be.3SG have.3SG he
 öis nöd wele verraate.
 us not want.INF tell.INF
 ‘He didn’t want to tell us the reason why he was late.’
- b. D Art, wie de Peter s Probleem __ glööst hät,
 the manner how the Peter the problem solve.PTCP have.3SG
 hät mi seer beiidruckt.
 have.3SG me very impress.PTCP
 ‘The way Peter solved the problem impressed me a lot.’

The third relative adverb that is found in Swiss German is *wo* ‘where’. It is used for both locative and temporal relations:

- (15) a. Da isch s Huus, wo de Peter __ wont.
 this be.3SG the house where the Peter live.3SG
 ‘This is the house where Peter lives.’
- b. Das isch e Ziit gsii, wo d Wält __ no in Ornig gsii
 this be.3SG a time be.PTCP where the world still in order be.PTCP
 isch.
 be.3SG
 ‘This was a time when the world was still in order.’

As observed in van Riemsdijk (2008: 231–239), the locative adverb can also be used for so-called aboutness relatives. Such relatives have a vague locative meaning (similar to English expressions *with this weather*) and express corollary circumstances:¹⁹

- (16) a. Das isch es Wätter, wo s sich nöd loont, de
 this be.3SG a weather where it self not be.worthwhile.3SG the
 Raase z mäije.
 lawn to mow.INF
 ‘This is the kind of weather where there is no point in mowing the lawn.’
- b. Das isch s Mäitli, wo s dihäi käi Stroom händ.
 this be.3SG the girl C they at.home no electricity have.PL
 lit.: ‘This is the girl that they don’t have any electricity at home.’

¹⁹ See Staub et al. (1881ff.: XV, 15, section 5), Fischer & Pfeleiderer (1904: 912) and Dalcher (1963: 127, section on genitive) for examples in traditional descriptions and Lehmann (1984: 222–223) and Murelli (2011: 185–186) for aboutness relatives in other languages.

- c. Das isch es Ehepaar, wo si d Hose aahät, ãr aber s
 this be.3SG a couple C she the pants wear.3SG he but the
 Gält verdient.
 money earn.3SG
 lit.: ‘This is a couple that she wears the pants, but he earns the money.’

Reason and manner relatives display two properties that cast doubts on the assumption that they are regular relatives.²⁰ First, in both, the adverb can co-occur with the declarative complementizer *dass* ‘that’:

- (17) a. De Grund, wurum dass er z spaat __ choo isch, hät
 the reason why that he too late come.PTCP be.3SG have.3SG
 er öis nöd wele verraate.
 he us not want.INF tell.INF
 ‘He didn’t want to tell us the reason why he was late.’
- b. D Art, wie dass de Peter s Probleem __ glööst hät,
 the reason how that the Peter the problem solve.PTCP have.3SG
 hät mi seer beiidrukt.
 have.3SG me very impress.PTCP
 ‘The way Peter solved the problem impressed me a lot.’

Second, unlike their *wh*-counterparts in matrix questions, they do not allow for low/long-distance construal. Only the short/high construal is possible:

- (18) a. de Grund, wurum du gsäit häsch, dass er z spaat
 the reason why you say.PTCP have.2SG that he too late
 choo isch
 come.PTCP be.3SG
 ‘the reason why you said he was late’ ✓high; *low
- b. d Art, wie du gsäit häsch, dass de Peter s Probleem
 the way how you say.PTCP have.2SG that the Peter the problem
 glööst hät
 solve.PTCP have.3SG
 ‘the way you said Peter had solved the problem’ ✓high; *low

20 A peculiar property that only holds for reason relatives is that – like their standard German counterparts – they can also occur without the *wh*-adverb:

- (i) Das isch de Grund, dass er z spaat choo isch.
 this be.3SG the reason that he too late come.PTCP be.3SG
 ‘This is the reason he was late.’

The first property is unexpected given that the complementizer used in relativization is normally *wo*. The second property may be expected given the observation in chapter 4 that there is no long relativization in Standard German and the fact that long-distance relatives in Swiss German require resumptives (which can be taken as an indication that long-distance relativization is prohibited in this variety as well, see section 5.5 below). What is crucial in the present context is that reason and manner relatives pattern with embedded *wh*-questions w.r.t. these two properties:

- (19) a. Ich wäiss nöd, wurum (dass) du gsäit häsch, dass er z
 I know.1SG not why that you say.PTCP have.2SG that he too
 spaat choo isch.
 late come.PTCP be.3SG
 ‘I don’t know why you said he was late.’ ✓high; *low
- b. Ich wäiss nöd, wie (dass) du gsäit häsch, dass de Peter
 I know.1SG not how that you say.PTCP have.2SG that the Peter
 s Probleem glööst hät.
 the problem solve.PTCP have.3SG
 ‘I don’t know how you said that Peter had solved the problem.’
 ✓high; *low

Since these adverbial relatives will not play any role in the remainder of this chapter, I will leave an investigation of why they behave like indirect questions for further research.

I will instead only discuss locative (and temporal) relatives. They are different from manner and reason relatives in that the complementizer *dass* seems impossible, while it can occur with *wo* in the corresponding embedded question:

- (20) a. Das isch s Huus, wo (??dass) de Peter __ wont.
 this be.3SG the house where that the Peter live.3SG
 ‘This is the house where Peter lives.’
- b. Ich wäiss nöd, wo (dass) de Peter __ wont.
 I know.1SG not where that the Peter live.3SG
 ‘I don’t know where Peter lives.’

Second, it seems that locative relatives, including aboutness relatives, allow for long-distance construal, suggesting long-distance A'-movement, cf. van Riemsdijk (2008: 229, 237):

- (21) a. Das isch s Huus, wo mer säit, dass de Peter __ wont.
 this be.3SG the house where one say.3SG that the Peter live.3SG
 ‘This is the house where one says that Peter lives.’
- b. Das isch es Wätter, won i finde, dass es sich __ nöd
 this is a weather where I find.1SG that it self not
 loont, de Raase z mäije.
 be.worthwhile.3SG the lawn to mow.INF
 ‘This is the kind of weather where I think there is no point in mowing
 the lawn.’

Third, locative relatives (but not aboutness relatives) can occur with a resumptive:

- (22) Das isch e Stadt, wo mer säit, dass **deet** d Mietene seer hööch
 this be.3SG a city where one say.3SG that there the rents very high
 sind.
 be.3PL
 ‘This is a city where one says that the rents are very high.’

Locative relatives are thus clearly special. I will come back to them in section 5.5.3.3 below.

5.2 Movement diagnostics

In this section, I will discuss diagnostics for movement in Swiss German relativization, with a focus on resumptive relatives. I will argue that the properties of resumption are best accounted for in terms of base-generation, mainly because resumption in Swiss German is insensitive to any kind of locality constraint. SCO effects and reconstruction effects can be found under resumption, but since they do not pattern with locality, little speaks in favor of movement. Other movement effects like parasitic gaps, the compatibility with ATB-contexts and cyclicity effects are unfortunately uninformative.

5.2.1 Locality

Resumptive relative clauses in Swiss German are insensitive to any kind of locality constraint, see van Riemsdijk (1989) for the original observation. Resumptives inside islands are thus considered to be fully grammatical. Importantly, resump-

tives occur across the board, i.e., they also obligatorily occur in subject and direct object position (and there is no variation in dative resumption).²¹

The first triple illustrates resumption in subject islands, (23-a), *wh*-islands, (23-b), and PPs within PPs (on this, recall section 4.3.4 and see section 5.4.2.1 below), (23-c):

- (23) a. Das isch de [Sportler], wo < d Biografie über *(in) > vil
 this be.3SG the athlete C the biography about him much
 Erfolg ghaa hät.
 success have.PTCP have.3SG
 lit.: 'This is the athlete that the biography about him had a lot of success.'
- b. Das isch d [Frau], won i nöd wäiss, < wurum de Hans
 This be.3SG the woman C I not know.1SG why the John
 *(ere) wett hälfe >).
 her.DAT want.3SG help.INF
 lit.: 'This is the woman that I don't know why John wants to help her.'
- c. Das isch de [Maa], won i < mit de Schwöschter von *(em) > i
 this be.3SG the man C I with the sister of him in
 d Schuel bi.
 the school be.1SG
 'This is the man with whose sister I went to school.'

The next triple illustrates island-insensitivity with a noun complement clause, (24-a), with a complex noun phrase involving a relative clause, (24-b), and an adjunct island, (24-c):

- (24) a. Das isch de [Politiker], wo d < Bhauptig, dass *(en) d Susi
 this be.3SG the politician C the claim that him the Susi
 küsst hät >), nöd stimmt.
 kiss.PTCP have.3SG not be.correct.3SG
 lit.: 'This is the politician that the claim that Susi kissed him is wrong.'

²¹ Note that some examples with relativization into islands can also be found in traditional descriptions, see, e.g., Noth (1993: 420) for *wh*- and CNPC-islands and the *wh*-island in (i) from Hodler (1969: 247, 6.):

(i) e Blick wo dä nid gwüsst het, wohi ne tische
 a look C he not know.PTCP have.3SG where him interpret.INF
 'a look that he did not know how to interpret'

- b. Das isch de [Autoor], wo d Susi < jedes Buech, won *(er)
 this be.3SG the author C the Susi every book C he
 schriibt), sofort chaufft.
 write.3SG immediately buy.3SG
 lit.: ‘This is the author that Susi immediately buys every book he
 writes.’
- c. Das isch de [Politiker], won i uusgwanderet bi, < wil
 This be.3SG the politician C I emigrate.PTCP be.1SG because
 *(en) d Susi küsst hät).
 him the Susi kiss.PTCP have.3SG
 lit.: ‘This is the politician that I emigrated because Susi kissed him.’

(25) shows that resumption can also void more than one strong island (contra the claim in Müller 2014b):

- (25) Das isch de [Studänt], wo de < Vorwurf, dass < d Aarbet, won *(er)
 This be.3SG the student C the allegation that the paper C he
 gschriibe hät,) es Plagiat isch,) all überrascht hät.
 write.PTCP have.3SG a plagiarism be.3SG all surprise.PTCP have.3SG
 lit.: ‘This is the student that the allegation that the paper that he wrote is
 a plagiarism surprised everyone.’

Resumptives can also occur in V2-relatives, which, like V2-clauses more generally, are barriers for extraction if extraction targets (or crosses) a V-final clause (cf. Müller & Sternefeld 1993: 497); see the following examples from Stalder (1819: 274), Dalcher (1963: 128) and Fischer (1989: 430), respectively (for another example, see Hodler 1969: 646):

- (26) a. vuwäge miim [Suh], won i gmeint haa, *(er) seig
 because of my son C I think.PTCP have.1SG he be.SBJV.3SG
 tod
 dead
 ‘because of my son, who I thought was dead’
- b. ne [Maa], wo mer gmäint hëäd, me chönnt (n)es Huus
 a man C one think.PTCP have.3SG one could.3SG a house
 ofn *(en) ue bouwe
 on him on build.INF
 ‘a man that one thought one could build a house on’
- c. [an], wo’ s haast, *(er) sei Schomacherlerling g’sii
 one C it say.3SG he be.SBJV.3SG shoemaker.apprentice be.PTCP
 ‘one who it is said was a shoemaker’s apprentice’

Finally, resumptives also occur in coordinated NPs:²²

- (27) a. Das isch de [Maa], won i *(inn) und *(sini) Muetter iiglade
 This be.3SG the man C I him and his mother invite.PTCP
 ha.
 have.1SG
 lit.: ‘This is the man that I invited him and his mother.’
- b. Das isch de [Typ], won i mit *(imm) und em Hans go
 This be.3SG the guy C I with him and the.DAT John to
 fische bi.
 fish.INF be.1SG
 lit.: ‘This is the guy that I went fishing with him and John.’

Corresponding *wh*-extractions are ungrammatical, with or without resumptives. For reasons that will become clear in 5.4.2.5 below, I will illustrate this by means of dative extraction. The following examples show the ungrammaticality of *wh*-extraction from a *wh*-island and a noun complement clause:

- (28) a. *[Welere Frau]₁ wäisch nöd, wurum de Hans __₁/ ere
 which.DAT woman know.2SG not why the John her
 wett hälffe?
 want.3SG help.INF
 lit.: ‘Which woman don’t you know why John would like to help her?’
- b. *[Welem Maa] stimmt d Bhauptig, dass __₁/ em s Susi
 which.DAT man be.true.3SG the claim that he.DAT the Susi
 gfalt, sicher nöd?
 please.3SG surely not
 lit.: ‘Which man is the claim that Susi likes him surely not true?’

The asymmetry is striking and thus strongly suggests that the syntax of *wh*-movement is different from the syntax of relativization.

²² As the second example shows, only one conjunct needs to contain a resumptive. This is different from coordination of VPs and larger constituents, where resumptives are only possible if the other conjunct also contains a resumptive or a gap, see Salzmann (2012b). For clausal coordination there thus seems to be a requirement that each conjunct contains a variable, which can be related to vacuous quantification or semantic symmetry. It is not clear to me why NP/DP-coordination should be different in this respect. Importantly, the possibility of having just one resumptive in DP-coordination is not a peculiarity of Swiss German; the same can be found in Hebrew, see Shlonsky (1992: 450), and Irish, cf. McCloskey (1990: 215).

5.2.2 Strong crossover effects

Strong crossover effects in gap relatives are straightforward: If an operator crosses a co-indexed pronoun, the result is ungrammatical:²³

- (29) *Das isch de Maa_i, won er_i ____i gern hät.
 this be.3SG the man C he like.3SG
 lit.: ‘This is the man_i who_i he_i likes.’

As discussed in section 3.1.2.4, the detection of crossover effects in resumption requires some care: One has to make sure that the pronoun that is putatively crossed cannot function as a resumptive. If it can, an alternative parse is possible with the first pronoun being the resumptive and the second pronoun being anaphoric. This is why the following examples are well-formed:

- (30) a. Das isch de Maa_i, won i em_i gsäit ha, dass er_i en
 this be.3SG the man C I he.DAT tell.PTCP have.1SG that he an
 Tubel isch.
 idiot be.3SG
 ‘This is the man_i who_i I told he_i was an idiot.’
 b. Das isch de Maa_i, won i glaube, dass er_i tänkt, dass en_i
 this be.3SG the man C I believe.1SG that he think.3SG that him
 niemert gern hät.
 no.one like.3SG
 ‘This is the man_i who_i I believe thinks no one likes him_i’

Fortunately, real SCO configurations can be established quite easily in Swiss German because matrix subjects and direct objects prohibit resumptives. Consequently, the alternative parse will not be available if the first pronoun is in one of these positions. The first pair illustrates this for local relativization:

- (31) a. *Das isch de Maa_i, won er_i über de Fründ von ere Kollegin
 this be.3SG the man C he about the friend of a.DAT colleague
 von em_i glachet hät.
 of he.DAT laugh.PTCP have.3SG
 lit.: ‘This is the man_i that he_i laughed about the friend of a colleague
 of his_i.’

²³ I will not discuss weak crossover effects because they are often taken to be absent in local A'-movement in German, although there is some disagreement, see Müller (1995: 165–167) for an overview of the literature.

- b. *Das isch de Bueb_i, won er_i sini_i Muetter gern hät.
 this be.3SG the boy C he his mother like.3SG
 lit.: ‘This is the boy_i who_i he_i likes his_i mother.’

Importantly, the deviance of these examples cannot be attributed to Principle B since corresponding non-relative examples are impeccable:

- (32) a. dass er_i über de Fründ von ere Kollegin von em_i glachet
 that he about the friend of a.DAT colleague of he.DAT laugh.PTCP
 hät
 have.3SG
 ‘that he_i laughed about the friend of a colleague of his_i’
 b. dass er_i sini_i Muetter gern hät
 that he his mother like.3SG
 ‘that he_i likes his_i mother’

Consequently, the deviance of the examples in (31) must be due to crossover. SCO effects are also found in long-distance movement:

- (33) a. *Das isch de Bueb_i, won er_i tänkt, dass d Susi en_i gern hät.
 this be.3SG the boy C he think.3SG that the Susi him like.3SG
 lit.: ‘This is the boy_i who_i he_i thinks that Susi likes him_i.’
 b. *Das isch de Maa_i, won i en_i devoo überzüügt ha,
 this be.3sg the man C I him there.of convince.PTCP have.1SG
 dass er_i tumm isch.
 that he stupid be.3SG
 lit.: ‘This is the man_i who_i I convinced him_i that he_i was stupid.’

Again, the corresponding non-relative sentences are fully grammatical:

- (34) a. dass er_i tänkt, dass d Susi en_i gern hät
 that he think.3SG that the Susi him like.3SG
 ‘that he_i thinks that Susi likes him_i’
 b. dass i en_i devoo überzüügt ha, dass er_i tumm isch
 that I him there.of convince.PTCP have.1SG that he stupid be.3SG
 ‘that I convinced him_i that he_i was stupid’

Finally, SCO effects also obtain if the resumptive is within an island:

- (35) a. *Das isch de Maa_i, won er_i < d Frau, won en_i geschter
 this be.3SG the man C he the woman C him yesterday
 verlaa hät,) vertüüflet.
 leave.PTCP have.3SG condemn.3SG
 lit.: ‘This is the man_i who_i he_i condemns the woman that left him_i.’
- b. *Das isch de Politiker_i, won i en_i gsee ha, < won er_i
 this be.3SG the politician C I him see.PTCP have.1SG when he
 s Gäld aagnoo hät).
 the money accept.PTCP have.3SG
 lit.: ‘This is the politician_i that I saw him_i when he_i took the money.’

In conclusion, then, once sufficient care is taken, SCO effects can be readily diagnosed in Swiss German resumptive relatives.

5.2.3 Reconstruction effects

Reconstruction effects obtain both with gap and resumptive relatives, the only exception being scope reconstruction, which is more restricted with resumptive relatives. I will first discuss local relativization before turning to reconstruction in long-distance relativization and reconstruction into islands. Scope reconstruction will be discussed separately towards the end of this section.

5.2.3.1 Reconstruction in local relativization

In what follows, I will go through the familiar reconstruction diagnostics. Each pair includes a gap and a resumptive relative. The first pair illustrates reconstruction for idiom interpretation (as has been pointed out repeatedly in this book, only transparent collocations are acceptable, recall the discussion from section 2.3.1.4):²⁴

- (36) a. D [Reed], [won er geschter __ gschwunge hät], hät mi
 the speech C he yesterday swing.PTCP have.3SG have.3SG me
 beiidrukt.
 impress.PTCP
 ‘The speech he gave yesterday impressed me a lot.’

²⁴ The idiom *e Reed schwinge*, lit. ‘swing a speech’ means ‘to give a speech’; *in es Fettnäppli trampe*, lit.: ‘to step into a fat bowl’, means ‘to put one’s foot in one’s mouth’.

- b. S [Fettnäpfli], [won i drii trampet bi], hett i
 the faux.pas C I there.in step.PTCP be.1SG have.SBJV.1SG I
 äigetli müese gsee.
 actually must.INF see.INF
 ‘I should have noticed the faux pas I made.’

The next pair illustrates reconstruction for variable binding (recall the provisos made in section 2.3.1.4.3):

- (37) a. D [Ziit vo sim_i Läbe], [wo jede_i __ wett vergässe], isch
 the time of his life C everyone want.3SG forget.INF be.3SG
 d Pubertät.
 the puberty
 ‘The time of his_i life that everyone_i wants to forget is puberty.’
- b. D [Ziit vo sim_i Läbe], [wo niemert_i gern drüber
 the time of his life C nobody with.pleasure there.about
 redt], isch d Pubertät.
 talk.3SG be.3SG the puberty
 ‘The time of his_i life that nobody_i likes to talk about is puberty.’

The following two pairs illustrate reconstruction for Principle A. All examples are constructed in such a way that they avoid the confound of a potential coreferential implicit PRO; recall the discussion in section 2.3.1.4.1 (note that R-pronouns are compatible with [inanimate] plural antecedents):

- (38) a. S [Spiegelbild vo siich_i], [wo de Peter_i __ a de Wand gsee
 the reflection of self C the Peter on the wall see.PTCP
 hät], hät en beunruigt.
 have.3SG have.3SG him disquiet.PTCP
 ‘The reflection of himself_i that Peter_i saw on the wall made him nervous.’
- b. S [Spiegelbild vo siich_i], [wo mi de Peter_i demit hät
 the reflection of self C me the Peter there.with have.3SG
 wele verzaubere], hät mi nöd beidruckt.
 want.INF enchant.INF have.3SG me not impress.PTCP
 ‘The reflection of himself_i that Peter_i wanted to enchant me with did not impress me.’

- (39) a. D [Bemerkige über siich_i], [wo de Hans_i __ ghöört hät],
 the remarks about self C the John hear.PTCP have.3SG
 händ em nöd gfale.
 have.3PL he.DAT not please.PTCP
 ‘John_i didn’t like the remarks about himself_i that he_i heard.’
- b. D [Bemerkige über siich_i], [wo de Hans_i devoo ghöört
 the remarks about self C the John there.of hear.PTCP
 hät], händ em nöd gfale.
 have.3SG have.3PL he.DAT not please.PTCP
 ‘John_i didn’t like the remarks about himself_i that he heard about.’

Given that we have repeatedly observed a lack of Condition C effects in relative clauses, it does not come as a surprise that we find the same lack in Swiss German relatives, both in gap and in resumptive relatives:

- (40) a. D [Naaforschige über de Peter_i], [won er_i mer __ hät
 the investigations about the Peter C he me.DAT have.3SG
 wele verschwiige], händ mi schockiert.
 want.INF conceal.INF have.3PL me shock.PTCP
 ‘I was shocked by the investigations about Peter_i that he_i wanted to
 conceal from me.’
- b. D [Naaforschige über de Peter_i], [won er_i mer devoo
 the investigations about the Peter C he me.DAT there.of
 verzelt hät], händ mi schockiert.
 tell.PTCP have.3SG have.3PL me shock.PTCP
 ‘I was shocked by the investigations about Peter_i that he_i told me
 about.’
- (41) a. Di [Verwandte vom Peter_i], [won er_i mer __ geschter
 the relatives of the Peter C he me.DAT yesterday
 vorgstellt hät], han i nöd sympatisch gfunde.
 introduce.PTCP have.3SG have.1SG I not likable find.PTCP
 ‘I didn’t like the relatives of Peter_i that he_i introduced me to yesterday.’
- b. Di [Verwandte vom Peter_i], [won er_i mer von ene
 the relatives of the Peter C he me.DAT of they.DAT
 verzelt hät], wett i nöd käne leere.
 tell.PTCP have.3SG want.1SG I not get.to.know.INF
 ‘I don’t want to meet the relatives of Peter_i that he_i told me about.’

Importantly, as in Standard German (recall section 2.5.3.5), the lack of Condition C effects cannot be due to the absence of reconstruction. Principle C effects remain

absent even if reconstruction is independently required, e.g., to ensure variable binding:

- (42) a. D [Naaforschige vo de Susi_i über sini_j Vergangehät], [wo si_i
the investigations of the Susi about his past C she
jedem Politiker_j __ wett verhämliche], beträffed de
every.DAT politician want.3SG conceal.INF concern.3PL the
Militäärdienscht.
military.service
'The investigations by Susi_i about his_j past that she_i wants to conceal
from every politician_j concern the military service.'
- b. D [Naaforschige vo de Susi_i über sini_j Vergangehät], [wo si_i
the investigations of the Susi about his past C she
jede Politiker_j demit konfrontiert hät], beträffed
every.ACC politician there.with confront.PTCP have.3SG concern.3SG
de Militäärdienscht.
the military.service
'The investigations by Susi_i about his_j past that she_i confronted every
politician_j with concern the military service.'

I have not provided any examples with datives so far. There are independent reasons why it is difficult to construct relevant examples: First, idiomatic dative objects, which are generally not as frequent as idiomatic direct objects, are usually semantically opaque and therefore cannot be used in relativization (recall that only relatively transparent collocations are possible); second, dative pronouns, and thus also dative resumptives, require animate antecedents, which rules out the usual antecedents like *picture of himself* etc. Once some care is taken, more or less acceptable examples can be constructed nevertheless. Here is an example with variable binding:

- (43) De [Schüeler vo sinere_i Klass], [won em jede Lehrer_i e Beloonig
the student of his class C he.DAT every teacher a prize
git], sött anonym bliibe.
give.3SG should.3SG anonymous remain.INF
'The student of his_i class that every teacher gives_i a reward should remain
anonymous.'

This subsection has shown that reconstruction is robust in local relativization, crucially in both gap and resumptive relatives.

5.2.3.2 Reconstruction in long-distance movement

Long-distance movement also allows for reconstruction for idiom interpretation, variable binding and anaphor binding. Recall from section 5.1.1 that there are no gaps. In what follows, each pair contains an example with the relativization of a direct object and one with the relativization of an oblique position. The first pair illustrates reconstruction for idiom interpretation:²⁵

- (44) a. D [Reed], [won i gsäit ha, dass er si gschwunge hät],
 the speech C I say.PTCP have.1SG that he it swing.PTCP have.3SG
 hät mi beiidrukt.
 have.3SG me impress.PTCP
 ‘The speech that I said he gave impressed me a lot.’
- b. S [Fettnäppli], [won i gsäit ha, dass i drii trampet
 the faux.pas C I say.PTCP have.1SG that I there.in step.PTCP
 bi], hett i äigetli müese gsee.
 be.1SG have.SBJV.1SG I actually must.INF see.INF
 ‘I should have noticed the faux pas I said I had made.’

The next pair illustrates reconstruction for variable binding:

- (45) a. D [Ziit vo sim_i Läbe], [won i glaube, dass si jede_i wett
 the time of his life C I believe.1SG that it everyone want.3SG
 vergässe], isch d Pubertät.
 forget.INF be.3SG the puberty
 ‘The time of his_i life that I believe everyone_i wants to forget is puberty.’
- b. D [Ziit vo sim_i Läbe], [won i glaube, dass niemert_i
 the time of his life C I believe.1SG that nobody
 gern drüber redt], isch d Pubertät.
 with.pleasur there.about talk.3SG be.3SG the puberty
 ‘The time of his_i life that I believe nobody_i likes to talk about is pu-
 berty.’

Reconstruction for Principle A is illustrated in (46) and (47):

²⁵ Since the resumptives undergo weak pronoun fronting, their surface position is not indicative of the reconstruction site, which corresponds to the theta-position.

- (46) a. s [Spiegelbild vo siich_i], [won i gsäit ha, dass es de
the reflection of self C I say.PTCP have.1SG that it the
Peter_i a de Wand gsee hät], hät en beunruigt.
Peter on the wall see.PTCP have.3SG have.3SG him disquiet.PTCP
'The reflection of himself_i that I said Peter_i saw on the wall made him
nervous.'
- b. s [Spiegelbild vo siich_i], [won i gsäit ha, dass mi de
the reflection of self C I say.PTCP have.1SG that me the
Peter_i demit hät wele verzaubere], hät mi nöd
Peter there.with have.3SG want.INF enchant.INF have.3SG me not
beiidrukt.
impress.PTCP
'The reflection of himself_i that I said Peter_i wanted to enchant me with
did not impress me.'
- (47) a. D [Bemerkige über siich_i], [won i gsäit ha, dass si
the remarks about self C I say.PTCP have.1SG that them
de Hans_i ghöört hät], händ mer nöd gfale.
the John hear.PTCP have.3SG have.3PL me.DAT not please.PTCP
'I didn't like the remarks about himself_i that I said John_i had heard.'
- b. D [Bemerkige über siich_i], [won i gsäit ha, dass de
the remarks about self C I say.PTCP have.1SG that the
Hans_i devoo ghöört hät], händ mer nöd gfale.
John there.of hear.PTCP have.3SG have.3PL me.DAT not please.PTCP
'I didn't like the remarks about himself_i that I said John_i had heard
about.'

Finally, as in local relativization, there is no reconstruction for Principle C:

- (48) a. D [Naaforschige über de Peter_i], [won i gsäit ha, dass
the investigations about the Peter C I say.PTCP have.1SG that
er_i si mer hät wele verschwiige], händ mi
he them me.DAT have.3SG want.INF conceal.INF have.3PL me
schockiert.
shock.PTCP
'I was shocked by the investigations about Peter_i that I said he_i
wanted to conceal from me.'

- b. D [Naaforschige über de Peter_i], [won i gsäit ha, dass
the investigations about the Peter C I say.PTCP have.1SG that
er_i mer devoo verzelt hät], händ mi schockiert.
he me.DAT there.of tell.PTCP have.3SG have.3PL me shock.PTCP
'I was shocked by the investigations about Peter_i that I said he_i had
told me about.'
- (49) a. Di [Verwandte vom Peter_i], [won i gsäit ha, dass er_i
the relatives of the Peter C I say.PTCP have.1SG that he
mer si vorgstellt hät], han i nöd sympatisch
me.DAT them introduce.PTCP have.3SG have.1SG I not likable
gfunde.
find.PTCP
'I didn't like the relatives of Peter_i that I said he_i had introduced me
to.'
- b. Di [Verwandte vom Peter_i], [won i gsäit ha, dass er_i
the relatives of the Peter C I say.PTCP have.1SG that he
mer von ene verzelt hät], wett i nöd
me.DAT of they.DAT tell.PTCP have.3SG want.1SG I not
käne leere.
get.to.know.INF
'I don't want to meet the relatives of Peter_i that I said he_i had told me
about.'

As a last point, as in local relativization, Principle C effects remain absent even if reconstruction is required for variable binding:

- (50) a. D [Naaforschige vo de Susi_i über sini_j Vergangehät], [won i
the investigations of the Susi about his past C I
glaube, dass si_i si jedem Politiker_j wett
believe.1SG that she them every.DAT politician want.3SG
verhämliche], beträffed de Militäardienst.
conceal.INF concern.3PL the military.service
'The investigations by Susi_i about his_j past that I believe she_i wants
to conceal from every politician_j; concern the military service.'

- b. D [Naaforschige vo de Susi_i über sini_j Vergangehäit], [won i
the investigations of the Susi about his past C I
glaub, dass si_i jede Politiker_j demit konfrontiert
believe.1SG that she every.ACC politician there.with confront.PTCC
hät], beträffed de Militäärdienst.
have.3SG concern.3SG the military.service
'The investigations by Susi_i about his_j past that I believe that she_i con-
fronted every politician_j with concern the military service.'

5.2.3.3 Reconstruction into islands

While the reconstruction effects discussed so far may suggest a movement approach to resumption, this possibility is called into question by the observation that reconstruction can also target positions within an island.

The first pair illustrates reconstruction for anaphor and variable binding into a PP which in turn is located within a PP:

- (51) a. D [Ziit vo sim_i Läbe], [wo kän_i Politiker < uf d Grücht
the time of his life C no politician on the rumors
drüber > stolz isch], isch d Pubertät.
there.about proud be.3SG be.3SG the puberty
lit.: 'The time of his_i life that no politician_i is proud of the rumors
about it is puberty.'
- b. De [Wäseszuug vo siich_i], [wo de Peter_i sogar stolz isch < uf s
the trait of self C the Peter even proud be.3SG on the
Gschwätz drüber >], wett i nöd käne.
gossip there.about want.1SG I not know.INF
lit.: 'I don't want to know the side of himself_i that Peter_i is even proud
of the gossip about it.'

The next pair illustrates reconstruction into a CNPC island (a relative clause):

- (52) a. D [Ziit vo sim_i Läbe], [wo < d Erfaarige, wo jede Bueb_i
the time of his life C the experiences C every boy
debi macht >], ganz unterschiedlich sind], isch d
there.with make.3SG very different be.3PL be.3SG the
Pubertät.
puberty
lit.: 'The time of his_i life that the experiences that every boy_i makes
during it are very different is puberty.'

- b. Das isch en [Wäseszuug vo siich_i], [won i < d Art, wien en de
This is a trait of self C I the way how it the
Peter_i vermarktet,) widerlich finde].
Peter market.3SG disgusting find.1SG
lit.: ‘This is a side of himself_i that I find the way disgusting how Peter_i
markets it.’

The final pair illustrates reconstruction into an adjunct island:

- (53) a. Das isch e [Siite vo siich_i], [won all lached, < wänn si de Peter_i
This be.3SG a trait of self C all laugh.3PL when it the Peter
erwäänt]).
mention.3SG
lit.: ‘This is a side of himself_i that everyone laughs when Peter_i men-
tions it.’
- b. D [Ziit vo sim_i Läbe], [wo mer erliechteret isch, < wänn in de
the period of his life C one relieved be.3SG when in the
Bäiz niemert_i; drüber redt], isch d Pubertät.
bar no.one there.about talk.3SG be.3SG the puberty.
lit.: ‘The time of his_i life that one is relieved when nobody_i talks about
it in the bar is puberty.’

Such examples are certainly complex and will admittedly be marked for many speakers for independent reasons; nevertheless I do not think that there is a substantial difference in the reconstruction possibilities with respect to transparent positions. Consequently, I conclude that reconstruction does not pattern with locality.

5.2.3.4 Scope reconstruction

Scope reconstruction provides an interesting picture: It is systematically possible in gap relatives but restricted in resumptive relatives. The crucial factor limiting scope reconstruction seems to be the type of resuming element. I will first discuss reconstruction cases where the external head is interpreted in the scope of a scopal element before discussing the availability of other semantic types more generally.

5.2.3.4.1 Local relativization

The following triple illustrates reconstruction for distributive readings, amount readings and *de dicto* readings in gap relatives (all examples involve DO-relativization),

- (54) a. Das isch d Liischte mit de [zwäi Lieder], [wo jede Schüeler __
 this be.3SG the list with the two songs C every student
 vorberäitet hät].
 prepared.PTCP have.3SG
 ‘This is the list with the two songs that every student prepared.’
 $2 > \forall; \forall > 2$
- b. Kän Linguischt würd di [vile Buecher] läse, [wo de Hans
 no linguist would.3SG the many books read.INF C the John
 fürs Medizinstudium __ bruucht].
 for.the med.school need.3SG
 ‘No linguist would read the many books that John needs for med
 school.’
 many > need; need > many
- c. De Peter wird d [Frau] finde, [won er __ suecht].
 the Peter will.3SG the woman find.INF C he look.for.3SG
 ‘Peter will find the woman he is looking for.’ $\exists > \text{seek}; \text{seek} > \exists$

(54-a) can have an interpretation where each student prepared two different songs. A distributive reading is facilitated by the fact that there is a list of songs. An individual reading under which every student performed the same two songs is unlikely in this context (though not strictly ruled out) since one would not need a list for just two songs. (54-b) allows a reading where the amount quantifier inside the external head is interpreted in the scope of the modal in the relative clause. Under such a reading, which is the more salient one here, there is a large number of books that John needs for med school. Importantly, there is no reference to specific books in that case. This is quite probable in the context above because a linguist is unlikely to know which books exactly someone needs for med school. A linguist will only see the incredible amount of books that he could probably not cope with. (54-c) can have an interpretation where there is no presupposed woman that Peter is looking for. Rather, he is looking for a type, a woman with certain properties. This is the narrow-scope or *de dicto* reading (the wide-scope/*de re* reading is also available).

As observed in the previous subsections, Condition C effects remain absent even if reconstruction is independently necessary, e.g., for variable binding. The following examples show that scope reconstruction also does not entail a Condition C violation:

- (55) a. Kän Linguischt würd di [vile Büecher über em Hans_i
 no linguist would.3SG the many books about the.DAT John
 sin Vatter] läse, [won er_i fürs Medizinstudium __ bruucht].
 his father read.INF C he for.the med.school need.3SG
 ‘No linguist would read the many books about John_i’s father that he_i
 needs for med school.’ many > need; need > many
- b. Niemert kânt di [vile schlächte Siite vom Peter_i], [won er_i
 nobody know.3SG the many bad traits of.the Peter C he
 __ wett verberge].
 want.3SG conceal.INF
 ‘Nobody knows the many bad sides of Peter_i that he_i wants to conceal.’
 many > should; should > many

Scope reconstruction is possible in resumptive relatives as well, as shown by the following triple. Note that all examples involve relativization of oblique relations, the resumptive appearing as an R-pronoun:

- (56) a. d Liischte mit de [zwäi Lieder], [wo jede Schüeler demit
 the list with the two songs C every student there.with
 uufträtte isch]
 go.on.stage.PTCP be.3SG
 ‘the list with two songs that every student performed on stage’
 2 > ∀; ∀ > 2
- b. Kän Linguischt würd di [vile Büecher] läse, [wo sich de
 no linguist would.3SG the many books read.INF C self the
 Hans demit sött uf d Prüefig vorberäite].
 John there.with should.3SG on the exam prepare.INF
 ‘No linguist would read the many books that John should prepare with
 for the exam.’ many > need; need > many
- c. De Peter wird d [Couch] finde, [won er denaa suecht].
 the Peter will.3SG the couch find.INF C he there.after seek.3SG
 ‘Peter will find the couch he is looking for.’ ∃ > seek; seek > ∃

All examples are constructed in such a way that the reconstructed reading is more prominent (but the wide-scope reading is not ruled out). (56-a) allows a distributive reading under which there are two different songs per student. (56-b) allows a narrow-scope interpretation of the amount quantifier. There is a large number of books that John needs to prepare with for the exam. But importantly, there is no reference to specific books in that case; (56-c) allows a *de dicto* reading: John is

looking for a couch with certain properties, but this need not be a specific couch which he owns or has lost etc.

As with direct relations, no Condition C effects emerge under scope reconstruction:

- (57) a. Kän Linguischt würd di [vile Buecher über em Hans_i
no linguist would.3SG the many books about the.DAT John
sin Vatter] läse, [won er_i sich demit sött uf d
his father read.INF C he self there.with should.3SG on the
Prüefig vorberäitet].
exam prepare.INF
'No linguist would read the many books about John_i's father that he_i
should prepare with for the exam.' many > need; need > many
- b. Niemert kânt die [vile schlächte Siite vom Peter_i], [won er_i
nobody know.3SG the many bad traits of.the Peter C he
äim devoo sött warne].
one there.of should.3SG warn.INF
'Nobody knows the many bad sides of Peter_i that he_i should warn one
about.' many > should; should > many

5.2.3.4.2 Long-distance relativization

Long-distance relativization displays a pattern that at first sight is rather puzzling: There is no scope reconstruction in direct relations, while oblique relations allow for distributive, amount and *de dicto* readings: The first triple shows the lack of scope reconstruction in direct relations (relativization of a DO):

- (58) a. Das isch d Liischte mit de [zwäi Lieder], [won i wett, dass
this be.3SG the list with the two songs C I want.1SG that
jede Schüeler si vorberäitet].
every student them prepare.3SG
'This is the list with two songs that I want every student to prepare.'
2 > ∀; *∀ > 2
- b. *Niemert list di [vile Buecher], [won i gsäit ha, dass
nobody read.3SG the many books C I say.PTCP have.1SG that
de Peter si 2016 wett schriibe].
the Peter them 2016 want.3SG write.INF
'Nobody will read the many books I said Peter would like to write in
2016.' *many > want; *want > many

- c. De Hans wird d [Frau] scho finde, [won er gsäit
 the John will.3SG the woman PRT find.INF C he say.PTCP
 hät, dass er si suecht].
 have.3SG that he her look.for.3SG
 ‘John will find the woman he said he was looking for.’
 ∃ > seek; *seek > ∃

(58-a) does not allow the reconstructed reading, where there are two different songs per student. Only an individual reading is possible, which, however, is rather unnatural in that context: It does not make much sense to use a list if there are only two songs altogether. (58-b) forces reconstruction by using a verb of creation. Since the event is located in the future, the books have not been written yet. Consequently, a wide-scope/referential reading is not available. Interestingly, the narrow scope/amount reading is not available either. Therefore, the sentence is completely ungrammatical. In (58-c) only a *de re* interpretation is possible. There is a presupposed woman about which John said that he is looking for her.

Interestingly, oblique relations pattern differently: Scope reconstruction is possible:

- (59) a. Das isch d Liischte mit de [zwäi Fottene], [wo mer abgmacht
 this be.3SG the list with the two pictures C we agree.PTCP
 händ, dass jede Schüeler demit i d Schuel chunt].
 have.1PL that every student there.with in the school come.3SG
 ‘This is the list with the two pictures that we agreed that every pupil
 would come to school with.’ 2 > ∀; ∀ > 2
- b. Kän Linguischt würd di [vile Büecher] läse, [won i
 no linguist would.3SG the many books read.INF C I
 ghöört ha, dass sich de Hans demit sött uf d
 hear.PTCP have.1SG that self the John there.with should.3SG on the
 Prüefig vorberäite].
 exam prepare.INF
 ‘No linguist would read the many books that I heard John should pre-
 pare with for the exam.’ many > should; should > many
- c. De Hans wird d [Couch] scho finde, [won er gsäit
 the John will.3SG the couch PRT find.INF C he say.PTCP
 hät, dass er denaa suecht].
 have.3SG that he there.after seek.3SG
 ‘John will find the couch that he said he was looking for.’
 ∃ > seek; seek > ∃

As in local relativization, scope reconstruction does not affect the absence of Condition C effects:

- (60) Kän Linguischt würd di [vile Buecher über em Hans; sin
no linguist would.3SG the many books about the.DAT John his
Vatter] läse, [won i ghöört ha, dass er_i sich demit
father read.INF C I hear.PTCP have.1SG that he self there.with
sött uf d Prüefig vorberäite].
should.3SG on the exam prepare.INF
'No linguist would read the many books about John_i's father that I heard
he_i should prepare with for the exam.' many > should; should > many

Before addressing this somewhat puzzling pattern, I will show that the relativization of semantic types other than ⟨e⟩ behaves similarly.

5.2.3.4.3 Relativization of other semantic types

In this subsection, I will discuss the relativization of semantic types other than individuals more generally (see also the reason and manner adverbials that are constructed by means of relative adverbs discussed in 5.1.2.2 above). In local gap relativization, predicates, as in (61-a), and amounts as in (61-b/c) are possible:

- (61) a. Er isch de [gliche Idiot], [wo scho sin Vatter __ gsii isch].
he be.3SG the same idiot C already his father be.PTCP be.3SG
'He is the same idiot his father already was.'
- b. Die [20 Franke], [won er defüür __ zalt hät], sind
the 20 francs C he there.for pay.PTCP have.3SG be.3PL
minere Mäinig naa z vil.
my opinion according too much
'The twenty francs he paid for it are too much in my view.'
- c. Mer brüüchted de Rescht vo öisem Läbe, zum de
we need.SBJV.1PL the rest of our life in order the
[Champagner] z trinke, [wo mer geschter __ verschüttet
champagne to drink.INF C we yesterday spill.PTCP
händ].
have.1PL
'We would need the rest of our life to drink the champagne we spilled
yesterday.'

The predicate example (61-a) is straightforward. The first example with an amount reading, (61-b), means that the amount that was paid was too much; a referential

reading is not possible here unless *20 Franke* ‘twenty francs’ is interpreted as the referential object of paying, but that is not straightforwardly possible. In (61-c), which is the translation of the English example discussed in Heim (1987: 40), only makes sense under an amount reading: If one needs the rest of one’s life to drink the champagne spilled on an evening, this cannot involve an individual but only an amount. Furthermore, since that particular bottle of champagne no longer exists, it can no longer be drunk. A referential interpretation is therefore ruled out.

Local resumptive relatives also allow non-individual antecedents even though natural examples are somewhat difficult to come by since non-individual-denoting phrases usually do not occur in oblique positions. I couldn’t construct any examples with datives, but some complements of prepositions can be non-individual-denoting. The following example illustrates a predicate:

- (62) Isch de Hans wüerkli de [Trottel], [won en all defüür halted]?
 be.3SG the John really the idiot C him all there.for hold.3PL
 ‘Is John really the idiot everyone regards him as?’

Amounts are possible as well. The following example, a variant of the champagne example used above, is grammatical under an amount interpretation:

- (63) Mer würded de Rescht vo öisem Läbe bruuche, zum de
 we would.1PL the rest of our life need.INF in.order the
 [Champagner] z trinke, [wo mer geschter demit öises Sofa
 champagne to drink.INF C we yesterday there.with our couch
 tränkt händ].
 soak.PTCP have.1PL
 ‘We would need the rest of our lives to drink the champagne we soaked our
 sofa with yesterday.’

Since the champagne does not exist anymore, the matrix clause cannot mean that it will take very long to drink a particular bottle of champagne. Rather, a lot of champagne was spilled on the sofa, more than normal people would drink in a lifetime.

The pattern in long-distance relativization is somewhat different: Predicates and amounts do not seem to be easily available when occurring outside of PPs. Even though there are proforms for these semantic types such as *das* ‘that’, which, for instance, occurs in contrastive left-dislocation, the result remains degraded for many speakers; some prefer a gap in these constructions (the personal pronouns cannot be used as resumptives since they are incompatible with non-individual types, see the next subsection):

- (64) a. #De Hans isch immer no de [gלייך Idiot], [wo mini Muetter
the John be.3SG still the same Idiot C my mother
scho vor 20 Jaar gsäit hät, dass er (das) seg].
already before 20 years say.PTCP have.3SG that he that be.SBJV.3SG
'John is still the same idiot that my mother already said 20 years ago
that he was.'
- b. #Di [20 Franke], [won er gsäit hät, dass er
the 20 francs C he say.PTCP have.3SG that he
(si/das/so vil) defüür zalt hät], sind minere
them/that/so.much there.for pay.PTCP have.3SG be.3PL my
Mäinig naa z vil gsii.
opinion after too much bee.PTCP
'The twenty francs that he said he had paid for it were too much in my
view.'
- c. #Mer brüüchted de Rescht vo öisem Läbe, zum de [Champagner]
we need.SBJV.1PL the rest of our life to the champagne
z trinke, [won i fürchte, dass mer (en/das/so vil) geschter
to drink.INF C I fear.1SG that we him/that/so much yesterday
verschüttet händ].
spill.PTCP have.1PL
'We would need the rest of our life to drink the champagne I am afraid
we spilled yesterday.'

Interestingly, things seem to be different if a complement of a preposition is relativized and consequently, R-pronouns are used: Scope reconstruction seems to be quite acceptable:

- (65) a. Isch de Hans würkli de [Trottel], [wo t gsäit häsch, dass
be.3SG the John really the idiot C you say.PTCP have.2SG that
en all defüür halted]?
him all there.for hold.3PL
'Is John really the idiot that you said everyone regards him as?'
- b. Mer würded de Rescht vo öisem Läbe bruuche, zum de
we would.1PL the rest of our life need.INF to the
[Champagner] z trinke, [wo t gsäit häsch, dass si
champagne to drink.INF C you say.PTCP have.2SG that they
demit öises Sofa tränkt händ].
there.with our couch soak.PTCP have.3PL
'We would need the rest of our life to drink the champagne that you
said they had soaked our sofa with.'

5.2.3.4.4 The role of the resumptive

The pattern we have established so far is somewhat confusing. While scope reconstruction and other semantic types (predicates, amounts) are available in local relativization in both direct and oblique relations, they are more restricted in long-distance relativization, i.e., they seem to be blocked in direct relations but not in oblique relations. As I will show presently, the interpretive possibilities can be understood once the nature of the resuming element is taken into account: Reconstruction and non-individual semantic types are unproblematic in gap relatives; restrictions only obtain under resumption. Here, the grammatical relation seems to play a role: reconstruction in oblique relations but not in direct relations. This pattern is reminiscent of the findings in Bianchi (2004) discussed in section 3.1.2.5, who observes that scope reconstruction is more readily found in oblique resumption. However, there is no perfect match since the split in Bianchi (2004) is in fact based on optional vs. obligatory resumptives. In the cases under discussion, however, all resumptives are obligatory. Rather, what is at stake in Swiss German is neither the relation nor the obligatoriness but rather the type of resumptive: Scope reconstruction and non-individual types are possible with R-pronouns but not with regular personal pronouns. This can be shown most convincingly in oblique relations if we replace the R-pronoun with a regular personal pronoun. In the examples in (66), which form near-minimal pairs with (56-c) and (63), an individual reading is enforced in all cases (leading to degradation in (66-a)):

- (66) a. ??Mer würded de Rescht vo öisem Läbe bruuche, zum de
 we would.1PL the rest of our life need.INF to the
 [Champagner] z trinke, [wo mer geschter mit em öises Sofa
 champagne to drink.INF C we yesterday with it our couch
 ruiniert händ].
 ruin.PTCP have.1PL
 ‘We would need the rest of our lives to drink the champagne we ruined
 the sofa with yesterday.’
- b. De Hans wird d [Couch] scho finde, [won er nach ere
 the John will.3SG the couch PRT find.INF C he after it
 suecht].
 seek.3SG
 ‘John will find the couch that he is looking for.’ ∃ > seek; *seek > ∃

Scope reconstruction is also blocked in dative relatives since that necessarily involves a personal pronoun:

- (67) di [zwäi Mäitli], [won ene jede Bueb en Struuss
 the two girls C they.DAT every boy a bunch.of.flowers
 mues bringe]
 must.3SG bring.INF
 ‘the two girls that every boy must bring a bunch of flowers’ 2 > ∀; *∀ > 2

The special role of the pronoun can also be observed in long-distance relativization. Consider (68), a variant of (59-c):

- (68) De Hans wird d [Couch] scho finde, [won er gsäit hät,
 the John will.3SG the couch PRT find.INF C he say.PTCP have.3SG
 dass er nach ere suecht].
 that he after it seek.3SG
 ‘John will find the couch that he said he was looking for.’
 ∃ > seek; *seek > ∃

Why should the nature of the resumptive have such a drastic influence? There is a straightforward answer: The interpretive possibilities in resumption mirror the interpretive possibilities in other anaphoric contexts: While personal pronouns can only refer to individuals, R-pronouns can also refer to non-individuals, consider (69) (the dialect behaves like the standard language in this respect):

- (69) a. de Peter hät de Oski mit 20 Franke bstoche. Iich
 the Peter have.3SG the Oscar with 20 Francs bribe.PTCP I
 chönt en demit/ *mit ene nöd bstäche.
 could.1SG him there.with/ with them not bribe.INF
 ‘Peter bribed Oscar with 20 Francs. I couldn’t bribe him with that.’
- b. De Peter schafft für 20 Franke im Monet. Iich würd
 the Peter work.3SG for 20 Francs in the month I would.1SG
 dadefür/*für si kän Taag schaffe.
 there.for/for them no day work.INF
 ‘Peter works for 20 Francs per month. I wouldn’t work a single day for that.’

I will discuss the implications of all the reconstruction effects in the next subsection.^{26, 27}

5.2.4 In favor of base-generation

In my opinion, three aspects of the data discussed in this section argue in favor of base-generation: First, resumption in Swiss German is insensitive to any kind of locality constraint. As I have argued at length in section 3.1.3, movement approaches to resumption have a hard time accounting for why resumption should make movement out of islands possible. In my view, perhaps apart from Müller (2014b), there is to date no convincing theory of locality that can handle island violations and their avoidance by resumption in a consistent way. Second, a hybrid approach with movement in transparent domains and base-generation in islands (cf. section 3.1.3.4) is incompatible with the reconstruction and SCO facts established for Swiss German, as they do not pattern with locality, viz., are found in island and non-island contexts. Furthermore, there are no other obvious asymmetries between resumptives in transparent positions and those in intransparent positions that could motivate a hybrid approach.²⁸ Third, the effect of resumptives on interpretation also tends to favor a base-generation approach as it captures this effect most directly: As discussed in detail in section 3.1.3, Big-DP- and spell-out approaches arguably need more machinery to derive the semantic effects of resumption: In Big-DP-approaches, there may be too many variables as there is one left by the operator, but the pronoun is arguably bound as well. In spell-out approaches, one has to make sure that PF has access to a very late LF-representation to get the necessary information about the semantic content of traces. Further-

26 The degraded acceptability of long-distance relativization of predicates and amounts in direct relations, cf. (64), remains somewhat puzzling. To some extent, this may follow from the fact that there are no proper pro-forms; especially with amounts, one would often use more complex expressions such as *so vil* ‘that much’, which simply may not qualify as resuming elements. However, this explanation does not work for *das* ‘that’, which surely is pronominal and can be used to refer to predicates and amounts in both anaphoric dependencies and contrastive left-dislocation.

27 Low readings of superlative adjectives also seem to be restricted in Swiss German resumption. Given that they pattern with amount quantifiers with respect to reconstruction, this can be related to the restrictions on scope reconstruction. The difference between personal pronoun and R-pronouns seems to play a role as well, but the facts are very subtle, see Salzmann (2006a: 365–365).

28 I will in fact argue for a hybrid approach in the sense that long-distance relativization is reanalyzed in terms of prolepsis and thus involves a more indirect dependency than local relativization. However, this does not affect the resumptives, which always arise through base-generation.

more, such approaches tend to predict the distribution of resumptives on the basis of the semantics of the trace, but for many languages, including Swiss German, this is not correct. Local direct objects never occur with resumptives, even if they involve specific traces. Furthermore, there is no indication in Swiss German that obligatory resumption could ever override the semantic effects of resumptives (as was observed by Bianchi 2004 for some languages). Rather, the interpretive possibilities are restricted by the nature of the pronoun. R-pronouns play a particularly interesting role as they are the only resuming element that allows for scope reconstruction/interpretation of the variable as non-individual denoting. This connection is most directly captured by base-generation.

Reconstruction effects under resumption can be captured by the NP-ellipsis theory of pronouns originally proposed in Elbourne (2001), and applied to resumption in Guillot & Malkawi (2006) and Rouveret (2008), as shown in section 3.1.3.5: The resumptive corresponds to a definite determiner that takes a silent NP-complement. If this NP-complement is elided under identity with the antecedent, we get the effect of reconstruction without movement:

(70) [CP [DP Op NP_i] ... [DP Res NP_i]]

I will provide detailed derivations and LF-representations for local and long-distance relativization in the subsequent sections. In the rest of this section, I will discuss two further arguments for base-generation (and especially against spell-out approaches) that have not received much attention in the recent literature.²⁹

29 Movement diagnostics other than locality and reconstruction are unfortunately uninformative in Swiss German: First, resumptives can occur as variables in ATB-contexts, but as discussed in section 3.1.2.2, this does not provide any evidence in favor of a movement approach. Second, parasitic gaps can appear in resumptive relatives, however, they are arguably not licensed by the putatively fronted operator but rather by the fronted pronoun, which, as discussed below, licenses PGs independently. Third, cyclicity effects do not seem to be observed: Müller (1999a: 376–379) shows that non-final clauses hosting a trace of an A'-movement operation have to undergo obligatory extraposition (while this is optional for CP-complements that do not contain a trace). Extraposition thus constitutes evidence for intermediate A'-movement:

- (i) a. *Ich weiß nicht, wen₁ er [dass Fritz __₁ liebt] gesagt hat.
 I know.1SG not whom he that Fritz love.3SG say.PTCP have.3SG
 'I do not know who he said that Fritz loves.'
- b. Ich weiß nicht, wen₁ er gesagt hat, [dass Fritz __₁ liebt].
 I know.1SG not whom he say.PTCP have.3SG that Fritz love.3SG

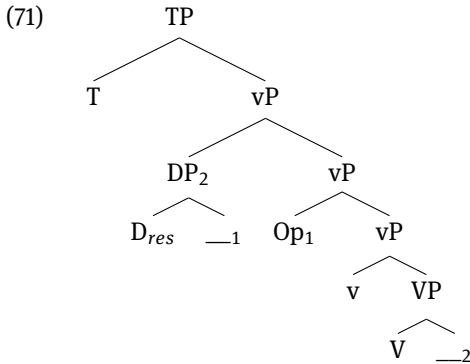
5.2.4.1 Pronoun fronting

As mentioned at the beginning of this chapter, the resumptives in Swiss German are usually drawn from the clitic series of the pronoun paradigms. Like clitic and weak pronouns more generally in the language, resumptives that are not governed by prepositions are fronted to the Wackernagel position. They thus often do not occur in the theta-position that the antecedent is related to. This pronoun fronting operation also has implications for the theory of resumption; it proves especially problematic for movement approaches: Treating pronoun fronting in Swiss German as intermediate movement as Demirdache (1991) proposes for Hebrew (recall section 3.1.3.1) is implausible because the resumptives do not obviously occupy intermediate landing sites: Quite often, they occur immediately after C and thus neither in SpecvP nor SpecCP. Pronoun fronting is less problematic for Big-DP-approaches because the pronoun is an independent element in the syntax and can thus undergo the usual movement operations of a (weak) pronoun. To respect cyclicity, the antecedent has to move out of the Big-DP first, e.g., to SpecvP, before the pronoun (i.e., the remnant DP) can be fronted to a slightly higher position (I assume for concreteness' sake that the resumptive is fronted to an outer specifier of v, but the specifier of a designated functional head would be a possibility as well):

There is no such contrast in long-distance resumptive relativization in Swiss German. Non-extrapolated non-final CPs hosting a resumptive are degraded (as intraposed CPs generally are), see (ii-a), but arguably equally degraded as non-final CPs without a resumptive, see (ii-b):

- (ii) a. Ich lise s Buech, wo du, [dass es spannend isch], gsäit häsch.
 I read.1SG the book C you that it interesting be.3SG say.PTCP have.2SG
 'I am reading the book that you said is interesting.'
- b. Ich lise s Buech, wil du, [dass es spannend isch], gsäit häsch.
 I read.1SG the book because you that it interesting be.3SG say.PTCP have.2SG
 'I am reading the book because you said it is interesting.'

Thus, resumptive long-distance relativization in Swiss German does not display any cyclicity effects and thus fails to provide evidence for movement.



This type of derivation is independently available given the possibility of remnant VP-topicalization, see below. While unproblematic for Big-DP-approaches, pronoun fronting raises serious issues for spell-out approaches because the fronting must necessarily be treated as post-syntactic (see also Daskalaki & Mavrogiorgos 2013: 325–332): The pronoun comes into being at a rather late stage of the derivation, i.e., arguably too late for pronoun fronting to obey syntactic cyclicity. Even under a model with cyclic/phasal spell-out (e.g., Chomsky 2001), spell-out of the resumptive would be determined at the end of the cycle and thus too late to still allow for cyclic movement. Treating pronoun fronting as post-syntactic may at first seem attractive since neither the trigger nor the landing site of the pronoun can be easily characterized in syntactic or semantic terms (such as Case or information structure): Concerning the trigger, as pointed out in Richards (2006), what the fronted elements have in common is their prosodic deficiency, i.e., they cannot form a prosodic word on their own. Fronting occurs for the pronoun to be able to integrate prosodically into a host within the same phonological phrase. Assuming that phases constitute phonological phrases, the object pronouns, being enclitic, have to leave VP and move to the edge of vP. Concerning the landing site of weak/clitic pronouns in German and its varieties, what makes a syntactic approach somewhat difficult is that there is not just one designated position where weak/clitic pronouns are possible (although at least in Swiss German there is a rather strong tendency for them to occur directly below C). There is a bit of flexibility, and the literature reports quite some dialect-/inter-speaker variation as well as conflicting judgments (cf., e.g., Müller 1999b vs. Frey 2006): For instance, some speakers allow the pronouns below the subject, some even below scrambled objects, while others do not, etc.

It is fair to say that many of these facts are still poorly understood and that a syntactic approach is certainly confronted with a number of challenges. However, at the same time, there are also good reasons to treat pronoun fronting in syntax:

First, pronoun fronting can cover rather long distances. In the following example, which involves the 3rd construction, it has been moved over two VP-boundaries (note that since the verbal elements are interrupted by non-verbal material, we cannot be dealing with a complex head projecting just a single VP):

- (72) s Problem, won i gsäit ha, dass i s₁ versproche han
 the problem C I say.PTCP have.1SG that I it promise.PTCP have.1SG
 äntlich z versueche eläi ___₁ z lööse
 finally to try.INF alone to solve
 ‘the problem that I said I had promised to finally try to solve myself’

It is not a priori ruled out that PF-movement can go thus far, but movement steps of this type are certainly more reminiscent of operations taking place in narrow syntax rather than at PF; the PF-movement operations documented in the literature (e.g., in Embick & Noyer 2001) are usually of a much more local type. Second, pronoun fronting can feed remnant VP-movement, i.e., the pronoun is not affected by VP-topicalization as in (73):

- (73) Gläse han i s nöd.
 read.PTCP have.1SG I it not
 ‘I haven’t read it.’

This follows straightforwardly under a syntactic account but requires extra assumptions under PF-movement: For instance, one might have to argue that the lower copy of the pronoun (the one in the in-situ VP) is moved at PF (although it is not clear if that copy is still available at that point) or that remnant movement involves distributed deletion (Fanselow & Cavar 2002). Third, pronoun fronting licenses parasitic gaps as in (74):

- (74) s Buech, won i gsäit ha, dass i s [ohni **pg** z läse]
 the book that I say.PTCP have that I it without to read.INF
 verschänkt ha
 give.away.PTCP have.1SG
 ‘the book that I said that I gave away without reading’

The status of PGs in German is admittedly rather controversial (see Assmann 2010 for a recent overview). They surely have properties that are significantly different from their English counterparts, and there are also speakers who reject PGs in German altogether. However, the majority position seems to be that PGs exist after all. The debate seems to center on whether PGs are proper PGs or rather involve some kind of coordination structure (see, e.g., Kathol 2001). Whatever the correct

analysis will eventually turn out to be, a PF-approach to pronoun fronting implies that PGs can be licensed by both syntactic means (A'-movement, scrambling) and a PF-operation (pronoun fronting). This seems somewhat unlikely.

In conclusion, then, while compatible with Big-DP-approaches, pronoun fronting clearly argues against LF-movement and spell-out-approaches to resumption.³⁰

5.2.4.2 Silent resumptives

Another strong argument against spell-out approaches comes from silent resumptives, recall the discussion in section 3.1.3.2. Silent resumptives can also be found in Swiss German, at least under certain specific analyses. The first instance is possessor relativization. As shown at the beginning, possessor relativization in Swiss German involves the possessive pronoun *sin-/ir-* 'his/her':

- (75) Das deet isch de Schüeler, won i geschter sin Vatter
 that there be.3SG the pupil C I yesterday his father
 käne gleert ha.
 get.to.know.PTCP have.1SG
 'Over there is the pupil whose father I met yesterday.'

In Salzmann (2011) I have argued that it is not the possessive pronoun that functions as the resumptive but rather a silent *pro* in SpecDP:

- (76) Das deet isch de Schüeler, won i geschter **pro** sin Vatter
 that there be.3SG the student C I yesterday his father
 käne gleert ha.
 get.to.know.PTCP have.1SG
 'Over there is the student whose father I met yesterday.'

30 Another potential argument against a spell-out approach comes from Person Case Constraint (PCC) effects. Anagnostopoulou (2008) argues that they obtain in Swiss German as well, thus putatively providing evidence against PF-movement. However, the data discussed in Anagnostopoulou are uninformative because the relevant putative minimal pairs do not form proper minimal pairs. The author fails to distinguish between weak and clitic versions of the pronoun, but this difference is crucial for the ordering possibilities. Consequently, while there may indeed be certain restrictions concerning the combination of pronouns/clitics with certain person specifications, it is not clear to me that they are necessarily syntactic in nature.

Another issue that may be relevant in this context is the observation in (26) above that in the relativization from a verb-second clause, the resumptive can occur in the prefield and thus satisfies the verb-second constraint. A PF-approach to resumption would entail that the verb-second requirement is of a PF-nature as well, i.e., is checked at the interface.

The postulation of a silent *pro* becomes obvious once the underlying possessor construction is taken into account: Possessive relations are usually expressed by means of the possessor doubling/external possessor construction, where a dative possessor in SpecDP co-occurs with a possessive pronoun as the head of the entire DP:

- (77) dem Schüeler sin Vatter
 this.DAT student his father
 ‘the father of this student/this student’s father’

As the pronoun co-occurs with a possessor-DP, it is best treated as a functional/agreement element rather than as the possessor argument itself. Another argument that the pronoun is just an agreement element and that the construction does not involve some kind of left-dislocation comes from the fact that the possessor doubling construction is possible with indefinite and negatively quantified possessors:

- (78) Das isch emene Maa/niemertem sin Kofer.
 this is a.DAT man/nobody.DAT his suitcase
 ‘This is a man’s/nobody’s suitcase.’

If the possessor is recoverable from context, it can also be silent, suggesting the presence of a silent *pro* (note that the pronoun encodes the features of the possessor and of the possessee).

- (79) sin Vatter
 his father
 ‘his father’

As in pro-drop languages, an overt pronoun is used for emphasis/contrast (note that the strong version of the personal pronoun must be used here, viz., *im* instead of the weak form *em*):

- (80) imm sin Vatter
 he.DAT his father
 ‘HIS father’

A consistent analysis of these facts treats the possessive pronoun always as a functional/agreement element (e.g., like the subject inflection on finite verbs in pro-drop languages).

Consequently, the possessive pronoun cannot be the resumptive in possessor relativization. An alternative analysis of (75) with possessor extraction – and thus

a gap relative – fails because prenominal possessors cannot be extracted in (Swiss) German:

- (81) ??Wem₁ hät de Peter geschter [₁ sin Vatter] käne gleert?
 who.DAT have.3SG the Peter yesterday his father get.to.know.PTCP
 ‘Whose father did Peter meet yesterday?’

Further evidence for a silent resumptive comes from the fact that an overt resumptive leads to degradation:

- (82) ??Das deet isch de Schüeler, won i geschter im sin Vatter
 that there be.3SG the student C I yesterday he.DAT his father
 käne gleert ha.
 get.to.know.PTCP have.1SG
 ‘Over there is the student whose father I met yesterday.’

This is in accordance with a general tendency in resumption: Unless required for independent reasons, the language will always choose the weakest pronominal form possible. In Swiss German, it is usually the weak/clitic pronoun that is preferred over the strong one. In possessor relativization, both the weak/clitic and the strong pronoun are blocked because an even weaker version is available, viz., the silent pronoun. This preference for the weakest element is an instance of representational economy; more concretely, the preference can be related to the Avoid Pronoun Principle (Chomsky 1982).

A similar argument can be made based on relativization of the 2nd person singular. In non-relative sentences, when the subject is 2nd person singular, it can be zero (2nd person singular is expressed very clearly by verb morphology); an overt pronominal subject is only possible for emphasis/contrast:

- (83) Wurum häsch (du) em ghulffe?
 why have.2SG you he.DAT help.PTCP
 ‘Why did you help him?’

In V-final sentences (including relative clauses) the complementizer takes the agreement marker *-t*. Again, the subject is silent unless it is emphasized/contrastive:

- (84) dass-t em (du) ghulffe häsch
 that-2SG he.DAT you help.PTCP have.2SG
 ‘that you helped him’

This suggests that *-t* licenses a *pro* in the 2nd person singular. Crucially, when a second person singular is relativized, there is a strong preference for a silent subject, even if the variable is inside an island (such examples are admittedly somewhat awkward):

- (85) du, won i glaube, dass es \langle niemert git, wo-t em **pro**/??du
 you C I believe.1SG that it no.one give.3SG C-2SG he.DAT pro/you
 wettsch hälffe \rangle
 want.2SG help.INF
 lit.: ‘you, who I believe that there is no one who you would like to help
 him’

This pattern again suggests the presence of resumptive *pro* (the overt pronoun being blocked by economy). Since this silent element amnesties a locality violation, it provides strong arguments against a spell-out approach.³¹

To conclude this section, the behavior w.r.t. movement diagnostics argues for a base-generation approach to Swiss German resumption. The insensitivity to locality constraints and the lack of a correlation between reconstruction effects and locality proves particularly problematic for movement approaches; in addition, base-generation also provides a more direct account of the semantic effects of resumption. Furthermore, there are clear empirical arguments against a spell-out approach coming from pronoun fronting and silent resumptives. Before turning to an explicit analysis of local and long-distance relativization, I will discuss another hitherto little known property of Swiss German relativization that also provides an argument against a movement approach to resumption (or at least against certain implementations).

5.3 Matching effects

In the introduction, I argued that dative/indirect objects, unlike subjects and direct objects, require resumptives (modulo the variation discussed in 5.1.2.1 above). There is one little-known systematic exception to this rule: The dative resumptive

³¹ There is an alternative explanation of the facts, suggested to me by Peter Gallmann: The ‘agreement marker’ *-t* could be reanalyzed as a pronoun, which would function as the subject and thus represents the resumptive. The additional overt subject would then instantiate clitic-doubling. Possible evidence for this reanalysis comes from the fact that *-t* also occurs in the absence of an overt complementizer, viz., in indirect questions. The absence of *-t* in verb second sentences as in (83) must then be attributed to a general phonological rule that deletes /t/ after /sch/, see Weber (1987: 174).

is dropped if the head noun bears dative as well, as shown by the following minimal pair, where (86-b) illustrates the matching effect (the cases assigned by the verbs appear as subscripts):

- (86) a. Ich sueche_{acc} de Bueb, wo mer *(em) es Buech ggëë_{dat}
 I search.1SG the.ACC boy C we (he.DAT) a book give.PTCP
 händ.
 have.1PL
 ‘I’m looking for the boy who we gave a book to.’
- b. Ich hilffe_{dat} em Bueb, wo mer *(em) es Buech ggëë_{dat}
 I help.1SG the.DAT boy C we he.DAT a book give.PTCP
 händ.
 have.1PL
 ‘I help the boy who we gave a book to.’

Subjects and direct objects are unaffected by the matching configuration. They always require gaps in local relativization, irrespective of the Case assigned to the head noun. (3-a) above is an example where the cases are identical, viz., nominative. Unsurprisingly, gaps also obtain if both verbs assign accusative:

- (87) Ich sueche_{acc} de Maa, won i (*en) geschter gsee_{acc} ha.
 I search.1SG the man C I him yesterday see.PTCP have.1SG
 ‘I am looking for the man I saw yesterday.’

However, gaps also result if the cases differ. (3-b) above is an example where the cases differ (matrix: nominative, RC: accusative). Here are two further examples where the matrix Case is different from (in this case, more oblique than) the RC-internal one (Acc vs. Nom; Dat vs. Acc):

- (88) a. Ich sueche_{acc} de Bueb, wo (*er) immer z spaat chunt_{nom}.
 I search.1SG the.ACC boy C (he) always too late come.3SG
 ‘I’m looking for the boy who is always late.’ SU
- b. Ich hilffe_{dat} em Bueb, won i (*en) geschter gsee_{acc} ha.
 I help.1SG the.DAT boy C I (him) yesterday see.PTCP have.1SG
 ‘I help the boy who I saw yesterday.’ DO

Matching effects are prominent in the theoretical discussion of free relatives (cf. van Riemsdijk 2006 for a recent overview). The implications of matching in resumption, however, have not received much attention in the literature on resumption, even though the phenomenon has been described for a few languages including Hebrew (Cole 1976: 581), Greek (Daskalaki & Mavrogiorgos 2013: 335), Polish

(Hladnik 2015: 67–69) and Croatian (Gračanin-Yuksek 2013).^{32, 33} In Swiss German, the matching effect was already observed in the descriptive literature. (89-a) is an example from Bernese German, cf. Hodler (1969: 247), (89-b) is from Staub et al. (1881ff.: II, 1066, bottom) and (89-c) is from Dalcher (1963: 127) (who cites from a novel by Albert Bächtold):

- (89) a. Lüte, won es (*ene) guet geit_{dat}, darf me nid ergrübled
 people.DAT C it they.DAT good go.3SG may one not disturbing
 Sachen uftische_{dat}.
 things confront.with.3SG
 ‘One shouldn’t confront people who are doing well with negative things.’
Bernese German
- b. Dëm wo der Hag ist_{dat}, ist_{dat} au der Graben.
 DEM.SG.DAT C the fence be.3SG be.3SG also the trench
 ‘To him who the fence belongs to also belongs the trench.’
- c. dëne, wo si ghööred_{dat} ...
 DEM.PL.DAT C they belong.to.3PL
 ‘to those to whom they belong ...’

Importantly, the matching effect is insensitive to the distinction between structural and inherent datives (recall from 5.1.1 above that both types in principle require resumptives). The resumptive is dropped whenever the cases are identical. While (86-b) shows the matching effect with a structural dative, (90) makes the same point with an inherent dative:

- (90) Ich gibe_{dat} s Buech em Bueb, wo mer (*em) geschter ghulffe_{dat}
 I give.1SG the book the.DAT boy C we he.DAT yesterday help.PTCP
 händ.
 have.1PL
 ‘I give the book to the boy who we helped yesterday.’

32 Unlike in Greek and Swiss German, where local resumptives only occur for indirect objects and matching is consequently restricted to datives, the matching effect with resumptives in Croatian and Polish only occurs with direct objects but not with oblique relations.

Murelli (2011: 235–236) provides an example with DO-matching from Maltese but notes that native speakers do not necessarily share this judgment.

33 A somewhat similar phenomenon is described in Bayer (1984): He analyzes Case matching in Bavarian headed relative clauses, where the relative pronoun can be deleted if it matches the case of the head noun.

Similarly, in (91), the (structural) dative resumptive can be dropped if the head noun is governed by a preposition assigning dative case (although prepositions are usually thought to assign inherent Case in German):

- (91) Ich ha mit em Bueb, won i (*em) es Buech ggëë
 I have.1SG with the.DAT boy C I he.DAT a book give.PTCP
 ghaa ha, lang diskutiert.
 have.PTCP have.1SG long discuss.PTCP
 ‘I had a long discussion with the boy that I had given a book.’

Note that the absence of a resumptive is not due to the fact that we are dealing with dialects/idiolects where dative resumptives are absent (recall section 5.1.2.1). Rather, as the traditional sources explicitly point out, the matching configuration is special in that it allows for the omission of a resumptive that is otherwise obligatory (in varieties where dative resumptives are optional, they are also omitted in the matching context). While the matching effect seems generally quite strong, it should be mentioned that there are also speakers that accept resumptives in the matching configuration; the same is suggested by an example in Hodler (1969: 247, 5.).³⁴

As in free relatives, we also find syncretism effects in resumption: A matching configuration also obtains if the head noun is non-dative but occurs in a morphological form that is syncretic with the dative. In (92), the head noun is the matrix subject, but its form is syncretic between nominative/accusative/dative (note that nouns have lost most of their inflectional endings in Swiss German, the Case of the noun phrase being primarily expressed on determiners and adjectives):

- (92) Mane, won i (*ene) es Buech schänke, sind immer tankbar.
 men.NOM C I they.DAT a book give.1SG be.3PL always grateful
 ‘Men who I give a book to are always grateful.’

Importantly, the matching effect is restricted to local relativization. In long-distance relativization, resumptives are still required across the board, both for subjects and direct objects as well as datives. (7-a) has already shown this for subjects. Here are examples with long-distance relativization of direct and indirect objects with matching matrix cases:

³⁴ According to Gračanin-Yuksek (2013: 29, 39), Hladnik (2015: 67–69), and Daskalaki & Mavrogiorgos (2013: 335), resumption is optional in matching contexts in BCS, Polish and Modern Greek, while Alexopoulou (2006: 97) describes resumption in Greek FRCs to be ‘dispreferred’ in matching contexts, the preference for gaps being highest if the predicates are identical.

- (93) a. Ich *sueche_{acc}* de Maa, won i gsäit ha, dass i *(en)
 I search.1SG the man C I say.PTCP have.1SG that I him
geschter gsee_{acc} ha.
 yesterday see.PTCP have.1SG
 ‘I am looking for the man that I said I saw yesterday.’
- b. Ich *hilfe_{dat}* em Bueb, won i gsäit ha, dass mer *(em)
 I help.1SG the.DAT boy C I say.PTCP have.1SG that we he.DAT
 es Buech *ggë_{dat}* händ.
 a book given have.1PL
 ‘I help the boy that I said we gave a book to.’

Consequently, it is little surprising that there is no matching effect if the resumptive is inside an island. The examples (24-b) and (25) above have already shown this for subjects. The following two examples illustrate the necessity of a resumptive for direct and indirect objects inside islands:³⁵

- (94) a. Ich *sueche_{acc}* de Politiker, wo d (Bhauptig, dass *(en) d Susi
 I search.1SG the politician C the claim that him the Susi
küsst_{acc} hät), nöd stimmt.
 kissed have.3SG not be.correct.3SG
 lit.: ‘I am looking for the politician that the claim that Susi kissed him
 is wrong.’
- b. Ich *han* em Bueb, wo du *kän* Lehrer *känsch*, (won
 I have.1SG the.DAT boy C you no teacher know.2SG C
 *(em) *vil* *zuetrou_{dat}*), es *Komplimänt* *gmacht_{dat}*.
 he.DAT much consider.capable.3SG a compliment make.PTCP
 lit.: ‘I made the boy that I don’t know a single teacher who considers
 him capable of much a compliment.’

The matching effect thus patterns with the distribution of resumptives and thus with locality: It is available in local relativization, where gaps are in principle a possibility (at least for subjects and direct objects) and blocked in long-distance relativization including island contexts, where resumption is required across the board. In section 5.5 below, I will argue that this provides another argument against a movement analysis of resumption. Furthermore, the matching effect

³⁵ The same holds for matching in Croatian resumptive relatives, see Gračanin-Yuksek (2013: 32–33) and for matching in Greek FRCs, where genitive resumptives for possessors cannot be dropped even if the RC as a whole is assigned genitive and the RelP thus bears genitive (note that genitive resumptives for indirect objects *can* be omitted if the RelP bears genitive as well), see Alexopoulou (2006: 98).

will play a crucial role in accounting for the distribution of gaps and resumptives in local relativization, cf. section 5.4.2.3 below.³⁶

36 A matching effect also obtains with oblique relations based on preposition + resumptive. If the head noun is governed by the same preposition, both preposition and resumptive can be omitted RC-internally (unlike in dative resumption where omission of the resumptive is pretty much obligatory, retaining preposition + pronoun seems does not seem to be ruled out categorically, the acceptability depending on various factors including intra- or extraposition of the PP and the type of predicate):

- (i) Ich bi mit de gliiche Frau is Kino ggange, won i scho letscht Wuche
 I be.1SG with the same women in the movies go.PTCP C I already last week
 (mit ere) uusggange bi.
 with her.DAT go.out.PTCP be.1SG

'I went with the same woman to the movies with whom I had already gone out last week.'

Examples of Swiss German PP-matching can also be found in traditional descriptions, see, e.g., Staub et al. (1881ff.: XV, 14–15) and Hodler (1969: 247). PP-matching in resumptive relatives has also been observed in Hebrew (Cole 1976) and Persian (Lehmann 1984: 222); in both languages, omission of the PP is described as optional. Murelli (2011: 233–236) provides PP-matching examples (from the literature) from Basque, Catalan, Italian and Lower Sorbian. He does not indicate whether matching is optional or obligatory and furthermore mentions that the native speakers he additionally consulted do not necessarily share the judgments reported in the literature.

As in free relatives (Larson 1987, Grosu 1996), PP-matching is subject to rather strict conditions; usually, matching, i.e., omission of the RC-internal PP, is only felicitous if the predicates are identical. Additionally, pragmatic factors such as predictability play a role. A rather extreme case in this respect in Modern Greek (Joseph 1980, Alexopoulou 2006: 97–100), where preposition+resumptive can be deleted inside the RC as long as their content is recoverable; crucially, this does not require an instance of the preposition in the matrix clause; contextual recovery is apparently sufficient. Alexopoulou also treats the matching effect in resumption in this light (i.e., as a semantic/pragmatic rather than as a syntactic effect). Further examples where oblique relations inside the RC can remain unexpressed (and thus have to be contextually retrieved) can be found in Murelli (2011: 199–200, 203–205, 229–233), who provides examples from Portuguese, Italian, Bosnian-Croatian-Serbian, Bulgarian, Russian, Romanian and Greek. Some of the examples (especially those from Italian, BCS and Bulgarian on pp. 203–205), however, may represent aboutness relatives, see 5.1.2.2. Somewhat different are nominalized structures as in languages like Turkish, where the vagueness of the interpretation is a result of the vagueness of the roles of a 'possessor'. Contextual recovery also seems to be at work in the gap-relatives of the languages with prenominal relatives discussed in Wu (2011: 587–590).

Since PP-matching thus borders on a more pragmatic/processing phenomenon, I will not discuss it any further in this book. See Salzmann (2006b) for an earlier proposal.

5.4 Local relativization: resumption as a last resort

Having established that resumption involves base-generation, I will focus on the distribution of resumptives in this subsection. I will argue that they are best analyzed as a last resort and that two factors govern their distribution, viz., locality and Case attraction.

5.4.1 Asymmetries between local and long-distance relativization

Before turning to my analysis, I would like to briefly take stock and point out a number of similarities and differences between local and long-distance relativization.

As for the similarities, resumptives display the same properties in local and long-distance relativization with respect to reconstruction, the semantic effects they impose on the antecedent as well as SCO effects. This very much suggests that resumption is a unified phenomenon within the language. Given the arguments of the previous section, I will assume that resumption involves base-generation in Swiss German.

There are at least two properties that set local and long-distance relativization apart from each other: The distribution of resumptives and the matching effect: While there is a direct-oblique split in the distribution of resumptives in local relativization, they are required across the board in long-distance relativization. Similarly, while the matching effect obtains in local relativization and thus allows for the omission of the dative resumptive, resumptives can never be omitted once a finite clause-boundary is crossed. Crucially, even in the dialects/idiolects where dative resumptives are optional or absent in local relativization, they are still required in long-distance relativization.

At first sight, one may be tempted to simply treat long-distance relativization as a case where the resumptive is within an island, with the finite clause-boundary functioning as a barrier (basically as in Rouveret 2002). While the clause-boundary arguably is indeed a barrier for relativization, I will argue in 5.5 below that the dependency between antecedent and resumptive in long-distance relativization is more complex, i.e., instantiates prolepsis, similar to the standard German construction analyzed in chapter 4.

Since I have already established that resumption involves base-generation, the major issue left to address in this section on local relativization is the distribution of gaps and resumptives.

5.4.2 The distribution of resumptives

The major challenge posed by local relativization is the distribution of resumptives. I will argue, following a by now relatively long tradition, that resumptives function as a last resort; i.e., they are a repair device that only comes into play if all else fails. As a first illustration, consider again two examples involving the relativization of a predicate discussed in section 5.2.3.4.3:

- (95) a. Er isch de [glichen Idiot], wo scho sin Vatter ___/ *das gsii
 he be.3SG the same idiot C already his father that be.PTCP
 isch.
 be.3SG
 'He is the same idiot his father already was.'
- b. Isch de Hans würkli de [Trottel], won en all *(de)füür haltet?
 be.3SG the John really the idiot C him all there.for hold.3PL
 'Is John really the idiot everyone regards him as?'

In (95-b), the predicate is the complement of a preposition, which requires a resumptive in Swiss German relativization (because PPs are islands, recall section 4.3.4 and see below). In (95-a), however, the extraction site is in an unembedded position so that movement is unproblematic and no resumptive is necessary. While this is easily phrased in prose, it will turn out to be much more difficult to derive this complementarity in a technically watertight manner.

The Swiss German pattern is typologically interesting in two ways: First, gaps and resumptives are in complementary distribution. Second, the split direct-oblique appears to be somewhat rare; it is also found in Breton and Welsh, but I do not know whether it is more widespread (resumptives for indirect objects are not remarkable as such, they quite often appear in languages that also have resumptives for direct objects, recall section 3.2.2). This split automatically rules out specificity-based approaches as in Boeckx (2003) and Bianchi (2004), where resumptives are motivated on the basis of the semantic properties of the operator (or its trace). Since both direct and indirect objects can be specific and undergo scrambling in Swiss German, one would expect both to require resumptives under such approaches, contrary to fact.

Concretely, the distribution in Swiss German poses two challenges: First, one has to motivate the occurrence of resumptives: Which grammatical property forces the presence of resumptives? Second, given that resumptives are a possibility in the language, why are they blocked in the relativization of subjects and direct objects? Anticipating the analysis, I will argue that two factors are necessary to motivate resumptives: Resumptives inside PPs, for possessors and

inside islands are necessary to prevent locality violations. Dative resumptives, on the other hand, are the result of Case attraction; they are necessary to discharge a relative-clause-internal probe, which the relative operator cannot check. The matching effect will also follow from Case attraction; in that scenario, the relative operator can check the RC-internal Case so that gaps are – exceptionally – possible. To account for the absence of resumptives for subjects and direct objects (and for the matching effect), I will argue that this is due to a parametric setting that prefers the establishment of A'-dependencies by means of movement rather than base-generation in Swiss German. I will thus argue against an economy account and show that a more flexible parametric perspective helps accommodate crosslinguistic variation in the last resort nature of resumptives. In what follows, I will first address possessor resumptives and resumptives inside PPs before tackling dative resumptives. In the last step, I will address the necessity of gaps for subjects and direct objects.³⁷

5.4.2.1 PPs and possessors: islands

I have already briefly discussed possessor relativization in 5.2.4.2; I concluded that it involves a silent *pro* in the specifier of the possessive pronoun:

- (96) Das deet isch de Schüeler, won i geschter **pro** sin Vatter
 that there be.3SG the student C I yesterday his father
 käne gleert ha.
 get.to.know.PTCP have.1SG
 'Over there is the student whose father I met yesterday.'

³⁷ Brandner & Bucheli Berger (to appear) argue that the distribution of gaps and resumptives is linked to the semantic type of the RC. They assume that relativization with *wo* necessarily requires gaps because only gaps can ensure that the RC is a predicate, while resumptives imply that the RC is propositional. Resumptives for SU and DO are thus ruled out as the RC would fail to be predicative and thus could not compose with the head noun. Why resumptives are possible for datives and oblique constituents does not become clear; the authors speculate that such RCs may not have to be predicative since the relations that are relativized are not core arguments (which is questionable in the case of many IOs and PPs), but this raises more questions than it answers. Note also that the assumption that resumptives imply propositional rather than predicative structures clashes with the assumptions in Heim & Kratzer (1998), who discuss predicate abstraction in *such that*-relatives and, of course, the proposal by Adger & Ramchand (2005) which Brandner & Bucheli Berger rely on. Even worse, since Adger & Ramchand assume that the 'gaps' are in fact silent pronouns, *wo*-relatives relativizing subjects and direct objects would thus involve resumption and should be ungrammatical, contrary to fact.

The silent resumptive can be motivated by the fact that prenominal possessor extraction is ungrammatical (or at least strongly degraded) in Swiss German:

- (97) ??Wem₁ hät de Peter geschter [₁ sin Vatter] käne gleert?
 who.DAT have.3SG the Peter yesterday his father get.to.know.PTCP
 ‘Whose father did Peter meet yesterday?’

The resumptive and the base-generated A'-dependency it is involved in thus avoid the violation of a locality constraint. The same logic goes for resumptives after PPs as in (98), repeated from above:

- (98) Das isch de Maa, won i von *(em) es Buech überchoo ha.
 this be.3SG the man C I from he.DAT a book receive.PTCP have.1SG
 ‘This is the man that I got a book from.’

Extracting the complement of the preposition is ungrammatical:³⁸

- (99) *Wem₁ häsch es Buch vo ₁ überchoo?
 who.DAT have.2SG a book from receive.PTCP
 ‘Who did you get a book from?’

Examples like (99) are ambiguous between an account that relates the ungrammaticality to the ban on preposition stranding or an analysis where it follows from the islandhood of PPs in German (recall section 4.3.4 above). That the latter view is preferable is illustrated by the following pair: (100-a) shows PP-extraction from a direct object, a transparent domain. Extracting the same PP from a prepositional object is ungrammatical, though, see (100-b):³⁹

38 Pied-piping in (98) is not an option since for reasons that are poorly understood, pied-piping by zero-operators is generally blocked, see Heck (2004: 478–481) for some discussion. What is crucial for the current approach is that the pied-piping derivation crashes. Given a post-syntactic approach to morphology, it is difficult to relate the ban solely to the silence of the operator (i.e., that silent operators cannot pied-pipe in the first place). Relating the ungrammaticality of the pied-piping derivation to a ban on deletion of operators in SpecCP (and thus recoverability) is unattractive for languages like Swiss German where relative operators are never overt. Instead there seems to be a (PF-related) ban on bare prepositions in SpecCP, whose deeper causes remain to be uncovered.

39 Note that unlike in some German varieties, Swiss German does not even allow preposition stranding with R-pronouns; instead, doubling is required, see, e.g., Fleischer (2002). This strongly suggests that PPs are generally opaque.

- (100) a. [Vo wem]₁ häsch [e Schwöschter ___₁] gsee?
 of who.DAT have.2SG a sister see.PTCP
 ‘Who did you see a sister of?’
- b. *[Vo wem]₁ häsch ⟨an e Schwöschter ___₁⟩ tänkt?
 of who.DAT have.2SG at a sister think.PTCP
 lit.: ‘Who did think of a sister of?’

Consequently, resumptives in the complement position of a preposition also prevent a locality violation; the PP-island is crossed by a base-generated A'-dependency. This account extends to the subject islands in (23-a) and PP-islands embedded within a PP, see (23-c). Islands involving a finite clause-boundary will be addressed in the section on long-distance relativization in 5.5.3.2 below.

5.4.2.2 Dative resumptives: previous accounts

As discussed in section 3.2.2.1, most approaches to resumptives for indirect objects relate them to the notion of inherent Case, see, e.g., Boeckx (2003: 80–83) and Bianchi (2004: 96). It is, however, not quite clear what is meant by inherent Case in contemporary syntactic theory. Traditionally, inherent Cases are those which are linked to a particular theta-role and cannot be predicted on the basis of the syntactic context. Furthermore, they are unaffected by passivization. This notion is insufficient to motivate dative resumptives in Swiss German: First, as discussed in section 5.1.1, both structural and inherent datives require resumptives (modulo dialectal and speaker variation, which, however, affects both types of datives):

- (101) a. Das isch de Bueb, won i *(em) es Velo ggää ha.
 this be.3SG the boy C I he.DAT a bike give.PTCP have.1SG
 ‘This is the boy I gave a bike to.’ *structural*
- b. Das isch de Bueb, won i *(em) ghulffe ha.
 this be.3SG the boy C I he.DAT help.PTCP have.1SG
 ‘This is the boy I helped.’ *inherent*

Second, inherent accusatives do not require resumptives (unlike in Greek and Hebrew, see Landau 2010: 5, 28, 31). The verb ‘ask someone something’ takes two accusative objects, see (102-a). While the higher (goal) argument can be promoted to subject, (102-b), this is not possible with the lower (theme) argument, (102-c):

- (102) a. Ich ha di öppis gfrööget.
 I have.1SG you.ACC something.ACC ask.PTCP
 ‘I asked you something.’

- b. Du bisch öppis gfrööget worde.
 You be.2SG something.ACC ask.PTCP become.PTCP
 ‘You were asked something.’
- c. *Öppis isch dich gfrööget worde.
 Something be.3SG you.ACC ask.PTCP become.PTCP
 lit.: ‘Something was asked you.’

Nevertheless, relativization of the theme argument requires a gap:

- (103) di vile Sache, won er (*si) mi di ganz Ziiit frööget
 the many things C he them me.ACC the whole time ask.3SG
 ‘the many things that he asks me all the time’

Accusative-marked predicates, which receive their Case from the subject of the small clause (and thus arguably do not bear a structural Case) pattern the same: The verb *siich schimpfe*, lit. ‘scold oneself something’ = ‘call oneself something’ (with the connotation that the predicate is inappropriate) takes a small clause complement with an accusative subject and an accusative predicate, see (104-a). Relativization of the predicate requires a gap (regardless of the type of resumptive), see (104-b):

- (104) a. Er schimpft sich en Profässer.
 he scold.3SG self a.ACC professor
 ‘He calls himself a professor.’
- b. Er isch also nöd de Profässer, won er sich (*en/*das)
 he be.3SG really not the professor C he self he.ACC/that
 gschumpfe hät.
 scold.PTCP have.3SG
 ‘He is definitely not the professor he called himself.’

Finally, semantic accusative Case that is, for instance, borne by phrases expressing temporal or local extension also does not require resumptives (recall also the facts from Czech discussed in section 3.2.2.1 above):

- (105) di zwäi Wuche, won er __i de Ferie gsii isch
 the two weeks C he in the vacation be.PTCP be.3SG
 ‘the two weeks he was on vacation’

Since such semantic Cases are often subsumed under inherent Case, the lack of a resumptive is surprising if resumption is linked to ‘inherentness’ (on this issue, see also Rouveret 2002: 177, fn. 28).

The traditional notion *inherent* Case therefore cannot be used to motivate dative resumptives. In more recent works, there are two interpretations of the term that have played a certain role in resumption (recall section 3.2.2.1). The ‘inherent-ness’ is either captured by means of categorial obliqueness, i.e., datives are reanalyzed as involving more structure, e.g., a PP/KP-structure, or by morphological obliqueness. I will discuss these perspectives in turn and show why they fail for Swiss German. The major problem that arises in all previous approaches is that, while datives indeed differ from direct objects, they cannot easily be equated with PPs.

5.4.2.2.1 The dative as a PP

The first formal analysis of Swiss German relatives was proposed in van Riemsdijk (1989). He relates dative resumptives to recoverability by treating them as hidden prepositional phrases. He presents a base-generation approach with an operator in SpecCP always binding a resumptive pronoun, even in the relativization of subjects and direct objects. The resumptives have to undergo cliticization; in the case of obliques, this targets the governing preposition; in the case of subjects and direct objects, cliticization targets a position close to C, where they undergo obligatory deletion. The obligatoriness of the deletion process is derived from the Avoid Pronoun Principle (Chomsky 1982).⁴⁰ With dative resumptives, deletion is blocked because they are argued to be amalgamations of a locative preposition plus a dative pronoun. Deletion of the resumptive would thus entail deletion of the preposition, which would violate recoverability. Van Riemsdijk capitalizes on the similarity between the dative paradigm and PPs headed by the locative preposition *a* ‘at’, as shown in the following table:

(106)

| | Nom | Dat | Loc | <i>gloss</i> |
|--------|--------|------------|------------|--------------|
| m.def | de Maa | em Maa | am Maa | ‘the man’ |
| m.indf | en Maa | emene Maa | amene Maa | ‘a man’ |
| f.def | d Frau | de Frau | a de Frau | ‘the woman’ |
| f.indf | e Frau | enere Frau | anere Frau | ‘a woman’ |

⁴⁰ Note that, while pronoun fronting can in principle target lower positions, it has to target C in relativization to allow for deletion. This implies transderivational economy.

Deletion of subject and object resumptives is not possible in long-distance movement because pronoun fronting is clause-bound. This accounts for the obligatoriness of resumptives across the board once a clause-boundary is crossed. van Riemsdijk (2008) proposes a different account of long-distance relativization, see section 5.5.1 below.

According to van Riemsdijk, the preposition is visible as schwa in the dative. The personal pronouns functioning as resumptives, *em* ‘he.DAT’ and *ere* ‘she.DAT’ are then argued to be composed of the locative preposition *a* ‘at’ followed by the NP-pronoun.

There are several arguments against van Riemsdijk’s analysis. The first concerns the morphological properties of the dative. While the locative forms can transparently be derived from *a* + dative (e.g., *a* + *em* = *am*; *a* + *de* = *a de*), it is completely unclear how the surface forms of the dative come about. This is mostly due to the fact that van Riemsdijk does not discuss which Case the NP-complement of the locative preposition bears in the dative. There is in fact no obvious choice: If it bore dative, we would end up in infinite regress – a problem that, of course, also obtains in the locative, which selects the dative. If the pronoun is nominative or accusative instead, the morphological processes necessary to arrive at the correct surface form are improbable at best: *a* + *er/en* would have to lead to *em* in the masculine, *a* + *si* would lead to *ere* in the feminine. The same problem obtains with determiners: *a* + *de* would have to lead to *em* in the masculine and *a* + *d* would have to result in *de* in the feminine. This is so implausible that we can readily conclude that at least the morphological decomposition into locative preposition + pronoun is incorrect.

A further argument against an amalgamated dummy preposition comes from the phenomenon traditionally referred to as prepositional dative marking, see Seiler (2002, 2003): In quite a number of Alemannic (and more generally Upper German) dialects, prepositions are used in the expression of the dative. The preposition is either *a* ‘at’ or *i* ‘in’; with masculine and neuter nouns (and with indefinite feminine nouns), we obtain the amalgamations displayed in the table in (106) above:

- (107) a. Ich ha s Buech i/a de Muetter ggëë.
 I have.1SG the book PREP the.DAT mother give.PTCP
 ‘I gave the book to the mother.’
- b. Ich ha s Buech im/am Vatter ggëë.
 I have.1SG the book PREP.the.DAT father give.PTCP
 ‘I gave the book to the father.’

For those dialects, it is highly unlikely that the dative pronoun also contains a preposition as it is hard to motivate two dummy prepositions.

An obvious alternative is to treat the prepositions in (107) as the overt counterpart of van Riemsdijk’s postulated dummy preposition:

- (108) [_{PP} i/a [_{DP} em]]

- (111) Die händ immer no nüüt zalt [für di Arme]/ [a
 they have.3PL still nothing pay.PTCP for the.ACC poor.PL PREP
 de Arme]/ ??[de Arme].
 the.DAT poor.PL the.DAT poor.PL
 ‘They still haven’t paid anything for the poor.’

Again, bare datives, which according to van Riemsdijk include a silent preposition, pattern with DPs rather than PPs. The contrast is even more drastic with dative resumptives, which completely resist extraposition, while resumptive PPs are impeccable in extraposed position (even if they are equally light as the dative resumptive)

- (112) s Mäitli, wo mer es Velo gchauft händ *em/ für=s
 the girl C we a bike buy.PTCP have.1PL her.DAT for=her.DAT
 ‘the girl that we bought a bike (for)’

Finally, the variation in dative resumption discussed in section 5.1.2.1 also argues against assimilating datives to PPs: Van Riemsdijk would have to assume that the very same pronoun *em* ‘he.DAT’ can have the status of a PP in one dialect/idiolect and the status of a DP in the other. In the absence of independent evidence, this is rather ad hoc. Note that the obligatoriness of dative resumptives correlates in no way with the shape of the pronoun; nor is there a correlation between prepositional dative marking and the obligatoriness of dative resumptives.

One can thus conclude that van Riemsdijk’s approach is insufficient to account for dative resumptives in Swiss German. I will come back to van Riemsdijk’s explanation of the lack of subject and direct object resumptives in 5.4.2.4 below.

The fact that Swiss German datives do not pattern with PPs also has implications for a few other important approaches to the distribution of gaps and resumptives (recall also the discussion in 3.2.2 above): The distinction DP vs. PP also plays a role in the approaches by Rouveret (1994, 2002) and Willis (2000), who analyze resumption in Welsh, a language which shows the same direct-oblique split as Swiss German.

Rouveret (2002) argues that resumptives for indirect objects result from the Phase Impenetrability Condition: According to standard assumptions, only elements that are accessible to the C-head can be attracted by movement. If an element can be attracted, a gap-derivation results. Attraction by C is unproblematic for subjects, which are base-generated at the edge of vP. Direct objects can be attracted by C if they undergo object shift. Indirect objects, however, which are PPs, do not undergo object shift and consequently are not accessible to C. Only resumption is a possibility in this case as with complements of prepositions more gener-

ally and with possessors (since resumption involves Agree in his approach, he assumes that resumptives become accessible via cyclic Agree; Agree is thus subject to weaker locality constraints than movement). However, despite the distributional similarities between the two languages, Rouveret's approach cannot be extended to Swiss German because (i) Swiss German datives do not pattern with PPs in relevant respect and (ii) do not differ from direct objects in their propensity to scramble.⁴¹

A somewhat different perspective is taken in Rouveret (1994) and Willis (2000), who derive the direct-oblique split by means of a disjointness requirement: Resumptives are barred from positions where they would be too locally bound. In other words, resumptives are a grammatical possibility of the language rather than a last resort. Consequently, they are in principle available everywhere and thus have to be blocked in certain positions. The constraint is formulated as follows (repeated from section 3.2.2.2 above), see Rouveret (1994: 408):

- (113) A pronoun must be A'-free in the functional projection, or, if it exists, in the extended projection, of the head L to which the site of the pronoun is lexically linked.

The relevant extended projection for subjects and direct objects is the CP. Resumptives are consequently blocked in these positions. Things are different for PPs and possessors as the relevant extended projections are different: Given the standard assumption that nouns and prepositions have extended projections (viz., DP and AgrPP), resumptives inside these phrases will be free in the relevant domain (they are bound by the C-head). Since indirect objects are PPs, resumptives are a possibility in that position. However, since, as shown above, Swiss German datives cannot easily be reanalyzed as PPs, this will not work. I will come back to their treatment of subjects and direct objects in section 5.4.2.4 below.

Finally, the fact that datives cannot be analyzed as PPs also proves problematic for the approach in Müller (2014b), where resumptives are motivated by locality/islands. Since dative resumptives cannot be subsumed under island resump-

⁴¹ A somewhat similar idea seems to be intended by Alexopoulou (2006: 79–80), where the extra structural layer of indirect objects blocks Agree between the D-features of C (which the Greek complementizer *pu* bears quite generally) and that of the operator. Resumptives are then taken to be a last resort that ensures identification of oblique phrases. However, I fail to see why resumption should remedy the problem. If resumptives arise at PF, as suggested by the island-sensitivity of resumption in Greek, this should come too late to check features of C. And even if they are present in the syntax, e.g., within a Big-DP-structure, the resumptives would still be embedded within an extra layer so that checking with C should be prevented as well.

tives, a different trigger would have to be found, but it is not clear what kind of trigger that would be.

In addition to the evidence against assimilating datives in Swiss German to PPs, the matching effect discussed in section 5.3 provides a last and particularly strong argument against most of the previous approaches: Under most of them, the Case of the head noun should have no influence on the possibility of the resumptive inside the relative clause: It should have no effect on the accessibility of the IO as in Rouveret (2002), nor should it affect the binding domain of the resumptive in Rouveret (1994) and Willis (2000), nor should it affect the islandhood of datives as in Müller (2014b). Since in all these approaches, dative resumptives are motivated by properties inside the relative clause alone, the matrix context cannot have any influence. Things may actually be somewhat different in van Riemsdijk (1989), where recoverability of deletion plays an important role. However, with no explicit formal implementation of recoverability, such a proposal remains difficult to assess.

To conclude, treating datives as PPs in Swiss German fails for empirical reasons and thus automatically rules out most previous approaches to the direct-oblique split in the distribution of resumptives.⁴²

5.4.2.2.2 Datives as oblique Case

As discussed in section 3.2.2.1, there are a number of proposals that motivate resumptives for datives and other oblique objects morphologically/at PF (cf., e.g., Pesetsky 1989, Bianchi 2004): They argue that certain cases are subject to special recoverability requirements and therefore require overt realization at PF. This usually derives the correct result, but in the absence of independent evidence these proposals are not much more than a restatement of the empirical facts.

⁴² This is not to deny that there are asymmetries between direct and indirect objects and that indirect objects pattern with PPs with respect to certain tests. For instance, as shown in Vogel & Steinbach (1998: 73–75), direct objects can bind indirect ones but not vice versa. Furthermore, while direct objects generally allow for subextraction, indirect objects (like PPs) turn out to be barriers:

- (i) a. [Über wen]₁ hast du [ein Buch __₁] gelesen?
 about whom have.2SG you a.ACC book read.PTCP
 ‘Who did you read a book about?’
 b. *[Über wen]₁ hat der Verleger [einem Buch __₁] keine Chance gegeben?
 about whom have.3SG the editor a.DAT book no chance give.PTCP
 lit.: ‘Who did the editor give a book about no chance?’

Such facts therefore require a different explanation. The barrierhood of datives, for instance, can be reduced to the CED if they are introduced in the specifier of V, as proposed in Müller (2011: 103–104).

At least at first sight, the situation seem to be different in (Swiss) German: Bayer et al. (2001) argue for Standard German that such a constraint holds more generally in the language, i.e., also outside of relativization (in fact they do not discuss resumption at all). I will reproduce three of their arguments: First, while sentential complements can occur in the direct object position, this is not possible in the case of indirect objects. The only possibility to rescue such examples is to add a DP taking the CP as its complement (which is optional in the case of nominatives/accusatives), see Bayer et al. (2001: 471):

- (114) a. Wir bestritten_{acc} (die Behauptung), [dass wir verreisen
we deny.PST.1PL the claim that we travel.away.INF
wollten].
want.PST.1PL
'We denied (the allegation) that we wanted to go away.'
- b. Wir widersprachen_{dat} *(der Behauptung), [dass wir
we object.PST.1PL the.DAT claim that we
verreisen wollten]].
travel.away.INF want.PST.1PL
'We rejected the allegation that we wanted to go away.'

Standard German

Second, certain indefinite quantifiers in German do not inflect for case. Interestingly, they can function as bare subjects or direct objects but not as indirect objects (Bayer et al. 2001: 472):

- (115) a. Wir haben genug/ nichts/ allerlei/ etwas/ wenig
we have.1PL enough nothing a lot something little
erlebt_{acc}.
experience.PTCP
'We have experienced enough/nothing/a lot/something/little.' ACC
- b. *Feuchtigkeit schadet_{dat} genug/ nichts/ allerlei/ etwas/ wenig.
humidity harm.3SG enough nothing a lot something little
'Humidity harms enough/nothing/a lot/something/little.' DAT

Standard German

Some of these adjectives have an inflected form, which is optional for the structural cases but obligatory for datives (Bayer et al. 2001: 472):

- (116) a. Wir haben schon viel-(es)/ nur wenig-(es) erlebt_{acc}.
we have.1PL already much-(ACC) only little-(ACC) experience.PTCP
'We have experienced much already/only little.' ACC

- b. Das schadet_{dat}/ gleicht_{dat}/ ähnelt_{dat} viel-*(em)/ wenig-*(em).
 that harm.3SG equal.3SG resemble.3SG much-(DAT) little-(DAT)
 ‘This harms/equals/resembles much/little.’ DAT
Standard German

Third, topic Drop (phonetic deletion of an XP in the prefield, viz., SpecCP), is only possible with accusative (and nominative) DPs but not with datives, see Bayer et al. (2001: 489):

- (117) a. $\overline{\text{DP}}_{acc}$ Hab' ich schon gesehen_{acc}.
 have.1SG I already see.PTCP
 ‘I have already seen (it).’
 b. * $\overline{\text{DP}}_{dat}$ Würde ich kein Geld geben_{dat}.
 would.1SG I no money give.INF
 ‘I wouldn’t give (him) any money.’ *Standard German*

Importantly, the realizational constraint treats all datives (and, in the standard language, genitives) alike (cf., e.g., the structural dative in (117-b) vs. the inherent dative in (114-b)). This clearly argues for a morphological notion of obliqueness.

The facts are the same in Swiss German (the only difference being that there is no genitive anymore). Consequently, it seems very attractive to subsume dative resumptives under this general constraint (a position I have argued for in earlier work, cf., e.g., Salzmann 2006a). However, I now believe that there are several serious arguments against this type of proposal: First, the matching effect shows that there simply is no strict requirement to realize datives. Appealing to recoverability of the oblique Case in these configurations is insufficient in the absence of an explicit theory of recoverability. Second, in the dialects/idiolects without dative resumptives (or in those where they are optional), cf. section 5.1.2.1, the constraint does not seem to hold or only holds optionally in relativization, although datives still need to be realized in the contexts discussed above. Third, there is empirical evidence against a strict requirement of dative realization: First, singular mass nouns can sometimes occur in the dative without any overt ending ((118-a) was provided by Daniel Hole p.c.):

- (118) a. Wein droht_{dat} das Verkaufsverbot.
 wine threaten.3SG the.NOM prohibition of sale
 ‘Wine is threatened by the prohibition of sales.’

- b. Stimmungsmache gegen Flüchtlinge trete ich entschlossen
 cheap propaganda against refugees step.1SG I determined
 entgegen_{dat.}
 against
 ‘I strongly oppose cheap propaganda against refugees.’

Malu Dreyer, facebook, 15.10.2015

Standard German

Another systematic exception are proper names, which at least in the standard language can occur without the article (note that proper names no longer inflect in contemporary German):⁴³

- (119) Hans gefällt_{dat} das Buch.
 John please.3SG the book
 ‘John likes the book.’

Standard German

A final exception are bare plurals where the ending is syncretic for nominative/accusative/dative as, e.g., with nouns taking the *(e)-n* plural, as in (120).

- (120) Frau-en gefällt_{dat} das.
 women-PL please.3SG this
 ‘Women like this.’

Standard German

Bayer et al. (2001: 481) argue from a historical perspective that these forms are still datives. While this may work for *-(e)n*-plurals, where the morphological form is indeed still close to the Old High German dative plural form, it is unlikely that this explanation can be extended to *s*-plurals as in (121-a) or Swiss German plurals only formed by umlaut as in (121-b) (the singular would be *Hund*), neither of which derives from an older dative form:

- (121) a. Oma-s kann man immer vertrauen_{dat.}
 grandma-PL can.3SG one always trust.INF
 ‘One can always trust grandmas.’

Standard German

- b. Hünd cha mer immer vertraue_{dat.}
 dog.PL can.3SG one always trust.INF
 ‘One can always trust dogs.’

Swiss German

⁴³ Bayer et al. (2001: 479–480) speculate that the realizational requirement may be satisfied through N-to-D raising of the proper name and the fact that D is connected to a paradigm that provides Case morphology for the dative. I regard this explanation as somewhat creative.

The realizational requirement for datives probably must be adjusted to the effect that it is satisfied (in the plural) as long as there is a morphological exponent different from the stem.⁴⁴

Crucially, there is no evidence that plural resumptives are less systematic than singular resumptives. Consequently, the distribution of resumptives does not pattern with obligatory overt dative realization. Therefore, the realizational requirement is insufficient to motivate dative resumptives.⁴⁵

5.4.2.3 Dative resumption as the result of Case attraction

I will now proceed to my analysis of local relativization. In what follows, the matching effect will play a central role. I will show that it provides the key to a proper understanding of the distribution of gaps and resumptives. I propose, adapting an earlier idea by Georgi & Salzmann (2014, 2017), that the distribution in local relativization follows if there is obligatory Case attraction. Although this may seem surprising at first sight, I will show in what follows that Case attraction

44 Another possible counter-argument against a strict requirement to realize the dative are the silent resumptives for the dative possessor, recall sections 5.2.4.2 and 5.4.2.1.

45 Admittedly, the realizational requirement does play a certain role in the relativization of certain dialects, as shown by Fleischer (2004, 2006). While Alemannic varieties and Yiddish make use of resumptive pronouns for datives, others use case-marked relative pronouns. Interestingly, many varieties can use either particles or relative pronouns for subject and direct object relativization, but once indirect objects are relativized, only the relative pronoun is acceptable, clearly suggesting that the realizational constraint is at work. Most of the German varieties which do not seem to express dative case in relativization do so for principled reasons. First, in Low German dialects like Westphalian for instance accusative and dative have collapsed so that there is no oblique Case anymore that needs to be expressed. Second, as pointed out in Fleischer (2006: 226–228), many Franconian and Bavarian varieties show a matching effect with dative, allowing for deletion of the dative relative pronoun under matching, i.e., if the head noun bears the same Case, as originally described in Bayer (1984). For a syntactic account of the matching effect in Bavarian, see fn. 59 below.

Another common pattern in dative relativization is some form of *attractio inversa*, i.e., a correlative structure where the head noun bears the dative Case that should be expressed inside the relative clause. Here is an example from Swabian, cf. Fischer & Pfeleiderer (1904: vol 6: 912):

- (i) Denere Frau, wo des Haus ghört_{dat}, (die) hat s verkauft.

DEM.DAT woman C this house belong.to.3SG she have.3SG it sell.PTCP

‘The woman to whom this house belongs sold it.’

Swabian

The authors also provide a correlative-like example where a PP-complement that is missing inside the RC can be recovered from the matrix clause.

Among the German varieties in Fleischer’s sample which have a separate dative case but nevertheless do not express it in relativization are certain Alemannic varieties (recall section 5.1.2.1) and the dialect of Saarbrücken, where the use of the dative relative pronoun is optional.

and the distribution of gaps and resumptives in Swiss German share crucial properties so that a unified approach suggests itself. The basic idea is that through Case attraction, the relative operator must bear the same Case as the head noun. This will be implemented by means of Case-Agree between the head noun and the relative operator. Additionally, I assume a slight modification of the Activity Condition such that DPs may enter Case-Agree with a second Case-probe in narrowly-defined circumstances. This allows the relative operator to check both the Case-probe on the head noun as well as the RC-internal Case-probe. This will be successful if the operator bears a Case that is more oblique or as oblique as the RC-internal Case. If, however, the RC-internal Case is more oblique, the relative operator will fail to check one of the two probes. This is where resumption comes into play: While the operator checks the Case-probe on the head noun, the resumptive discharges the RC-internal Case-probe.

In the following subsections, I will first illustrate the similarities between Case attraction and resumption in Swiss German; then, I will introduce my assumptions about Case-checking before providing derivations for the various configurations.⁴⁶

46 That matching effects and attraction play an important role in the syntax of resumptive relatives has been discovered only recently. See, e.g., Gračanin-Yuksek (2013) for the idea that inverse attraction is at work in Croatian relative clauses (the Case-features of the internal head somehow percolate to the external head of the RC).

Hladnik (2015) proposes that the matching effect in Slavic obtains if the internal D can incorporate into the external D and the resulting complex head can be spelled out by a single element (which somehow removes the otherwise strong requirement to spell-out Case, either by means of a relative pronoun or by means of resumption). This is basically the same proposal as in Salzmann (2006b). Apart from the fact that it is not fully clear why resumption is not possible (or, rather, why Case does not have to be spelled out anymore), a more serious problem for this approach constitute syncretism effects that depend on the declension class of the head noun: They cannot be straightforwardly captured as N is not part of this ‘matching’ procedure.

The distribution of resumptives in Greek is also related to Case attraction by Daskalaki & Mavrogiorgos (2013). They argue that the Case of the head noun (in restrictive RCs)/the *wh*-pronoun (in free RCs) is overwritten with the Case assigned by the matrix Case-probe. In the relativization of an indirect object (which bears genitive in Greek) this will lead to a recovery problem at LF if the matrix case is structural because genitive would no longer be represented inside the RC, in violation of the requirement that inherent Case be visible at LF. This is where resumption comes in: A genitive resumptive clitic (that was generated together with RelP as part of a clitic-doubling structure) ensures that inherent Case is visible at LF. The approach seems to assume that all copies of the *wh*-phrase are overwritten (as otherwise genitive would be present on the lower RC-internal copy; some of the data about secondary predication discussed in section 5.4.2.3.4 below may be problematic for this view). In the matching configuration, the genitive clitic is optional as genitive is overwritten with genitive so that no recoverability issue arises. Similarly, in *wh*-movement and

5.4.2.3.1 Case attraction and the distribution of resumptives

In Case attraction, the relative pronoun (RelP) does not bear the case governed by the relative clause-internal probe but rather the Case assigned to the head noun of the RC. In the following examples, the RelP bears genitive, the Case of the head noun, although one would have expected it to bear accusative/nominative given the Case-properties of the verbs inside the RC:

- (122) a. mne:moneúete_{gen} toû lógou
 remember.2PL.PRS.IPFV the.M.SG.GEN word.M.SG.GEN
 hoû egò: eípon_{acc} humín
 which.M.SG.GEN I.SG.NOM say.1SG.AOR you.PL.DAT
 ‘Remember that word which I said to you.’
New Testament Greek (Kirk 2012: 202)
- b. daz er [...] alles des verplac_{gen} des im ze
 that he all that.GEN abandon.PST.3SG which.GEN he.DAT to
 schaden mohte_{nom} komen
 damage might.3SG come.INF
 ‘that he abandoned all that might cause damage to him’
Middle High German (Pittner 1995: 198)

There are two additional important properties of Case attraction that need to be taken into account: First, Case attraction is generally optional. Second, attraction is only possible if the matrix Case is more oblique than (or as oblique as) the Case assigned in the RC. The obliqueness hierarchy is given in (123) (see Grosu 1994: 122, Pittner 1995: 200–201):⁴⁷

- (123) Gen > Dat > Acc > Nom

wh-relatives (where there is no overwriting), the genitive clitic is generally optional as genitive is recoverable from the overt *wh*-phrase.

See also Hawkins (2004: 96f.), Hawkins (2014: 25f.) for arguments that matching and attraction reflect the grammaticalization of a processing preference (so-called parallel function effects).

⁴⁷ I am aware of one exception to the hierarchy generalization, viz., Nez Perce, where nominative, accusative and ergative can attract to each other (Amy Rose Deal, p.c.).

Things are more complicated with free relatives, see Vogel (2001) and Georgi & Salzmann (2014: 388–391): Some languages like Romanian and Gothic conform to the hierarchy, while others like Icelandic do not in that they systematically require the matrix Case. Still others like German and its varieties (depending on the variety/the speaker group) tend to either consistently use the RC-internal Case or require strict Case-matching. For an implementation of strict Case matching, see fn. 58 below.

The two crucial similarities between Case attraction and Swiss German relatives are the following: First, in both constructions, the form of an element inside the RC depends on the Case of the head noun: In attraction, it determines the Case of the RelP; in Swiss German relativization, it affects the choice between gaps and resumptives, as shown by the matching effect. Second, both constructions are subject to a hierarchy effect. For Swiss German relatives, this becomes immediately visible once the following table is inspected (MC refers to matrix Case, RC refers to relative clause-internal Case):

Table 5.1: Distribution of gaps and resumptives in Swiss German local relativization

| MC-Case | RC-Case | result |
|---------|---------|------------|
| Dat | Nom/Acc | gap |
| Dat | Dat | gap |
| Nom/Acc | Nom/Acc | |
| Nom/Acc | Dat | resumptive |

As the table shows, gaps are only possible if the matrix Case is more oblique than or as oblique as the RC-Case (given the obliqueness hierarchy Dat > unmarked, see (130) below). They thus have exactly the same distribution as Case attraction. Furthermore, resumptives occur when the MC-Case is less oblique than the RC-Case, i.e., in the scenario where Case attraction is blocked.

5.4.2.3.2 Case-checking

Given a cyclic bottom-up derivation, the relative operator will first enter Agree with the RC-internal Case-probe. Since in Case attraction it surfaces with the Case assigned to the head noun, it must also enter a second Case-Agree operation. I conclude from this that a strict version of the Activity Condition is untenable and will consequently propose a slight modification that allows the operator to enter two Case-Agree relations.⁴⁸

Concretely, I make the following assumptions (partly drawn from Georgi & Salzmann 2014, 2017): 1. Case-Agree involves checking, i.e., DPs start out with prespecified Case values [uCase]. 2. The prespecified Case-feature [uCase] of a DP needs to be checked by a c-commanding probe bearing a corresponding [*CASE*]-

⁴⁸ Various alternatives to address the problem with Case-checking in Case attraction are discussed in Georgi & Salzmann (2014: 350–352) and Georgi & Salzmann (2017).

feature (probes are rendered as star-features, for the notation, see, e.g., Sternefeld 2006). Agree is defined as follows:

(124) *Definition of Agree (based on Chomsky 2000, 2001):*

Agree between a probe P and a goal G applies if

- a. P c-commands G,
- b. P has an undischarged feature [$*F^*$] and G has a corresponding pre-specified feature [uF],
- c. G is the closest goal for P.
- d. Result: [$*F^*$] on P is discharged.

3. Most importantly, there are two ways of discharging probe features, viz., checking and matching:

(125) *checking:*

Checking involves Agree between a DP with an *unchecked* Case feature [uCase] and a probe [$*CASE^*$]. It does not require identity of features, viz., it is possible if the probe has a *subset* of the features of the goal (see (131) below on Case decomposition).

(126) *matching:*⁴⁹

Matching involves Agree between a DP with a *checked* Case feature [uCase] and a probe [$*CASE^*$]. It requires identity of features, i.e., it is only possible if the goal has the same features as the probe.

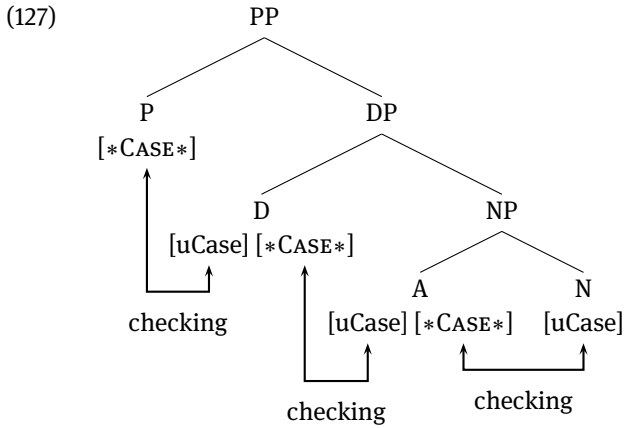
The possibility of matching allows the relative operator to enter an Agree relation both with the matrix Case-probe (which leads to attraction) and the RC-internal one.

4. To account for concord within DP, I assume that all heads above N have a [$*CASE^*$]-probe in addition to their inherent Case feature [uCase]; the two Case-features need to have the same values:⁵⁰

This doubling of features is necessary to account for the fact that a D is active and thus visible for a DP-external probe (v/T/P) as well as for Agree with DP-internal elements (A or N). Within a DP (here selected by P), the following operations thus take place (I use a simplified DP-structure just consisting of D, A and N):

⁴⁹ For independent motivation for the concept of matching, see Anagnostopoulou (2005) and Richards (2008a) on PCC-effects.

⁵⁰ The same holds for phi-features, which I omit in what follows. This doubling of features is a general property of checking approaches to concord within DP, see Georgi & Salzman (2011: 2083, fn.25).



5. To implement Case attraction, I assume an additional Agree operation between the head noun and the relative pronoun/operator (see also Spyropoulos 2011; for phi-features, see Brandt & Fuß 2014). Concretely, I propose that N has a Case-probe-feature in addition to its inherent [uCase]-feature; this probe-feature will enter into Agree with the RelP:⁵¹

(128) $N_{[uCase],[*CASE*]}$

To capture the crosslinguistic variation w.r.t. the availability of Case attraction, the presence of the Case-probe on N is parameterized as follows:

- (129)
- a. optional (languages with Case attraction)
 - b. prohibited (languages without Case attraction, e.g., Modern German)
 - c. obligatory (Swiss German)

While the first two options are obvious, I argue that the third logical possibility, the obligatoriness of the Case-probe on N and thus of Case attraction, is also attested. This derives the pattern of gaps and resumptives in Swiss German.⁵²

⁵¹ Previous accounts of Case attraction usually do not provide a technical implementation but rather phrase the process in prose so that its precise nature remains unclear, see, e.g., Harbert (1983: 246) and Gračanin-Yuksek (2013: 43, fn. 18).

⁵² Case attraction, i.e., the assignment of the matrix Case to RelP, could in principle also be handled in a Multiple Agree (Hiraiwa 2000) approach to concord (cf. Assmann et al. 2014). The RelP would thus be affected in the same way other sub-constituents of the DP receive Case. However, such an approach cannot easily capture the crosslinguistic variation. One would arguably expect many more languages to instantiate Case attraction given that in most, RCs are DP-internal and

6. To account for the hierarchy effect in (123), I make the following assumptions about Case features: (i) Cases are decomposed (see, e.g., McFadden 2004 and references cited there): traditional Case-labels are replaced by bundles of (more abstract) privative Case-features. (ii) The more marked/oblique a Case is, the more features it is composed of, see Béjar & Ěezáč (2009) for person and Assmann (2013) for Case (see also Caha 2009 for a similar proposal). The markedness/obliqueness hierarchy is as follows:

(130) Gen > Dat > Acc > Nom

The individual Cases then receive the following abstract specifications:

(131) Case-decomposition
 Nom $[\alpha]$
 Acc $[\alpha \beta]$
 Dat $[\alpha \beta \gamma]$
 Gen $[\alpha \beta \gamma \delta]$

Importantly, this feature decomposition holds for both probes and goals. For ease of representation, I will use the traditional labels in the rest of this section, but it should always be borne in mind that they actually refer to feature bundles.

7. I adopt the matching analysis (to account for the reconstruction pattern, recall section 5.2.3 and see section 5.4.3 below) and assume that RCs are merged as complements of N.⁵³

should thus be affected by multiple Agree. To capture the crosslinguistic variation, one would have to postulate that languages differ in whether they allow for matching in addition to regular checking. While the obligatoriness of attraction (as in Swiss German) or the absence thereof (as in Standard German) could arguably be accommodated, it is not so clear how to handle the optionality of Case attraction. Under standard assumptions, multiple Agree would target all available goals, including the relative pronoun so that, once matching (and thus attraction) is available, there should always be Case attraction, contrary to fact.

In the present approach, where the variation is located in the lexical specification of N, the variation can be captured straightforwardly.

Furthermore, there are languages like Standard German and Gothic which have Case attraction in FRCs but not in headed relative clauses. Under the present account, this can be captured by assuming that only certain heads have an extra Case-probe. Concretely, under the assumption that free relatives have a silent D, one can postulate that in the relevant languages, only this D but not nouns that take an RC-complement have the extra probe. Under a Multiple Agree approach, attraction should affect both constructions since the relative pronoun is DP-internal in both.

53 If the noun additionally takes arguments or modifiers, RCs are attached to a projection of N. Given Bare Phrase Structure, selectional and probe-features will be present on the relevant label so that they c-command the RC. I assume a general rule that optionally assigns to an N

I will now go through the relevant configurations in Case attraction before tackling Swiss German relatives.

5.4.2.3.3 Case attraction derivations

There are two central components in my analysis of Case attraction. First, the Agree relationship between the Case-probe on the head noun and the relative pronoun implements attraction; it ensures that the RelP bears the matrix Case. Second, the possibility of Case-Agree under matching allows the relative pronoun to enter two Case-Agree operations, both with the RC-internal probe and the probe on N. The fact that checking is only possible if the probe has a subset of the features of the goal implements the hierarchy effect, see (123). The subset condition is not an arbitrary stipulation but follows from the fact that this is the only way to discharge all Case-probe features.

I will now go through the various scenarios. In the first scenario, corresponding to example (122-a), the Case assigned by the matrix probe is more oblique than that of the RC-internal one (genitive vs. accusative, instantiating attraction), see (132). In the second scenario, both the matrix Case-probe and the RC-internal Case-probe assign the same Case (genitive in (133)). The third scenario is the reverse of the first: The Case assigned by the RC-internal probe is more oblique than that of the matrix Case probe, which renders attraction impossible. The derivation for the first scenario looks as in (132):⁵⁴

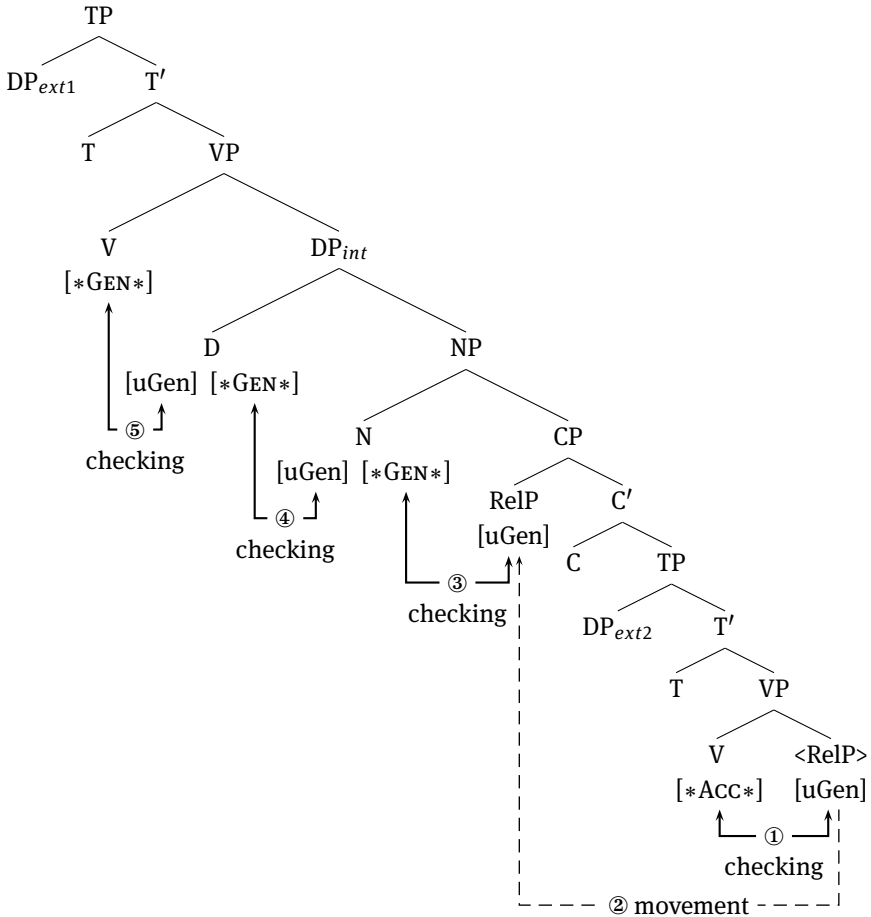
a structure-building feature for the relative clause and a probe feature for Case-Agree with the operator. While agreement in phi-features between N and the operator could also result from anaphoric agreement, Case attraction has to be ensured by a grammatical operation.

Given the discussion in section 2.5.3.6, this implies that late merger effects have to be treated as in Sportiche (2006) with the RC merged cyclically but deleted under identity with its copy attached to the top-copy of the *wh*-phrase. Given that Case attraction involves the discharge of structure-building and probe features, countercyclic merger is ruled out anyway. In principle, the approach to Case attraction pursued here would also be compatible with adjunction to NP. However, this would require an additional Case-probe on D rather than on N and since the RC would not be introduced by a structure-building feature, the additional Case-probe could not be easily linked to the presence of the RC. Treating the RC as an argument of D as in Sternefeld (2006) and locating the additional Case-probe on D, however, would work just as well as the proposal in the text.

Note that the fact that the RC is merged as a complement does not imply that it is an argument. Rather, it is a selected adjunct that is interpreted as a modifier that combines with the noun via intersective modification. Because of this it can undergo LF-deletion in the late merger contexts.

54 For ease of representation the tree diagrams used in this section will mostly be strictly right-branching, even for OV languages. For reasons of space, the projection of the functional head *v* is omitted in most tree diagrams. For my present purposes, it does not matter whether Case is assigned by *v* or *V*.

(132) Case attraction – scenario 1: MC=Gen; RC=Acc → RelP=Gen

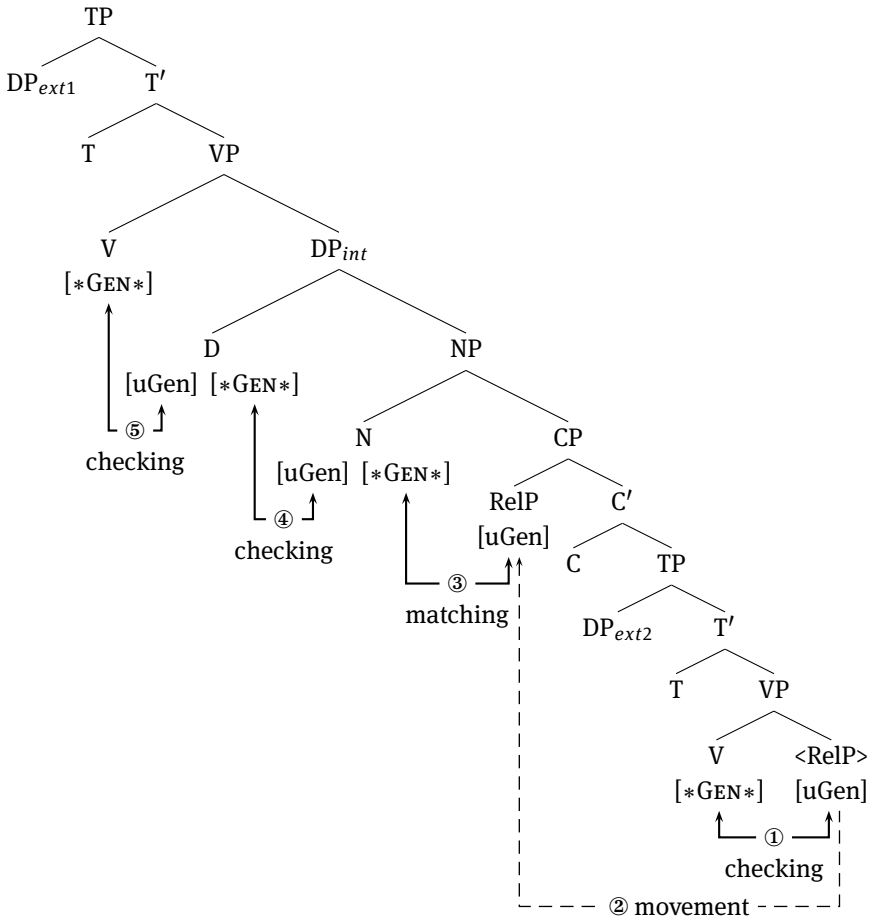


The relative pronoun starts out in its θ -position, bearing the features of the matrix Case, viz., genitive. The crucial step is the first one: It enters Case-checking with the RC-internal Case probe. Since the probe has a subset of the features of the RelP ($[\alpha, \beta]$ vs. $[\alpha, \beta, \gamma, \delta]$), checking is successful and the Case-probe is discharged ①. The RelP remains active for checking as it has more features than the Case-probe. RelP then undergoes movement to its operator position in the left periphery, via intermediate landing sites not indicated in (132), see ②. Since the operator is still active, Case-Agree with N, which implements attraction, involves checking; checking is successful since the probe has the same features as the RelP (identity of features also constitutes a subset). Consequently, the Case-probe on N is discharged and all of the RelP's features are checked ③. Thereafter, there is

DP-internal concord, i.e., Agree between D and N ④. Finally, the external D undergoes Case-checking with the matrix Case-probe ⑤. Note that the derivation would crash if RelP were specified for the RC-internal case, viz., accusative: While it could check the RC-internal probe, matching with the probe on N would fail as there is no identity of features (the probe on N would have a superset, leaving features on N unchecked).

The second scenario is a variant of the first, the only difference being that both probes assign the same Case, viz., genitive. The derivation proceeds as in (133). In the first step, RelP enters Case-checking with the RC-internal Case-probe. Since both have the same number of features ($[\alpha, \beta, \gamma, \delta]$), checking is successful ①. RelP then moves to its operator position ②, where it undergoes matching with the Case-probe on N (note that unlike in scenario 1, all of RelP's features have been checked in the Agree-operation with the RC-internal probe). Matching is successful since both probe and goal have identical Case-features ③. Thereafter, there is Agree between D and N (DP-internal concord) ④ and Agree between D and the matrix Case-probe ⑤:

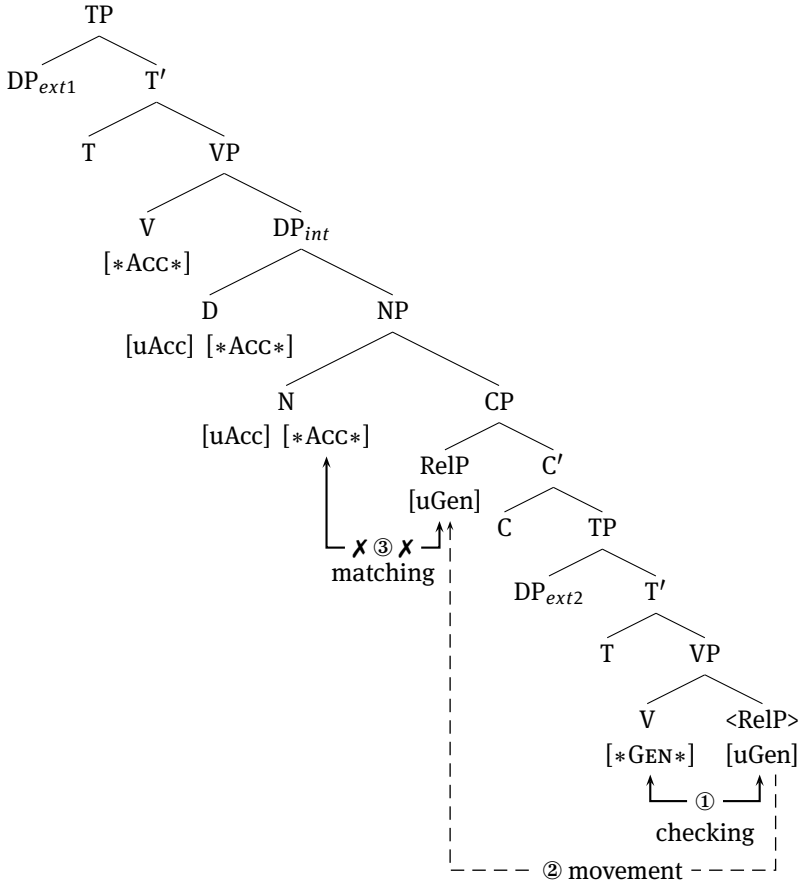
(133) Case attraction – scenario 2: MC=Gen RC=Gen → RelP=Gen



The third scenario involves a configuration where the matrix Case is less oblique than the embedded Case (accusative vs. genitive). Recall that attraction is impossible here. The derivation proceeds as follows: Suppose RelP starts out with the RC-Case, viz., genitive: It first undergoes checking with the RC-internal probe, which is successful given that probe and goal have identical Case-features ①. RelP then moves to its operator position in the left periphery ②. But now a problem obtains when RelP enters Case-Agree with N: Given that the relative pronoun has already been involved in Case checking, matching is the only possibility for feature discharge. However, since N has fewer features than the relative operator, matching

is not possible ③ and the derivation crashes.⁵⁵ Note that a derivation with the relative pronoun being specified for accusative, the matrix Case, would crash as well because probe features of the embedded verb would remain unchecked. Consequently, there is no converging derivation in this scenario:

(134) Case attraction – scenario 3: MC=Acc; RC=Gen → crash

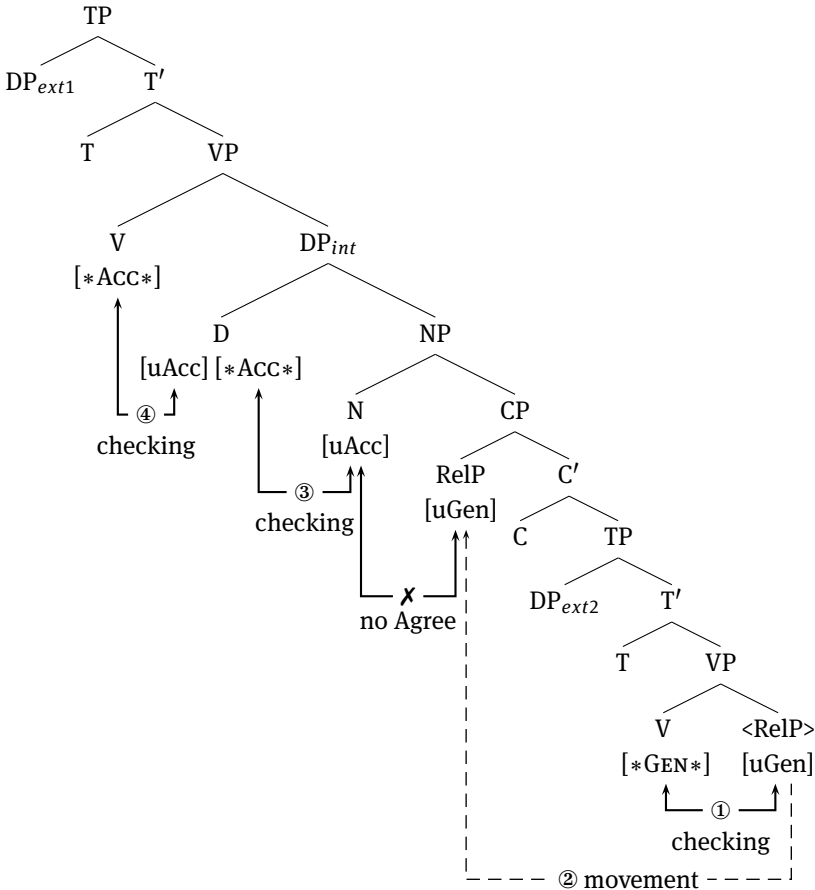


The only possible derivation in this scenario involves absence of attraction, i.e., the lack of a Case-probe on N. The derivation converges if RelP is specified for

⁵⁵ The identity condition on matching may seem unattractive and unnecessary here since without it one could derive non-attraction cases in the presence of a Case probe on N (and thus could keep N's feature content constant). However, in the discussion on resumption below we will see that the identity condition is crucial to prevent overgeneration: Without it, one could derive gap relatives for dative objects even if the matrix Case is nominative/accusative.

the RC-internal Case, viz., genitive. The first steps are the same as in attraction: RelP enters Case-checking with the RC-internal probe, which is successful given that probe and goal have identical features ①. RelP then moves on to its operator position ②. Crucially, there is no Case-Agree between RelP and N. There is just Agree between D and N (concord) ③ and Agree between D and the matrix Case-probe ④:

(135) No attraction – scenario 3: MC=Acc; RC=Gen → RelP=Gen



Derivations without a Case-probe on N will also be needed (i) for languages without any Case attraction at all (e.g., Modern German) and (ii) for languages with Case attraction to capture the optionality of attraction.

To summarize: There are 2 crucial ingredients that make Case attraction possible: (i) There is Case-Agree between N and RelP. This ensures that RelP bears

the matrix Case (because matching requires identity of features). (ii) Discharge of Case-probes is possible under matching, which allows RelP to enter Case-Agree with N even though it has already undergone Agree with the RC-internal Case-probe. The subset condition on checking allows RelP to start out with more features than the RC-probe and implements the hierarchy effect in (123). The presence/absence of the Case-probe on N regulates the possibility of attraction: In some languages like modern German, it is never present so that there will never be any attraction; in that Case, RelP must be specified for the RC-internal Case. In Case attraction languages, the Case-probe on N is optional. In its absence, RelP bears the RC-internal Case. If it is present, however, RelP must start out with the matrix Case, i.e., there must be attraction for the derivation to converge.⁵⁶

5.4.2.3.4 Gap and resumptive derivations in Swiss German

I now turn to the distribution of gaps and resumptives in Swiss German and repeat the overview from above:

Table 5.2: Distribution of gaps and resumptives in Swiss German local relativization

| <i>MC-Case</i> | <i>RC-Case</i> | <i>result</i> |
|----------------|----------------|---------------|
| Dat | Nom/Acc | gap |
| Dat | Dat | gap |
| Nom/Acc | Nom/Acc | gap |
| Nom/Acc | Dat | resumptive |

I propose that this distribution follows if Case attraction, viz., a Case-probe on N, is obligatory in Swiss German. In the first scenario, the matrix Case is more oblique than the RC-Case, which obeys the hierarchy in (123) so that a Case attraction derivation will converge. In the third scenario, however, the reverse situation obtains, and resumption comes to the rescue to save a derivation that is otherwise doomed to fail: While the operator bears the matrix Case and therefore fails to discharge the RC-internal probe, the resumptive can check the RC-internal probe.

⁵⁶ My analysis seems to be incompatible with inverse attraction (*attractio inversa*), where it appears that the embedded Case is imposed onto the head noun. However, there is good reason to believe that the construction involves a different structure (as pointed out, e.g., in Pittner 1995, Bianchi 2000b and van Riemsdijk 2006): In most examples of inverse attraction, there is a demonstrative/resumptive pronoun in the matrix clause (with matrix Case) resuming the head noun. This suggests that the construction rather represents a correlative or left-dislocation structure (for potential counter-examples, see Grosu 1994: 127 and Wood et al. to appear).

The second scenario, the matching configuration, is a subcase of Case attraction: RelOP can enter Agree both with the RC-probe and the MC-probe since the features are identical (both probes assign nominative, accusative or dative).

As shown in section 5.3, nominative-accusative mismatches always result in gaps, even if they go against the hierarchy in (123), i.e., even if the MC-Case is nominative and the RC-Case is accusative, as in (3-b) above. I propose that this is due to a slight difference in the Case-hierarchy: nominative and accusative represent the same type of Case, viz., unmarked Case:

(136) Dat > unmarked (Nom, Acc)

Concretely, they have the same number of Case-features (which holds for probes and goals) and thus a subset of the features of the dative. For ease of readability, I will nevertheless use the labels Nom/Acc in the derivations below. Independent motivation for collapsing the two cases comes from Swiss German morphology: Nominative and accusative are not morphologically distinguished except in personal pronouns (basically as in English). Apparent nominative-accusative mismatches thus actually represent instances of scenario 2, viz., matching (identity of the Cases).⁵⁷

⁵⁷ Matching/attraction between nominative and accusative illustrates a morphology-syntax mismatch. In syntax, nominative and accusative behave the same (with respect to attraction), but morphologically they are distinguished; in Swiss German, the distinction is restricted to the personal pronoun paradigm. But in other languages like Modern Greek, where in free relatives nominative and accusative can be attracted to each other, the two Cases are morphologically differentiated both in pronominal and nominal paradigms. Given my syntactic approach to attraction, the two Cases must be represented by exactly the same set of privative Case features. To capture the morphological difference, I propose, following Georgi & Salzmann (2017), that exponents can be sensitive to the category of the head that checks Case on the DP, i.e., v/V vs. T (see Pesetsky & Torrego 2001). For concreteness' sake, one can assume that DPs start out with an additional category feature [uF] that is checked against the categorial feature of the Case-checker. Vocabulary items can then refer to this feature. Note that this [uF] is not a proper Case-feature but a categorial feature that is checked as a by-product of Case-checking. Consequently, it does not count for the computation of subset relations and does not prevent matching.

As pointed out by Klaus Abels, in Swiss German configurations with personal pronouns as heads (where crucially nominative and accusative are distinguished), one predicts gaps under nominative/accusative mismatches because the Cases are syntactically the same. This prediction is borne out:

- (i) Er, wo __ /*en d Aarbetskoleege regelmäässig schlönd_{acc}, bruucht_{nom} dringend Hilf.
 he C him the colleagues regularly beat.up.3PL need.3SG urgently help
 'He, who the colleagues beat up regularly, urgently needs help.'

Another morphology-syntax mismatch arises with syncretisms, which are famous for resolving mismatches. They are not only attested in free relatives (cf., e.g., van Riemsdijk 2006) and para-

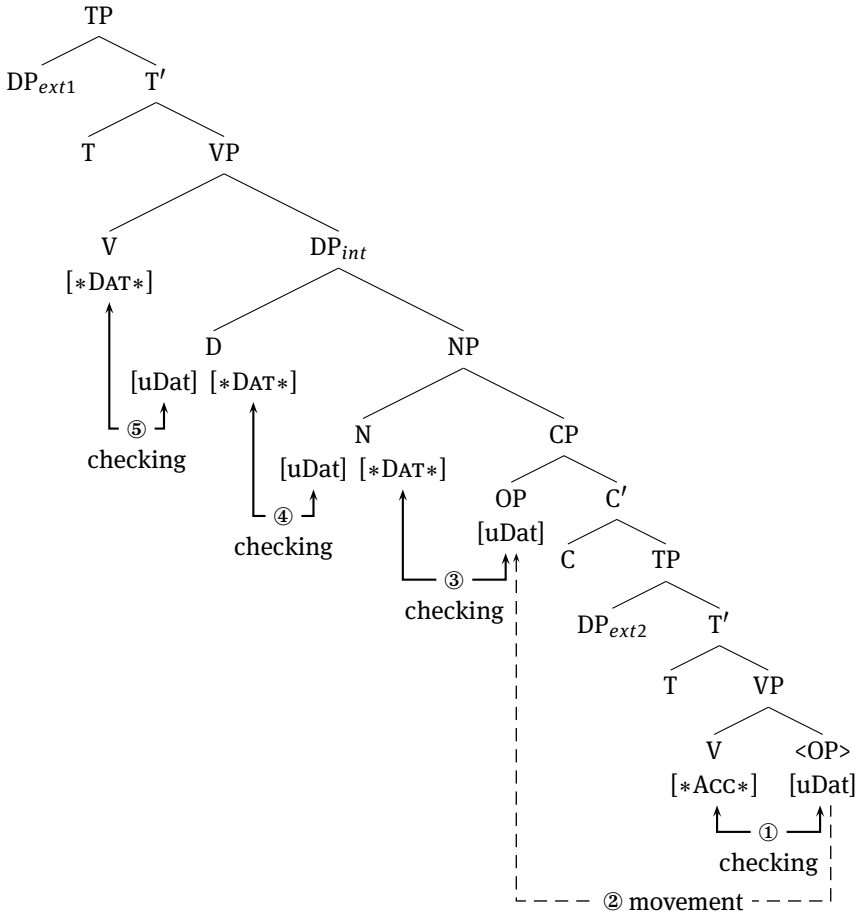
I will now go through the three scenarios: The derivation in scenario 1, which corresponds to examples like (88-b), where the matrix Case is dative and the RC-Case accusative, proceeds as in (137):

sitic gaps (Himmelreich 2016) but also in Case attraction (Grosu 1994: 126) and, as already shown in section 5.3 above, in matching in resumption (the same holds in Croatian, see Gračanin-Yuksek 2013: 29–30). I repeat the relevant example (92) from above:

- (ii) Mane, won i (*ene) es Buech schänke, sind immer tankbar.
 men.NOM C I they.DAT a book give.1SG be.3PL always grateful
 ‘Men who I give a book to are always grateful.’

The obvious solution given my syntactic approach is that the syntactic features of the relevant syncretic object are modified during the derivation by means of Impoverishment (on Impoverishment, cf. also Assmann 2014, on feature-changing rules to capture syncretisms, cf. Himmelreich 2016). To make a concrete example, in the case of German free relatives, the neuter *wh*-phrase *was* that is syncretic for nominative/accusative would bear accusative and would be impoverished to nominative after Case-checking with the RC-internal Case-probe. Impoverishment is restricted to specific morpho-syntactic contexts; in German free relatives it only applies to neuter *wh*-pronouns, in the matching in resumption Case, it would affect plural head nouns as in (ii) and impoverish the dative to nominative after Case-Agree with the dative relative operator. The now nominative-bearing head noun can subsequently undergo Case-checking with the external D. The derivation thus converges and we obtain a gap derivation.

(137) Resumption – scenario 1: MC=Dat; RC=Acc → gap



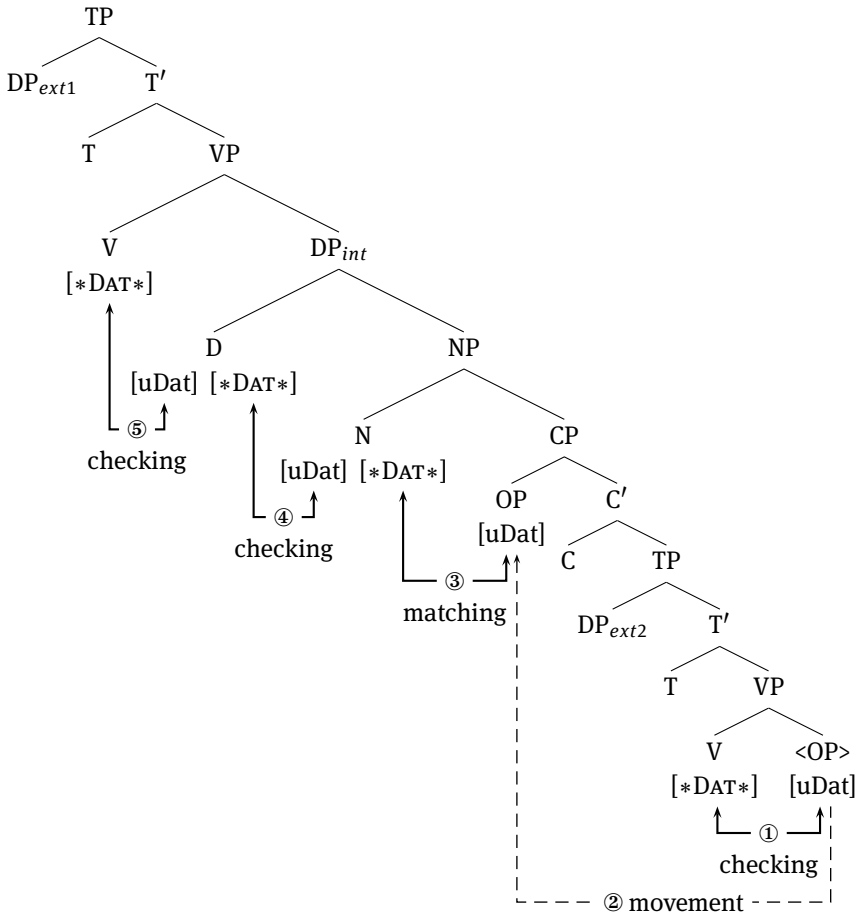
As in the attraction derivation, what makes the gap derivation possible is the fact that the relative operator bears more Case features than the embedded Case probe (dative vs. accusative/unmarked Case). The operator and the embedded probe thus undergo checking and the Case probe is discharged ①, while the operator remains active for checking. It then moves on to the left periphery ②. Subsequently, it undergoes checking with N and is deactivated as both have the same features ③. Finally, N checks Case with D ④ and D with the matrix verb ⑤ so that the derivation converges.

Note that a derivation where the operator bears unmarked Case and thus the same features as the RC-Case probe would crash: The embedded Case probe could be discharged through checking and the operator would be deactivated. As a con-

sequence, only matching is possible with N. However, since N would have more features than the operator, matching would fail, leading to a crash.

The second scenario is the matching configuration. The derivation of an example like (86-b), where both verbs assign dative, proceeds as in (138): First, the operator checks the embedded Case probe and is deactivated for further Case-checking ①. After moving to the left periphery ②, it undergoes matching with N (since its features have all been checked). Since N and the operator have the same features, matching is successful ③. Thereafter, N checks Case with D ④, D checks Case with the matrix verb ⑤, and the derivation converges.

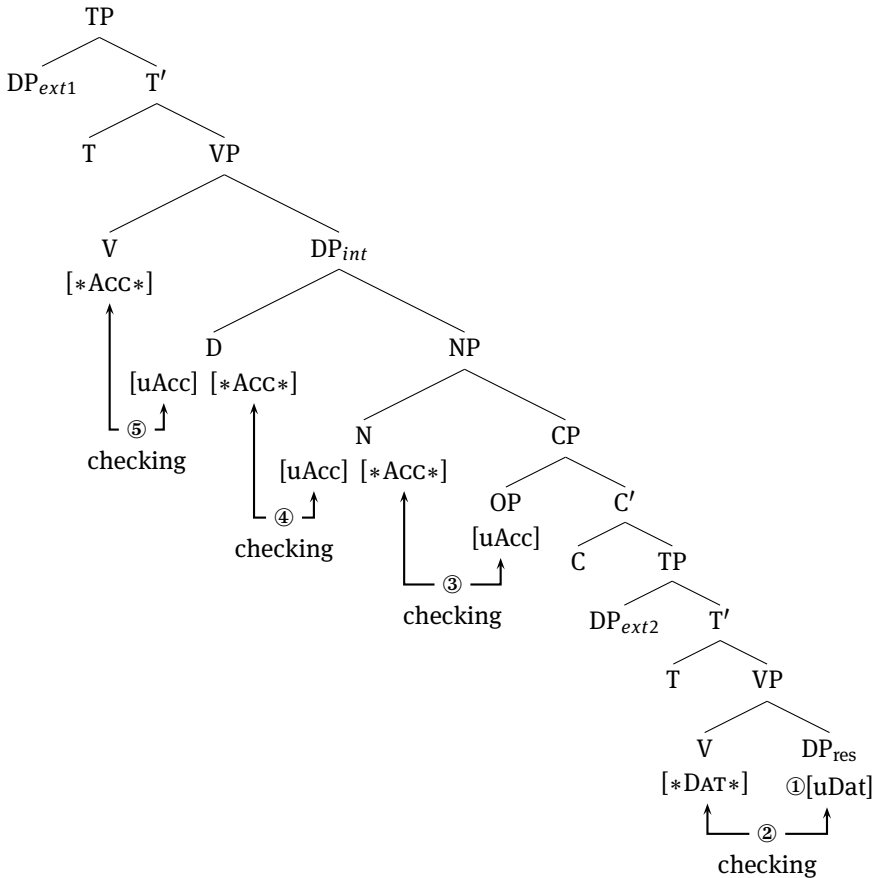
(138) Resumption – scenario 2: MC=Dat; RC=Dat → gap



The same kind of derivation obtains if both Cases are of the unmarked type (i.e., nominative or accusative). The matching effect thus falls out automatically from the Case attraction analysis.

In the third scenario, the matrix Case is less oblique than the RC-internal one. This is the configuration where Case attraction fails, as discussed in 5.4.2.3.3 above. Since I assume that the Case-probe on N is obligatory in Swiss German, the non-attraction derivation is not an option here. Instead, it is the resumptive that saves the attraction derivation. The derivation of an example like (86-a) with MC = accusative and RC = dative provides the following challenge: Given that attraction is obligatory in Swiss German, the RelOP must be specified for the matrix Case, viz., accusative (unmarked Case). As a consequence, it cannot check the RC-Case, i.e., dative. This is where resumption comes in: A resumptive specified for dative is externally merged with V ① and checks the RC-internal probe ②, while the operator, which is specified for accusative (unmarked Case), is base-generated in its operator position and enters Case-checking with N ③. Both Case-probes are thus discharged and the [uCase]-features of the two DPs are checked as well. Finally, as in the previous derivations, N checks Case with D ④ and D checks Case with the external Case-probe ⑤.

(139) Resumption – scenario 3: MC=Acc; RC=Dat → resumptive



The base-generation analysis in (139) additionally involves binding between the operator and the resumptive. Note also that (139) does not indicate potential pronoun fronting. However, since the pronoun is merged cyclically in the syntax, nothing precludes cyclic pronoun movement.

Importantly, an alternative derivation with the operator being specified as dative and merged in its theta-position crashes: Although it could check the embedded dative probe, problems obtain when it enters an Agree relationship with N: Since N has fewer features, matching is not possible as it requires, by definition, identity of features. If matching were possible with a subset relationship, a gap derivation should converge in the relativization of datives outside of the matching

configuration, contrary to fact. It is this fact that motivates the identity requirement on matching.⁵⁸

Recall from section 5.1.2.1 that in some dialects/idiolects dative relativization outside of the matching configuration is possible with gaps. This pattern can be captured by assuming that in these varieties, Case attraction, viz., a Case-probe on N, is absent (depending on the pattern, the Case-probe is generally absent or only optionally so).⁵⁹ Recall also that a minority of speakers accept dative resumptives in matching contexts. This group of speakers is somewhat more difficult to accommodate. One possibility is that for these speakers, datives are PPs underlyingly and thus islands so that resumptives are required irrespective of matching (of course, this solution is confronted with the arguments listed in section 5.4.2.2.1 above against assimilating datives to PPs), i.e., base-generation is the only derivation that leads to a converging result.

A base-generation derivation as in (139) will, of course, also generally be chosen when the extraction site is within an island, e.g., inside PPs and in possessor relativization, cf. 5.4.2.1. As in the configuration in (139), the movement derivation

58 Since Swiss German free relatives do not show hierarchy effects but rather – like other German varieties – tend to require strict Case-matching for most speakers (cf. van Riemsdijk 2006), the checking/matching mechanism cannot be extended to it without modification (I am grateful to Jeroen van Craenenbroeck for discussion about this issue). Since FRCs differ from headed RCs in how the operator is related to the matrix context, it is straightforward to locate the difference in the interaction between the silent D-head of the FRC (supposing that there is one) and the relative operator. The matching effect can be implemented by assuming that D (unlike N in headed RCs) cannot *check* features but can only undergo *matching*. Since matching requires identical features, this will derive the strict Case matching effect. Suppose that in a configuration where the matrix Case is dative and the internal one is accusative the operator starts out with dative. While it would have the same features as the probe on D, it could not have all its features checked because (by assumption) D cannot *check* features (note that the operator would not be deactivated for checking after Case-Agree with the internal Case-probe). For an approach that enforces strict matching by means of bi-directional Agree, see Himmelreich (2016).

59 Optionality of attraction/presence of the Case-probe on N may also explain optional deletion of the relative pronoun in Bavarian, cf. Bayer (1984: 215–225) and Bianchi (1999: 172–174): In this variety, the overt Case-marked relative pronoun can optionally be dropped if the RC-Case is less oblique than or as oblique as the matrix Case. This pattern can be accounted for by assuming that matching requires a superset relationship, i.e., the probe on N must have a superset of the features of RelP. Suppose further that RelPs that undergo matching (next to checking) are PF-deleted. In the configurations where matching fails because the RC-Case is more oblique than the MC-Case, the Case attraction derivation crashes. Since the Case-probe on N is optional, the non-attraction derivation is used in this configuration and the RelP must be overt (since it has only been involved in one Case-Agree operation). Since attraction as such, viz., the probe on N, is optional, the non-attraction derivation is also possible if the matrix case is more oblique than the RC-Case. This then accounts for the overt RelP in this configuration.

crashes. Note that derivations as in (139) would, in principle, also be compatible with a Big-DP-structure (abstracting away from the arguments raised against it above). However, given that the base-generation derivation is inevitable for resumptives in islands and there is no evidence that they behave differently than dative resumptives, a uniform analysis necessarily involves base-generation.

The Case attraction analysis I have just proposed for Swiss German is admittedly somewhat abstract given that the operator is silent. Interestingly, we do find an overt counter-part in free relative clauses in Modern Greek: In the following example the relative pronoun bears (via the silent external D) the Case of the matrix verb, while the oblique Case of the RC-internal probe is checked by a resumptive clitic (cf. Alexiadou & Varlokosta 2007: 229 and Daskalaki & Mavrogiorgos 2013):

- (140) *tha voithiso_{acc} opjon tu dosis_{gen} to onoma mu*
 FUT help.1SG whoever.ACC CL.3SG.M.GEN give.2SG the name my
 ‘I help whoever you give my name.’ *Modern Greek*

The syntax of the construction may be somewhat different in Modern Greek because it is a clitic-doubling language so that movement may be involved, but the distribution of Cases over relative pronoun and resumptive is exactly the same as postulated for Swiss German (the Case-mismatch between operator and resumptive will, of course, require some care should a big-DP-structure be assumed).⁶⁰

60 Secondary predicates provide an interesting complication in this context: Given that the RelOP bears the matrix Case, one expects secondary predicates related to the operator to agree with it in Case. However, the secondary predicate bears the RC-Case. In the example in (i), which instantiates scenario 1, the secondary predicate bears accusative (unmarked Case), although the operator bears dative according to my analysis:

- (i) *Ich hilfe_{dat} em Maa, wo s als {eerschte / *eerschtem} bringed_{acc}.*
 I help.1SG the.DAT man C they as first.SG.NOM-ACC first.SG.DAT bring.3PL
 ‘I will help the man who they will bring first.’

In scenario 3, the secondary predicate bears dative and thus agrees with the resumptive and not with the operator, which bears accusative (unmarked Case):

- (ii) *Ich sueche_{acc} de Maa, wo s em als {eerschte / eerschtem} ghulffe_{dat}*
 I search.1SG the man C they he.DAT as first.SG.NOM-ACC first.SG.DAT help.PTCP
 händ.
 have.3PL
 ‘I am looking for the man who they helped first.’

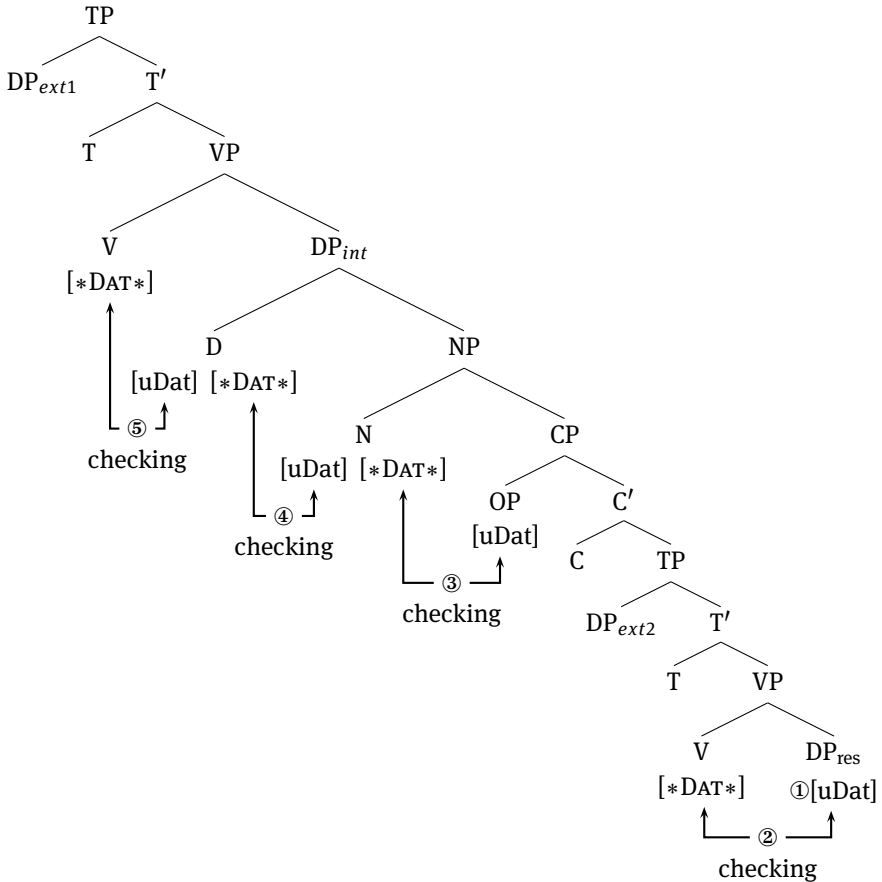
Interestingly though, Case attraction in Modern Greek behaves the same, see Spyropoulos (2011: 35–36). This shows that my Case attraction approach to Swiss German is not falsified by the behavior of secondary predicates. Things are even more complex in that in Ancient Greek, the secondary predicate can optionally agree with the RelP in scenario 1, see Quicoli (1982: 164–167). This pattern follows straightforwardly under the Case attraction approach if the secondary

The Case attraction approach thus provides a straightforward account of the distribution of gaps and resumptives: In at nutshell, the distribution follows from the obligatoriness of Case attraction, which restricts the operator's possibilities to discharge the RC-internal Case probe. In scenario 3, where this prevents the operator from discharging the RC-probe, a resumptive makes a converging derivation possible by checking the RC-Case probe.

There remains one general problem, though: Given that we must allow for the possibility to merge a resumptive in the θ -position in those configurations where the movement derivation crashes, a base-generation derivation should in principle always be available. This raises the question of what blocks base-generation in the matching configuration, e.g., as in (141): A dative resumptive is merged as a complement of the verb ① and checks the RC-internal Case-probe ②. The operator is base-generated in its scope position and undergoes checking with N ③. Both Agree operations lead to discharge of the Case-probes (as the features are identical in both cases. Furthermore, there is checking between D and N ④ and between D and the matrix Case-probe ⑤:

predicate simply gets its Case from the operator (perhaps by means of upward Agree), while the pattern in (i)/(ii) suggests that the secondary predicate gets its Case not via agreement with the RelP/RelOP but rather directly from the RC-Case probe. I leave an exploration of the technical options for future research.

(141) Resumption – scenario 2: MC=Dat; RC=Dat → *resumptive



This would wrongly derive resumptive relativization in the matching context. In the same way one could obtain resumptive relatives in the relativization of subjects and direct objects. Clearly, this must be prevented. Ideally, the resumptive derivation should crash in the matching configuration; however, there does not seem to be an obvious way of ensuring that, at least not in a non-stipulative way. This also holds for the following two possibilities that came up in reactions to prior versions of this work: First, given the head raising analysis (as in Kayne 1994 and later implementations), where the head noun is generated together with the relative operator, spell-out rules could make reference to this local configuration: One could stipulate that a dative operator is realized as zero if its NP-complement bears dative but as a resumptive if the complement bears non-dative. Second, in an HPSG-setting, assuming that the moving element (Müller 2014b)/the slash feature

(Maling & Zaenen 1982, Assmann et al. 2010) bears a diacritic indicating whether the chain terminates in a gap or a resumptive, one could formulate a constraint that blocks the unification of a dative marked head noun with an operator/slash-feature specified for the resumptive diacritic. While descriptively correct, both proposals amount to a reformulation of the observation and do not seem to follow from independently established principles of grammar. Such constraints/lexical stipulations are arbitrary so that the reverse situation would be just as plausible, but this is not what one finds. After all, one would still like to know why resumptives are distributed the way they are. In my view, the proposals to derive the complementarity just sketched do not provide any insights in this respect.⁶¹

In the absence of good motivations for a crash, I will therefore assume that resumptive derivations converge in matching configurations. Since they lead to ungrammatical outputs, they must be blocked. This is the topic of the next subsection.⁶²

61 The approaches by Rouveret (1994) and Willis (2000), which are based on A'-disjointness, as well as Müller (2014b), can in principle derive the complementarity between gaps and resumptives since resumptive derivations crash or are filtered out outside of island contexts. However, since, as shown in section 5.4.2.2, these approaches cannot account for dative resumptives and the matching effect in Swiss German, this is of no avail.

62 Klaus Abels (p.c.) has suggested to me a way of ensuring that only the gap derivation converges in matching contexts: Suppose that Cases are also decomposed as in the present approach but correspond to layers of structure (in the spirit of Nanosyntax, cf. Caha 2009). Given the identity criterion on matching, the relative operator will always drag along as many Case segments as needed to satisfy the probe on N. Suppose that the MC-Case is more oblique than the RC-Case (e.g., dative vs. accusative). In this case, the relative operator will be dative and all segments will be pied-piped so that a gap-derivation results. In the reverse Case (accusative vs. dative), all segments except for the dative segment will be pied-piped. It is then assumed that the stranded dative segment is realized as a (dative) resumptive. Crucially, in the matching context (dative vs. dative), the only way to satisfy the probe on N is to pied-pipe all segments, including the dative segment. This automatically leads to a gap derivation. The complementarity thus follows straightforwardly. There is one major reason why I hesitate to adopt this approach: It basically amounts to a spell-out approach and is thus confronted with the problems discussed above (concerning the narrow-syntactic behavior of resumptives that are hard to reconcile with its coming into being at PF). Furthermore, it is not quite clear why the segment for the dative Case should be realized as a dative pronoun in the first place given that dative is normally composed of several Case-layers. It seems thus that the other layers have to be added for insertion to be possible, but this requires extra assumptions (perhaps some sort of *do*-support to obtain the minimal unit that can be realized).

See also Daskalaki (2011) for an approach based on Case-stranding, which, however, under-generates.

5.4.2.4 Preferring gaps over resumptives

In much previous work, the preference for gaps and thus movement over resumptives/base-generation is captured in terms of economy, recall the discussion in section 3.2.3. For an economy account two ingredients are crucial: First, one has to ensure that gap and resumptive derivations can compete. This in turn is only possible if they are part of the same reference set. Second, there has to be an economy constraint that favors one derivation/representation over the other. Furthermore, since economy constraints are usually taken to be universal and not subject to parameterization (Müller & Sternefeld 2001: 29), they should capture a universal preference rather than one that only holds in some languages but not in others. I will go through these aspects in turn.

5.4.2.4.1 The definition of the reference set

There are several options to determine the reference set (see Sternefeld 1997 for discussion). The original and possibly still most widely held assumption is that the reference set is based on the lexical material used in a derivation: Derivations belong to the same reference set if they are built from the same numeration, i.e., if they are made up of the same set of lexical and functional elements. This definition of the reference set cannot easily be applied to the competition between gap and resumptive relatives because at least pretheoretically, they are made up of different numerations: The resumptive derivation contains a pronoun that the gap derivation does not. Competition is possible, however, in two possible scenarios: Either if the resumptive comes about after the composition of the numeration or if both gap and resumptive relatives are based on numerations containing a resumptive. The first is the case in spell-out approaches, which I have argued against on principled grounds. There is another possibility: Aoun et al. (2001) propose an implementation of resumption/base-generation where the resumptive is a lexical item that is added during the derivation. Discussing island contexts, they assume that when an operator attempts to move out of an island, an operation *Bind* applies. Under *Bind*, the operator is demerged from the phrase marker and remerged in the operator position, and a resumptive pronoun is substituted for the demerged expression in the thematic position. *Bind* is argued to be blocked by movement because it involves more operations (see the next subsection). There are serious problems with this proposal all being related to cyclicity: First, in most languages, resumptives generally appear close to the theta-position they are related to – modulo pronoun fronting (and ignoring pronoun fronting in Hebrew, see section 3.1.3.1). However, if the pronominalization rule proposed by Aoun et al. only applies at the point where an island is encountered, one would expect the resumptive to appear directly below the island: Given successive-cyclic move-

ment, the operator might have made numerous intermediate movement steps before reaching the island. It thus seems that backtracking is necessary.⁶³ Second, it is unclear how the Bind-operation can be triggered in the first place given that the operator is within an island and should thus be inaccessible to Agree. Furthermore, in many cases, the operator will encounter an island long before the final C-complementizer is merged. Demerging would thus have to apply preemptively and the copy would have to be kept in storage somewhere until the final probe is merged, but again, it is far from clear how this can be implemented (see Heck & Müller 2000: 35 for similar concerns). Third, since it is not quite clear how the resumptive can be inserted at the right point, i.e., early in the derivation, it is equally unclear how pronoun fronting can be handled. If Bind applies at the point when the C-head that projects the final landing site is merged, cyclic movement of the pronoun is no longer possible. Consequently, if Bind applies late, pronoun fronting under Aoun et al.'s assumptions has to take place post-syntactically, a solution I argued against in 5.2.4.1 (see Georgi & Salzmann 2017 for a top-down approach under which resumption can be handled as a local repair).

Another proposal where competition between gap and resumptive relatives can be based on identical numerations is van Riemsdijk (1989). As already mentioned in section 5.4.2.2.1 above, he proposes a base-generation approach to both gap and resumptive relatives. Competition is possible because he assumes that gap relatives are based on resumptive relatives, i.e., they involve deletion. The preference for deletion is argued to follow from the Avoid Pronoun Principle (Chomsky 1981). In long-distance relativization and inside islands, deletion of the resumptive is not possible because pronoun movement/cliticization cannot bring the resumptive close enough to the matrix C-head, where deletion is licensed. While ingenious, there are two clear empirical arguments against basing gap-relatives on resumptive relatives: First, as shown in 5.2.3.4 above, gap relatives freely allow for scope reconstruction, while resumptive relatives often do not (unless R-pronouns are used). This asymmetry follows if only the resumptive relative contains a resumptive (which thus imposes semantic restrictions) but is unexpected if both are resumptive relatives underlyingly. Second, as shown in section 5.2.3.4.3, the relativization of semantic types other than type ⟨e⟩ generally does not seem to allow for resumption, not the least because in some instances there is no proper

⁶³ Perhaps, the remerger theory of movement might help, see the discussion in Aoun et al. (2001: 399, fn. 31). Alternatively, one could argue that a derivation where the resumptive is substituted early is more economical than one where it is substituted upon encountering an island. However, this would mean that next to a transderivational constraint that favors movement over Bind, one would also need a transderivational constraint that favors 'early' Bind over 'late' Bind. This would certainly not represent a particularly satisfactory solution.

pro-form. An example like (142), which involves the relativization of an amount, is thus unlikely to be based on a resumptive structure:

- (142) di zwäi Wuche, won er __ i de Ferie gsii isch
 the two weeks C he in the vacation be.PTCP be.3SG
 ‘the two weeks he was on vacation’

In left-dislocation, only a phrasal expression can be used to resume the amount phrase:

- (143) Zwäi Wuche, so lang/*si isch er nie i de Ferie gsii.
 two weeks that long/them be.3SG he never in the vacation be.PTCP
 ‘Two weeks he has never been on vacation.’

Even if something like *so lang* were at the basis of (142), it would still be unclear how it could get deleted because according to van Riemsdijk the deletion of the resumptive depends on the fronting of the pronoun. While this is unproblematic with the weak personal pronouns that van Riemsdijk posits for the relativization of subjects and direct objects, an expression as complex as *so lang* certainly cannot undergo cliticization and thus cannot be deleted given the logic of van Riemsdijk’s proposal. One can thus safely conclude that the relativization of subjects, direct objects and non-individual types (in transparent positions) involves movement.

Since neither the approach by Aoun et al. (2001) nor the one by van Riemsdijk (1989) can be successfully applied to Swiss German, it follows inevitably that gap and resumptive relatives are based on different numerations. Since they compete nevertheless, a different definition of the reference set is required. There are two alternative possibilities: Either, the derivations have to have the same semantic interpretation or the same LF. Basing the definition of the reference set on the semantic interpretation has been shown to be undesirable (cf. Sternefeld 1997: 89–93) because this would rule out all movement operations that do not lead to a truth functional difference with respect to the base structure, including scrambling, topicalization, verb movement and others. Furthermore, paraphrases of all kinds should no longer be possible. I propose instead that the reference set should be based on identical LFs, a position also advocated in Sternefeld (1997), Broekhuis & Dekkers (2000), Heck et al. (2002) and Broekhuis & Klooster (2007).

While very different on the surface, gap and resumptive relatives do have identical LFs provided copies of movement are converted by the Trace Conversion rule of Fox (2002) and resumptives are reanalyzed as definite determiners taking a silent NP-complement, i.e., if the NP-ellipsis theory of pronouns by Elbourne (2001) is adapted to resumption (cf. Guillot & Malkawi 2006, 2009, 2011, Rouveret

2008), as I have been assuming throughout this book. A sentence like *the book that John read (it)* will thus have the following LF in both gap and resumptive relatives (see Elbourne 2005: section 3.5.3 for a similar observation; I assume that the lambda-term can also be introduced by the base-generated operator, basically like *such* in English *such that*-relatives, cf. Heim & Kratzer 1998: 106–115):

(144) the λx . that John read the_x book

I thus conclude that competition between gap and resumptive relatives is possible despite their superficial differences because the reference set is based on identical LFs.

5.4.2.4.2 Against an economy solution

Previous work has proposed both solutions in terms of derivational economy (Fewest Steps, cf. Aoun et al. 2001, Rouveret 2002: 153–154) and representational economy (essentially some version of the Avoid Pronoun Principle, see van Riemsdijk 1989, Pesetsky 1998, Heck & Müller 2000: 34–35, Müller & Sternefeld 2001: 41, Sichel 2014).

As for derivational economy, Aoun et al. (2001: 398–401) argue that base-generation in their implementation, viz., the operation Bind, involves more operations than movement and is therefore blocked:

- (145) a. Movement: Copy + Merge
 b. Bind: Demerge (Copy + Delete) + Merge + Pronominalize

While this may be correct for their specific implementation of base-generation, things are obviously different in the implementation adopted in this book:

(146) Base-generation: Merge (Operator) + Merge (Pronoun)

Since movement will also additionally involve External Merge of the operator (and more Copy and Merge operations if there is successive-cyclic movement), base-generation may actually turn out to be more economical than movement. Given this, derivational economy is not suitable to derive the preference for movement/gaps.

Representational economy also cannot be applied to the case at hand because the constraints that have been proposed do not work if movement and base-generation involve different derivations as I have assumed here: SILENT-TRACE by Pesetsky (1998) cannot be applied to base-generation/pronouns since my analysis of resumption does not involve the realization of a trace. Conversely,

the Avoid Pronoun Principle (Chomsky 1982: 63–64) fails to apply to traces/copies of movement because it only chooses between overt and zero pronouns as in (147):

(147) John_i preferred [PRO_i/his_{*i/j} going to the movies].

What is most devastating to representational economy approaches is that they refer to overtness; this implies that they have nothing to say about silent resumptives, recall the discussion in section 3.1.3.2 and section 5.2.4.2. Obviously, what should be banned is not objects with certain phonetic properties but rather pronouns/base-generation. Sichel (2014), who takes gaps to involve less structures than pronouns, is confronted with similar problems since it is far from obvious that gaps, which on standard assumptions contain a full copy of the antecedent, really contain less structure than pronouns, which are sometimes nothing but PhiPs. Rather, what should be blocked is resumption/base-generation quite generally. The constraint RES (Müller & Sternefeld 2001: 41) does exactly that and provides the right result but at the expense of restating the facts: After all, one would like to know what is wrong with resumptives.

It should have become clear that it is non-trivial to find an economy constraint that correctly chooses between movement and base-generation. In fact, this is arguably not a bad result because the preference for gaps is not universal. First, recall from section 3.2.3 that there are languages where gaps and resumptives can occur in identical environments; in Hebrew and Irish, for instance, both gaps and resumptives are possible in the relativization of direct objects. An economy solution would wrongly rule out resumption in these environments. Second, as discussed in section 3.2.2.2, there are languages where resumption/base-generation is the only relativization strategy. This certainly holds for Urhobo (Keenan & Comrie 1977) and Akan (Saah 2010) and arguably a few more of the languages listed there that have resumptives in all positions. In other words, in these languages, the preference is reversed: Resumption is the unmarked case. Since economy constraints are normally taken to be universal and not subject to parameterization (Müller & Sternefeld 2001: 29), they are the wrong means to handle this crosslinguistic variation. Third, resumption is often the first relativization strategy acquired by children, even in languages with relative pronouns in the adult language, cf., e.g., Labelle (1990) on Canadian French or Goodluck & Stojanovic (1996) on Serbo-Croatian (though see Guasti & Cardinaletti 2003 for a somewhat different result). Taken together, this casts serious doubts on the assumption that resumption is

intrinsically marked. In the next section, I will therefore argue for a different perspective.⁶⁴

5.4.2.4.3 Parameterizing the preference for External and Internal Merge

Given the crosslinguistically variable (dis)preference for movement/gaps, I consequently propose a parameterization approach. Following other work (Broekhuis & Klooster 2007, Broekhuis 2008, Chomsky 2008), I assume that Internal Merge and External Merge are in principle equally costly operations. Adapting this to movement vs. base-generation (which involves External Merge of the operator), this implies that there is nothing inherent to syntax that would always prefer one or the other. This thus leads to an indeterminacy, which languages can resolve in different ways, i.e., they can have different parameter settings. Following Broekhuis (2008), the (macro-)parameters can be expressed by means of constraints that penalize Internal Merge and External Merge. Concretely, *MOVE penalizes Internal Merge, while *MERGE penalizes External Merge in the satisfaction of a given uninterpretable feature. In what follows I will assume that the constraints refer to the satisfaction of an operator probe on the topmost C-head of a relative clause; since the ranking for other probes can be different, the constraints will have to be relativized to specific probe-features.⁶⁵ With the two constraints, we get the following three attested patterns:

- (148) a. movement as the default (e.g., Swiss German): *MERGE \gg *MOVE
 b. optionality (Hebrew/Irish) *MERGE \langle *MOVE
 c. resumption as the default (e.g., Akan): *MOVE \gg *MERGE

In languages of type (148-a), base-generation = resumption is generally dispreferred and only comes into play if movement derivations fail. This derives comple-

⁶⁴ Another possibility to prefer gaps over resumptives is the principle of last resort (cf., e.g., Shlonsky 1992). Last resort is a (probably) transderivational meta-constraint that penalizes certain – often language-specific – operations if there is an alternative converging derivation that does not involve this operation. A famous example is *do*-support. Last resort cannot easily be applied to resumption; on the one hand, it certainly does not qualify as language-specific given that it is typologically unmarked. On the other, the crosslinguistic variability in the preference for movement vs. base-generation suggests that resumption is not always a last resort. Furthermore and most importantly, treating resumption as a last resort essentially begs the question of why resumption should be penalized. Ideally one would like to know which intrinsic property of resumption/base-generation makes it less economical than gaps/movement.

⁶⁵ Broekhuis & Klooster (2007) discuss the satisfaction of the [+neg]-feature in English vs. Dutch and argue that, while Dutch favors the movement strategy, English prefers External Merge of the negative adverb *not*.

mentary distribution between gaps and resumptives. In languages of type (148-b), where the constraints are tied, both strategies are of the same rank so that both can occur in the same environment (of course, there will be environments where gaps are blocked for independent reasons). In the last type of language, resumption is the default, leading to a pattern with resumptives in all positions. At first sight, it may seem that languages of type (148-c) can also be captured by assuming that they have no movement complementizer but rather only the base-generation one, with no need for constraint ranking. However, there are instances of gap relatives in Akan, viz., in the relativization of non-individual-denoting types (cf. section 5.2.3.4.3), where resumption is not an option (either because there is no proform or because for some reason they cannot be used in resumption). The following example illustrating relativization of a predicate was provided by Sampson Korsah (p.c.) (note that CD = clausal determiner):

- (149) Kofi n-ye [agya pa no] aa na ɔ-ye ___ no biom.
 Kofi NEG-be father good DEF REL PST 3SG.SBJ-be CD again
 ‘Kofi is no more the good father that he was.’ *Akan*

While Akan does have silent resumptives for inanimate objects (Saah 2010), there is no indication that it would have silent resumptives for predicates. Consequently, gap relatives are possible in languages of this type, but only if resumption is not available. This can only be captured by the preferential ranking in (148-c).

Note that the constraint notation is reminiscent of Optimality Theory; however, this is only to be interpreted as a means to formulate macro-parameters. I otherwise adhere to a standard Minimalist model. Importantly, these are translocational/representational constraints, i.e., they compare (parts of) representations w.r.t. the satisfaction of probe-features. They cannot be interpreted as local constraints that apply at a certain point of the derivation because there is not sufficient information available at that point to make the correct choice. To give two examples: In the relativization of a subject or a direct object, one would have to decide between External Merge of a resumptive or of an operator at the point when the argument is merged with the verb. However, at that point it is not clear what will happen later in the derivation, e.g., whether there will be an island between the theta-position and the landing site or not. Consequently, if in a language like Swiss German, there would be a local preference for gaps, the resumptive strategy would always be blocked even if the gap-derivation crashes later on. Similarly, in the relativization of indirect objects, one would need to know the Case of the head noun when choosing between movement or resumption, but again, the relevant information is not available at that point.

One last technical detail needs to be clarified, the implementation of base-generation (recall the discussion in section 3.1.1.2): given the Case attraction analysis, operators are always Case-bearing in Swiss German so that the difference between movement and base-generation cannot be implemented by different feature-specifications of operators. I will therefore opt for the solution proposed in Abels (2012: 124–134): Movement involves a C-head that requires mutual c-command between probe and goal, viz., [$uOp_{\downarrow\uparrow}$], while base-generation involves a probe that searches upward, viz., [uOp_{\uparrow}]. I find Abel's feature specification more economical than the one in McCloskey (2002); furthermore, in Abels' approach, both movement and base-generation involve the satisfaction of a contentful feature, while in McCloskey's implementation base-generation only involves checking of an EPP-feature. As for the morphological realization, I will assume that the vocabulary item for /wo/ is underspecified; it only bears the feature [uOp] (and potentially an interpretable feature like [$iRel$]) but contains no specification for the direction of feature-checking:

(150) /wo/ \Leftrightarrow [uOp , ($iRel$)]

To conclude therefore, I have argued that the crosslinguistically variable preference for movement over base-generation is best captured by means of parameters, expressed as constraints penalizing either external or Internal Merge in the satisfaction of a given probe feature. These are translocal/representational constraints that require the inspection/comparison of (parts of) both the gap and the resumptive derivation in those environments where both converge, viz., for subjects and direct objects as well as for datives in the matching configuration. With the account for the preference for movement over base-generation in place, I will now turn to the skewed distribution of resumption across A' -dependencies.⁶⁶

⁶⁶ There is one conceivable alternative to derive the variable preference for movement and base-generation that is compatible with minimalist assumptions, a possibility first suggested in Sternefeld (1997: 97–100): the parametrization of the reference set. For languages like Swiss German where resumptives are always a last resort, the reference set would be based on identical LFs (and one would still need an economy constraint favoring movement over base-generation). For languages like Hebrew/Irish where gaps and resumptives exist side by side in certain contexts, however, the reference set would be based on identical numerations. It is indeed by reference to different numerations that Shlonsky (1992) and McCloskey (2002: 205) explain the optionality in Hebrew/Irish. This would be a possible albeit quite radical move whose implications are hard to assess. At any rate, there are two strong counterarguments. First, such a solution would still be confronted with the problem of finding an appropriate economy constraint to favor movement over base-generation. Second, it would be unclear how to derive the third type of language with resumption only. If the reference set in those languages is based on identical LFs, one would require

5.4.2.5 Absence of resumption in *wh*-movement/topicalization

As discussed in section 3.2.1, resumptives are crosslinguistically most frequent in relative clauses and constructions based on them (such as clefts and the like) but rather rare in *wh*-movement. Swiss German conforms to this tendency: As shown in section 5.1.1, there is no resumption with *wh*-movement and topicalization in Swiss German. Since the effect also obtains with D-linked antecedents, the incompatibility cannot be due to the semantics (recall that some languages allow resumptives with D-linked *wh*-operators but not with bare ones). I would like to propose that the difference is due to Case-licensing and follows from the Case attraction approach to Swiss German: Since relative operators/pronouns undergo Case-checking with the head noun, they are Case-licensed even if they do not enter Case-Agree with the relative clause-internal probe, which under base-generation is discharged by the resumptive. In *wh*-movement and topicalization, however, there is no head noun, and the only possibility for the dislocated XP to be Case-licensed is via Case-Agree with its predicate. There is thus no Case-probe left that could be checked by a resumptive. Conversely, if the resumptive checked the Case-probe, the *wh*-phrase/topicalized XP would fail to be Case-licensed. This thus accounts for the crosslinguistically skewed distribution of resumptives across A'-constructions – in Swiss German and beyond.⁶⁷

Languages that do have resumption in proper *wh*-movement/topicalization (thus setting aside languages where questions have the form of clefts) will have additional means to accommodate both an overt XP and a resumptive. Either the resumptive is reanalyzed as part of a clitic-doubling structure (with the Case as-

the opposite type of economy constraint as in Swiss German. This is not only far from obvious but shows again that an economy approach is on the wrong track and that the parameterization-perspective is more promising.

67 The only other construction in Swiss where one expects resumptives to be possible is comparative deletion because there the comparative clause modifies an NP so that the operator could also be involved in Case-checking and would thus be licensed without checking Case with its predicate. At the same time, resumption is disfavored in comparative deletion because it involves abstraction over amounts, which often resist resumptives. The following example with a dative resumptive sounds relatively acceptable, even though dative resumptives were shown to favor specific interpretations:

- (i) Es sind mee Lüüt choo als ?(ene) de Tokter hät chöne
 there be.3PL more people come.PTCP than they.DAT the doctor have.3SG can.PTCP
 Medikamänt verschriibe.
 medicine prescribe.INF
 'There came more people than the doctor could prescribe medicine for.'

See also McCloskey (1990: 239) for an Irish example with a (oblique) resumptive in comparative deletion.

signed to the *wh*-phrase and the clitic simultaneously) or as an agreement element. Alternatively, the language has a way of licensing base-generated overt *wh*-operators/topics. In Swiss German this seems to be residually possible with topics in the unmarked Case (recall that nominative and accusative are only distinguished in the personal pronoun paradigm). (151) is an example from Basel German, where a topicalized direct object is linked to a resumptive inside a *wh*-island, cf. Suter (1992: 186, §319):

- (151) [Sälli Meebel]_i waiss i my Seel nit, won i si mues
 such furniture know.1SG I by God not where I them must.1SG
 aanestèlle.
 put.INF
 ‘Such furniture, I really don’t know where to put.’ *Basel German*

Similar examples can be found in Bernese German, cf. Hodler (1969: 646), and in Zurich German, cf. Weber (1987: 304). Obviously, the unmarked Case can also function as a default for XPs that are not assigned Case in syntax. The expectation is thus that resumption should not occur with dative marked antecedents; this seems to be borne out, although there is still empirical work needed in this area. Furthermore, base-generation with *wh*-movement/topicalization is predicted to be limited to island contexts because it should be blocked by movement in other contexts. This seems generally the Case, not the least because Swiss German allows long *wh*-movement/topicalization quite freely. In Salzmann (2011: 205–208) I discuss some further possible base-generation cases in long-distance movement (thus outside of islands); their status remains unclear to me though, which is why I will not pursue this matter any further.⁶⁸

68 Brandner & Bucheli Berger (to appear) report hitherto unattested patterns in long-distance movement: Instead of the declarative complementizer *dass* ‘that’, some speakers (roughly 10% of the informants of the Swiss German dialect syntax project SADS, www.dialektsyntax.uzh.ch) accept the relative complementizer *wo* in embedded clauses in both long relativization and *wh*-movement. The authors propose that this represents a pattern familiar from Celtic languages with agreeing complementizers in both final and intermediate position; they adapt the base-generation analysis by Adger & Ramchand (2005) for Gaelic to Alemannic. Perhaps even more controversial is their proposal that long *wh*-movement with gaps involves the same base-generation analysis with *dass* functioning as a relative complementizer as well. Such an approach runs into difficulties in the light of reconstruction effects, which are familiar from *wh*-movement and will be documented in detail for relativization below (unless the gaps, which are silent pronouns according to Adger & Ramchand, involve NP-ellipsis and could thus accommodate reconstruction). Another serious problem for the proposal is the fact that *wh*-movement and topicalization can involve complex non-DPs, showing that the gaps cannot correspond to silent pronouns but rather have to contain more structure and thus arguably are silent copies of the displaced

5.4.3 The syntax of local relativization: summary

Before concluding this section, I will briefly summarize the main aspects of the syntax of local relativization:

First, I assume that gap relatives involve movement, while resumption involves base-generation. In both cases, there is an unvalued feature [μOp] on the top-most C-head. Depending on its precise specification, it can be checked either by movement (Internal Merge), viz., [$\mu\text{Op}_{\downarrow\uparrow}$], or by base-generation (External Merge), viz., [μOp_{\uparrow}].

Second, the distribution of gaps and resumptives follows from obligatory Case attraction: There is a Case-probe on N so that the relative operator bears the matrix Case. This leads to gaps as long as the matrix Case is more oblique than or as oblique as the relative clause-internal Case because the operator can discharge both Case-probes. The matching effect in resumption thus emerges as a subcase of Case attraction. If the matrix Case is less oblique than the RC-internal Case, the RelOP cannot discharge the RC-internal probe as it has a subset of the features of the probe. In this configuration, only the resumptive derivation converges; it is the resumptive that discharges the RC-internal probe, while the operator checks Case with N. Resumptive derivations are also required when the extraction site is within an island, including PPs and possessors.

Third, if both gap and resumptive derivations converge, i.e., in the relativization of subjects and direct objects as well as in the relativization of datives in the matching configuration, the gap derivation is preferred because of the parameter setting *MERGE >> *MOVE.

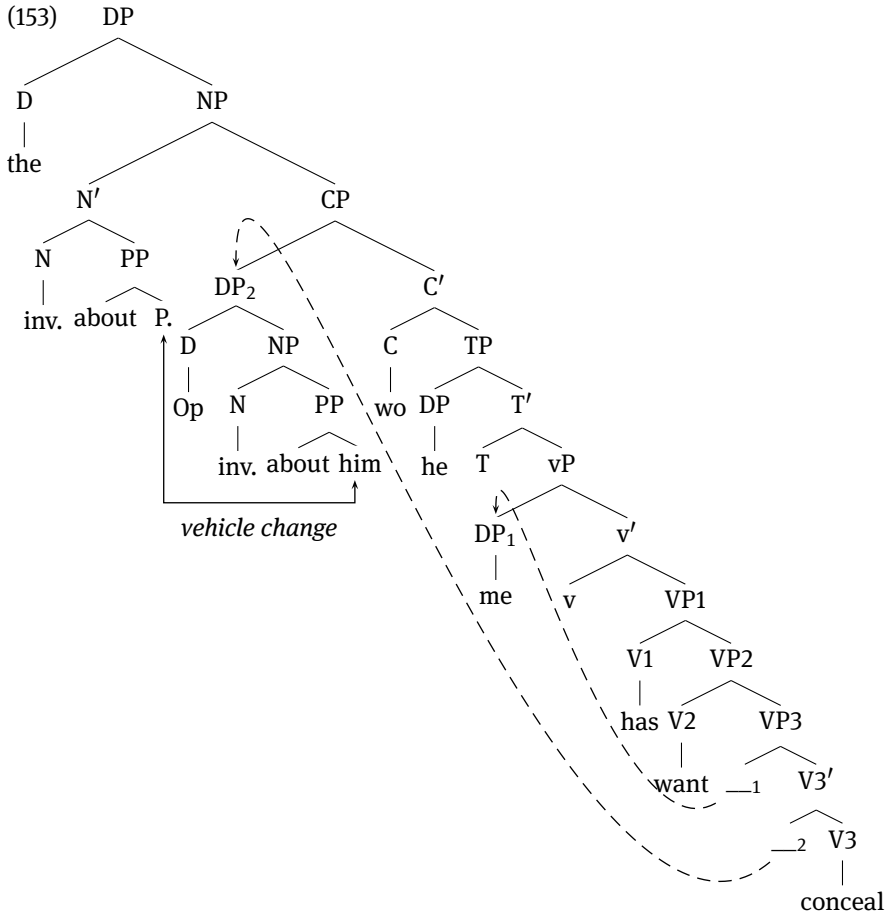
Fourth, given that the reconstruction pattern we have observed in Swiss German largely mirrors that in Standard German local relativization, cf. section 2.5.3 (and to a large extent also the one found in prolepsis, see section 4.4.2), especially given systematic reconstruction apart from Condition C effects, I will adopt the matching analysis for Swiss German as well. An example like (152) with absence of reconstruction for Principle C thus involves the syntactic structure in (153) (I omit the matrix clause and Case-checking operations and represent the verbal

antecedent. If, for instance, a PP is *wh*-moved, the 'gap'/silent pronoun would have to be a PP, and if the antecedent is a degree or manner expression, there would have to be a corresponding silent pronoun of the same semantic type. This strikes me as rather unlikely. Additional problems for the base-generation analysis of long *wh*-movement arise with dative-marked antecedents. If they are base-generated in their surface position, it is mysterious who they can have been Case-marked.

complex as a stacked VP-structure for ease of representation; English words are used for ease of readability):⁶⁹

- (152) D [Naaforschige über de Peter_i], [won er_i mer ___ hat
 the investigations about the Peter C he me.DAT have.3SG
 wele verschwiige], händ mi schockiert.
 want.INF conceal.INF have.3PL me shock.PTCP
 ‘I was shocked by the investigations about Peter_i that he_i wanted to con-
 ceal from me.’

⁶⁹ Since I take the RC to be a complement, ellipsis must target the N'^l-segment of the head noun rather than NP; otherwise, the relative operator would have to contain the entire relative clause, leading to infinite regress.



At LF, due to vehicle change, there will be just a personal pronoun c-commanded by the RC-subject so that no Condition C effect obtains:

(154) ... λx . that he_{*i*} me has want [the_{*x*} investigations about him_{*i*}] conceal

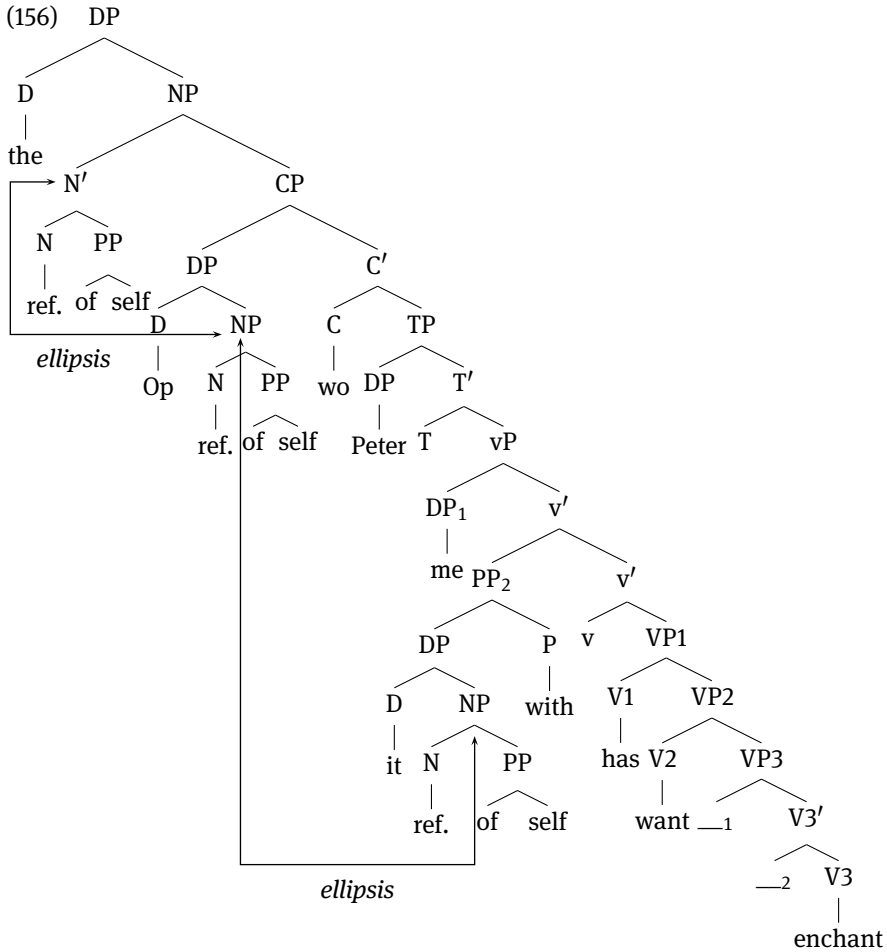
Other reconstruction effects in gap relatives pattern essentially as in the standard language (see section 2.5.3), which is why I will not discuss them any further here.

Resumptive relatives additionally restrict the interpretive possibilities in that they usually require a specific antecedent, thus ruling out scope reconstruction and more generally the relativization of semantic types other than type $\langle e \rangle$ (except with R-pronouns, recall 5.2.3.4). Reconstruction under resumption is captured by means of the NP-ellipsis theory of resumption, where the pronoun is

re-interpreted as a definite determiner whose NP-complement has been elided under identity with the antecedent (see Guilliot & Malkawi 2006). Consider again an example with reconstruction for Principle A into a PP:

- (155) S [Spiegelbild vo siich_i], [wo de Peter_i mi demit hät
 the reflection of self C the Peter me there.with have.3SG
 wele verzaubere], hät mi nöd beiidrukt.
 want.INF enchant.INF have.3SG me not impress.PTCP
 ‘The reflection of himself_i that Peter_i wanted to enchant me with did not
 impress me.’

These base-generated structures thus involve two ellipsis operations: One between the head noun and the complement of the relative operator and one between the relative operator and the NP-complement of the resumptive (again, I omit the matrix clause and the Case-checking operations for ease of readability; note that the resumptive PP undergoes short scrambling):



As a consequence, at LF, the anaphor will be locally c-commanded by its antecedent:

(157) ... λx . that the Peter_{*i*} has want me with [the_{*x*} reflection of self_{*i*}] enchant

This concludes my summary of the syntax of local relativization in Swiss German.⁷⁰

⁷⁰ An issue I will have to leave unresolved for the time being are strong crossover effects under resumption. While the NP-ellipsis theory of resumption captures most reconstruction effects, it arguably does not extend to strong crossover effects because there is no reason to believe that

5.5 Long-distance relativization: an instance of prolepsis

The major properties that set long-distance relativization apart from local relativization are the obligatoriness of resumptives in all positions and the absence of the matching effect. Both would follow immediately if the finite clause-boundary is analyzed as a barrier so that only base-generation is an option. I will instead argue, adopting insights from van Riemsdijk (2008) that many instances of long-distance relativization instantiate (an abstract form of) prolepsis, i.e., the dependency between operator and resumptive is more indirect. I first introduce van Riemsdijk's approach before presenting my own analysis.

5.5.1 Long relativization as aboutness relativization

Van Riemsdijk's starting point are locative and aboutness relatives as in (158), repeated from section 5.1.2.2:

- (158) a. Da isch s Huus, wo de Peter __ wont.
 this be.3SG the house where the Peter live.3SG
 'This is the house where Peter lives.'
- b. Das isch es Wätter, wo s sich __ nöd loont, de
 this be.3SG a weather where it self not be.worthwhile.3SG the
 Raase z mäije.
 lawn to mow.INF
 'This is the kind of weather where there is no point in mowing the
 lawn.'

Van Riemsdijk assumes that in both cases there is a phrasal relative adverb *wo* 'where' next to the relative complementizer *wo*. It moves to SpecCP and is eventually deleted under haplology with the complementizer:

- (159) [_{CP} ~~wo~~_T [_{C'} *wo* ... __₁]]

NP-ellipsis should affect the external distribution of pronouns; i.e., they should still be subject to Principle B. Consequently, the ungrammaticality in SCO -contexts (with pure operators) is unexpected or at least does not follow from Principle C. Recall from section 4.5.2.3 that a similar problem obtains in *tough*-movement. Given that there have been arguments in the literature (cf. Postal 2004) that SCO effects should not be subsumed under Principle C, this may not be too detrimental; SCO effects thus require a different treatment. For reasons of space, I leave further investigation of this issue for future research.

Since this is a normal case of phrasal A'-movement, a resumptive pronoun is not expected. The lower copy is deleted due to normal deletion of the lowest chain link and the upper copy is exceptionally deleted by haplogy. In a next step, van Riemsdijk proposes that long relativization actually involves short aboutness relativization in the matrix clause; the resumptive pronoun we find in the complement clause is simply a bound pronoun linked to its antecedent by construal and not movement:

(160) [CP ~~wo~~_{77T} [C' wo ... ₁ V that ... he_i ...]]

This is similar in spirit to the syntax of the prolepsis construction analyzed in section 4.4. This ingenious reanalysis of long relativization has two desirable consequences: First, the island-insensitivity follows since only binding is involved. Second, the obligatoriness of resumptives in long-distance relativization is accounted for as well because without a resumptive/proform a structure building feature/a theta-role of a predicate would remain unchecked/unassigned. Third, the absence of the matching effect is a consequence of the fact that no movement is involved and there is thus no direct relationship between the position of the resumptive and the head noun.⁷¹ Fourth, since aboutness relativization and binding are independently attested, no extra assumptions are needed to account for long-distance relativization.

Before discussing further advantages of the reanalysis, I will briefly point out two shortcomings of van Riemsdijk's implementation: First, it fails to capture reconstruction effects since there is no representation of the external head anywhere inside the relative clause. Second, since aboutness relativization is independently licensed in the matrix clause (it is an adjunct of the matrix clause), we expect resumptives to be optional, contrary to fact, as (161) shows:

(161) es [Resultaat], won i glaube, dass de Hans zfriden isch
 a result C I believe.1SG that the John satisfied be.3SG
 *(demit)
 there.with
 'a result that I believe John is satisfied with'

⁷¹ This thus represents another argument against a movement analysis of resumption, especially against movement approaches to resumption inside islands. To be fair, however, in the accounts of Boeckx (2003) and Müller (2014b), the resumptive inside the island is intimately connected to the process that makes movement out of islands possible so that one does not necessarily expect the matching configuration to have an effect.

The obligatoriness of the resumptive (and the preposition) cannot be related to selectional properties of the adjective in the embedded clause because it allows its argument to be dropped in other contexts:

- (162) De Chef isch zfride (demit).
 the boss be.3SG satisfied there.with
 ‘The boss is satisfied with it.’

Omitting the PP-complement of the adjective does not affect the interpretation; there is still (or at least can be) an implication that the boss is satisfied with something. Still, preposition and resumptive are obligatory in long-distance relativization. This is unexpected if *wo* is independently licensed. Matrix clause adjuncts (and arguments except those of control verbs) normally do not have to be resumed in the embedded clause. I conclude from this that long-distance relativization in Swiss German cannot merely involve aboutness relativization. However, a reanalysis in terms of prolepsis as in chapter 4 would derive the special properties of long-distance relativization as well; as I will show in the next subsection, such a reanalysis has a number of additional advantages.

5.5.2 Further arguments for a prolepsis reanalysis

While the reanalysis in terms of prolepsis derives the distribution of resumptives and the absence of matching, these facts would also follow if the finite CP-boundary is treated as an island (for relative operators): Long-distance movement would thus be blocked so that base-generation would be the only alternative. It is generally quite difficult to distinguish between the two options because the semantic difference is slight at best, basically as in the following English minimal pair:

- (163) a. the man of whom I believe that Mary loves him
 b. the man who I believe that Mary loves

As discussed in section 4.4.3, the major difference between long-distance relativization and prolepsis is the obligatory wide-scope of the proleptic object. However, given that long-distance relativization in Swiss German also involves resumption, a pure base-generation structure will have the same semantic effects. Nevertheless, there are some arguments (of variable strength) that suggest that a reanalysis in terms of prolepsis is preferable. First, long-distance relativization allows for reconstruction into the matrix clause. The pair in (164) shows this for anaphor binding and scope reconstruction:

- (164) a. Das isch s [äinzig Grücht über siich_i], [wo de Peter_i findt,
this be.3sg the only rumor about self C the Peter find.3sg
dass es ungrücht isch].
that it unfair be.3sg
'This is the only rumor about himself_i that Peter_i thinks is unfair.'
- b. Das isch d Liischte mit de [zwäi Lieder], [wo jede Schüeler
this be.3sg the list with the two songs C every student
versproche hät, dass er si vorberäitet].
promise.PTCP have.3sg that he them prepare.3sg
'This is the list with the two songs that every student promised to
prepare.'
(2 > ∀); ∀ > 2

This is a remarkable observation given that reconstruction into intermediate positions is otherwise not available in Swiss German – as in the standard language, recall the discussion in section 4.2.1:

- (165) [Weles Grücht über *siich_i/in_i]₁ tänkt de Peter_i, dass ich ___₁ am
which rumor about self/him think.3sg the Peter that I the
beschte finde?
best find.1sg
'Which rumor about himself_i/him_i does Peter_i think I like best?'

The facts in (164) thus strongly suggest that the dependency is indirect, i.e., that the operator is base-generated in the matrix clause in a position c-commanded by the subject.

Second, in long-distance relativization, we find the same range of possible resuming elements as in the Standard German prolepsis construction (compare section 4.2.2): (166-a) illustrates relativization with an epithet, (166-b) is an example with disagreement in phi-features, and (166-c) illustrates partial reference:

- (166) a. de [Maa], won I nöd cha glaube, dass t **dem Trottel**
the man C I not can.1sg believe.INF that you the.DAT idiot
au no Gält ggëe häsch
also even money give.PTCP have.2sg
lit.: 'the man that I cannot understand that you even gave that idiot
money'

- b. Das isch e [Brugg], won i nöd cha verschtaa, wurum
 that be.3SG a bridge.SG C I not can.1SG understand.INF why
 mer **söttigi Sache** bout.
 one such thing.PL build.3SG
 lit.: ‘That is a bridge that I cannot understand why one builds such
 things.’
- c. Ich han e [Frau] käne gleert, won i überzüügt bi, dass
 I have.1SG a woman meet.PTCP C I convinced be.1SG that
mer e guets Paar wäred.
 we a good match be.SBJV.1PL
 lit.: ‘I met a woman that I think we would be a good match.’

Admittedly, it is not clear that such examples argue against a direct resumption approach because at least epithet have been documented in regular resumption as well (e.g., Aoun & Choueiri 2000, Guillot & Malkawi 2011). Whether the other forms of resumption exist in other resumption languages remains to be investigated. The cases in (166) are certainly relevant internal to Swiss German because such resuming elements do not seem to be possible in local relativization:

- (167) a. *de [Maa], won i **dem Trottell** Gält ggää ha
 the man C I the.DAT idiot money give.PTCP have.1SG
 lit.: ‘the man that I gave that idiot money’
- b. *d [Frau], wo **mer** es guets Paar wäred
 the women C we a good match be.SBJV.1PL
 lit.: ‘the woman that we would be a good match’

In the case of epithets, this may be due to a disjointness requirement (cf. Aoun & Choueiri 2000, Aoun et al. 2001), but in the case of partial reference, the reason for the ungrammaticality is not so obvious.⁷² At the very least this suggests that long-distance relativization is special, and the parallel with the Standard German data is, of course, suggestive.

This also holds for the last argument: One can also find *wo*-relatives in colloquial/substandard German. This use is prescriptively stigmatized, but the con-

⁷² The example may be ruled out because it involves a subject resumptive. However, this depends on the representation of the pronoun. If instead it contains a hidden coordinate structure, the ungrammaticality no longer follows as resumptives are possible in coordinated subject DPs, recall from section 5.2.1 above:

- (i) Das isch de Maa, won i inn und sini Muetter iiglade ha.
 This be.3SG the man C I him and his mother invite.PTCP have.1SG
 lit.: ‘This is the man that I invited him and his mother.’

struction occurs rather frequently. While *wo*-relatives are not so prominent in local relativization, the use of *wo* is rather common in the same context where prolepsis occurs. Here are a few examples ((168-c) illustrates a phi-feature mismatch):

- (168) a. Es gibt [Figuren], **wo** ich weiß, dass die zu absolut
 there be.3PL characters wo I know.1SG that they to absolutely
 100 Prozent erfunden sind.
 100 percent fictitious be.3PL
 ‘There are characters that I know are absolutely a hundred percent
 fictitious.’⁷³
- b. Ich schieb hier gleich nochmal eine [Aufgabe] hinterher,
 I shove.1SG here immediately again a exercise after
wo ich hoffe, dass ich sie richtig gelöst habe.
 wo I hope.1SG that I it correctly solve.PTCP have.1SG
 ‘I am adding an exercise that I hope I solved correctly.’⁷⁴
- c. Wieder so ein [Fall], **wo** ich mich frage, ob
 again such a case wo I myself ask.1SG if
 sowas wirklich mal irgendwo passiert.
 something.like.that really ever anywhere happen.3SG
 lit.: ‘Another case that I ask myself if something like that really ever
 happens anywhere.’⁷⁵ *Colloquial German*

While these are admittedly not knock-down arguments, I nevertheless conclude that a prolepsis reanalysis of long-distance relativization in Swiss German provides an interesting alternative, and I will therefore adopt it.

5.5.3 Implementing prolepsis in Swiss German

I will now proceed to an explicit implementation of the prolepsis reanalysis of long-distance relativization in Swiss German. I will first discuss the basic derivation before addressing the distribution of prolepsis and finally the syntax of locative relatives.

⁷³ www.karen-susan-fessel.de/html/interview_sim99.htm, accessed November 20, 2005

⁷⁴ www.matheplanet.com/matheplanet/nuke/html/viewtopic.php?topic=45082, accessed November 20, 2005

⁷⁵ www.jura.uniduesseldorf.de/interactive/foren/show.asp?forumid=2&threadid=41227&site=1, accessed February 28, 2017

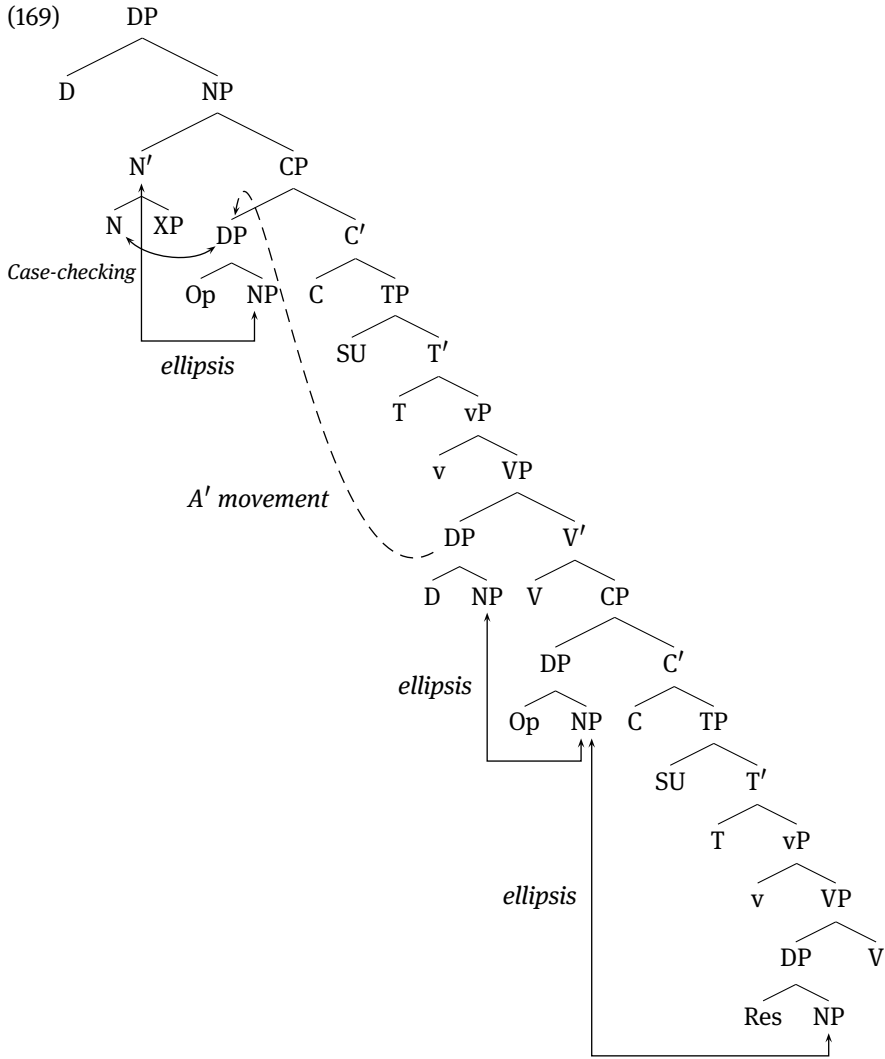
5.5.3.1 Derivation

The derivation in the complement clause is identical to what I proposed in section 4.4 above for Standard German prolepsis: There is a base-generated operator that binds a resumptive. This dependency turns the complement into a predicate, an open sentence. As a consequence, an additional constituent is licensed in the matrix clause, the proleptic object, which then undergoes local A'-movement. What still needs to be fleshed out is the precise structure of the proleptic object. Unlike in standard German, it is not obviously composed of a preposition + relative pronoun. I propose instead that the operator is a silent DP and that the visible *wo* is the regular relative complementizer. What sets Swiss German apart from the standard language is the presence of Case attraction, i.e., the Case-probe on N: This Case-licenses the operator in its landing site. Consequently, no preposition is required to license the proleptic object.^{76, 77}

To capture reconstruction effects, I assume, as in the analysis of Standard German prolepsis, that several ellipsis operations are involved: First, since the top-most clause is a relative clause for which I assume the matching analysis, there is ellipsis between the head noun (i.e., N') and the NP-complement of the silent operator, as is standard in matching relatives. Second, there is ellipsis between the NP-complement of the matrix-clause operator and the NP-complement of the base-generated operator in the complement clause (which is turned into a predicate). Third, there is ellipsis between the complement of the operator in the predicate clause and the NP-complement of the resumptive. The entire derivation thus looks as follows (the only difference w.r.t. the prolepsis derivation in section 4.4 is the absence of a preposition in the matrix clause):

⁷⁶ The presence of *wo*-relatives in Substandard German discussed in the previous subsection suggests that this register has at least optional access to the Case attraction derivation; further evidence for this, e.g., from the distribution of resumptives, is hard to come by given that the construction is extremely stigmatized and thus difficult to investigate. See also Müller (2014b: chapter 4.2) on *wo*-relativization in Colloquial German.

⁷⁷ Since prolepsis is more abstract in Swiss German, it is not fully clear which preposition occurs in prolepsis with *wh*-movement and topicalization (it is much less frequent than in relativization). *vo* 'of' is an obvious possibility; alternatively, *bi* 'at' can be used. But since the latter is also used to express aboutness, it is arguably not the right equivalent as aboutness phrases are independently licensed.



Reconstruction into the complement clause as in (170-a) will thus receive the simplified LF in (170-b) (note that, as indicated in the LF, the external head is interpreted in the base-position of the resumptive, not in the scrambled/Wackernagel position):

- (170) a. S [Spiegelbild vo siich_i], [won i gsäit ha, dass es de
the reflection of self C I say.PTCP have.1SG that it the
Peter_i a de Wand gsee hät], hät mi beunruigt.
Peter on the wall see.PTCP have.3SG have.3SG me disquiet.PTCP
'The reflection of himself_i that I said Peter_i saw on the wall made me
nervous.'
- b. S [_{NP} Spiegelbild vo siich_i]_T, [_{CP} [_{DP} λ_x. [_{NP} Spiegelbild vo siich_i]]
the reflection of self Op reflection of self
won i [_{DP} the_x [_{NP} Spiegelbild vo siich_i]] gsäit ha, [_{CP} [_{DP}
C I reflection of self say.PTCP have.1SG
λ_y. [_{NP} Spiegelbild vo siich_i]] dass de Peter_i [_{DP} the_y [_{NP} Spiegelbild
Op reflection of self that the Peter reflection
vo siich_i]] a de Wand gsee hät,]] ...
of self on the wall see.PTCP have.3SG

As before, the Preference Principle applies in both CPs. Additionally, the copy of the proleptic object in the middle-field is exceptionally deleted because it contains material with a positive licensing requirement that is not licensed there. The same goes for the external head of the relative. This means that only one instance of the proleptic object survives, viz., the instance in the complement position of the resumptive. This clearly illustrates the importance of deletion under identity.

The absence of Condition C effects documented in section 5.2.3 is due to vehicle change, i.e., the ellipsis operations license a mismatch between R-expressions and pronouns. SCO effects in long-distance movement as in (171-a) (repeated from section 5.2.2) are unproblematic because the effect obtains in the matrix clause, where no resumption is involved: Since there is a representation of the external head inside the matrix clause (via the proleptic object), it will be c-commanded by the coreferential subject so that a Condition C violation obtains, cf. (171-b) (recall that vehicle change is not possible here as the antecedent *Bueb* 'boy' is just an NP):

- (171) a. *Das isch de Bueb_i, won er_i tänt, dass d Susi en_i gern hät.
this be.3SG the boy C he think.3SG that the Susi him like.3SG
lit.: 'This is the boy_i who_i he_i thinks that Susi likes.'
- b. de [_{NP} Bueb] [_{CP} [_{DP} λ_x. [_{NP} Bueb]]] C er_x [_{DP} the_x [_{NP} Bueb]]
the boy Op boy he boy
tänt ...
think.3SG

Since reconstruction functions exactly as in standard German prolepsis, I will terminate the discussion about reconstruction here; for further exemplification, the reader is thus referred to section 4.4.2 above.

5.5.3.2 The distribution of prolepsis

The precise distribution of prolepsis in Swiss German still needs to be determined. As we will see, it differs slightly from its Standard German counterpart. I will first discuss infinitival complements before turning to contexts where the matrix verb does not take a CP-complement.

As shown in section 4.3.1, prolepsis in the standard language is categorically blocked with restructuring infinitives but possible with non-restructuring infinitives. Since regular relativization is also possible with non-restructuring infinitives, there seems to be optionality (although I would like to stress that prolepsis with infinitives is marked). As described in section 5.1.1 above, the situation in Swiss German is quite similar: Restructuring infinitives require gaps for subjects and direct objects and thus involve regular local relativization. This is shown in (172), repeated from above, where scrambling of the indirect objects triggers the restructuring variant of *versueche* ‘try’ (which, like its Standard German counterpart, is optionally restructuring):

- (172) de Artikel, won i de Petra versuecht ha (*in) z erchlääre
 the article C I the.DAT Petra try.PTCP have.1SG it to explain.INF
 ‘the article that I tried to explain to Petra’

With non-restructuring predicates, resumption is optional:

- (173) es Buech, won i beduure (s) noni gläse z haa
 a book C I regret.1SG it not.yet read.PTCP to have.INF
 ‘a book that I regret not having read yet’

Since the possibility of a gap shows that the clause-boundary cannot be an island, the resumptive variant arguably involves prolepsis. Since non-restructuring infinitives are normally classified as CPs, this fits well with the generalization established for Standard German prolepsis that it occurs only with verbs taking a CP-complement. The fact that both gap-relativization and prolepsis are possible in the same environment follows from the fact that their LFs are different (prolepsis involves a representation of the head noun in the matrix middle field, which regular relativization does not) so that the two derivations do not compete.

I now turn to contexts without CP-complements; recall from section 4.4.5 that in Standard German, prolepsis is only possible with verbs that take a CP-complement but not with CP-adjuncts. I repeat the relevant contrast from above:

- (174) a. ??das Bild, von dem alle lachen, wenn ich es zeige
 the picture of which.DAT all laugh.3PL when I it show.1SG
 lit.: ‘the picture of which everyone laughs when I show it’
 b. das Bild, von dem ich fürchte, dass alle lachen,
 the picture of which.DAT I fear.1SG that everyone laugh.3PL
 wenn ich es zeige
 when I it show.1SG
 ‘the picture of which I fear everyone laughs when I show it’

Standard German

(174-a) improves to full grammaticality once a matrix verb is inserted that takes a CP-complement, see (174-b). In Swiss German, however, the equivalent of (174-a) is unproblematic:

- (175) s Fotti, wo all lached, wänn i s zäige
 the picture C all laugh.3PL when I it show.1SG
 lit.: ‘the picture that all laugh when I show it’

Such examples could either involve prolepsis – with the [pred]-feature on the C-head of the adjunct clause and thus short movement of a silent operator in the matrix clause – or direct base-generation with the operator in the matrix clause directly binding the resumptive. Some evidence for prolepsis comes from reconstruction effects: In (176), the anaphor inside the external head can be bound by the matrix subject, which suggests reconstruction into the matrix clause; such a position is only available under an indirect dependency but not if the operator is directly related to the resumptive in the complement clause:

- (176) s [Grücht über siich_i], [wo de Hans_i nöme lachet, wänn s
 the rumor about self C the John no.longer laugh.3SG if it
 öffentlich wird]
 public become.3SG
 lit.: ‘the rumor about himself_i that John_i will no longer be happy if it becomes public’

For such examples to be compatible with prolepsis, the adjunct has to be attached at a level below the subject so that the proleptic object starts out in the subject’s c-command domain. Since in this case it is an adjunct that is predicative, the com-

position will be very similar to adjunct parasitic gaps, cf. Nissenbaum (2000) (the proleptic object has to start out above the attachment site of the adjunct clause). In other island configurations it is difficult to determine whether prolepsis or direct base-generation is involved. With noun-complement clauses in subject position as in (25) prolepsis may not be possible if the subject starts out above the experiencer, as is assumed by Landau (2010) for many psych verbs with accusative experiencers. And with relative clause islands as in (24-b) postulating another [pred]-feature would not help as the relative clause island is already predicative. In that case, base-generation seems the only possibility. But apart from that, while semantic composition would be somewhat more complex under a prolepsis analysis, prolepsis is certainly not ruled out in these cases so that in principle all embedded C-heads can bear the [μ Pred_T]-feature in Swiss German.⁷⁸

5.5.3.3 Locative relatives

The final issue to be discussed in this chapter concerns locative relatives. The major puzzle they present for the present approach is that they allow long-distance movement. I repeat an example from section 5.1.2.2:

- (177) Das isch s Huus, wo mer säit, dass de Peter __ wont.
 this be.3SG the house where one say.3SG that the Peter live.3SG
 ‘This is the house where one says that Peter lives.’

This is unexpected given that regular relatives cannot cross the finite clause-boundary. Another question arises with respect to Case attraction: If the Case-probe on N is obligatory, how can it be discharged by a locative operator? I will start with the second aspect. I propose that the locative operator is nominal, viz., a DP, similar to bare NP-adverbs in English, cf. Larson (1985). While Larson explains the special behavior of NP-adverbs by means of an inherent Case feature that the heads themselves bear, I assume that the silent locative operator is Case-

⁷⁸ If partial/overlapping reference is a diagnostic for prolepsis, the following island-cases would consequently also involve prolepsis:

- (i) a. d Frau, wo all lached, wänn mer es Paar werdend
 the woman C all laugh.3PL if we a couple become.PL
 lit.: ‘the woman that all laugh if we become a couple’
 b. d Frau won i d Bhauptig, dass mer es guets Paar wäred, nöme
 the woman C I the claim that we a good couple be.SBJV.PL no.longer
 cha ghööre
 can.1SG hear.INF
 lit.: ‘the woman that I don’t want to hear the claim anymore that we would be a good couple’

licensed through Case attraction when it reaches its scope position and enters Case-checking with N. Since – like bare NP-adverbs – it starts out in environments where there is no Case-assigner, Case attraction is the only possibility for it to be licensed. This still does not explain why locative relatives can undergo long-distance movement. They obviously differ from regular relatives in that the operator has not yet been involved in Case-Agree when it reaches the CP-boundary. There is some reason to believe that this may actually facilitate extraction: Recall from section 5.2.3.4.3 that long-distance relativization of amounts and predicates is not compatible with resumption for many speakers; rather, the most acceptable version for these speakers involves a gap and thus long movement proper. If we take them to involve nominal operators as well, they can be analyzed along the same lines as locative operators: They start out without Case and are Case-licensed in their operator position when they enter Case-Agree with the head noun. We thus arrive at the following generalization: Only DPs with unchecked [u Case] can undergo long-distance movement across a finite clause-boundary. Technically, this can be implemented by specifying the properties of the intermediate C-head in relativization (note that intermediate heads in *wh*-movement and topicalization are different because long-distance movement is possible in these constructions in Swiss German, recall section 5.1.1): It can only attract DPs with an unchecked Case-feature. This derives the correct result, but it is not fully clear why Case should play such a crucial role in regulating extraction.⁷⁹

Note finally that locative relatives are also compatible with resumptives (recall section 5.1.2.2):

- (178) Das isch e Stadt, wo mer säit, dass **deet** d Mietene seer
 this be.3SG a city where one say.3SG that there the rents very
 höch sind.
 high be.3PL
 ‘This is a city where one says the rents are very high.’

⁷⁹ See Bayer & Salzmann (2013) for the proposal that only contrastive elements can undergo long-distance movement. Since relative operators are normally topics, long movement is assumed to be blocked by a version of improper movement. While this account is compatible with long relativization of amounts and predicates, it would arguably wrongly block long relativization of locatives, which generally make good topics.

The fact that long-distance relativization from non-restructuring infinitives is possible may be problematic for the view that Case regulates extractability given that the operator will have undergone Case-Agree inside the RC. Presumably, the phase-head of non-finite CPs differs from that of finite ones in not being sensitive to Case. The split between finite and non-finite CPs in Swiss German is thus equally puzzling as with long relativization in the standard language.

This simply shows that they are also compatible with the prolepsis structure. Since long relativization and prolepsis involve different LFs (recall that prolepsis involves a representation of the external head in the matrix middle field, while long-distance movement does not), they will not compete so that optionality results.⁸⁰

5.6 Summary

I have argued that local and long-distance relativization in Swiss German involve different constructions. While local relativization has the standard properties of relative clauses, long-distance relativization instantiates an abstract form of prolepsis (and thus receives essentially the same analysis as its Standard German counterpart). The empirical evidence for this split comes from the distribution of resumptives and the behavior with regard to the matching effect: While in local relativization resumptives are limited to oblique positions, they are required across the board in long-distance movement. Similarly, while dative resumptives are subject to a matching effect in local relativization, long-distance movement is completely unaffected by it.

What is particularly challenging is the distribution of resumptives in local relativization. I have argued that the complementarity of the two strategies shows that resumptives are a last resort. Concretely, adopting insights from Georgi & Salzmann (2014), I have shown that the split between subjects and direct objects

80 van Riemsdijk (2008: 230) claims that locative relatives with resumptives (inside islands) have the same status as intrusive pronouns in English, i.e., they retain a repair flavor and are thus not fully grammatical (he does not provide a grammaticality judgment):

- (i) s Huus, wo (d Bhauptig, dass de Hans deet wont), nie bewise
 the house C the claim that the John there live.3SG never prove.PTCP
 worden isch
 become.PTCP be.3SG
 lit.: ‘the house that the claim that John lives there has never been proven’

While (i) may indeed not be impeccable, this is arguably due to a parsing difficulty. Comparable examples of non-locative relativization seem similarly degraded. Furthermore, the example in (i) becomes fully acceptable once the complement clause is extraposed:

- (ii) s Huus, wo d Bhauptig nie bewise worden isch, dass de Hans deet
 the house C the claim never prove.PTCP become.PTCP be.3SG that the John there
 wont
 live.3SG
 lit.: ‘the house that the claim that John lives there has never been proven’

on the one hand and datives on the other follows from obligatory Case attraction. A slight modification of the Activity Condition allows the operator to enter Case-Agree with two probes, the Case-probe on N and the RC-internal probe. Due to Case attraction, the relative operator must bear the matrix Case. If the matrix Case is more oblique than or as oblique as the embedded Case, discharge of the RC-internal Case-probe will be possible under checking (which requires that the probe have a subset of the features of the goal). The matching effect in resumption emerges as a subcase of Case attraction. If the matrix Case is less oblique than the RC-Case, the operator cannot discharge the RC-internal probe and a resumptive is used as a repair. While Case attraction accounts for dative resumptives, the strict complementarity between gaps and resumptives is attributed to a general preference for movement over base-generation in the language. This preference is modeled as a parameter by means of ranked constraints, leading to a preference for Internal Merge over External Merge in the satisfaction of A' -related features. I have argued against the use of economy constraints because crosslinguistic variation suggests that the preference is not universal: In some languages, both movement and base-generation have equal status, while in others the preference is reversed, i.e., resumption is the default.

Resumption is implemented as base-generation, largely because it is insensitive to locality and imposes semantic restrictions on the antecedent that are difficult to capture otherwise. Movement effects like reconstruction effects, which do not pattern with locality, are captured by means of the NP-ellipsis theory of resumption.

An important result of the Case attraction approach is that it motivates the unbalanced distribution of resumptives across A' -dependencies: Resumption is systematic in relativization but blocked in *wh*-movement and topicalization. Case attraction Case-licenses relative operators so that they do not have to enter Case-checking with the RC-internal probe, i.e., they can be base-generated in their landing site. Topics and *wh*-operators can only receive Case from their predicate so that they have to move from the theta-position to their landing site with Case-checking taking place along the way. There is consequently no Case-probe left for a resumptive.

6 Conclusion

In this monograph, I have investigated three A'-dependencies where it is not obvious how the antecedent is related to the position where it is semantically interpreted, viz. headed restrictive relative clauses, resumption, and prolepsis, as illustrated in (1):

- (1) a. the [book] [which John read ___]
b. Das isch de [Maa], won i von **em** es Buech überchoo
this be.3SG the man C I from he.DAT a book receive.PTCP
ha.
have.1SG
'This is the man that I got a book from.' *Swiss German*
c. ein Maler, von **dem** ich glaube, dass Maria **ihn** mag
a painter of who.DAT I believe.1SG that Mary him like.3SG
'a painter of whom I believe that Mary likes him' *Standard German*

These constructions provide evidence (such as reconstruction) that the antecedent can be interpreted semantically in the position of the gap/the coreferential pronoun; at the same time, a direct dependency is problematic in all of them as this would require movement operations that conflict with fundamental properties of syntax. I have shown that the problems dissolve once an indirect dependency is assumed. One of the crucial components is ellipsis, which makes the content of the antecedent available in the position where it is thematically interpreted without requiring literal movement.

The following are the major results obtained in this monograph:

1. Restrictive relative clauses are best analyzed in terms of the matching analysis; this approach to relative clauses involves a representation of the external head inside the relative clause; unlike in the raising analysis, this representation is not related to the external head by means of movement but by ellipsis:

- (2) [DP D [NP [NP N] [CP [DP Op ~~NP~~₁ ... V ___₁]]]

I have argued that the matching analysis has two fundamental advantages: First, since it adheres to the classical constituency with external head and relative clause forming separate constituents, it avoids all the problems of the raising analysis that arise from its derivation and the non-standard constituency (the Case problem, the trigger for NP-movement, the locality problem etc.). While

several of these problems have been addressed in publications following Kayne (1994), the effort needed to make the raising analysis compatible with the – mostly simple – facts is an indication that there is something fundamentally wrong with it. Second, the matching analysis provides a uniform account of the complex reconstruction pattern. On the one hand, since there is a relative clause-internal representation of the external head, it can capture regular reconstruction effects as in (3):

- (3) a. The [headway] [we made $__$] was sufficient.
 b. The [~~NP headway~~] [_{CP} [_{DP} λx . headway] we made [_{DP} the_x headway]] was sufficient.

Recoverability plays an important role in the proposal introduced in chapter 2: I have argued that elements with a positive licensing requirement can be deleted if they are not licensed in their surface position. This licenses deletion of the external head in (3). Conversely, this principle also allows for exceptional deletion of the internal head in cases of obligatory non-reconstruction as in (4):

- (4) a. John pulled the [_{NP} strings] [_{CP} that $__$ got him the job].
 b. John pulled the [_{NP} strings] [_{CP} [_{DP} OP strings] that [_{DP} x strings] got him the job].

Since ellipsis is involved in the matching operation, certain mismatches are possible; concretely, vehicle change licenses a mismatch between R-expressions and pronouns, thereby accounting for the absence of reconstruction for Principle C:

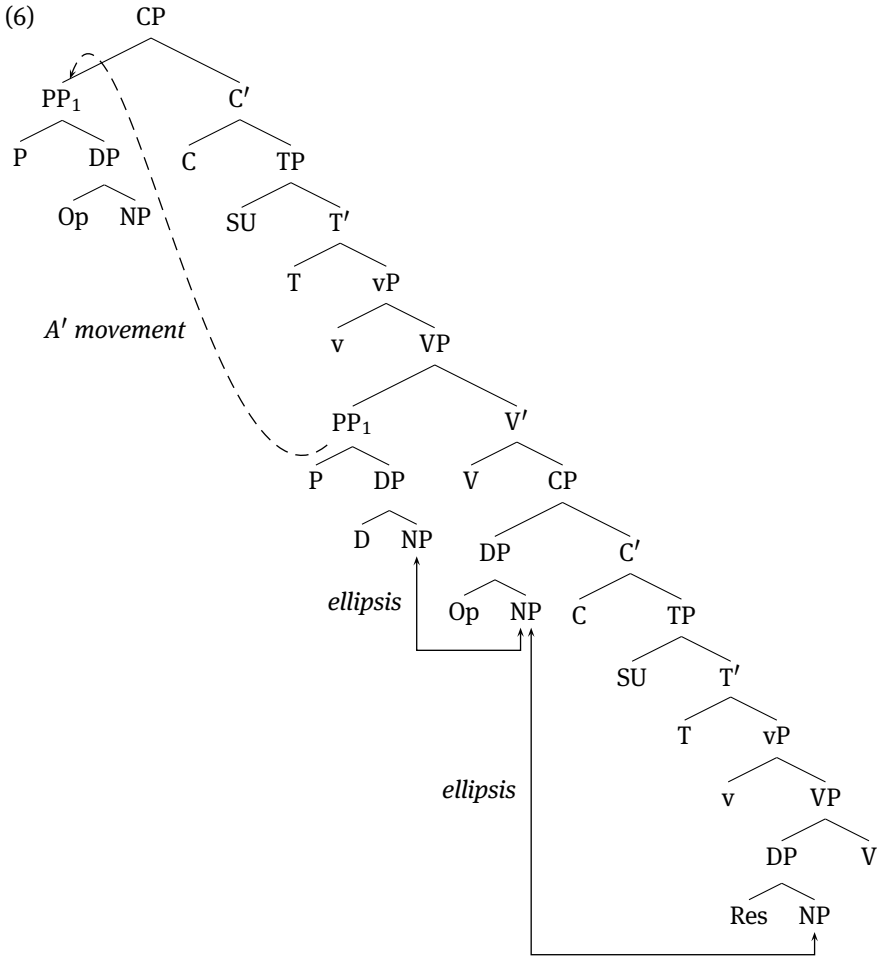
- (5) a. The [picture of John_i] [which he_i saw $__$ in the paper] is very flattering.
 b. The [picture of John_i] [_{CP} λx . [~~picture of him_i~~] he_i saw [the_x picture of him_i] in the paper] is very flattering.

A careful investigation of examples where the head noun contains material that needs to be reconstructed in addition to an R-expression (referred to as ‘correlation cases’), which systematically fail to display a Condition C effect, also showed that what was originally intended as an argument for the raising analysis actually turns out to favor the matching analysis. The same holds for the examples where the external head must be interpreted in more than one position; this is straightforwardly possible under the matching analysis because the external head and its relative clause-internal representation are not related by movement.

The raising analysis can only account for regular reconstruction effects; to capture the other properties, it has to resort to a different derivation, viz., some version of the matching analysis. Since the variant of the matching analysis I have proposed in this book captures all reconstruction data in a systematic way,

it also provides a better account of reconstruction effects and thus removes the final argument in favor of the raising analysis.

2. The prolepsis construction in Standard German is much more complex than it may initially seem: It can be shown that analyzing the proleptic object as a matrix argument that is anaphorically referred to by a coreferential element in the complement clause fails to capture fundamental properties of the construction. Rather, there is strong evidence in favor of an A' -dependency: There is reconstruction into the complement clause, the opacity of the complement CP is suggestive of a weak island, and the obligatoriness of the coreferential pronoun implies the presence of a variable. The coreferential element is consequently analyzed as a resumptive. At the same time, there is evidence for a base-position of the proleptic object in the matrix clause. I have shown that these conflicting properties can be reconciled by means of a predication analysis whereby ellipsis plays a crucial role: An operator turns the complement clause into a predicate. The base-generated proleptic object in the matrix middle-field saturates the open slot of the predicate. The proleptic object is related to the operator by means of ellipsis. Given the island-insensitivity of prolepsis, the lack of a correlation between reconstruction effects and locality and the absence of other movement effects, I have argued in favor of a base-generation approach to resumption. To capture reconstruction effects, the operator base-generated in SpecCP of the complement clause is related to the resumptive pronoun via ellipsis as well. The resumptive is thus reanalyzed as a definite description with a silent NP-complement, as originally proposed by Guillot & Malkawi (2006). This provides a means of capturing reconstruction effects without movement; the A' -dependency is thus doubly indirect. Finally, the obligatory presence of a (resumptive) pronoun follows from binding theory: Given that the position of the variable is c -commanded by the proleptic object from its base-position, a pronoun prevents a Principle C violation. The derivation of prolepsis in Standard German is illustrated by the following tree diagram:



3. Relativization in Swiss German is particularly interesting because of the distributional pattern of gaps and resumptives. While in local relativization, gaps and resumptives are in complementary distribution – with gaps obligatory for subjects and direct objects and resumptives for all oblique relations –, resumptives are required across the board in long-distance relativization. Based on this asymmetry, I have argued that local and long-distance relativization involve different constructions: Concretely, while local relativization has the standard properties of relative clauses, long-distance relativization should be reanalyzed as an abstract form of prolepsis.

The theoretically most challenging property is the distribution of resumptives in local relativization. I have shown that the split between subjects and direct objects on the one hand and datives on the other follows from obligatory Case attraction. This limits the operator's possibilities to discharge the relative clause-internal case probe. The system I have proposed correctly derives the generalization that gaps are only possible if the matrix Case is more oblique than or as oblique as the relative clause-internal Case. This also accounts for the matching effect in dative resumption, which is simply a subcase of Case attraction: While dative resumptives are normally obligatory, they are omitted if the head noun bears the same Case. If the relative operator cannot discharge the relative clause-internal probe, resumption, which is analyzed by means of base-generation, acts as a repair. The strict complementarity between gaps and resumptives, finally, follows from a general preference for movement over base-generation in the language. Importantly, the preference is not implemented as an economy constraint but rather by means of general rankable constraints because crosslinguistic variation shows that the reverse preference is attested as well, so that a more flexible system is needed.

In conclusion, this monograph has provided strong evidence for indirect A'-dependencies both in familiar and in hitherto rather little-studied phenomena. With ellipsis as a mediator, many of the central properties of A'-dependencies can be captured straightforwardly by an indirect dependency so that a complication of the theory of movement, which direct dependency approaches usually entail for these constructions, is not necessary.

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Index

- A'-disjointness 237, 245, 249, 250, 428
Abkhaz 12
adjunction 45, 54, 55, 76–79, 83, 110, 123,
124, 127, 132, 134, 147, 170, 178, 210,
216, 411
Akan 187, 193, 194, 226, 229, 242, 243, 252,
254, 256, 433–435
Albanian 12, 233
Alemannic dialects 211, 335
– Alsace 336
– Liechtenstein 336
– Oberrotweil 344, 345
– Stahringen 344
– Vorarlberg 336
Altaic 17
Amharic 21
animacy 238, 239, 248, 360
antipronominal context 59, 132, 142, 148,
157, 174, 179, 228, 253, 329
antisymmetry 49, 86, 87, 130, 148
Arabic
– Jordanian 186, 196, 197, 201, 206, 225
– Lebanese 145, 186, 188, 196, 199, 200,
203, 205, 206, 209, 216, 231, 291, 313
– Moroccan 249
– Palestinian 234, 240, 244, 249, 250
– Standard 187, 203, 208, 230–232
argument-adjunct asymmetry 48, 107, 179
ATB-movement 100, 103, 177, 191, 192, 256,
351, 376
Austronesian 17, 27, 318

Babungo 243
Baka 243
Bambara 13, 16
Bantu 187, 188, 226
barrier 29, 49, 89, 322, 353, 389, 400, 444
base-generation 4, 5, 37, 103, 177, 181, 182,
187–192, 194–196, 198, 200, 206, 215,
216, 221–223, 225–227, 229, 230,
232–234, 236, 240, 241, 244, 248, 251,
253–257, 291–293, 295, 299, 314, 321,
326, 333, 336, 351, 375, 376, 383, 389,
391, 395, 423–426, 429, 430, 432–439,
444, 446, 454, 455, 458, 461, 463
Basque 12, 32, 129, 388
Bavarian 32, 51, 337, 385, 404, 424
Belarusian 243
Big-DP 185, 214, 217, 222, 226, 232, 242,
288, 375, 377, 378, 399, 425
binding
– anaphoric 272, 278
– logophoric 66, 67, 70, 71, 156, 199, 264,
265, 326
– variable 1, 63, 73–75, 134, 156, 158, 177,
187, 188, 198, 199, 201, 202, 205, 206,
224, 225, 281, 284, 287, 290, 291, 294,
296, 306, 307, 322, 326, 328, 330, 334,
358, 360, 361, 363, 364, 366
Bosnian-Croatian-Serbian 184, 239, 386,
388
– Croatian 75, 87, 88, 101, 105, 106, 117,
202, 385, 387, 405, 419
– Serbian 261
– Serbo-Croatian 15, 18, 184, 218, 226, 236,
239, 252, 261, 263, 292, 319, 320, 433
Breton 186, 198, 199, 203, 242, 245, 249,
250, 335, 390
Bulgarian 98, 186, 202, 203, 226, 229, 231,
233, 239, 388

Case
– inherent 235–238, 386, 393, 394, 405,
408, 455
– oblique 25, 235–238, 339, 402, 404, 425
– structural 25, 243, 394, 401
Case attraction 5, 10, 13, 45, 49, 93, 117,
176, 335, 389, 391, 404–407, 409–411,
416–419, 422, 424–426, 436, 437, 439,
450, 455, 456, 458, 463
Case matching 240, 385, 406, 424
Case-switch 116, 117, 324, 325
Catalan 65, 233, 388
Caucasian 17, 21
Chadic 17
Chinese 21, 32, 76, 82, 99, 136, 185, 191,
196, 197, 199, 206, 209, 243

- clitic-doubling 2, 211, 215–217, 226, 232, 233, 257, 338, 383, 405, 425, 437
- comparative deletion 51, 228, 229, 253, 311, 312, 316, 335, 343, 437
- complementation 46, 48–50, 52–56, 76, 78, 83, 102, 110, 123, 128, 134, 169, 176, 262, 293, 300
- concord 92, 93, 104, 105, 109, 112, 115, 125, 133, 408, 409, 413, 416
- control 24, 69, 81, 293, 321, 328
- finite 278
- verb 276, 278, 446
- coordination 42–45, 84, 87, 100, 103, 105, 106, 112, 121, 147, 179, 188, 241, 245, 268, 269, 354, 379
- copy-raising 180, 293, 322, 333
- correlative clauses 14–21, 26, 34, 40, 57, 147, 404, 417
- Criterial Freezing 241
- crossover 195–198, 208, 210, 215, 223–226, 332, 355, 356
- strong 107, 124, 140, 153, 195–198, 306, 332, 351, 355–357, 375, 389, 443, 444, 452
- weak 197, 198, 212, 355
- cyclicity 82, 86, 97, 99, 101, 104, 106, 121, 132, 179, 215, 429
- countercyclic 82, 118, 411
- cyclicity effects 192–194, 202, 222, 225, 227, 256, 351, 376, 377
- Czech 187, 188, 204, 211, 237–239, 243, 394
- D-linking 203, 215, 227, 229, 230, 253, 266, 342, 437
- differential object marking 239, 240
- Dinka 187, 193, 194, 241
- Dravidian 15, 16
- Dutch 3, 18, 58, 60, 62, 67, 91, 140, 141, 144, 148, 177, 261, 263–266, 268, 269, 274–277, 283, 284, 286, 294, 314, 317–320, 324, 434
- Colloquial 94
- dialects 33
- Middle 320
- West-Flemish 339
- Dyirbal 24
- economy 31, 97, 104, 105, 210, 214, 247, 250–252, 383, 391, 429, 433, 436, 437, 458, 463
- Avoid Pronoun Principle 244, 251, 382, 395, 430, 432, 433
- derivational 251, 432
- Fewest Steps 251, 432
- representational 251, 382, 432, 433
- transderivational 251, 395, 430, 434
- ellipsis 3, 4, 87, 123, 138, 146, 147, 152, 154, 157, 165, 166, 175, 177, 213, 224, 258, 292, 296–300, 304, 306, 307, 313, 318, 331, 333, 334, 440, 442, 450, 452, 459–461, 463
- NP-ellipsis 53, 54, 59, 123, 196, 224, 225, 256, 299, 306, 307, 312, 313, 332, 376, 431, 438, 441, 443, 444, 458
- VP-ellipsis 71, 123
- English
- Biblical 320
- Irish 323
- Old 15, 57
- epithet 188, 196, 197, 201, 209, 211, 216, 225, 269, 270, 291, 313, 324, 447, 448
- European 6, 17, 24, 27, 33, 38, 233, 243
- extraposition 14–20, 26, 28, 49, 51, 79, 80, 84–87, 90, 100, 105, 106, 112, 121, 122, 142–144, 146, 147, 168, 172–174, 178, 179, 276, 294, 328, 339, 376, 377, 388, 397, 398, 457
- French 161, 187, 197, 201, 204, 209, 224, 233, 261, 263, 270, 295, 319, 320, 322, 323
- Canadian 252, 433
- Frisian 203
- Gaelic 183, 185, 186, 192, 199, 438
- German Sign Language 85
- Germanic 29, 235, 335
- Greek 117, 136, 183, 188, 198, 205, 211, 216, 226, 229, 230, 232, 233, 236, 237, 249, 254, 320, 321, 385–388, 393, 399, 405, 418, 425
- Ancient 99, 320, 425
- New Testament Greek 406

- Hausa 191, 193, 231
 Hebrew 21, 24, 30, 75, 180, 181, 186–189,
 191, 194, 196, 197, 199, 200, 203–208,
 211, 212, 215, 218, 226, 229–232, 236,
 237, 239, 241, 244, 245, 248, 251, 254,
 292, 319, 354, 377, 384, 388, 393, 429,
 433, 434, 436
 hierarchy effect 407, 410, 411, 417, 424
 highest subject restriction 245, 249
 Hindi 15–19, 22, 26, 57, 147
 Hittite 15
 Hungarian 15, 33, 98, 117, 263, 324, 325
- Icelandic 33, 406
 Ijo 12
 implicit PRO 68–71, 135, 155, 156, 159, 161,
 164–167, 282, 305, 358
 improper movement 85, 86, 267, 288, 312,
 326–328, 456
 Indo-Aryan 15, 16
 Indonesian 12
 infinitive
 – non-restructuring 276, 341, 453, 456
 – restructuring 276, 340, 453
 Innu-aimûn 321
 Irish 23, 186, 188, 189, 192–197, 205, 212,
 213, 222, 229, 241, 244–246, 248, 249,
 251–253, 354, 433, 434, 436, 437
 island 356
 – adjunct 183, 184, 193, 194, 200, 220, 223,
 268, 287, 352, 365
 – Complex Noun Phrase 36, 89, 124, 184,
 191, 268, 287, 352, 364
 – sentential subject 184, 193
 – strong 49, 183–185, 188, 199–201, 213,
 223, 231, 233, 235, 236, 284, 286, 353
 – weak 81, 146, 183, 185, 219, 279, 280, 311,
 334, 461
 – wh- 89, 183, 184, 187, 194, 219, 220, 268,
 352, 354, 438
 Italian 17, 60, 61, 63, 67, 70, 71, 73, 85, 89,
 98, 122, 123, 136, 167, 213, 233, 243,
 244, 248, 295, 388
- Japanese 12, 13, 26, 31, 129, 319, 320
 Javanese 23
- Kayah Li 243
 Kera 249
 Kikuyu 193
 Kinande 187, 198
 Kombai 18
 Korean 12, 117, 319, 320
- last resort 4, 24, 133, 181, 234, 243, 245,
 247, 249, 251, 253, 255, 256, 293,
 389–391, 399, 434, 436, 457
 late merger 44, 47, 48, 54, 83, 105, 107–111,
 113–115, 117–119, 122, 123, 135, 142,
 143, 145, 147, 158, 168, 171–173, 176,
 178, 289, 411
 – wholesale 113–119, 142, 143, 169–171,
 173, 176, 178
 Latin 13, 17, 18, 57, 98–100, 130, 320
 left-dislocation 133, 177, 185, 194, 199, 230,
 249, 292, 317, 371, 375, 381, 417, 431
 locality constraints
 – anti-locality 219, 241
 – Condition on Extraction Domains 90, 101,
 105, 109, 112, 124, 125, 133, 147, 179,
 215, 400
 – Coordinate Structure Constraint 103
 – ECP 180, 240
 – freezing effects 89, 90, 101, 105, 109, 112,
 133, 215, 328
 – Left Branch Condition 30, 90, 101, 105,
 112, 125, 133, 147, 179, 234, 235
 – Phase Impenetrability Condition 241, 246,
 250, 398
 – PP-island 112, 179, 393
 – Right Roof Constraint 80, 81, 90
 – subjacency 180, 184
 Luganda 24
- Macedonian 15, 233
 Madurese 318–320
 Malagasy 24
 Maltese 385
 Marathi 27
 matching effect 10, 335, 336, 339, 347,
 384–389, 391, 400, 402, 404, 405,
 407, 422, 424, 428, 439, 444, 445, 457,
 458
 Middle High German 406

- Minangkabau 23, 234
 mixed chain 194, 197
 Mizo 14
 Mohawk 292
 Mooré 13, 191
 Moskona 17
- Navajo 12, 19, 32
 negative polarity item 140, 141, 151, 154, 294
 Nez Perce 320, 406
 Ngemba 243
 Niger-Congo 13, 17
 Norwegian 61, 63, 117, 145
 noun phrase accessibility hierarchy 4, 11, 22, 24–28, 31, 33, 34, 227, 233, 243, 255
- opacity 185, 220, 236, 272, 280, 281, 292, 295, 461
 open sentence 38, 293, 450
 operator
 - empty/silent 72, 100, 103, 107, 185, 218, 232, 233, 254, 292, 293, 323, 392, 450, 454
 - relative 36, 38, 39, 50, 65, 134, 137, 175, 180, 218, 229, 233, 248, 249, 336, 391, 392, 405, 407, 408, 414, 419, 420, 424, 427, 428, 437, 439, 440, 442, 446, 456, 458, 463
- Palauan 184, 191, 193, 196, 198, 225, 244, 252, 256
 Pama-Nyungan 17
 Papuan 17, 18
 parasitic gap 81, 100, 186, 190, 191, 209, 217, 227, 228, 263, 312, 325, 332, 351, 379, 419, 455
 Passamaquoddy 321
 Persian 248, 388
 picture NP 68–70, 139, 153, 155–157, 159
 pivot 10, 22, 56
 Polish 136, 187, 190, 191, 202, 232, 233, 239, 241, 243, 384–386
 Portuguese 233, 388
 - Brazilian 200, 201, 205, 248
- predicate
 - abstraction 294, 316, 321, 391
 - derived 42, 169, 293, 316, 331
 - modification 39, 64, 102, 121, 176
- predication 4, 38, 258, 292–295, 314, 316–319, 322, 324, 325, 331, 333, 334, 405, 461
- Preference Principle 63, 64, 138, 141, 169, 299, 302, 452
- preposition stranding 29, 101, 223, 235, 263, 286, 392
- pronoun
 - anaphoric 72, 186, 187, 221
 - bound 48, 153, 163, 177, 182, 187, 202, 221, 225, 244, 304, 305, 313, 445
 - clitic 87–89, 101, 105, 106, 112, 121, 133, 147, 183, 187, 188, 211, 215, 222, 232, 236, 338, 377, 378, 380, 382, 397, 405, 406, 425
 - demonstrative 15, 94, 96, 109, 174, 175, 291, 313
 - E-type 152, 175, 292
 - intrusive 180, 181, 457
 - overt 136, 188, 209, 213, 251, 324, 381, 383
 - R- 95, 284–286, 336, 338, 358, 367, 372–376, 392, 430, 441
 - relative 1–3, 6, 10, 12, 13, 20, 21, 23, 26–30, 32–35, 37–39, 45, 46, 53, 54, 56–60, 64, 72, 76, 78, 82, 85, 88, 92–96, 98, 99, 103–106, 109, 112, 120, 127, 132, 145–148, 150, 172, 174–176, 188, 219, 220, 230, 232, 234, 239, 247–249, 252, 336, 337, 347, 385, 404–406, 409–412, 414, 415, 424, 425, 433, 450
 - silent 6, 35, 36, 213, 244, 313, 324, 333, 382, 391, 438, 439
 - strong 188, 201, 216, 222, 225, 269, 338, 339, 381, 382, 397
 - weak 187, 188, 201, 216, 269, 338, 361, 377, 378, 380–382, 397, 431
- pronoun fronting 188, 194, 207–209, 211, 212, 215, 361, 377–380, 383, 395, 423, 429, 430

- quantifier raising 74, 139, 142, 143, 153, 173, 208, 294
- Quechua 9, 12, 13, 19, 56, 117
- Raman 15
- reconstruction
- idiom interpretation 198, 281, 296, 357, 361
 - into intermediate positions 75, 186, 202, 225, 264, 447
 - into islands 200, 201, 219, 224, 225, 284, 357
 - Principle A 2, 66, 68, 71, 198, 199, 264, 282, 284, 287, 330, 358, 361, 442
 - Principle C 48, 113, 135, 136, 159, 165, 166, 185, 198, 199, 201, 202, 296, 311, 328, 334, 362, 439, 460
 - scope 62, 64, 66, 73, 151, 160, 162, 172, 200, 203, 205, 212, 253, 260, 292, 311–313, 322, 329, 330, 332, 357, 365–370, 372, 373, 375, 376, 430, 441, 446
 - variable binding 63, 73, 74, 177, 198, 199, 201, 202, 281, 287, 296, 322, 326, 358, 361
- recoverability 29, 142, 146, 157, 159, 166, 169, 170, 172, 173, 235, 239, 243, 392, 395, 400, 402, 405, 460
- reference set 248, 251, 429, 431, 432, 436
- relative clause
- aboutness 348, 350, 351, 388, 444
 - adverbial 146, 350
 - amount 7–9, 65, 75, 136, 146, 228, 229, 253, 312
 - appositive/non-restrictive 7, 9, 17–20, 30, 34, 44, 45, 51, 54, 71, 122, 128, 129, 145, 175, 229, 313, 336
 - circumnominal/head-internal 9, 12–14, 16, 19–21, 23, 25, 28, 32, 40, 52, 56, 126–130, 132, 147, 148, 150, 174, 176
 - double-headed 16–19, 148
 - free 9, 10, 14, 16, 17, 20, 36, 117–120, 204, 205, 226, 228, 230, 231, 236, 237, 253, 336, 343, 384, 386, 388, 406, 410, 418, 419, 424, 425
 - locative 347, 350, 351, 449, 455–457
 - maximalizing 7, 9, 10, 19, 20, 34, 204, 205, 228
 - participial 25, 26
 - possessive 79, 90, 91, 339, 380–382, 391, 424
 - postnominal 11, 15–17, 19–21, 23, 25–27, 32, 57, 126, 127, 129, 131, 147, 148
 - prenominal 11, 12, 16, 17, 19–21, 23, 25–27, 32, 99, 100, 127–130, 147, 148, 150, 388
 - reduced 27, 131
 - such-that 291, 294, 391, 432
 - that- 38, 72, 78, 81, 82, 86, 96, 100–103, 106, 121, 136, 145, 229, 232, 237, 248, 292
 - wh- 72, 78, 82, 86, 90, 96, 97, 99, 100, 102, 103, 106, 119, 120, 125, 133, 136, 145, 146, 178, 202, 229, 230, 232, 233, 237, 406
- relative complementizer 337, 438, 444, 450
- remnant movement 84, 87, 379
- reprojection 76, 119–121, 125
- resumption
- adverbial 254
 - apparent 200
 - hybrid approaches to 187, 207, 222, 223, 235, 284
 - strong 201, 216
 - true 200
 - weak 201
- Romance 180, 232
- Romanian 127, 183, 233, 388, 406
- Russian 21, 26, 92, 136, 232, 243, 388
- Medieval 15
- São Tomense Creole 185, 221
- scrambling 242, 266, 286, 340, 390, 431, 442, 453
- Selayarese 193, 194
- Sema 12
- Semitic 21
- sideward movement 82, 83, 110–112, 114, 133, 170, 327
- Sinhala 16
- Slavic 15, 16, 232, 238, 239, 248, 249, 405
- Slovene 33, 183, 188, 190, 191, 202, 239, 319

- Sorbian
 – Lower 388
 – Upper 59, 142
 Spanish 65, 180, 200, 204, 205, 232, 233, 241, 243, 248
 specificity 227, 239, 253, 390
 spell-out 2, 94, 185, 207, 210–212, 215, 221, 226, 252, 256, 257, 288, 375, 376, 378, 380, 383, 405, 427–429
 split antecedent 45, 175, 292
 superiority effects 263, 266
 Swabian 336, 404
 Swahili 32, 99
 Swedish 49, 184, 190, 191, 198, 241, 246, 332
 Swiss German 2–4, 31, 51, 177, 187, 189, 191, 192, 195, 196, 213, 227, 229, 232, 236, 242, 245, 249, 254, 256, 292, 335
 – Appenzell German 337, 344, 345
 – Argovian German 344
 – Basel German 259, 344, 345, 438
 – Bernese German 259, 338, 344–346, 385, 438
 – Glarus German 345
 – Lucerne German 259, 344, 345, 397
 – Wallis German 345
 – Zug German 344, 345
 – Zurich German 229, 259, 336, 337, 344, 345, 438
 syncretism 386, 405, 418, 419
 Tagalog 24
 Tibetan 13, 17, 19
 Tibeto-Burman 17
 Tigre 12
 Toba Batak 23
 topic 98, 219, 230, 316, 317, 319, 321, 402
 – hanging 317, 320
 topicalization 118, 119, 177, 188, 194, 197, 209, 219, 228, 230, 245, 258, 260, 262, 264, 265, 279, 281, 290, 297–299, 307, 308, 335, 342, 343, 378, 379, 431, 437, 438, 450, 458
 tough-movement 288, 293, 306, 313, 317, 318, 325, 326, 328–334, 444
 Trace Conversion 64, 113, 196, 211, 225, 312, 431
 Tsez 321, 322
 Tuki 187, 188, 198, 202, 213, 247
 Tundra Nenets 21
 Turkish 11, 19, 20, 22, 27, 322, 388
 Ukrainian 239
 Urhobo 12, 234, 243, 433
 variation 10, 12, 25, 31, 33, 34, 68, 145, 190, 197, 203, 212, 254–257, 314, 319, 335, 336, 339, 343–346, 352, 378, 383, 391, 393, 398, 409, 410, 433, 458, 463
 Vata 184, 187, 197, 243
 vehicle change 138, 139, 146, 152–155, 157–160, 164–167, 175, 225, 296, 298, 303–305, 331, 441, 452, 460
 Wackernagel position 269, 338, 377, 451
 Wappo 16
 Warlpiri 14–16, 19, 32
 Welsh 183, 185, 186, 192, 196, 198, 202, 203, 221, 222, 234, 236, 245, 246, 249, 335, 390, 398
 Yiddish 203, 232, 241, 243, 244, 248, 335, 404
 Yoruba 12, 241, 243, 244
 Yurok 12