Patterns of Resumption –
Towards a Derivational Account

Timo Klein
Contents

Acknowledgments v
List of Abbreviations vii

1 Introduction 1
   1.1 What this Thesis is about: Resumption in Relativization 1
   1.2 What this Thesis is not about: The Semantics of Resumption 6
   1.3 Base Generation and Movement Approaches to Resumption 9
      1.3.1 Base Generation 11
      1.3.2 Movement 15
   1.4 Goals and Outline of this Thesis 21

2 Crosslinguistic Data on Resumption in Relativization 25
   2.1 Defining the Object of Investigation 25
      2.1.1 Focus on Relativization 25
      2.1.2 Intrusive vs. Grammatical Resumption 27
      2.1.3 The Form and Register of RPs 30
      2.1.4 The Selection of Languages 31
   2.2 The Distribution of Gaps and RPs across Languages 32
      2.2.1 Asante Twi 33
      2.2.2 Brazilian Portuguese 35
      2.2.3 Czech 36
      2.2.4 Ga 37
# Contents

2.2.5 Hausa .................................................. 38  
2.2.6 Hebrew .................................................. 39  
2.2.7 Irish .................................................... 40  
2.2.8 Lebanese Arabic ....................................... 42  
2.2.9 Mandarin Chinese ...................................... 43  
2.2.10 Palestinian Arabic ...................................... 44  
2.2.11 Polish .................................................. 45  
2.2.12 Serbo-Croatian ........................................ 47  
2.2.13 Spanish ................................................. 48  
2.2.14 Tuki ..................................................... 50  
2.2.15 Ukrainian ............................................... 51  
2.2.16 Vata ...................................................... 52  
2.2.17 Welsh .................................................... 53  
2.2.18 Yiddish .................................................. 54  
2.2.19 Yoruba .................................................. 55  
2.3 Bringing the Data Together: Gap and RP patterns across Languages 57  
2.4 Summary: Generalizations and Observations .......................... 61  
2.4.1 Gap/RP Pattern Generalizations ........................ 61  
2.4.2 Additional RP Observations ............................ 62  

## 3 A Derivational Analysis of Resumptive Pronouns in Relativization 65  
3.1 Relative Clauses ........................................... 65  
3.2 The Structure and Creation of Gaps and RPs ..................... 67  
3.2.1 φP ....................................................... 69  
3.2.2 Antilocality ............................................ 73  
3.2.3 Phase Extension ....................................... 77  
3.2.4 Head Movement as an Instance of Agree .................. 80  
3.2.5 Interim Summary ...................................... 85
3.2.6 The Order of Operations ........................................ 91
3.2.7 Optionality and Split Move .............................. 95
3.2.8 External Merger of the Subject .................. 101
3.2.9 The Operations and their Interactions ........ 103
3.3 Sample Derivations: Vata ...................................... 105
3.3.1 Extraction from embedded Object Position: Gap ... 105
3.3.2 Extraction from embedded Subject Position: RP ... 107
3.3.3 Extraction from matrix Object Position: Gap ...... 109
3.3.4 Extraction from matrix Subject Position: RP ...... 110
3.4 Analysis Summary: All Orders and Patterns ........ 112

4 Resumptive Pronouns in Islands ......................... 121
   4.1 Island Data ........................................ 121
   4.2 Feature Maraudage and the Intermediate Step Axiom .. 124
   4.3 Resumption and Wh-Islands ........................ 129
   4.4 Resumption and Adjunct Islands .................. 135
   4.5 Resumption and Complex NP Islands ............... 138

5 Further Implications ........................................ 141
   5.1 The Highest Subject Restriction .................. 141
   5.2 Resumption and the C Domain ...................... 144
   5.3 Alternating C in Ga and Irish .................... 148
      5.3.1 Ga Complementizers .......................... 148
      5.3.2 Irish Complementizers ....................... 150
   5.4 Multiple, Intermediate and Moving Resumptives ... 154
   5.5 Prepositional Objects .............................. 159
   5.6 Coordinated Subjects and Objects ................. 164
## Contents

### 6 Conclusion

6.1 Summary: The Generalizations and their Analyses .......................... 169

6.2 Outlook: Potential Challenges and further Research ..................... 177

   6.2.1 Other resumptive Constructions ..................................... 177

   6.2.2 Epithets ................................................................. 178

   6.2.3 More Data ............................................................... 179

### 7 Appendix: Additional Data

7.1 Asante Twi ................................................................. 199

7.2 Brazilian Portuguese .................................................... 200

7.3 Czech ........................................................................ 202

7.4 Ga .......................................................................... 202

7.5 Hausa ....................................................................... 203

7.6 Hebrew ................................................................. 204

7.7 Irish ........................................................................ 205

7.8 Lebanese Arabic .......................................................... 206

7.9 Mandarin Chinese ....................................................... 207

7.10 Palestinian Arabic ....................................................... 208

7.11 Polish ................................................................. 209

7.12 Serbo-Croatian ......................................................... 210

7.13 Spanish ................................................................. 211

7.14 Tuki ................................................................. 212

7.15 Ukrainian ............................................................. 214

7.16 Welsh ................................................................. 215

7.17 Yiddish ................................................................. 216

7.18 Yoruba ................................................................. 217
Acknowledgments

My life was already on a different path when Gereon Müller and Fabian Heck – *dei ex machina* – offered me to move to Leipzig and continue with linguistics. It is due to their belief in me, first-class mentoring and guidance, that this little syntactic endeavour came to a close. You influenced me hugely, both academically and personally, and I respect the, well, Heck out of you both. Thank you!

It is also fair to say that Leipzig is a magical place to do linguistics. My time there wouldn’t have been half as fun or enlightening without all these smart and kind people. I especially want to thank the members of my project group for making me feel welcome, bearing with all my questions, and for tons of foosball practice: Anke, Doreen, and Philipp – it was an honor to work with you. Everybody’s ears and office doors were always open for discussions, and I would always find encouragement when I needed it. Andreas, Andy, Barbara, Eva, Joanna, Johannes, Jude, Katja, Laura, Ludger, Martin, Matias, Peter, Petr, Sampson, Sandhya, Sandra, Sebastian, Siri, Tom, Yuriy, and Zorica: thank you for all your help and critical questions, but also for all the barbecues in the park.

For all kinds of valuable data and discussion, refinements, corrections, and that one missing reference (there always is one), I am greatly indebted to Theodora Alexopoulou, Rajesh Bhatt, Claudia Bucheli-Berger, Chris Collins, Norvert Corver, Jeroen van Craenenbroeck, Berthold Crysmann, Patrick Elliott, Peter Gallmann, Doreen Georgi, Juan Jose Gonzalez, Itzik Gottesman, Erich Groat, Kleanthes Groh-
Acknowledgments

mann, Maria Heberlein, Eliana Henriquez, Anke Himmelreich, Marko Hladnik, Anders Holmberg, Sampson Korsah, Yuriy Kushnir, Jim McCloskey, Sigrid Newman, Dennis Ott, Victor Pan, Omer Preminger, Zorica Puškar, Henk van Riemsdijk, Sean Roberts, George Saad, Martin Salzmann, Uli Sauerland, Radek Šimík, Volker Struckmeier, Maria Barrera Verdejo, Philipp Weisser, Katya Yordanova, Joanna Zaleska, and Inga Zalevskaya.

My leaving to Eastern Germany for several years must have been a great burden (or, maybe, relief?) for a number of people. Nevertheless, they provided the necessary support and, sometimes, necessary distraction during this journey: Anne-Marie, Alex, Anastasia, Benjamin, Carmen, Christoph, Daniel, Daniel, David, Denis, Dennis, Esra, Felix, Flo, Friederike, Henry, Johanna, Judith, Julia, Kat, Lori, Luisa, Luise, Matthias, Matthias, Max, Meike, Melinda, Nina, Nina, Ole, Regine, Susanne, Tanja, Thomas, Torsten, and Turner – thanks for never getting out of touch or reach.

The final round of applause shall go to my family – Barbara and Jochen, Dorothee, Charlotte and Marlene – for their endless support, starting ages before I even knew that Agree is an operation, not a verb. I could not have done this without you guys, and I’m lucky just knowing you are there for me.

Sadly, the one person to whom the biggest thanks and appreciation is due is not alive to see what her love and support has fostered. Writing this was only a tiny step towards giving back – I dedicate this work to you, mom. Thank you for everything.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2/3/p</td>
<td>person</td>
</tr>
<tr>
<td>ACC</td>
<td>accusative case</td>
</tr>
<tr>
<td>AGR</td>
<td>agree</td>
</tr>
<tr>
<td>AUX</td>
<td>auxiliary</td>
</tr>
<tr>
<td>C/COMP</td>
<td>complementizer</td>
</tr>
<tr>
<td>CD</td>
<td>clause determiner</td>
</tr>
<tr>
<td>CL</td>
<td>clitic</td>
</tr>
<tr>
<td>COND</td>
<td>conditional mood</td>
</tr>
<tr>
<td>CONT</td>
<td>continuative aspect</td>
</tr>
<tr>
<td>CPL</td>
<td>complete aspect</td>
</tr>
<tr>
<td>DAT</td>
<td>dative case</td>
</tr>
<tr>
<td>DEF</td>
<td>definite</td>
</tr>
<tr>
<td>DEM</td>
<td>demonstrative</td>
</tr>
<tr>
<td>EM</td>
<td>external merger</td>
</tr>
<tr>
<td>EXPL</td>
<td>expletive</td>
</tr>
<tr>
<td>FM</td>
<td>final movement</td>
</tr>
<tr>
<td>G</td>
<td>gap</td>
</tr>
<tr>
<td>GEN</td>
<td>genitive case</td>
</tr>
<tr>
<td>IM</td>
<td>intermediate movement</td>
</tr>
<tr>
<td>IMPERF</td>
<td>imperfect</td>
</tr>
<tr>
<td>INDEF</td>
<td>indefinite</td>
</tr>
<tr>
<td>L</td>
<td>linker</td>
</tr>
<tr>
<td>MASC/FEM, M/F</td>
<td>masculine/feminine</td>
</tr>
<tr>
<td>NEG</td>
<td>negative marker</td>
</tr>
<tr>
<td>NOM</td>
<td>nominative case</td>
</tr>
<tr>
<td>NRP</td>
<td>null resumptive pronoun</td>
</tr>
<tr>
<td>OBJ</td>
<td>object</td>
</tr>
<tr>
<td>OP</td>
<td>operator feature</td>
</tr>
<tr>
<td>PAST</td>
<td>past tense</td>
</tr>
<tr>
<td>φ</td>
<td>phi features</td>
</tr>
<tr>
<td>PRES</td>
<td>present tense</td>
</tr>
<tr>
<td>PROG</td>
<td>progressive aspect</td>
</tr>
<tr>
<td>PROX</td>
<td>proximal</td>
</tr>
<tr>
<td>Q</td>
<td>question particle</td>
</tr>
<tr>
<td>REL</td>
<td>relative marker/feature</td>
</tr>
<tr>
<td>RP,R</td>
<td>resumptive pronoun</td>
</tr>
<tr>
<td>SG/PL, S/P</td>
<td>singular/plural</td>
</tr>
<tr>
<td>SM</td>
<td>subject marker</td>
</tr>
<tr>
<td>SUB/SUBJ</td>
<td>subject</td>
</tr>
<tr>
<td>VN</td>
<td>verbnoun</td>
</tr>
<tr>
<td>WH</td>
<td>interrogative marker/feature</td>
</tr>
</tbody>
</table>
1 Introduction

This thesis will propose a novel way to derive the patterns in which resumptive pronouns (RPs) occur in various languages. The focus will be on relativization contexts as a syntactic common ground for this crosslinguistic endeavour, and syntactic movement will be used to bring about the occurrence of gaps and RPs alike. In this chapter, the subject matter will be introduced, and the motivation for backgrounding certain related phenomena will be given.

In section 1.1, the syntactic properties of resumptive constructions and the notion of resumptive distribution patterns will be introduced; these are among the core data which shall be derived in the course of this proposal. Next, section 1.2 will state why certain semantic characteristics of RPs are not part of this investigation. Section 1.3 will give a brief overview of existing approaches to resumption, both base generation and movement ones. Finally, section 1.4 will provide a summary of the phenomena which the present proposal intends to derive.

1.1 What this Thesis is about: Resumption in Relativization

A regular pronoun does usually not alternate with a gap in the same position. Consider the sentence pair below in (1):

(1)  a. Sally said that she would resign.
    b. *Sally said that _____ would resign.

adapted from (McCloskey 2006, 1)
1 Introduction

The pronoun *she* is free, i.e. it can refer to an antecedent somewhere in the discourse (be it *Sally* or some other female participant in the sentences before). Since a syntactic gap is bound by an antecedent within the same clause, it cannot alternate with a pronoun that is inherently free. As a result, b) is ungrammatical.

Resumption, in its most common definition, denotes a construction in which a pronoun appears in a position where a gap would be expected (McCloskey, 2006). In (2) below, two relative constructions are given:

(2) a. There are guests that everyone wants to invite ____.
   
b. ?There are guests who I am curious about what *they* are going to say.

adapted from (McCloskey 2006, 1)

In the a) case, a gap occurs in the position of the relativized object. A gap is licit, because it is bound by an antecedent in the same clause (a relative operator in the embedded CP); its reference is recoverable via binding. The relative example in b), on the other hand, has an overt pronoun *they* in the position from which an element was relativized. While it is not perfectly grammatical, it is still far less deviant than the gap example in (1). This kind of pronoun in the position of an expected gap is called a resumptive pronoun (cf. McCloskey 2006, among others), and it will be at the center of the present investigation. It is a pronoun that is bound by an antecedent in the same way that a gap would be bound. The syntactic mechanism that brings about RPs depends on how this connection between the antecedent in a relative clause (the relative operator) and the position it binds (the RP position) is established. The two broad directions that RP analyses can take are called base generation and movement approaches; a discussion can be found in section 1.3 below.

RPs are also often attributed to some kind of Last Resort mechanism which a grammar can invoke in order to save an otherwise illicit structure. It has been
argued that the usage of a pronoun is derivationally more costly than a gap, such that it is only viable in syntactic “emergencies”, that is, only when gaps are blocked (cf. e.g. Shlonsky 1992; Pesetsky 1998; Aoun et al. 2001; Willis 2000; Alexopoulou 2006). However, as will be seen below, RPs frequently occur when gaps are not blocked (free alternation). Thus, the present approach will not invoke Last Resort, but rather treat RPs and gaps the same in terms of derivational cost (see also Asudeh 2012).

While the RP example in (2) does not really alternate with the gap example, in certain languages there are minimal pairs involving RPs and gaps, and they are both deemed grammatical (contra Last Resort). The Hebrew example below will serve as an illustration:

(3) Hebrew, object relativization
a. ha-ʔiš še- raʔiti gap
   the-man that- (I) saw gap
b. ha-ʔiš še- raʔiti ʔoto
   the-man that- (I) saw him

   ‘the man that I saw’

   (Shlonsky 1992, 444)

The same relative clause can host a gap and an RP in the relativization position, indicating that RPs and gaps appear to have the same syntactic properties and are sometimes interchangeable. They are not always in free alternation, as a subject relativization example from Irish shows:

(4) Irish, subject relativization
a. fear nár fhan gap sa bhaile
   an C.NEG.PAST remained gap at home

1From an acquisition perspective, Suñer (1998) reports that children acquiring Spanish make use of resumption very frequently, which would also be at odds with a general, economy-driven ban.
2More precisely: languages which exhibit so called grammatical resumption; see chapter 2.1.2 for a discussion.
### 1 Introduction

b. *fear nár fhan sé sa bhaile
man C.NEG.PAST remained he at home

‘a man that didn’t stay at home’

(McCloskey 2006, 8)

Here, only the gap version is licit, while the occurrence of an RP makes the sentence ungrammatical.\(^3\) Apparently, the choice between RPs and gaps in relativization does not have to be uniform even within a single language, but can change with respect to the position from which is relativized. Non-embedded relativization was shown above, and two corresponding embedded examples are given below:

(5) Irish, embedded object relativization

a. an rud a shíl mé a dúirt tú a dhéanfá ___
the thing C thought I C said you C do.COND.2.SG gap

‘the thing that I thought you said you would do’

b. an rud ar dúirt sé go gcóinneodh sé ceilte é
the thing C said he C keep.COND he hidden it

‘the thing that he said he would keep hidden’

(McCloskey 2011, 75)

(6) Irish, embedded subject relativization

a. an t-ór seo a chreid corr dhuine a raibh ___ ann
this gold C believed a.few people C was gap there

b. an t-ór seo ar chreid corr dhuine go raibh sé ann
this gold C believed a.few people C was it there

‘this gold that a few people believed was there’

(McCloskey 2011, 78)

Both embedded configurations behave like the direct object case: they allow for free alternation between gaps and RPs. Together, these examples form a certain distribution pattern of resumption in Irish:

\(^{3}\)Possible reasons for the often special behavior of the highest subject position will be discussed during the analysis in chapter 3 and, more to the point, in chapter 5.1.
1.1 What this Thesis is about: Resumption in Relativization

Pattern of resumption in Irish relativization

<table>
<thead>
<tr>
<th>Highest Subject</th>
<th>Embedded Subject</th>
<th>Object</th>
<th>Embedded Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
</tbody>
</table>

This is the kind of pattern which shall be derived by the analysis proposed in chapter 3 (among other phenomena). For these four positions (non-embedded and embedded subject and object)\(^4\) gap/RP patterns will be extracted from 19 languages in the context of relativization. It will become clear that the number of actually attested patterns is heavily restricted, and these restrictions will be carved out from general syntactic principles in chapter 3.

In addition to these four positions, RPs frequently appear in other positions such as objects of prepositions and, more notoriously, inside islands:

(8) Hebrew, prepositional object relativization

<table>
<thead>
<tr>
<th>Hebrew</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. *ha-ʔiš še- xašavti ŋal-____ the-man that- (I) thought about-gap</td>
</tr>
<tr>
<td>b. ha-ʔiš še- xašavti ŋal-av the-man that- (I) thought about-him</td>
</tr>
</tbody>
</table>

‘the man that I thought about’  

(Shlonsky 1992, 445)

(9) Welsh, wh-island relativization

<table>
<thead>
<tr>
<th>Welsh</th>
</tr>
</thead>
<tbody>
<tr>
<td>rhyw afwydd na ſ yr neb be ydi o some affliction c.NEG know no.one what be.PRES.3.SG it</td>
</tr>
</tbody>
</table>

‘some affliction that no one knows what (it) is’  

(Willis 2011, 214)

These additional contexts of resumption will be considered in chapters 4 (islands) and 5.5 (PPs). Their derivations will be shown to mainly fall out from the core assumptions proposed in the analysis.

\(^4\)The most comprehensive amount of data are available for these positions, but others will be derived as well. See chapter 2 for a more detailed motivation.
1 Introduction

In sum, this thesis will provide a movement based approach to deriving resumptive patterns crosslinguistically. The focus will be on relativization from certain positions, such that a basis for comparison between different languages is given. This gap/RP typology will yield syntactic generalizations and observations for which explanations will be provided during the course of this investigation.

1.2 What this Thesis is not about: The Semantics of Resumption

While the present proposal will consider (and derive) different kinds of syntactic phenomena connected with resumption, certain semantic effects will not be in its focus. One phenomenon appears to be relatively straightforward. In some languages, e.g. Hebrew, the gap version of a relative clause allows for both a de re and de dicto reading:

(10) Hebrew, prepositional object relativization

a. dani yimca et ha-iša še hu mexapes ____
   Dani will-find ACC the-woman that he seeks gap

b. dani yimca et ha-iša še hu mexapes ota
   Dani will-find ACC the-woman that he seeks her

‘Dani will find the woman that he seeks (her).’ (Doron 2011, 305)

In the gap version, two readings are possible. In one, Dani is either hoping to find a woman who he does not know yet, but of whom he has a wishful mental image (de dicto). In the other, he knows exactly which woman he is looking for (de re). The RP version only allows for the latter interpretation, thus the usage of an RP restricts the ways in which the relative clause can be understood. This certainly is an interesting observation, but it will not be discussed further here for two reasons: first, this effect has only been investigated at this level of detail in Hebrew (see also Bianchi 2011), such that it is not clear (as of now) whether a significant number of the languages which exhibit grammatical resumption share this property. This
would make it a difficult candidate for a large crosslinguistic endeavour. Second, Doron (2011) provides an explanation based on different kinds of binding for gaps and RPs which is not straightforwardly transferable to a movement-based approach. At the same time, it might very well be that a gap is interpreted in a different way at LF from an RP in the respective languages. The present proposal remains compatible with a separate semantic explanation, but its focus is on the syntax of resumption.

The second phenomenon appears to be more difficult to ignore. Often, the occurrence of a gap is taken as evidence that movement has taken place from this position, while an RP is considered not to involve movement, but rather both the RP and its binder (the relative operator) are base generated and then linked via syntactic binding (for an overview of base generation accounts, see the next section). In order to diagnose movement, certain effects are often sought out. One of them is the so-called weak crossover effect (cf. e.g. Postal 1993) which occurs if an element is \( \ddot{A} \)-moved across a co-referring pronoun which does not c-command the trace:

(11) *(?Who\(_i\) does his\(_i\) mother like t\(_i\)?

If this is taken as a sign of (illicit) movement, and if RPs did not show this effect, a movement approach would be challenged. And, indeed, Irish appears to show no weak crossover effect if an RP occupies the relativized position:

(12) Irish, no weak crossover effect

\[
\begin{align*}
\text{a. } & \text{ *fear a d’fhág a bhean } \quad \text{gap} \\
& \text{man c left his wife} \\
\text{b. } & \text{ fear ar d’fhág a bhean } \quad \text{him} \\
& \text{man c left his wife} \\
\end{align*}
\]

\[\text{‘a man that his wife left (him)’} \quad \text{(McCloskey 1990, 110)}\]
However, a similar RP construction in Vata actually shows this effect (see also Korsah and Murphy 2015 for evidence of RPs triggering successive-cyclic movement effects in Asante Twi):

(13) Vata, weak crossover effect

a. *àló ọ̀ gùgù ná ọ́ mì là
   who₃ his₃ mother think that he₁ left wh
   ‘who did his mother think left’ (Koopman 1982, 143)

For a crosslinguistic approach, this means that weak crossover effects do not clearly rule out movement as a means of bringing about resumption. The same situation arises with respect to *strong crossover effects*, which indicate that a trace of A-movement is (illicitly) bound by a co-referring element in an argument position. This has been shown for at least Irish (McCloskey, 2006), Hebrew (Shlonsky, 1992), and Arabic (Aoun, 2000).

Lastly, a certain effect shall be mentioned which is often grouped under *reconstruction*; it describes the fact that sometimes elements that have been dislocated are interpreted in a position they occupied before their dislocation:

(14) a. [Which picture of herself₃] does Mary₃ hate ____.
   b. *[Which picture of Mary₃] does she₃ hate ____.

In the a) case, the moved phrase *which picture of herself* is assumed to be in its base position at the time when Binding Principle A applies (i.e. Mary, as the antecedent, properly c-commands herself). Thus, at the surface, the sentence is grammatical because the phrase can be interpreted as if movement had not happened. In b), on the other hand, Mary is also interpreted as if it had not moved yet, but it violates Principle C in its base position (the pronoun she must not c-command
1.3 Base Generation and Movement Approaches to Resumption

Both outcomes are seen as the result and, thus, an indicator of movement. These kinds of (movement) effects have been shown to arise with RPs in Arabic (Aoun et al., 2001), Hebrew (Shlonsky, 2004), Ndendeule (Ngonyani, 2006), and Welsh (Rouveret, 2008). They even arise within islands in French and Jordanian Arabic (cf. Guilliot and Malkawi 2006), and Asudeh (2012), more generally, states that “resumptives cross-linguistically do not behave uniformly with regard to the following syntactic diagnostics for gaps [...] : islands, weak crossover, across-the-board extraction, parasitic gaps, and reconstruction” (29).

While these counterexamples are not meant to rule out certain diagnostic tools for movement completely, they do support the possibility of a movement-based account of resumption (see Reitbauer 2013 for a more detailed overview). For present purposes, it will be assumed that certain semantic effects can be derived independently of the syntactic strategy that is employed to derive gaps and RPs, although they are not the center of this investigation. The approach presented here will derive gap and RP patterns solely by movement, thereby providing a unified mechanism for both strategies. Since it has been established that RPs do not differ from their gap counterparts syntactically (McCloskey, 2006), this unification is a desirable goal.

1.3 Base Generation and Movement Approaches to Resumption

As was mentioned in section 1.1, the position from which an element is relativized needs to be bound by the relative operator. Since gaps come about by (relative) movement, it is assumed that the moved item itself is the relative operator. It leaves behind a gap (trace) and, at a later stage in the derivation, takes scope over the relative clause from SpecCP position. Thus, the antecedent (operator) once was in the position of the gap; the trace is bound to the operator after movement.

RP cases, on the other hand, can be handled in two different ways. The lack of a

---

5This is based on the assumption that Principle C is either evaluated derivationally at certain stages, or that there are copies or traces of moved elements which reconstruction can target.
surface gap can be taken as evidence that no movement has happened. Instead, both the RP and the relative operator are base generated independently of one another at the respective stages of the derivation, as in (15) below. A binding relation is established after the operator has been merged:

(15) Base generation of RP and operator
\[
\text{[CP Relative operator [C' C [TP T [vP ... Resumptive Pronoun ... ]]]]}
\]
\[\text{................... BINDING ...................}\]

This relation is characterized by an insensitivity to locality conditions and holds between the operator in an Ā-position and a variable in the same clause (here: the RP) (cf. McCloskey 2006). However, this operator-variable relation can also be construed with movement. Either, the RP can be assumed to be a spelled out copy of the moved operator (reminiscent of the gap derivation above), as in (16) below. Or the operator and RP start out as parts of the same syntactic unit, and the RP part gets stranded by the relative movement of the operator part, as in (17):

(16) Movement and copy spellout
\[
\text{[CP Relative operator [C' C [TP T [vP ... Operator copy = RP ... ]]]]}
\]
\[\text{\underline{\text{MOVEMENT}}}\]

(17) Movement = stranding
\[
\text{[CP Relative operator [C' C [TP T [vP ... [[RP] [...]] ... ]]]]}
\]
\[\text{\underline{\text{MOVEMENT}}}\]

Both categories of approaches have certain advantages and disadvantages, and an overview will be given in the following sections.6 The present proposal will

---

6It should be noted that recently a few interesting attempts have been made to deal with resumption within a top-down-derivation framework, as originally proposed by Phillips (2003) (see e.g. Klein 2013; Salzmann and Georgi 2014; Georgi and Salzmann (to appear.)
develop a novel take on the movement account, but it shall be stated clearly that this undertaking does not intend to refute base generation as such. Rather, it is an exploration into what can be accomplished by using only one syntactic mechanism to generate RPs. As will be illustrated below, base generation approaches also rely on movement for gaps, and even for certain RPs.

1.3.1 Base Generation

Base generation approaches to resumption appear to be more popular than movement based analyses (cf. McCloskey 1990, 2002; Shlonsky 1992; Aoun et al. 2001; Bianchi 2004; Salzmann 2009a, 2011; Rouveret 2008, 2011). The main reason is their flexibility when it comes to different syntactic configurations involving RPs. As seen above, base generation refers to the disjunctive manner in which the operator and RP are merged prior to binding. This lack of movement in the mechanism can be exploited in cases where movement is assumed not to take place on independent grounds, e.g. if the operator is separated from the RP by an island boundary, or whenever a diagnostic for movement fails (such as weak and strong crossover, reconstruction, etc., see section 1.2 above). Accordingly, base generation is traditionally assumed to underlie the occurrence of an RP in the island example below:

(18) Irish, relativization from a wh-island

na hamhráin sin nach bhfuil fhios cé a chum iad
the songs DEM NEG.C is knowledge who C composed them

‘those songs that we don’t know who composed them’ (McCloskey 2006, 6)

First, *them* is merged, and the derivation progresses up to the level of the relative CP headed by *nach* on the surface. At this stage, the (null) relative operator is merged, and binding takes place with the RP. Although the RP is located within
1 Introduction

a syntactic island, no movement restrictions need to be violated to establish the operator-RP connection.

Sometimes, in non-island environments, both a gap and an RP are licit in the same construction:

(19) Serbo-Croatian, object relativization

a. čovjek koga ____ mrzi
   man REL gap hates

b. čovjek što ga mrzi
   man c him hates

‘the man who he hates’ (Bošković 2007, 1)

In this case, base generation approaches would assume that both base generation (b) and movement (a) are possible strategies. This might be viewed as slightly problematic if RPs are supposed to be an indicator of the unavailability of movement. A real challenge, however, is posed by data in which movement should be possible for all intents and purposes, but the gap (= movement) derivation seems to fail:

(20) Palestinian Arabic, object relativization

a. *l-bint ?illi šufti-____
   the-girl that (you-F) saw-gap

b. l-bint ?illi šufti-ha
   the-girl that (you-F) saw-her

‘the girl that you saw’ (Shlonsky 1992, 445)

In the a) example, the syntactic environment would allow for movement, but the gap derivation fails. Meanwhile, the RP version in b) is grammatical, thus base generation could be assumed. In order to maintain that gaps come about by movement,

---

7 As was shown above in section 1.2, movement effects sometimes arise in environments that otherwise ban movement, or vice versa.

8 Sometimes the reason for a failed movement derivation is sought in transderivational economy considerations, as in e.g. Aoun et al. (2001).
and RPs by staying in situ (plus binding), the “movement-friendly” environment in the example above would have to somehow be re-analyzed as a kind of exceptional island for movement, allowing only for a base-generation strategy.

Another disadvantage lies in the disjunctive nature of the RP and its antecedent operator. Below, the early stage of a derivation is depicted in which the object to be relativized is merged:

(21) \[ \text{VP} \]
\[ \text{V} \quad \text{RP? Full argument?} \]

Recall that the relative operator will only be base-merged after the derivation has reached the matrix SpecCP stage, but at the initial stage there is still a choice between a regular direct object (e.g. a full DP) and an RP. Once the derivation has reached the point where the operator is supposed to be inserted, information from lower phases (including the object) is no longer accessible due to the \textit{Phase Impentrability Condition, PIC} (see chapter 3.2.2). The form of the relative operator appears to be dependent on whether a DP or RP is merged in the relativization site (cf. e.g. Broihier 1995; Pesetsky 1998 for Polish, and see chapter 5.2). In order for C to obtain the relevant information, it would have to be passed on from the object position across phase boundaries. However, if this information has to “move” in a phase-based manner, then this is quasi-indistinguishable from simply assuming movement to begin with:
To conclude, base generation approaches, which are virtually always hybrids between base generation and movement strategies, seem to cover both cases where RPs occur in environments licensing movement, and in environments banning movement. They can switch between two syntactic mechanisms basically at will. However, as has been shown above, it is not always clear that movement is actually banned where it is assumed to be. In addition, base generation needs counter-cyclic devices such as look-ahead or backtracking in order to derive the desired outcomes. While crash proofness is not per se necessary in a minimalist framework where phases are built step by step and bottom-up, it would still be desirable to have only one mechanism, movement, to bring about both gaps and RPs. To that end, the following section will outline what (pure) movement approaches do differently. Ultimately, this thesis will propose an approach to resumption that also falls into the movement camp.
1.3.2 Movement

In contrast to base generation approaches, movement (only) accounts attempt to establish binding between the relative operator and the gap/RP position using only the operation Move. This implies that a full argument is always merged, in contrast to just an RP under base generation. Scenarios which allow for relativization without resumption work the same way as in base generation: the DP to be relativized moves to the operator position, and a variable (trace) remains in the extraction site and is connected to the operator via this movement. In order to model RP cases with movement, too, there needs to be something that is “left behind” after the DP has moved. This remnant is then later pronounced as an RP. Three basic proposals have arisen over time, and the two more prominent ones shall be introduced in the following.9

One earlier class of approaches that has re-surfaced a number of times construes RPs as the overt spellout of whatever a movement operation has left behind in an extraction site (cf. e.g. Zaenen et al. 1981; Pesetsky 1998; Bianchi 2004; Alexopoulou 2006). These spellout accounts assume that movement leaves behind a trace or copy of the respective element (depending on whether one assumes traces or copies within generative syntax / minimalist frameworks). While this copy remains silent in “regular” cases of movement which leave behind surface gaps, it receives overt realization in the RP cases. Due to reasons of derivational economy, the resumptive will not be spelled out as a full copy, which would amount to a kind of doubling. Rather, the idea is that the PF module will make this lower copy visible only in its most minimally possible form, which is the bundle of $\phi$ features. Thus, the moved DP’s copy is realized as a (resumptive) pronoun:

(23) This is the man $[_{\text{CP}} \text{ that Mary likes } [_{\text{DP}} \text{ the man } \rightarrow \text{him}]]$

9Demirdache (1991) argues that the operator is inserted as an RP in syntax and only later moved to its operator position at LF, but this kind of solution will not be discussed here.
This mechanism provides a seemingly smooth explanation for the occurrence of RPs instead of gaps in movement environments (but see a criticism below).

One weaker concern about the spellout of traces is that, in principle, PF should be able to spell out other copies of the same element, if intermediate, successive-cyclic movement steps are necessary for DP to reach its landing site. This would derive constructions with RPs in (all) intermediate landing sites (such as SpecvP or SpecCP) – however, these cases have so far not been attested in the literature on resumption (see chapter 5.4). Of course, additional assumptions could restrict the occurrence of RPs to their in-situ position. Moreover, it is unclear how the decision between the pronunciation of a full copy and a reduced pronoun is made, or what exactly facilitates this reduction. As Abels (2005) points out, pronouns might not even be the most minimal candidates for lexical insertion.

A stronger argument against deferring the spellout decision solely to the post-syntactic PF is that RPs can, apparently, undergo movement themselves (cf. 5.4 below). Where this kind of movement occurs, it never happens to a lower position (which might be construable at PF), but only to higher positions which have already been merged in syntax, before PF. Also, a PF operation should have no impact on LF readings, but there are cases where RPs have a limited interpretation in comparison to full arguments (see chapter 1.2). While these facts possibly do not rule out a spellout approach completely, the problems will be avoided by the present proposal, and copies will not be assumed.

Lastly, Merchant (2001) generalizes that the binding operator of an RP cannot be case-marked (see also chapter 5.2). This, however, is difficult to rule out with a copy-spellout approach, because case is assigned in the base position of an element, before it is moved. Thus, case information is available once the copy reaches the

---

10 The assumption of traces, however, appears to be compatible with the analysis proposed here.
operator position, and additional assumptions would be necessary to rule out its spellout as e.g. an overt relative pronoun.

A different class of approaches is subsumed under the term *Big DP* (Aoun et al. 2001; Boeckx 2003, cf. also Uriagereka 1995, who originally proposed it for clitic doubling, Grohmann 2000; Belletti 2005, among others). As the name suggests, this DP unit consists of more material than is contained in a “regular” DP, and it is commonly assumed to look like (24):

(24) **Big DP for resumption**

$$[\text{DP } [\text{DP lexical DP} ] [\text{DP } \phi\text{-features}]]$$

What can be seen here is that both the operator (lexical DP) and the resumptive ($\phi$) are construed as complete DPs. They are separated by movement of the lexical DP out of the complex which strands the RP part:

(25) This is $[\text{CP the man } [C\text{ that } [\text{vP Mary likes } [\text{BigDP } [\text{DP } ] [\text{DP him }]]]]]$]

One advantage of this construal over the copy-spellout approach is that stranding of the RP can only happen once, since it remains in situ. This is in line with the empirical evidence. Also, since the RP is a separate syntactic item instead of a PF “afterthought”, this would explain why RPs can have an influence on LF and can be moved/fronted in syntax (cf. chapter 5.4). In addition, depending on the exact nature of the Big DP,\(^{11}\) it could be argued that case is only assigned to either the entire moving Big DP, or only to the RP part which is stranded, circumventing the case problem of copy-spellout.

One important drawback, however, is the compound state of the Big DP. One would expect cases where movement does not happen, and the complex constituent

---

\(^{11}\)See chapter 3.2.1 for its construal in the present proposal.
(e.g. the man him) surfaces in-situ. However, this compound would be semantically uninterpretable (due to the $\theta$-criterion) and also never occurs as such (cf. Kayne 2002, but see also Grewendorf 2008). Moreover, more needs to be said about the derivational origin of Big DP. The integration of two DPs has to happen somewhere before the compound is merged into an argument position and possibly violates binding principles (Ott, to appear). Then, some kind of additional restriction would be needed to rule out Big DPs in non-resumptive environments. In addition, while the copy theory which is exploited in copy-spellout approaches is not specific to resumption and widely assumed independently of the phenomenon, the concept of a Big DP needs to be introduced solely for that purpose, thus entailing more stipulations.

Different attempts have been made to utilize only spellout or Big DP approaches without base generation (cf. Pesetsky 1998 for a copy-spellout, and Boeckx 2003 for a Big DP variant). Using movement to bring about both gaps and RPs (both inside and outside islands) has the benefit of avoiding the backtracking and look-ahead issues altogether. It also treats gaps and RPs in a unified way, which is desirable given their largely similar behavior. While movement-only approaches easily handle typical non-island environments, they face challenges in environments where movement is supposed to be banned, but RPs still appear (see e.g. the island example above in section 1.3.1). As a case in point, Pesetsky (1998) stipulates that dependency chains, brought about via copying plus movement, need an overt bottom realization within islands. Below, an example is sketched; intermediate landing sites of the operator are left out for clarity:

\[(26) \quad \text{[CP silent copy = Op [C: C [CP Island-Op [C: C [vP overt copy = RP ]]]]]} \]

\[\text{movement}\]

In regular non-island cases, the same explanation holds for RPs, while gaps can
be derived by pronouncing the topmost copy, e.g. as an overt relative pronoun, while the bottom copy is silent. This is an elegant and simple way of unifying both relativization gaps and RPs with the same mechanism, but one drawback needs to be mentioned. Apart from the fact that more has to be said as to why islands would require essentially a reversal of the regular spellout of the topmost copy, this approach is based on overt RPs (see also Salzmann 2011a). However, there are examples of covert resumptives even inside islands, e.g. in Lebanese Arabic (\(nRP\) denotes null RP):

(27) Lebanese Arabic, wh-island relativization

\[
\text{l-mf\'allme ?aSaSit l-walad yalli laila bta\'rif miin nRP}
\text{the-teacher punished.3.SG.F the-boy that Laila know.3.SG.F who nRP}
\text{Darab}
\text{hit.3.SG.M}
\]

‘The teacher punished the boy that Laila knows whom he hit.’

(Aoun 2000, 17)

The phenomenon is not at all uncommon (cf. Salzmann 2009a, 2011b, and in particular Korsah and Murphy 2015 for Asante Twi) and runs counter to Pesetsky’s stipulation that copies in islands need to be realized overtly. In addition, it is not entirely clear why the spellout of a full copy should result in an RP, and not in something with more or even less \(\phi\) content (cf. Abels 2005).

Boeckx (2003), on the other hand, devises a resumption strategy based on RP stranding. He invokes the operation \textit{Match} which initiates the search of a probe for suitable features in its c-command domain and can check non-\(\phi\) features. It is discerned from \textit{Agree} which is responsible for checking \(\phi\) features. Furthermore, Match is supposed to be insensitive to locality and can thus probe into island phases, while Agree is not, and movement can happen under Match alone. Thus, if the Big
1 Introduction

DP to be relativized is located inside an island, the local v head can check its $\phi$ features via Agree, while, at a later stage, the matrix clause C head can have its WH feature checked by attracting the operator part of the Big DP. Schematically, this looks as follows:

\[
(28) \quad [\text{CP Op} [\text{C'} C [\text{vP} ... [\text{CP Island-Op} [\text{C'} C [\text{vP v [DP D ]}]]]]]]
\]

1: Agree happens between v and the D part of the Big DP which carries the $\phi$ features. Then, in 2, the operator part is attracted to the edge of the matrix relative clause by its C, purely under Match. In this fashion, the licit construction with an RP inside an island is derived. Crucially, only these assumptions about Big DP and Match together lead to the desired outcome; if a regular DP was to be relativized, its $\phi$ features would not be separate, and Match could not access DP. This explains why gaps are (often) illicit inside islands.\(^{12}\) It also explains why RPs occur almost exclusively with invariant Cs: inflecting Cs or relative operators in SpecCP would require $\phi$ feature valuation, something that Match is assumed not to provide.\(^ {13}\)

However, movement under Match is probably not easily modeled as insensitive to locality (no intermediate steps). In addition, just like with traditional Big DP accounts, the mechanism appears to be tailored around resumption (cf. Salzmann 2011a), which is not desirable if RPs themselves are simply regular pronouns.

Thus, both prominent movement-only approaches to resumption have their advantages over hybrid approaches which also involve base generation. However, both mechanisms are also far from ideal. In order to improve that situation, the present proposal will try to save the spirit of movement as the source of both gaps and RPs.

\(^{12}\)Cases with null resumptives inside islands can presumably be handled by assuming that the $\phi$ features which remain in situ do not receive a PF realization due to independent, language specific reasons. In contrast to Pesetsky (1998), Boeckx does not rely on the overtness of the RP (similar to the present approach, see chapter 3 and following).

\(^{13}\)The same fact is derived in the present proposal in a different way, see chapters 3 and 5.2.
1.4 Goals and Outline of this Thesis

After a brief overview of the relevant classes of approaches, this section will outline the purpose of this thesis. The overarching research goal is to develop a movement based account of the distribution of gaps and RPs across various languages, which appears to be an aspect still missing in the treatment of the phenomenon. Relativization shall serve as the common phenomenon on which this crosslinguistic undertaking is based.

Chapter 2 will present the core empirical data which are to receive a derivational analysis in the course of this proposal. In section 2.1.1, the reasoning behind choosing relativization as a broad empirical base will be explained. Section 2.1.2 discusses why grammatical, not intrusive resumption is at the center of this investigation, while, in section 2.1.3, stylistic issues pertaining to the data will be highlighted. The selection of languages is discussed (2.1.4), before the data are presented in 2.2. Each investigated language is then represented with relativization data from four positions (embedded and non-embedded subjects and objects) which form a distributional pattern. The patterns of each language are then gathered in sections 2.3 and 2.4 in order to identify generalizations in these patterns which will also be derived later on.

Chapter 3 develops the core proposal: the mechanics necessary to derive the occurrence of gaps and resumptives via movement (instead of base generation). In order to do so, the chapter is divided into several parts which build on each other. First, in section 3.1, a brief overview of the relevant theories of relative clauses is given, into which the present proposal needs to be embedded. In the following sections (from 3.2 on), the core assumptions that are crucial to this approach will be
introduced and illustrated. Since it is based on the stranding variety of movement approaches (cf. section 1.3.2), an element akin to a “traditional” Big DP will be introduced: $\phi P$ (3.2.1). It consists of a DP embedded under a $\phi$ head which, if stranded, leads to the occurrence of an RP. In section 3.2.2, the concept of antilocality is introduced. It will be laid out how this poses a problem if the $\phi$ head (=RP) is to be stranded, because it bans the short movement step of DP from the complement of $\phi$ to its specifier. The means to circumvent this problem are presented in sections 3.2.3 and 3.2.4, where phase extension via head movement will be shown to be a way to avoid antilocality effects. In addition, it will be discussed how this head movement can be unified with the operation Agree in the relevant resumptive cases, such that Agree is a prerequisite for stranding movement. Without Agree, the entire $\phi P$ will be relativized, and a gap occurs in the extraction site. After an interim summary which illustrates the aforementioned assumptions and their interaction (section 3.2.5), an important notion pertaining to the order of syntactic operations will be introduced in 3.2.6: if multiple operations are triggered by the same phase head, something needs to be said about their order of application. The conclusion will be that operations such as Agree and Move are ordered extrinsically on the respective phase heads, and that this order decides whether an RP or a gap occurs in an extraction site c-commanded by this phase head. Thus, the same element ($\phi P$) is merged, but can be ultimately realized as an operator plus gap or RP, depending on the order of Agree and Move. In the remainder of the analysis chapter, one additional operation is introduced, External Merger (chapter 3.2.8), because the point in time where subjects are merged to SpecvP can have an influence on the gap/RP behavior of object positions. After a comprehensive overview of all possible operational orders and interactions in section 3.2.9, the now complete mechanism will be illustrated for Vata for every relevant extraction, in 3.3. Finally, a summary will be given of the analysis proposed here, including all possible distributional patterns and operational
1.4 Goals and Outline of this Thesis

orders, and how they relate to each other. This is also where the generalizations made in chapter 2.4 are picked up again and receive a principled explanation based on the analysis.

Chapter 4 is dedicated to the notorious ability of RPs to void island restrictions: relativization out of islands is licit if an RP is left behind in the extraction site. Gaps (mostly) remain prohibited. First, empirical data will be presented to provide evidence for this amnestying effect of RPs, in 4.1. Next, in section 4.2, an existing island theory based on feature maraudage will be introduced and integrated into the movement based analysis of resumption proposed here. Each of the following three sections, 4.3, 4.4, and 4.5, will illustrate the maraudage mechanism within the current framework for each investigated type of island in turn: wh-islands, adjunct islands, and complex NP islands. It will be shown that maraudage can be used to almost seamlessly extend the proposed approach to these island phenomena.

Chapter 5 will deal with a number of resumption phenomena which fall neither under the core, nor the island category. First, the Highest Subject Restriction (cf. Shlonsky 1992; McCloskey 2002) will be discussed in section 5.1, both in its traditional version and its treatment here. Next, in 5.2, the interesting correlation between RPs and invariant complementizers will be investigated. It will also be shown how the only way to have an overt relative pronoun in SpecCP is to leave a gap in the extraction site. In section 5.3, an issue related to the complementizer facts will be discussed: C elements which appear to signal which strategy of extraction has been used. This is true especially for Irish. Section 5.4 shows how several RP and movement phenomena fall out from the proposed mechanism: RPs do not occur in more than one position, and also not in intermediate ones. However, since RPs are known to occur on the surface where they were not merged, it will be shown how cases of actual RP movement can be handled within this framework. Next, the relativization of prepositional objects will be connected to the bigger picture in section
5.5. P-object extraction almost always results in the occurrence of RPs, regardless of the behavior of direct objects, and it will be shown how this can be reconciled with the main distributional patterns. Finally, something will be said about coordinated structures and resumption in section 5.6. Interestingly, while relativization from subject positions are ruled in many cases, this restriction appears to weaken severely as soon as the subject is a coordinated one. It will be shown how this ties in with the rest of the approach.

Chapter 6 will sum up the proposal and highlight its key components again. It will also point out possible challenges for this approach and provide an outlook for further investigations and possible extensions.
2 Crosslinguistic Data on Resumption in Relativization

In this chapter, the data on resumption are presented for which an analysis will be proposed in chapter 3. After the reasons are discussed for focusing on one particular construction (relativization) and, therein, grammatical resumption, each of the 19 languages will be presented individually. The goal is first to establish the distribution of gaps and RPs for the languages under investigation, based on comparable extraction scenarios. Secondly, these patterns will be gathered in order to make robust generalizations which will form input to the analysis. Since the data are presented without a theoretical bias, however, they can be used as a source of information for different approaches.

2.1 Defining the Object of Investigation

The following sections are dedicated first to motivating the focus on relativization as one particular resumptive structure, and on grammatical resumption as a more narrowly defined kind of the phenomenon. Then, reasons for the selection of languages and the register of the linguistic examples will be laid out.

2.1.1 Focus on Relativization

The literature on resumption has increased significantly from early systematic observations (such as Ross 1967), and reports and analyses of resumptive elements in a variety of languages and constructions have since been put forward. Many of these analyses have focused on one particular language or language family. In order to
bring insights from these studies together, the purpose of the present work is to generalize from individual languages that exhibit resumption, and propose a syntactic means of analyzing their distribution of RPs and gaps.

A proper crosslinguistic investigation of any syntactic phenomenon should be based on comparable syntactic structures. Unfortunately (and yet understandably), the authors of the available studies did not conspire to focus on the same resumptive configurations. In order to still establish a comparable base for this crosslinguistic endeavour, a construction which has received by far the most empirical attention has been selected: relative clauses (cf. Alexopoulou 2009). Almost every analysis includes several data points on relativization, whereas other A-dependencies (questions, clefts, topicalizations etc.) are often represented with very few examples.\footnote{This is not to neglect works which investigate these constructions (e.g. Tsimpli 1995, 1999, among many others), but, overall, the data base for a broad crosslinguistic study is not given.}

Sometimes, other wh-dependencies are taken into consideration if they are argued to behave identically to relativization contexts (e.g. Vata, section 2.2.16). Even within relativization, several different extraction sites (with gaps or RPs as a result) are conceivable. Arguments can be relativized from various base positions such as subjects and objects (both embedded and non-embedded), the complements of prepositions, or even island contexts, to name but a few. The available data on relativization is significant, but does not cover all these contexts in all investigated languages. Thus, in order to establish a common ground for a crosslinguistic analysis, the main focus of the present proposal is on relativization from subject and direct object positions (embedded and non-embedded), because the data is most complete for these constructions. While this seems to be a rather narrow restriction at first sight,\footnote{This kind of restriction is crucial for a thorough, crosslinguistic approach, because the number of possible RP sites per A-dependency per language would otherwise be unmanagable.} it turns out that these positions exhibit the most variation in terms of the distribution of gaps and RPs. Relativization from PPs and out of island contexts results in the occurrence of RPs in the overwhelming majority of cases. A
2.1 Defining the Object of Investigation

unified perspective on the different distribution patterns in subject and object positions poses the more interesting puzzle which this work sets out to solve. However, accounts for the RP tendencies of other constructions will also be given in the course of this work (chapters 4 and 5).

2.1.2 Intrusive vs. Grammatical Resumption

In addition to the choice of a grammatical context, another requirement must be fulfilled for crosslinguistic comparisons of RPs. In many languages, RPs are quite common in spoken/production contexts. That is, resumptive elements are inserted by speakers ad hoc if processing demands become too high, e.g. in constructions with many levels of embedding. These kinds of RPs have been dubbed intrusive in the literature (cf. e.g. Alexopoulou 2009; Bianchi 2011)\(^3\) in order to distinguish them from grammatical resumption. Intrusive RPs show a certain effect: they can ameliorate utterances involving extractions which are deemed ungrammatical otherwise (i.e. with a gap at the extraction site), thus they function as a kind of Last Resort strategy. However, they are still judged by native speakers as deviant or unacceptable. English does not usually allow for an RP strategy for its extraction dependencies:

(1)  the girl that I met (*her) at the party \hspace{1cm} (Alexopoulou 2009, 486)

\(^3\)This term was originally used by (Sells, 1984, 27) to distinguish certain kinds of binding scenarios:

(i) a. A pronoun that is interpreted as a bound variable whose antecedent is in an A-position is anaphorically bound.
   b. A pronoun that is interpreted as a bound variable whose antecedent is an operator is a resumptive pronoun.
   c. A pronoun whose antecedent is in an A-position but which is not interpreted as a bound variable is an intrusive pronoun.

An even simpler distinction is made by (de Vries, 2005, 27) by contrasting intrusion (as in e.g. English, see below) with resumption (as it will be of concern here).
However, Prince (1990) lists many attested examples from spoken English, two of which are shown below; in (2-a), an RP is inside a relative clause, and in (2-b), an RP occurs after extraction from a relative island:

(2) a. Let’s get to our first guest, who I asked and was so delighted that he could make it. (Prince 1990, 482, taken from Kroch 1981)

b. That asshole X, who I loathe and despise the ground he walks on, pointed out that... (Prince 1990, 483, taken from Kroch 1981)

These kinds of spoken examples can be found frequently in English, yet if native speakers are asked to judge them (offline), they are marked as deviant (or “substandard” as in Zaenen and Maling 1982). In some of the rare experimental studies on resumption, albeit on interrogatives, Alexopoulou and Keller (2003, 2005, 2007) conducted experiments on extractions in English and German in order to assess the acceptability of gaps and resumptives. Both languages exhibit the use of RPs in spoken contexts, but in neither are they judged as fully grammatical.

Alexopoulou and Keller (2005) tested several extraction contexts, each with zero, single and double embedding variants. The two examples below show single embedding in non-island contexts. Alexopoulou’s experiments focused on interrogative resumptive constructions, and while effects of magnitude can be expected to be

---

4Note that, in both coordinate examples, the RP only occurs in the more deeply embedded position. This is a first indication of the importance of embedding in intrusive resumption.

5The overall impression of resumption here is one of a Last Resort strategy (Müller, 2014a, 8) and “increasing degrees of wellformedness” (Müller, 2014a, 5), which separates German from fully grammatical resumptive languages.

6Note that examples from German relative extraction appear to be similarly deviant:

(i) Das ist der Mann, ¿wo/*dass ich weiss, dass ich ihn treffe.
this is the man, c I know, c I him meet

"This is the man that I know that I meet him."

If the first complementizer is changed to von dem (about whom), the construction becomes significantly more acceptable, but falls outside the purview of resumption as it is understood here (cf. Salzmann (2006) for resumptive prolepsis, but see also Müller (2014a,b)).

28
different with relative constructions, the overall patterns do not change (T. Alexopoulou, p.c.):

(3) Who does Mary claim gap / he will fire Sue?
   (Alexopoulou and Keller, 2005, 2)

(4) Wer behauptet Petra, entlässt gap / er Anna?
   (Alexopoulou and Keller, 2005, 4)

These experiments yielded two results. Firstly, with higher levels of embedding, the acceptance of RPs slightly increases. Secondly, and more relevant to the issue at hand,

[...] resumptives can not remedy island violations, contrary to claims in the linguistic literature. For all types of embedding and for both languages [...] we found that resumptive pronouns are seriously unacceptable, and never better than the corresponding gaps

   (Alexopoulou and Keller 2005, 6)

Thus, in sum, Alexopoulou (2009) takes these findings to support a view on intrusive resumption that is related to processing considerations. The perceived effect is a slight improvement after the ad hoc insertion of an RP in heavily embedded structures which is contrasted by the results of carefully executed experiments like the one above. The results for English were actually called into question by Heestand et al. (2011) who then conducted similar experiments with a different methodology. However, they ultimately also came to the conclusion “that English resumption does not ameliorate island effects” (Heestand et al., 2011, 149). In sum, this is how “intrusive resumption” will be understood here, and this is also the kind of resumption with which the present work will not be concerned.

In contrast, in languages with grammatical (or, as Sells 1984 terms it, true) resumption, RPs are judged as fully grammatical where they can occur in island and
non-island contexts (data are given below in sections 2 and 7). Strikingly, the level of embedding does not appear to be the decisive factor in crosslinguistic RP distribution. Grammatically resumptive languages do not exclusively license embedded subject or embedded object RPs while always favoring gaps in unembedded positions. In the Minimalist Program (Chomsky, 1995), processing demands and the ensuing ad hoc insertion of RPs are decoupled from the narrow syntactic component of the grammar which facilitates a predictable distribution of RPs. That does not mean that intrusion cannot also play a role in languages which exhibit grammatical resumption, but the present proposal does not set out to explain or predict non-syntactic factors which contribute to the occurrence of resumptives.

2.1.3 The Form and Register of RPs

Since resumptives take on the morphological form of existing pronouns in the respective languages (e.g. McCloskey 2002, 2006, 2011), their exponence is also not conditioned by some “special” resumptive behavior. That is, RPs can take on the guise of full pronouns, clitic pronouns attached to another element, or null pronouns (e.g. in cases of pro drop). The present proposal makes no systematic distinction between these different forms, because their choice appears to depend on language specific factors independent of the mechanism of resumption, which this crosslinguistic approach does not seek to derive. Most of the data presented below has its basis in a detailed investigation of resumptive properties of that particular language or language family. No (null) resumptives are stipulated here beyond the argumentations in these individual studies.

---

7Swiss German resumptives also appear to be subject to a certain level of embedding (C. Bucheli-Berger, p.c.) and are thus grouped with German.
8Cf. Alexopoulou (2009) who argues for a process by which the intrusive strategy might become grammaticalized at some point. Here, however, only languages were considered that show no signs of the intrusive strategy in subject or object positions – e.g. sensitivity to embedding or deviance in acceptability. See also Pan (2015) who argues that a language can have access to both strategies at the same time.
Another distinction which will not be of significance here is the one between formal and colloquial registers of a language. Firstly, it is not always clear from the individual studies whether the source of the resumption data is a formal (written) utterance, or whether it stems from e.g. spoken elicitation. Secondly, as long as “colloquial” data still receive clear acceptability judgments, it should be included in the scope of this analysis.

2.1.4 The Selection of Languages

Below, in (5), all 19 languages are listed which were investigated for this study:

(5) Investigated languages

<table>
<thead>
<tr>
<th>Language</th>
<th>Language</th>
<th>Language</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asante Twi</td>
<td>Hebrew</td>
<td>Polish</td>
<td>Vata</td>
</tr>
<tr>
<td>Brazilian Portuguese</td>
<td>Irish</td>
<td>Serbo-Croatian</td>
<td>Welsh</td>
</tr>
<tr>
<td>Czech</td>
<td>Lebanese Arabic</td>
<td>Spanish</td>
<td>Yiddish</td>
</tr>
<tr>
<td>Ga</td>
<td>Mandarin Chinese</td>
<td>Tuki</td>
<td>Yoruba</td>
</tr>
<tr>
<td>Hausa</td>
<td>Palestinian Arabic</td>
<td>Ukrainian</td>
<td></td>
</tr>
</tbody>
</table>

It is not claimed, of course, that this list is exhaustive. Several considerations guided the compilation of this particular set. The availability of data on RP relativization played a major role, since this context was chosen as a comparable crosslinguistic base (see above). In some cases, missing relativization data could be filled in, or existing data could be enhanced, by native speakers. In other cases, languages with a record of resumptive literature about them were called into question by native speakers. Swedish, for example, has a very rich research history (e.g. Maling

\[9\] But see Willis (2000, 2011) for some thoughts on that distinction. For Welsh, he even argues the other way around, namely that “Literary Welsh may be derivable from the colloquial system” (fn. 2).

\[10\] Alexandre (2009) states for resumption in Cape Verdean Creole, that “it should not be taken as a process of (exclusively) oral and/or informal speech”. Thus, the lack of a long and formal written tradition of course does not keep a language from developing a systematic resumptive strategy.
1978; Zaenen et al. 1981; Zaenen and Maling 1982; Engdahl 1985). However, when probed for resumption in relativization, it turns out that it patterns exactly like English (A. Holmberg, p.c.). Thus, Swedish has been excluded from this particular investigation. In a similar vein, Bulgarian was not investigated, despite the existence of some resumption data in the literature (Krapova, 2010). According to a Bulgarian informant, (at least) the relativization examples are of very deviant acceptability at best, and represent a very low register of the language (K. Yordanova, p.c.). Since, apparently, not even colloquial acceptance is achieved, the Bulgarian relativization data were disregarded for this work. Note that Tuki is still included (section 2.2.14) despite the fact that only one clear data point of the kind relevant here could be extracted. Since there is an acceptable resumptive in object position, it is assumed that the embedded object position can be recovered (see below). Tuki does not have subject pronouns. However, it could also be removed from the set with no influence on the generalizations in section 2.4. French was excluded because RPs in relativization follow the English intrusive pattern (the situation is different for Left Dislocation, cf. Pan 2015).

2.2 The Distribution of Gaps and RPs across Languages

In the following, the investigated languages will be presented in alphabetical order. Since the focus of this approach is on subject and object extraction contexts, these data will be made available for (almost) every language. The appendix in chapter 7 features more examples from other contexts, most notably prepositional phrases and island configurations. They are presented separately from the core data, because the derivation of these additional phenomena is not the focus of this analysis. However, it turns out that most of them fall out from the system proposed for subjects and objects in chapter 3, and they shall be addressed in chapter 5. In cases where the data are extracted from the relevant literature, the original notation is
2.2 The Distribution of Gaps and RPs across Languages

preserved most of the time. This entails that not all possible grammatical functions are encoded for every example. It also entails that null resumptives are analyzed as such (and not as gaps) only if the original author presents arguments in favor of such an analysis.\(^\text{11}\) The overall goal was to at least make four extraction examples available per language: highest subject (i.e. the subject of the unembedded matrix clause), embedded subject, direct object and embedded direct object. As will be seen, embedded and non-embedded direct objects turn out to consistently pattern alike with respect to gaps/RPs. However, the resulting generalization is an interesting and important one. This also means that if a particular data point for e.g. an embedded object position could not be obtained, it will be treated as recoverable from the unembedded example.

Each language section is prefaced with brief and potentially relevant information, and features the available relativization strategy above every example (gap, RP, gap or RP, none). These individual findings will later, in section (2.3), be gathered to build the empirical basis of the current proposal. The data do not yet receive any theoretical interpretation in this chapter (or in the appendix in chapter 7).

2.2.1 Asante Twi

Asante Twi belongs to the Akan branch of the Niger-Congo family. It makes use of clause final complementizer which can take the same form as a resumptive element (no). Relative clauses in Asante Twi make use of a relative complementizer aa which remains invariant and can be incorporated into the head noun to form a portmanteau morpheme. As is the case for many African languages, animacy can

\(^{11}\) No alterations or additions on my part are made which could potentially skew the grammaticality judgments after the fact. Thus, glossing conventions may appear inconsistent at times, especially across different informants. The relativization sites are marked in boldface (where this was not already done by the original authors) for ease of reference. If both gap and RP examples are available for the same relative example, minimal pairs are constructed. The source of each data point is indicated and includes authors of the original literature as well as informants.
have an influence on the properties of extracted elements; here, extracted objects can leave behind a null RP if they are inanimate, but obligatorily leave an RP if they are animate (cf. Saah 2010).

(6) Subject, RP

   a. *ɔbáá  áá ___-wárée Kofi nó fi Aburi
      woman REL gap-marry.PAST Kofi CD be.from Aburi
   b. ɔbáá  áá ɔ-wárée Kofi nó fi Aburi
      woman REL 3.sg-marry.PAST Kofi CD be.from Aburi

   ‘The woman who married Kofi is from Aburi.’

      (Saah 2010, 92)

(7) Embedded subject, RP

   a. *ɔbaa no aa wo-ka-a se ___-ware-e Kofi no fi Aburi
      woman CD C 2.sg-say-PAST C gap-marry-PAST Kofi CD be.from Aburi
   b. ɔbaa no aa wo-kaa se ɔ-ware-e Kofi no fi Aburi
      woman CD C 2.sg-say-PAST C 3.sg-marry-PAST Kofi CD be.from Aburi

   ‘The woman that you said that married Kofi is from Aburi.’

      (S. Korsah, p.c.)

(8) Object, RP

   a. *Mehuu ɔbáá áá Kofi wárée ___ nó
      1.sg.see.PAST woman C Kofi marry.PAST gap CD
   b. Mehuu ɔbáá áá Kofi wárée no nó
      1.sg.see.PAST woman C Kofi marry.PAST 3.sg CD

   ‘I saw the woman whom Kofi married.’

      (Saah 2010, 92)

(9) Embedded object, RP

   a. *Mihuu ɔbaa no aa wo-ka-a se Kofi ware-e ___ no
      1.saw woman CD C 2.sg-say-PAST C Kofi marry-PAST gap CD
   b. Mihuu ɔbaa no aa wo-ka-a se Kofi ware-e no no
      1.saw woman CD C 2.sg-say-PAST C Kofi marry-PAST 3.sg CD

   ‘I saw the woman that you said that Kofi married her.’

      (S. Korsah, p.c.)
2.2 The Distribution of Gaps and RPs across Languages

2.2.2 Brazilian Portuguese

Brazilian Portuguese is part of the Romance branch of the Indo-European family. Its C element in relativization *que* does not change with respect to the gap or RP strategy.

(10) Subject, gap

a. o homem que ___ ama a Maria
   the man that gap loves the Maria
b. *o homem que ele ama a Maria
   the man that he loves the Maria

‘the man who loves Maria’

(Grolla 2005, 3)

(11) Embedded subject, gap or RP

a. o homem que você disse que ___ ama a Maria
   the man that you said that gap loves the Maria
b. o homem que você disse que ele ama a Maria
   the man that you said that he loves the Maria

‘the man that you said that loves Maria’

(M. C. T. Heberlein, p.c.)

(12) Object, gap or RP

a. o homem que eu vi ___
   the man that I saw gap
b. o homem que eu vi ele
   the man that I saw him

‘the man that I saw’

(Grolla 2005, 3)

(13) Embedded object, gap or RP

a. o homem que você disse que eu vi ___
   the man that you said that I saw gap
b. o homem que você disse que eu vi ele
   the man that you said that I saw him

‘the man that you said that I saw’

(M. C. T. Heberlein, p.c.)
Czech

Czech is part of the Slavic branch of the Indo-European language family. Subjects are pro-dropped (Toman, 1998) and analyzed as null pronouns in extraction cases under the resumptive strategy (introduced by invariant C *co*), or gaps otherwise (introduced by inflecting relative pronouns, e.g. *který*) (Šimík, 2008). While *co* and the relative pronoun are largely mutually exclusive and each signal a different extraction strategy, there are examples of interchangability in colloquial speech (R. Šimík, p.c.). Note that, in the object cases, a gap appears postverbally (as expected due to SVO), while the alternate RP occurs preverbally. See chapter 5.4 for a discussion of the movement of RPs.

(14) Subject, gap

\[\text{To je ten pes, ktery } \_\_\_ \text{ tu štěká celou noc}\]
\[\text{this is the dog } \text{ gap} \text{ here barks whole night}\]

\[\text{‘This is the dog that barks here all night.’} \quad \text{(Toman 1998, 305)}\]

(15) Embedded subject, gap or RP

a. Ten chlap, ktery si mysliš, že \_\_\_ je zamilovaný do té
\[\text{the man REL REFL think.2.SG C gap} \text{ is fallen.in.love in the}\]
\[\text{ženské odešel woman left}\]

b. Ten chlap, co si mysliš, že \text{nRP} je zamilovaný do té
\[\text{the man REL REFL think.2.SG C nRP} \text{ is fallen.in.love in the}\]
\[\text{ženské odešel woman left}\]

\[\text{‘The man that you think loves the woman left.’} \quad \text{(R. Šimík, p.c.)}\]

(16) Object, gap or RP

a. chlap kerýmu nikdo nevěří \_\_\_\_
\[\text{man REL nobody believes gap}\]
The Distribution of Gaps and RPs across Languages

b. chlap co **mu** nikdo nevěří
   man c **him** nobody believes

   ‘the man that nobody believes’  (Toman 1998, 303)

(17) Embedded object, gap or RP

   a. Ta ženská, kterou si myslíš, že ten chlap miluje ___
      the woman REL REFL think.2.SG COMP the man loves **gap**
      odešla left

   b. Ta ženská, co si myslíš, že **ji** ten chlap miluje, odešla
      the woman REL REFL think.2.SG COMP **her** the man loves left

   ‘The woman that you think the man loves left.’ (R. Šimík, p.c.)

2.2.4 Ga

Ga is a language of the Atlantic-Congo branch of the Niger-Congo family. The two relevant C elements for (long) relativization are *ni* for relative clauses and *ak* which is inserted to head simple complement clauses. Both are invariant (see also chapter 5.3).  

(18) Subject, gap

   a. Nuu le **ní** -kpee Dede le **je** Tema
      man DEF REL **gap-marry** woman CD be.from Tema

   b. *Nuu le **ní** e-kpee Dede le **je** Tema
      man DEF REL 3.sg-marry woman CD be.from Tema

   ‘The man that married the woman is from Tema.’  (S. Korsah, p.c.)

(19) Embedded subject, RP

   a. *Nuu le **ní** o-ke **ak]**-kpee Dede le **je** Tema
      man DEF REL 2.SG-say C **gap-marry** woman DEF be.from Tema

---

The informant states that these complementizers do not signal embedding (*ak*) vs. non-embedding (*ni*), which could also be considered a possibility. In a relative island such as *This is the man that I know the woman that likes him*, both complementizers are *ni*, indicating that it is a relative marker (S. Korsah, p.c.).
2 Crosslinguistic Data on Resumption in Relativization

(20) Object, RP

a. *Mi-na yoo le ni Kwei kpee ___ el
   1.SG.SUB-see woman DEF REL Kwei marry gap CD

b. Mi-na yoo le ni Kwei kpee le le
   1.SG.SUB-see woman DEF REL Kwei marry 3.sg.obj CD

   ‘I saw the woman that Kwei married.’

(2.1.3.1) Embedded object, RP

a. *Mi-na yoo le ni o-këe akë Kwei kpee ___ le
   1.SG.SUB-see woman DEF 2.SG-say C Kwei marry gap CD

b. Mi-na yoo le ni o-këe akë Kwei kpee e le
   1.SG.SUB-see woman DEF 2.SG-say C Kwei marry 3.sg.obj CD

   ‘I saw the woman that you said that Kwei married.’

(2.2.5) Hausa

Hausa belongs to the Chadic branch of the Afro-Asiatic family. Resumptive elements can be overt (animate objects) or null (cf. Tuller 1988; for subjects and inanimate objects, the pronoun gets deleted in Schachter 1973’s terms). Animate objects have access to both an RP and a gap strategy. Subjects and inanimate objects can be pro-dropped. Access to examples of subject relatives could not be obtained, but the interrogative example appears to behave identically (B. Crysmann, p.c.).
2.2 The Distribution of Gaps and RPs across Languages

(22) Subject, RP

Wàa kikèe tsàmmaanìì wai nRP yaa tāfi Kanòo
who 2.SG.F.CONT thinking C nRP 3.SG.M.CPL go Kano
‘Who do you think went to Kano?’

(Crysmann 2012, 54 from Tuller 1986, 152f.)

(23) Object, gap or RP

a. yaron da suka gaya _____
   the.child C they told gap
b. yaron da suka gaya masa
   the.child C they told 3.sg.masc

‘the child that they told’

(Schachter 1973, 23)

(24) Embedded object, gap or RP

a. mùtùmin dà dàlibai sukà san cèwa malàma-r-sù
   man REL students 3.P.CPL know C teacher-L.F-3.P.GEN
   tanà sò-_____ 3.SG.F.CONT like.VN-gap
b. mùtùmin dà dàlibai sukà san cèwa malàma-r-sù
   man REL students 3.P.CPL know C teacher-L.F-3.P.GEN
   tanà sò-n-sà 3.SG.F.CONT like.VN-1-3.sg.m.gen

‘the man that the students know that their teacher likes’

(Crysmann 2012, 53 from Newman 2000, 539)

2.2.6 Hebrew

Hebrew belongs to the Semitic branch of the Afro-Asiatic language family. It does not have overt relative pronouns, thus the invariant še introduces both gap and RP relative constructions.
(25) Subject, RP
a. ha-ʔiš še-____ ohev ?et Rina
the-man that-gap loves ACC Rina
b. *ha-ʔiš še-hu ohev ?et Rina
the-man that-he loves ACC Rina
‘the man who loves Rina’ (Shlonsky 1992, 445)

(26) Embedded subject, gap or RP
a. ha-ʔiš še- xašavt še-____ melamed ?anglit
the-man that- (you.f) thought that-gap teaches English
b. ha-ʔiš še- xašavt še-hu melamed ?anglit
the-man that- (you.f) thought that-he teaches English
‘the man that you thought teaches English’ (Shlonsky 1992, 444)

(27) Object, gap or RP
a. ha-ʔiš še- raʔiti ____
the-man that- (I) saw gap
b. ha-ʔiš še- raʔiti ?oto
the-man that- (I) saw him
‘the man that I saw’ (Shlonsky 1992, 444)

(28) Embedded object, gap or RP
a. ha-ʔiš še- xašavt še-Dani pagaš ____
the-man that- (you.f) thought that-Dani met gap
b. ha-ʔiš še- xašavt še-Dani pagaš ?oto
the-man that- (you.f) thought that-Dani met him
‘the man that you thought that Dani met’ (Shlonsky 1992, 445)

2.2.7 Irish

Irish is part of the Celtic branch of the Indo-European family. It does not have overt relative pronouns but has C elements which change phonological properties of the following verb (commonly labeled aL for a lenition effect and aN for a nasalization
effect in the literature, cf. e.g. McCloskey and Hale 1983). These are argued to correlate with the relativization strategy (extraction vs. non-extraction; McCloskey 2002, 2006). A third particle, *go, heads ordinary complement clauses. However, considerable variation appears to be possible, such that aL can occur with RPs, while aN can occur with gaps (Duffield, 1991; McCloskey, 2011). Resumptive pronouns are reported to occur in every kind of wh-construction, not just relativization, and also show the same gap/RP pattern throughout (McCloskey, 2011).

(29) Subject, gap

a. fear nár fhan ___ sa bhaile an c.NEG.PAST remained gap at home
b. *fear nár fhan sé sa bhaile man c.NEG.PAST remained he at home

‘a man that didn’t stay at home’ (McCloskey 2006, 8)

(30) Object, gap or RP

a. an fear aL bhual tú ___ the man c. struck you gap
b. an fear aN bhual tú é the man c. struck you him

‘the man that you struck’ (McCloskey 1990, 18)

(31) Embedded object, gap or RP

a. an rud a shíl mé a dúirt tú a dhéanfá ___
   the thing c. thought I c. said you c. do.COND.2.SG gap
   ‘the thing that I thought you said you would do’

b. an rud ar dúirt sé go gcoinneodh sé ceilte é
   the thing c. said he c. keep.COND he hidden it

   ‘the thing that he said he would keep hidden’ (McCloskey 2011, 75)
2.2.8 Lebanese Arabic

Lebanese Arabic belongs to the Semitic branch of the Afro-Asiatic language family. Subject pronouns can be dropped (including overt subject RPs). For indefinite relatives, the invariant definite C element *yalli* is null, but the pattern remains the same otherwise (Aoun, 2000).

(32) Subject, RP

a. *t’aaSaS l-walad *yalli ____ xazza? l-kteeb
   punished.3.SG.M the-boy that gap tore.3.SG.M the-book
b. t’aaSaS l-walad *yalli huwwe / nRP xazza? l-kteeb
   punished.3.SG.M the-boy that he / nRP tore.3.SG.M the-book

   ‘The boy that tore up the book was punished.’
   (Aoun 2000, 15)

(33) Embedded subject, RP

l-m’sallme ?aaSaSit l-walad *yalli laila ?alit nRP
the-teacher punished.3.SG.F the-boy that Laila said.3.SG.F nRP
xazza? l-kteeb
   tore-up.3.SG.M the-book

   ‘The teacher punished the boy that Laila said tore up the book.’
   (Aoun 2000, 17)

(34) Object, RP

l-kteeb *yalli tarayto mbeeri Daa’y
the-book that bought.1.SG.IT yesterday is.lost.3.SG.M

   ‘The book that I bought yesterday is lost.’
   (Aoun 2000, 15)

\(^{13}\)Note that Aoun (2000) analyzes subject extraction sites as gaps in contexts where movement is, in principle, possible, and as RPs in island contexts. However, this is mainly because his approach follows the Move/base generation dichotomy laid out in chapter 1. Object RPs are always overt (and clitic).
2.2 The Distribution of Gaps and RPs across Languages

(35) Embedded object, RP

a. *haidi el-binit yalli `al George inno t`araf `aley-___
dem.f the-girl that said.3.sg.m George that met.1.sg on.3.sg.f-gap
b. haidi el-binit yalli `al George inno t`araf `aley-a
dem.f the-girl that said.3.sg.m George that met.1.sg on.3.sg.f-her

‘This is the girl that George said that I met her.’ (George Saad, p.c.)

2.2.9 Mandarin Chinese

Mandarin Chinese is a dialect of Chinese which, in turn, is part of the Sino-Tibetan language family. Its subject pronouns are droppable and analyzed as null RPs (Pan 2015, p.c.). An animacy constraint is in effect: objects which are inanimate do not have access to the resumptive strategy. Islands (see chapter 7.9) cannot be circumvented with either strategy in relativization contexts.

(36) Subject, gap or RP

a. ____ renshi Zhangsan de na-ge nanhai ganggang likai-le
   gap know Zhangsan c that-cl boy just.now leave-perf
b. nRP renshi Zhangsan de na-ge nanhai ganggang likai-le
   nRP know Zhangsan c that-cl boy just.now leave-perf

‘The boy that knows Zhangsan left.’ (Pan 2015, 4)

(37) Embedded subject, gap or RP

a. Wangwu shuo Lisi xiangxin ____ renshi Zhangsan de na-ge nanhai
   Wangwu says Lisy believes gap know Zhangsan c that-cl boy
   ganggang likai-le
   just.now leave-perf
b. Wangwu shuo Lisi xiangxin nRP renshi Zhangsan de na-ge nanhai
   Wangwu says Lisy believes nRP know Zhangsan c that-cl boy
   ganggang likai-le
   just.now leave-perf

‘Wangwu said that Lisy believed the boy that knows Zhangsan left.’
   (Pan 2015, 4)
(38) Object, gap or RP

a. Bao’an xian gan ___ chu xuexiao de na-ge xiao liumang
guard want chase gap out school C that-CL small hooligan
bu-jian-le
disappear-PERF

b. Bao’an xian gan ta1 chu xuexiao de na-ge xiao liumang
guard want chase 3.masc.sg out school C that-CL small hooligan
bu-jian-le
disappear-PERF

‘The hooligan that the guard wanted to chase out of the school has
disappeared.’

(Pan 2015, 4)

(39) Embedded object, gap or RP

a. Yiqin shuo Xiaoshi xiangxin Xiaqian hui jiandao ___ de na-ge
Yiqin say Xiaoshi believe Xiaqian will meet gap C that-CL
ren shi wei yisheng
person be CL doctor

b. Yiqin shuo Xiaoshi xiangxin Xiaqian hui jiandao ta1 de
Yiqin say Xiaoshi believe Xiaqian will meet 3.masc.sg C
na-ge ren shi wei yisheng
that-CL person be CL doctor

‘The man that Yinquin said that Xiaoshi believed that Xiaoqian would
meet is a doctor.’

(Pan 2015, 4)

2.2.10 Palestinian Arabic

Like Lebanese Arabic, Palestinian Arabic belongs to the Semitic branch of the Afro-Asiatic languages. Their properties are largely similar, except for the gap/RP distribution pattern.

(40) Subject, gap

a. l-bint ?illi ___ raayha ?albeet
the-girl that (you-F) gap going to.the.house
2.2 The Distribution of Gaps and RPs across Languages

b. *l-bint ʔilli ʔinno ʔiyy raayha ʕalbeet
   the-girl that (you-F) she going to.the.house

   ‘the girl that is going home’ (Shlonsky 1992, 446)

(41) Embedded subject, RP

   a. *l-bint ʔilli fakkarti ʔinno gap raayha ʕalbeet
      the-girl that (you-F) thought that gap going to.the.house
   b. l-bint ʔilli fakkarti ʔinno ʔiyy raayha ʕalbeet
      the-girl that (you-F) thought that she going to.the.house

   ‘the girl that you thought that she is going home’ (Shlonsky 1992, 445)

(42) Object, RP

   a. *l-bint ʔilli ʕu fət-i-saw
      the-girl that (you-F) saw-gap
   b. l-bint ʔilli ʕu fət-i-ˈha
      the-girl that (you-F) saw-her

   ‘the girl that you saw’ (Shlonsky 1992, 445)

(43) Embedded object, RP

   a. *l-bint ʔilli fakkarti ʔinno Mona ˈḥabbat-–
      the-girl that (you-F) thought that Mona loved-gap
   b. l-bint ʔilli fakkarti ʔinno Mona ˈḥabbat-ˈha
      the-girl that (you-F) thought that Mona loved-her

   ‘the girl that you thought that Mona loved’ (Shlonsky 1992, 445)

2.2.11 Polish

Polish is part of the Slavic branch of the Indo-European language family. An interesting observation is that RPs do not have to mark the extraction site but can also occupy sentence-second positions next to the complementizer co (for moving RPs, see chapter 5.4). In question contexts, RPs cannot occur at all. Invariant co obligatorily occurs with resumptives, while overt relative pronouns are restricted to gap
constructions (except for substandard varieties, Bondaruk 1995). Lavine (2003) argues for the existence of null RPs in Polish (except for the highest subject position), which would only affect the gap/RP optionality assumed here.

(44) Subject, gap

a. Ten człowiek, co ___ siedzi w więzieniu był the man.NOM.MASC.SG C gap is.sitting in prison was kiedyś moim sąsiadem at.one.time my neighbor

b. *Ten człowiek, co on siedzi w więzieniu był the man.NOM.MASC.SG C nom.masc.sg is.sitting in prison was kiedyś moim sąsiadem at.one.time my neighbor

‘The man who is in prison used to be my neighbour.’

(Bondaruk 1995, 37)

(45) Embedded subject, gap or RP

a. To jest kobieta która this is woman.NOM.FEM.SG which.NOM.FEM.SG myślałeś że ___ mnie widziała think.PAST.MASC.SG 2 C gap ACC.1.SG see.PAST.F.3.SG

‘This is the woman that you thought saw me.’ (J. Zaleska, p.c.)

b. Te psy co myśliwi mówia że one są najlepsze zostaly these dogs C hunters say C they are best were sprowadzone z Anglii brought from England

‘These dogs that hunters say that they are best were brought from England.’

(Bondaruk 1995, 40)
2.2 The Distribution of Gaps and RPs across Languages

(46) Object, gap or RP

a. To jest mężczyzna którego this is man.NOM.MASC.SG REL.ACC.MASC.SG gap widziałem see.PAST.MASC.SG.1

‘This is the man that I saw.’ (J. Zaleska, p.c.)

b. Ten chłopak co go tak bardzo nie lubisz okazał się bardzo this boy C him so much dislike turned out very sympatyczny nice

‘The boy that you dislike so much turned out to be very nice.’ (Bondaruk 1995, 36)

(47) Embedded object, gap or RP

a. To jest mężczyzna którego this is man.NOM.MASC.SG which.ACC.MASC.SG myślałeś że widziałem gap think.PAST.MASC.SG.2 C see.PAST.M.1.SG

‘This is the man that you thought I saw.’ (J. Zaleska, p.c.)

b. Mogę się założyć że on nie oddał ci tej forsy co mi I can myself bet that he not will.return you this dough what me mówiłeś że mu ja pożyczyłeś were.telling that him it lent

‘I bet that he won’t give you back the dough that you told me that you lent it to him.’ (Bondaruk 1995, 39)

2.2.12 Serbo-Croatian

Serbo-Croatian belongs to the Slavic branch of the Indo-European family. It has an inflecting relative pronoun (e.g. koji) for relativization under the gap strategy, and an invariant complementizer (što) for resumptive cases. Goodluck and Stojanović (1996) argue for the option of null RPs, since Serbo-Croatian is a pro-drop language.
2 Crosslinguistic Data on Resumption in Relativization

(48) Subject, gap or RP

a. Ovo je čovjek koji je _____ udario loptu
   this is man REL is gap hit ball
b. Ovo je čovjek što je nRP udario loptu
   this is man C is nRP hit ball

‘This is the man that hit the ball.’ (Z. Puškar, p.c.)

(49) Object, gap or RP

a. čovjek koga _____ mrzi
   man REL gap hates
b. čovjek što ga mrzi
   man C him hates

‘the man who he hates’ (Bošković 2007, 1)

(50) Embedded subject, gap or RP

a. Ovo je žena koja si rekao da _____ nosi haljinu
   this is woman REL are say that gap wears dress
b. Ovo je žena što si rekao da nRP nosi haljinu
   this is woman C are say that nRP wears dress

‘This is the woman that you said that she wears a dress.’
   (Z. Puškar, p.c.)

(51) Embedded object, gap or RP

a. Ovo je žena koju si rekao da _____ čovek voli
   this is woman REL are say that gap man loves
b. Ovo je žena što si rekao da je čovek voli
   this is woman C are say that she man loves

‘This is the woman that you said that the man loves.’ (Z. Puškar, p.c.)

2.2.13 Spanish

Spanish is part of the Romance branch of the Indo-European language family. Suñer (1998) argues that its resumptive pronouns are void of semantic features and could
thus also be inserted no sooner than at PF, as a post-syntactic phenomenon (following Chomsky 1995). However, a lack of semantic import does not at all preclude structure building in syntax, and RP movement facts point to a different direction (cf. chapter 5.4). The variation in acceptability appears to be rather great in Spanish: one informant from Andalucia (J. Gonzalez) rejected all RP examples, while another informant from the same region deemed them acceptable, even though she does not use RPs herself (M.B. Verdejo).\footnote{If Spanish turned out to be a problematic example for grammatical resumption, after all, its removal from the set would not change the amount of patterns.}

(52) Subject, gap or RP

a. el científico que ___ ganó el premio Nobel
   the scientist that gap won the prize Nobel
   ‘the scientist that won the Nobel prize’  
   (Suñer 1998, 342)

b. Conozco a un tipo que él me aconseja a mí
   know.1.sg at a guy that he me advises to me
   ‘I know a guy who advises me.’
   (Suñer 1998, 342, from the Caracas 1977 sociolinguistic corpus, I-541:678)

(53) Object, gap or RP

a. una cierta senadora que Luis ___ llamó
   a certain senator that Luis gap called

b. una cierta senadora que Luis la llamó
   a certain senator that Luis her called
   ‘a certain senator that Luis called’  
   (Suñer 1998, 337)

(54) Embedded subject, gap or RP

a. Éste es el hombre que María piensa que ___ llama a Claudia
   this is the man C María thinks C gap calls at Claudia
2 Crosslinguistic Data on Resumption in Relativization

b. Éste es el hombre que María piensa que él llama a Claudia
   this is the man he calls at Claudia
   ‘This is the man that Maria thinks that he calls Claudia.’
   (M.B. Verdejo, p.c.)

(55) Embedded object, gap or RP

   a. Éste es el hombre que María piensa que Claudia ___ llama
      this is the man gap calls
   b. Éste es el hombre que María piensa que Claudia le llama
      this is the man him calls
   ‘This is the man that Maria thinks that Claudia called.’
   (M.B. Verdejo, p.c.)

2.2.14 Tuki

Tuki is a Southern Bantoid language of the Niger-Congo family. It is a subject pro-drop language which has no subject pronouns. Biloa (1990) argues that surface gaps in relativization should better be analyzed as null RPs,\(^{15}\) and thus it appears

\(^{15}\)This line of argumentation is supported by the coordinated object data in chapter 7.14, anticipated below:

(i) Coordinated object, RP

   a. okutu oduz odzu, Mbara a m una nRP, na Puta
      woman this whom Mbara sm r2 kill nRP and Puta
      ‘This is the woman that Mbara killed her and Puta.’
      (Biloa, 1990, 228)
   b. okutu oduz odzu, Mbara a ma mu, una na Puta
      woman this whom Mbara sm r2 her kill and Puta
      ‘This is the woman that Mbara killed her and Puta.’
      (Biloa, 1990, 227)
   c. *okutu oduz odzu, Mbara a m una Dima na ___i
      woman this whom Mbara sm r2 kill Dima and gap
      ‘This is the woman that Mbara killed Dima and her.’
      (Biloa, 1990, 228)
   d. okutu oduz odzu, Mbara a m una Dima na a,
      woman this whom Mbara sm r2 kill Dima and her
      ‘This is the woman that Mbara killed Dima and her.’
      (Biloa, 1990, 228)

The surface gap in the a) case would violate the Coordinate Structure Constraint, while a resumptive could circumvent this violation. Note that the null strategy is illicit in c) because the complement of *na, analyzed as a preposition by Biloa (1990), has to be overt. In addition, neither RPs nor gaps show weak crossover effects.
reasonable to assume this strategy for subject positions. Tuki can use overt RPs for relativized objects if they are human.

(56) Object, RP

mutu odzu₄ ngu mu₄ dingam
man that I him love
‘the man that I love’ (Biloa, 1990, 215)

2.2.15 Ukrainian

Ukrainian belongs to the Slavic branch of the Indo-European languages. In relativization, the invariant complementizer scho/ščo can be used for both the gap and RP strategy in the colloquial register (I. Zalevskaya, p.c.). For extractions involving gaps, inflecting relative pronouns (e.g. jakýj) can occur in SpecCP.

(57) Subject, gap or RP

a. žhink-a ščo ___ pobačila cholovika
woman-NOM.SG C gap PFV.see.PAST.F.SG man.ACC
b. žhinka ščo vona pobachila cholovika
woman-NOM.SG C nom.3.sg see.PAST.3.SG man.ACC
‘the woman that saw the man’ (I. Zalevskaya, Y. Kushnir p.c.)

(58) Embedded subject, gap or RP

a. žhink-a jaku ty dumaw ščo ___
woman-NOM.SG REL you.NOM think.PAST.2.SG C gap
ide dodomu
go.PRES.IMPERF.3.SG home
b. žhink-a ščo ty dumaw ščo vona
woman-NOM.SG C you.NOM think.PAST.2.SG C she.nom.3.sg
ide dodomu
go.PRES.IMPERF.3.SG home
‘the woman that you thought that is going home’ (Y. Kushnir p.c.)
2 Crosslinguistic Data on Resumption in Relativization

(59) Object, gap or RP

a. Ce toj dim jakyj ja bačyv ___
the house.NOM.MASC.SG which.ACC.MASC.SG I.NOM saw gap
včora yesterday

b. Ce toj dim ščo ja joho bačyv včora
the house.NOM.MASC.SG C I.NOM ACC.MASC.SG saw yesterday

‘This is the house that I saw yesterday.’ (Lavine 2003, 355)

(60) Embedded object, gap or RP

a. ?žhink-a ščo ty dumaw ščo Petro
woman.NOM.SG C you.NOM.2.SG think.PAST.2.SG C Peter
kohav love.PAST.3.SG gap

b. žhink-a ščo ty dumaw ščo Petro
woman.NOM.SG C you.NOM.2.SG think.PAST.2.SG C Peter
jiji kohav her.3.SG love.PAST.3.SG

‘the woman that you thought that Peter loved’

(I. Zalevskaya, Y. Kushnir p.c.)

2.2.16 Vata

Vata is a dialect of Dida of the Niger-Congo language family. Although the data presented here are questions and not relativizations, it is argued that all Ā-dependencies show the same behavior with respect to resumptives (Koopman, 1982, 128).

(61) Subject, RP

a. *åló ___ lē sáká lá
who gap eat rice WH

b. àló ḥ lē sáká lá
who he eat rice WH

‘Who is eating rice?’ (Koopman 1982, 128)
2.2 The Distribution of Gaps and RPs across Languages

(62) Embedded subject, RP

a. *àlÓ ǹ gùgù nā ____ yi lá
   who you think that gap arrive WH

b. àlÓ ǹ gùgù nā ɔ yi lá
   who you think that he arrive WH

‘Who do you think arrived?’
(Koopman 1982, 128)

(63) Object, gap

a. yí kòfi lè ____ lá
   what Kofi eat gap WH

b. *yí kòfi lè mí lá
   what Kofi eat it WH

‘What is Kofi eating?’
(Koopman 1982, 128)

(64) Embedded object, gap

a. àlÓ ǹ gùgù nā wà ye ____ yé lá
   who you think that they see gap PRT WH

b. *àlÓ ǹ gùgù nā wà ye mɔ yé lá
   who you think that they see him PRT WH

‘Who do you think they saw?’
(Koopman 1982, 128)

2.2.17 Welsh

Welsh is a language on the Celtic branch of the Indo-European language family. Its RP/gap complementizer elements a/y(r) can be invariant and do not correlate with either extraction strategy but rather with the depth of embedding (cf. Willis 2000; Manning 1996). Note that certain periphrastic verb forms appear to also allow for surface gaps in embedded positions (cf. Willis 2011). These non-finite so-called “verbnouns” display a more complex structure than regular finite verbs and might have an additional language-specific effect on the distribution pattern which is not addressed in this proposal.
(65) Subject, gap

a. y dyn a welodd gap fi  
the man C saw  gap me

b. *y dyn a welodd ef fi  
the man C saw  he me

‘the man that saw me’  (Suñer 1998, 343, from McCloskey 1990)

(66) Embedded subject, RP

a. y gwragedd y gwn y gwelasant hwy y ddamwain  
the women REL know that saw 3.pl  they the accident

b. y gwragedd y gwn y gwelasant nRP y ddamwain  
the women REL know that saw 3.pl  nRP the accident

‘the women that I know saw the accident’  (Willis 2000, 535)

(67) Object, gap

a. y ffrwydrad glywais i gap wedyn  
the explosion hear.1.sg I gap next

b. *y ffrwydrad glywais i fe wedyn  
the explosion hear.1.sg I it next

‘the explosion that I heard next’  (Willis 2011, 191)

(68) Embedded object, gap

a. y dyn yr oeddch chi’n meddwl gwelais i  
the man REL do.PAST you think see I gap

b. *y dyn yr oeddch chi’n meddwl gwelais i o  
the man REL do.PAST you think see I him

‘the man that you thought that I saw’  (S. Roberts, p.c.)

2.2.18 Yiddish

Yiddish belongs to the Germanic branch of the Indo-European family. Its invariant complementizer vos correlates with the RP strategy, while the inflecting relative pronoun (e.g. velkhn) patterns with the gap strategy.
2.2 The Distribution of Gaps and RPs across Languages

(69) Subject, gap or RP

a. di froy velkhe ____ hot mikh gezen
   the woman that gap has me seen
b. di froy vos zi hot mikh gezen
   the woman that she has me seen

‘the woman who saw me’ (I. Gottesman, p.c.)

(70) Embedded subject, gap or RP

a. di froy velkhe du host gemeynt az ____ hot mikh gezen
   the woman that you have meant that gap has me seen
b. di froy vos du host gemeynt az zi hot mikh gezen
   the woman that you have meant that she has me seen

‘the woman that you thought that saw me’ (I. Gottesman, p.c.)

(71) Object, gap or RP

a. der man velkhn ikh hob ____ gezen
   the man that I have gap seen
b. der man vos ikh hob im gezen
   the man that I have him seen

‘the man that I saw’ (I. Gottesman, p.c.)

(72) Embedded object, gap or RP

a. der man velker du host gemeynt az ikh hob ____ gezen
   the man that you have meant that I have gap seen
b. der man vos du host gemeynt az ikh hob im gezen
   the man that you have meant that I have him seen

‘the that you thought that I saw’ (I. Gottesman, p.c.)

2.2.19 Yoruba

Yoruba is a Yoruboid language of the Niger-Congo family. It does not have any inflecting relative pronouns, just the invariant complementizer ni. While the examples presented here are focus constructions, Adesola (2010) states that the resumptive
behavior is the same across all A-dependencies.

(73) Subject, RP

a. *Àìná àti Olá ni Adé ú ná lẹhin tí Òjó bẹbẹ fún ___
    Aina and Ola be Ade PROG beat after c Ojo plead for gap

b. Àìná àti Olá ni Adé ú ná lẹhin tí Òjó bẹbẹ fún won
    Aina and Ola be Ade PROG beat after c Ojo plead for 3.pl

‘Aina and Ola were the people who Ade beat after Ojo had pleaded for them.’

(Adesola 2010, 66)

(74) Embedded subject, RP

a. *Olú ati Adé ni Ojó sọ pé ___ ra iṣu
    Olu and Ade be Ojo say that gap buy yams

b. Olú ati Adé ni Ojó sọ pé won ra iṣu
    Olu and Ade be Ojo say that they buy yams

‘It was Olu and Ade that Ojo said bought some yams.’

(Adesola 2005, 137)

(75) Object, gap

a. Ewúrè ni Olú rà ___ je
    goat be Olu buy gap eat

b. *Ewúrè ni Olú rà á je
    goat be Olu buy it eat

‘It was a goat that Olu bought, killed and ate.’

(Adesola 2005, 89)

(76) Embedded object, gap

a. Ewúrè ni Olú sọ pé Adé rà ___
    goat be Olu say that Ade buy gap

b. *Ewúrè ni Olú sọ pé Adé rà a
    goat be Olu say that Ade buy it

‘It was a goat that Olu said that Ade bought, killed and ate.’

(Adesola 2005, 90)
2.3 Bringing the Data Together: Gap and RP patterns across Languages

In the previous sections of this chapter, each language under investigation was presented along with its its gap/RP distribution patterns in subject and object positions. It is now time to bring all the acquired data on the four relevant relativization positions together. Below, the data will be organized in tables, so that cross-linguistic observations and generalizations can be made more easily. The first step is gathering the individually attested distribution patterns in one place.\textsuperscript{16} In (77), the gap/RP distribution for each language is listed alphabetically. “Gap” marks derivations which obligatorily result in a gap in the extraction site, “RP” indicates that a resumptive pronoun is mandatory in the respective position. “Gap/RP” denotes cases where either \( \tilde{A} \) strategy is available to the grammar, and thus optionality holds. The “X” for Tuki subject positions indicates that this language does not have subject pronouns, and “?” appears where the missing cell is assumed to be recoverable through the available one.

(77) Gap / RP distribution across languages in subjects and objects

<table>
<thead>
<tr>
<th></th>
<th>Subject embedded</th>
<th>Object embedded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asante Twi</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Brazilian Portuguese</td>
<td>Gap</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Czech</td>
<td>Gap</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Ga</td>
<td>Gap</td>
<td>RP</td>
</tr>
<tr>
<td>Hausa</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Hebrew</td>
<td>Gap</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Irish</td>
<td>Gap</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Lebanese Arabic</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Mandarin Chinese</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
</tbody>
</table>

\textsuperscript{16}Similar listings can be found in Suñer (1998); Grolla (2005), but on a much smaller scale.
What can be seen right away from this table is the lack of randomness in the distributional patterns across languages. With four extraction scenarios (matrix and embedded subjects and objects) and a binary choice of gap or RP for each of them, one could, in principle, expect 16 different distribution patterns. However, only five patterns emerge from the data investigated so far. Below, in (78) all theoretically possible patterns are listed. The four positions, sometimes set off by “/”, refer to “subject / embedded subject / object / embedded object” in that order throughout this work. The attested patterns are marked in boldface:

(78) 16 possible distribution patterns

<table>
<thead>
<tr>
<th>Subject</th>
<th>embedded Subject</th>
<th>Object</th>
<th>embedded Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>RP</td>
<td>RP?</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
</tr>
<tr>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>RP/RP</td>
<td>RP/RP</td>
<td>Gap</td>
<td>Gap/Gap</td>
</tr>
<tr>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
<td>Gap/RP</td>
</tr>
<tr>
<td>RP/RP</td>
<td>RP/RP</td>
<td>Gap</td>
<td>Gap/RP/Gap</td>
</tr>
<tr>
<td>RP/Gap</td>
<td>RP/Gap</td>
<td>Gap</td>
<td>Gap/RP/Gap</td>
</tr>
<tr>
<td>RP/Gap</td>
<td>RP/Gap</td>
<td>Gap</td>
<td>Gap/RP/Gap</td>
</tr>
</tbody>
</table>

58
### 2.3 Bringing the Data Together: Gap and RP patterns across Languages

If the data in (77) are reduced by organizing them into unique patterns, the empirical situation becomes even clearer. The following overview in (79) represents the core of what the present work and its analysis in chapter 3 will attempt to derive. Each pattern is assigned a pattern number (P) on the left for future reference. Next to the distribution, the languages are listed that display the respective distribution:

(79) Crosslinguistic distribution of gaps and RPs under relativization

<table>
<thead>
<tr>
<th>P</th>
<th>Subject</th>
<th>emb. Subject</th>
<th>Object</th>
<th>emb. Object</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>Czech, Hebrew, Irish, Mandarin Chinese, Serbo-Croatian, Spanish, Ukrainian, Yiddish</td>
</tr>
<tr>
<td>2</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Asante Twi, Hausa, Lebanese Arabic, Mandarin Chinese, Serbo-Croatian, Spanish, Tuki, Ukrainian, Yiddish</td>
</tr>
<tr>
<td>3</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Brazilian Portuguese, Czech, Ga, Hebrew, Irish, Palestinian Arabic, Polish</td>
</tr>
<tr>
<td>4</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Welsh</td>
</tr>
<tr>
<td>5</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Hausa, Tuki, Vata, Yoruba</td>
</tr>
</tbody>
</table>
Before we continue by drawing generalizations from these data, one important issue has to be highlighted: as we can see, some languages (e.g. Czech) occur in more than one row in table (1). Czech allows for gap/RP *optionality* in every extraction position except the matrix subject which obligatorily hosts a gap under relativization. Several other languages allow for similar kinds of choice. As this is an empirical fact, any theoretical approach has to somehow encode optional distributions. One solution – within the present approach – could be to assume that languages have access to every pattern in (78). An analysis of optionality would then “mix and match” the patterns from this list until the empirical facts are represented. Czech could then be derived using a number of patterns:

\[(80) \text{Czech} = \text{Gap/RP/Gap/RP} + \text{Gap/Gap/RP/Gap} + \text{Gap/Gap/RP/RP} \ldots\]

While this certainly is a viable solution with regard to the theoretically possible patterns,\(^\text{17}\) it also entails that the seemingly free choice of patterns still needs to be heavily and artificially restricted (note how the subject position in Czech does not allow for free variation). Admittedly, optionality will always have to be dealt with at some point, so that some kind of restriction applies; a system that fully derives one pattern cannot, at the same time, derive the opposite pattern. However, there is a more economic and intuitive solution.

In this approach, the assumption will be that the grammars of the respective languages can choose between a *minimal* amount of *independently attested* patterns. First, *minimal* here means that if two patterns suffice to cover the variation within a language, then a choice of three or more patterns will be rejected.\(^\text{18}\) This puts the least computational burden on the system. Second, if only *independently attested* patterns are available, we do not need any further, artificial distributional restric-

---

\(^\text{17}\)Thanks to Jeroen van Craenenbroeck for pointing out and discussing this possibility.

\(^\text{18}\)As it turns out, two patterns always suffice where variation occurs.
tions. If we have to design the system to derive patterns 1 and 3 independently for different languages, anyway, Czech can be given a “choice” between these existing patterns in order to derive its optionality facts. This is to be preferred over an additional, special pattern for just one language.

2.4 Summary: Generalizations and Observations

A closer look at (1) reveals that, in addition to the attested patterns, more generalizations can be made. In this section, two sets of empirical observations will be presented. The first set in section 2.4.1 will be concerned with phenomena which pertain directly to the crosslinguistic distribution of resumptives in subjects and objects, and which can be found in (79). These facts will receive a natural explanation in the course of the proposed analysis in chapter 3. The second set of observations in section 2.4.2 is concerned with RPs beyond the realm of subjects and direct objects, with the behavior of complementizers, and certain movement phenomena. These particular issues will be addressed in chapters 4 and 5, after the analysis has been laid out.

2.4.1 Gap/RP Pattern Generalizations

Number of gap/RP patterns: While 16 patterns are logically available (four positions with a binary choice of gap/RP for each, cf. (78), only five can actually be attested empirically.

Few matrix subject RPs: Of the 19 resumptive languages discussed here, eight do not allow for a resumptive pronoun in the highest subject position (Czech, Ga, Hebrew, Irish, Palestinian Arabic, Polish, Welsh), optional gap cases not included. This reflects the picture drawn by the well known Highest Subject Restriction, HSR

\(^{19}\text{A systematic attempt at generalizations over resumption is rare in the literature even for individual languages (but see e.g. Bondaruk 1995 for observations in Polish).}\)
(cf. Shlonsky 1992; McCloskey 2002). On the other hand, eleven do not obey the HSR.

**Objects:** Relativization processes appear not to make a distinction between matrix or embedded direct objects. Regardless of the level of embedding, extractions from both kinds of position follow the same strategy, be it gap or RP. Grammatical resumption seems not to be conditioned solely on the basis of the level of embedding (unlike intrusive resumption, cf. Alexopoulou and Keller 2003, 2005, 2007; Alexopoulou 2009).

**Subjects:** Unlike objects, extractions from subject positions sometimes do differ in their choice of strategy. Within the same language, a resumptive can be stranded in embedded subject positions, but not in the matrix subject position (essentially the languages which obey the HSR). Thus, subject RPs seem to be sensitive with regard to matrix vs. embedded positions.

**Object RPs → subject RPs:** If a language licenses RPs in object positions (embedded or matrix, see above), it also licenses RPs in embedded subject positions. This correlation cross cuts both position (subject vs. object) and level of embedding (matrix vs. non-matrix).

**Embedded subject RPs → object RPs:** The reverse does not hold: if a language licenses RPs in embedded subject positions, it does not automatically license RPs in object positions (e.g. Welsh, Tuki, Vata, Yoruba). The embedded subject position appears to be the only position which consistently hosts an RP, regardless of the pattern (apart from the all gap pattern).

### 2.4.2 Additional RP Observations

**RPs in islands:** RPs are notorious for voiding island violations in many cases (e.g. Aoun et al. 2001; McCloskey 2006. There appears to be a property of RPs which lets them form a licit movement chain (under the assumptions proposed here) out
of island contexts, while gaps do not show this property.

**Invariant C = RP:** In some languages, there appears to be a correlation between the form of the complementizer and the strategy used for relativization (gap vs. RP) (e.g. McCloskey 2002, 2006, also Merchant 2004).

**Doubled / intermediate RPs:** It seems intuitive that RPs could occur in more positions of a long movement chain (given successive-cyclic movement). However, it is always the case that only one RP is realized per chain.

**Moving RPs:** Resumptives do not need to stay in their base position (e.g. Czech, cf. Toman 1998, and Hebrew, cf. Shlonsky 1992), but can exhibit movement.20

**Prepositional objects:** Not all object positions pattern alike. There appears to be far less variation across languages when it comes to the relativization of prepositional objects; it most often has to result in a resumptive.

**RPs in coordination:** Some languages do not allow for an RP in the highest subject position unless they occur in a coordinated structure. In these cases, the HSR appears to be voided.

This concludes the chapter on crosslinguistic data in resumptive languages. The generalizations and observations drawn from the empirical evidence will serve as input to the analysis presented in the following chapter (3). This is where the patterns and generalizations will receive a principled syntactic derivation. The additional observations will be dealt with in the chapters on islands (4) and further implications (5).

---

20Note that this supports the stance taken here of RPs which does not construe them as a postsyntactic phenomenon.
3 A Derivational Analysis of Resumptive Pronouns in Relativization

In this section, a novel analysis of the genesis of resumptive pronouns and gaps in relativization will be proposed. While the mechanism applies within the relative clause (RC), it is important to be aware of the different assumptions about how the RC is related to its head noun. The first section of this chapter will be dedicated to this task. All remaining sections will explain the actual proposal and its premises in detail, including example derivations and a return to the generalizations made in chapter 2.4.1.

3.1 Relative Clauses

Traditionally, three major theories of relative clauses can be distinguished: the head external, head raising, and matching theory. Each will be briefly introduced in the following:

**Head External Analysis** (cf. e.g. Partee 1975; Chomsky 1977; de Vries 2002): As the name suggests, the relative head is assumed to be generated externally to its accompanying relative clause. Within the RC, an Ā-movement relation is formed between the position to be relativized and the operator position in SpecCP of the RC. No such movement connection is present between the external head and this operator position; the RC is adjoined to the external head and semantically combined with it. The operator can be overt or null:
Head Raising Analysis (cf. e.g. Vergnaud 1974; Kayne 1994; Bianchi 1999): Here, the idea is that the head noun of the RC is connected to the extraction site inside the RC via movement:

Matching Analysis: (cf. e.g. Chomsky 1965; Sauerland 2003): The matching analysis contains characteristics of the other two theories. On the one hand, the RC operator is not connected to the external head via movement, but on the other hand, there is an RC internal element, Á-moved from the relativization site, which
matches the external head in form. Under this identity, the lower representation of the head is deleted in SpecCP:

\[ (3) \]

\[
\begin{array}{c}
\text{DP} \\
\downarrow \\
\text{D} \\
\downarrow \\
\text{NP} \\
\downarrow \\
\text{the} \\
\downarrow \\
\text{NP} \\
\downarrow \\
\text{book} \\
\downarrow \\
\text{which} \\
\downarrow \\
\text{John likes} \\
\end{array}
\]

Due to the assumptions made within the present proposal (see below), it could most easily be integrated into both the head external or matching view on RCs. I will remain agnostic as to which model might be better suited, since the relevant syntactic operations will take place below the CP node of the relative clause. Note that the raising theory is also not completely incompatible, but it might require more provisions with regard to the spellout of movement copies.\(^1\)

### 3.2 The Structure and Creation of Gaps and RPs

Before anything can be said about entire distributional patterns, it has to be shown how an individual resumptive pronoun comes about in the course of a derivation. The foot of an Ā-dependency (relativization in our case) needs to be connected to its operator head in SpecCP. Within a minimalist framework, which assumes phase-

---

\(^1\)As will be shown below, this analysis does not rely on a copy theory of movement. If such a theory turns out to be needed for additional reasons, the occurrence of spelled out copies in undesirable positions would have to be prevented.
based, local operations, a viable option to account for this non-local dependency is to invoke the operation *Move*. In short, probes on phase heads target an element designated as the relative operator and move it from its base position to its final landing site, SpecCP, where it has scope over the entire relative clause. This movement is carried out via the specifiers of intermediate phases in a successive-cyclic fashion. If the element to be relativized acts as an operator in its entirety, *Move* will not leave any material behind in its base position. This will be the gap case. On the other hand, if the operator can be moved on its own, as a subpart of the element to be relativized, some material is left behind where said element was merged. This will be the RP case.

In the following sections, the detailed account behind this outline will be introduced. At first, several core assumptions will be laid out: the theory of a $\phi P$ which will become necessary to account for the structure of gaps and RPs; the notion of *antilocality* which, by itself, would prevent RPs from being created; a mechanism for *phase extension* with the goal to circumvent the antilocality “ban” on RPs in exactly the necessary cases; *head movement as Agree*, which enables the operation *Agree* to trigger phase extension, if needed; a theory of the *orders of operations* that becomes relevant because phase heads will trigger more than one syntactic operation per phase cycle – these orders will ultimately be responsible for the distribution of gaps and RPs. Each of these concepts will be motivated and illustrated in turn below.

---

2 Syntactic operations are assumed to be feature-driven (cf. Chomsky 1995), and Move will be triggered by a movement inducing feature such as e.g. REL, for movement of the relative operator.

3 An external relative head can then select e.g. the complementizer which is marked with a relative feature.

4 A phase will be understood here as a syntactic domain with certain properties pertaining to operations and movement out of it (Chomsky 2000). Movement from a complement position has to proceed via the “edge” or specifier of the same phase head, and only phase heads trigger syntactic operations such as Move and Agree.
3.2.1 $\phi P$

The main characteristic of the movement based approach to resumption presented here is that the two relevant elements, the position to be relativized and the relative operator, start out as parts of the same structure in the derivation. In this configuration, transfer of certain $\phi$ information can take place, and the necessary connection between operator and resumptive can be established before both are possibly separated by a movement operation. As has been shown in chapter 1.3.2, both copy spellout and traditional Big DP approaches have their respective downsides in a minimalist environment.

Thus, an alternative way to merge the resumptive with its operator shall be explored. The goal is to combine the benefits of the Big DP proposal, which structurally separates operator and resumptive, with the appealing notion of spelling out only a reduced version of a moved item, as in the copy spellout approach. The problem of how to determine the form of the reduced element will be avoided by positing that a set of $\phi$ features serves as the input to PF. This will ensure the insertion of a personal pronoun and prevent the insertion of e.g. *what*. In order to do so, we need to somehow separate the DP which is to be extracted as the relative operator from its corresponding set of $\phi$ features, which will later serve PF as input for the insertion of a resumptive pronoun. It will be argued that the DP to be relativized is split up into its $\phi$ features on the one hand, and into a DP part with NP and definiteness information on the other. The DP part will also be the locus of the operator marker, $\text{rel}$ for relativization in our case. Note that this structural split means that only the part with the full set of $\phi$ features, $\phi P$, can ever receive realization at PF;\(^5\) the predictions that stem from this construal will later be shown to be borne out (cf. chapter 5).

\(^5\)The possibility of the spellout of (sub)trees will be assumed here, following research into nanosyntax by Caha (2009) and Starke (2009), among others.
This general kind of separation has been proposed before in the literature. Déchaine and Wiltschko (2002) propose a DP structure like (4) for independent reasons:

(4) $\begin{align*}
&\text{DP} \\
&D \quad \text{φP} \\
&\quad \phi \quad \text{NP} \\
&\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \text{N}
\end{align*}$

(Déchaine and Wiltschko, 2002, 410)

Here, the φ layer is situated below the DP layer. While this facilitates the desired split between φ and the remaining projections, it is not the optimal structure for the present purposes. The φ features cannot be left behind by movement of DP (i.e. stranding), because DP does not form a constituent to the exclusion of φP. Instead, I propose a structure for DPs where a φ head takes DP as its complement (5):

(5) $\begin{align*}
&\text{φP} \\
&\quad \phi \quad \text{DP} \\
&D \quad \text{NP} \\
&\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \text{N}
\end{align*}$

The introduction of the additional φ layer can be motivated by assuming that it contributes at least number (and maybe person) features which are not lexically present in the NP portion of the complex unit, which contributes semantic information. In order for φ to get (at least) its missing gender features valued, it agrees with NP (6). Note that NP does not have other, unvalued φ features. This way, φP can trigger
full lexical insertion at PF, while NP on its own cannot (see also chapter 5.2 below):

\[
(6) \quad \phi P \\
\quad \phi \quad \text{DP} \\
\quad p: x \quad \text{N} \\
\quad n: y \quad \text{D} \\
\quad g: \_ \quad \text{I} \\
\quad g: z \\
\]

Independent support for a \(\phi P\) layer above DP in comes from Sauerland (2008) and (p.c.) where he proposes an identical structure for semantic reasons. He assumes pronouns to be reduced definite descriptions, such that the antecedent of a pronoun is included in its structure, but silently so. The structure of the pronoun in example (7) is (8):

\[
(7) \quad \text{Almost every boy hopes that Sally will marry him [the boy].} \\
(8) \quad \phi P \\
\quad \phi \quad \text{DP} \\
\quad 3.\text{sg} \quad \text{the boy} \\
\]

(Sauerland 2008, 337)

In Sauerland’s approach, the \(\phi\) layer is all that remains upon transfer to PF because the DP part is elided to turn the definite description \textit{the boy} into the reduced pronoun \textit{him}. \(\phi\) is the only element left in this position for PF to realize, and it is realized as a pronoun with the appropriate features. This is a result similar to what shall be achieved here for resumptive pronouns, even though the “stranding” of \(\phi P\) will
come about by movement, not PF-deletion. I will adopt this kind of $\phi P$ structure for DPs throughout the rest of this work. $\phi P$ also takes over the phasehood status which is often attributed to DP, along with CP and vP (e.g. Chomsky 2000, 2001; Svenonius 2001; Heck and Zimmermann 2004; Abels 2012).

Unlike the Big DP approach, where one never encounters the original syntactic object as one unit, two full sets of $\phi$ features (on $\phi P$ and NP), which could receive independent pronunciation, are not assumed here. Only as a unit with $\phi$ can DP/NP be pronounced at all, because its gender features alone are not enough for PF to insert any appropriate lexical item. In non-resumptive derivations this unit remains compatible with common DP assumptions (with D probably incorporating into $\phi$ at some point), such that the problem of an illicit, yet invisible lexical complex never arises. In resumptive contexts, however, the $\phi$ layer can be realized on its own at PF, after it is stranded by DP/NP. Note also another peculiarity of this approach: the decision for or against a resumptive pronoun does not have to be made at the point of merger of the argument (i.e. merger of a Big DP vs. a regular DP). Whether or not a $\phi P$ is split up into an operator and a resumptive is determined in the course of the derivation, as will be explained below. Differing numerations (possibly numerations in general) are not necessary here, and neither are transderivational constraints.

In conclusion, this approach assumes a structure as in (5), that is, a $\phi P$ containing a DP, instead of “regular” DPs. Since one important advantage of the present proposal is its lack of any resumption-specific elements, all DPs will be assumed to be $\phi P$s, $\phi P$ is a phase, DP is not, and if DP remains in place as the complement of $\phi$, the entire unit will look and act exactly like “regular” DPs do. Only if DP is removed and $\phi$ is stranded, a pronoun will be inserted later to realize the lone set of $\phi$ features.6

---

6Note that I remain agnostic as to whether there is a DP layer above NP or not (cf. Abney 1987; Georgi and Müller 2010). I assume that properties which are ascribed to D can be distributed to $\phi$ and/or N in a way that does not change the mechanics of the present approach. For the sake of exposition, DP will be assumed.
3.2 The Structure and Creation of Gaps and RPs

3.2.2 Antilocality

With the internal structure of φPs in place, we now need to make sure that the φ part is actually separated from the DP part if necessary. In cases of resumption, the φ features of the relativized φP have to be stranded in order for PF to realize them later as a resumptive pronoun in their base position. This task is thus twofold: first, the stranding mechanics have to be devised, and second, they have to be implemented in a way such that stranding only applies when an RP is needed in a given extraction position. Resumptives must not be generated when gaps are to be derived, or vice versa.

In order to separate DP from φP via Move, it has to be subextracted from it. Two conditions need to be met in a Minimalist framework. First, movement of the REL marked DP needs to be triggered by a REL feature on a c-commanding phase head (cf. Chomsky 2000, 2001, 2005). Second, any movement out of a phase’s complement has to proceed via that phase’s specifier due to the Phase Impenetrability Condition, PIC, (9), which states the “escape hatch” nature of these specifier positions:

(9) Phase Impenetrability Condition

In a phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

(Chomsky 2000, 108)

The domain denotes the complement of a phase head, while its specifier position constitutes its edge. For long movement, under the assumption that every movement step is triggered by a feature, this entails the placement of additional REL features on phase heads along the movement path of DP. Thus, φ, v and C are carriers of REL
features which target elements in their domain also marked by REL. With these requirements in mind, the expected first step in a derivation involving resumption would be the one illustrated in (10):

(10) \[
\begin{array}{c}
\phi P \\
\text{DP}_\text{Rel} \quad \phi P \\
\phi \\
\end{array}
\]

However, this basic first step already runs into problems. DP is the direct complement of the \( \phi \) head, with no intermediate non-phases, so movement to the “escape hatch” is movement of the complement to the specifier of the same head. It has been argued that movement operations should not only obey an upper limit on how far they can reach in one step, but also a lower limit which determines the shortest possible movement distance. This notion is known as antilocality (Abels, 2003; Grohmann, 2003; Bošković, 1994, 1997; Boeckx and Grohmann, 2007) and rules out derivations such as (10) above, where the complement of a head H is moved to SpecH. In what follows, I will acknowledge the existence of antilocality effects as shown in Abels (2003). Abels’ argumentation is twofold. On the one hand, he invokes the principle of Last Resort (cf. also Chomsky 1995), according to which syntactic operations (and base merger) are feature-driven and must lead to a new configuration for feature checking, (11):

---

7This notation is compatible with choosing the more general edge feature, but since the main focus of this work is on relativization, REL will be used. Note that this approach also remains compatible with a greed based theory of movement which essentially places the movement trigger on the moved element itself.
3.2 The Structure and Creation of Gaps and RPs

(11) Last Resort

A constituent $\alpha$ may only be merged, i.e. base-merged or re-merged, if that leads to the immediate satisfaction of a previously unsatisfiable feature.

(Abels 2003, 92)

On the other hand, he identifies different checking/agreement configurations as basically unified under mutual c-command, such that a probe (a head searching for certain features in its domain) and its goal (an element providing certain features in the domain of a head) can be in either relation to satisfy the feature’s requirements. In concrete terms, the head-complement configuration as in (12) enables feature valuation (the transfer or checking of values which were missing on the probe’s feature) just the same as the specifier-head configuration in (13):

\[
\begin{align*}
(12) \quad & \text{XP} \\
& \quad \text{YP} \\
& \quad \text{f:X} \quad \text{f:0} \\
& \quad \ldots \\
(13) \quad & \text{XP} \\
& \quad \text{YP} \quad \text{X'} \\
& \quad \text{f:0} \\
& \quad \text{X} \quad \text{WP} \\
& \quad \text{f:X} \\
\end{align*}
\]

If these two configurations achieve the same result with respect to checking/agreement, and if Last Resort holds, then any movement transforming head-complement into specifier-head relations is not only unnecessary, but banned. A YP that is merged in complement position of X can have its feature f valued by X right where it is. Thus, the step illustrated in (10), which moved DP from the complement of $\phi$ to $\phi$’s specifier in order to check $\phi$’s intermediate REL feature is ruled out. This essentially means that DP is barred from moving out of $\phi$P at all, since its movement would be not “antilocal” enough. In order for the REL marked DP to move at all, it has to pied-pipe $\phi$P along when it is attracted by phase head above $\phi$, e.g. v.
With no further provisions, the derivation would always generate gaps when \( \phi P \) is extracted, because DP can never be subextracted. This is, of course, contrary to empirical fact. Somehow, subextraction of DP has to be made possible. Note how Abel’s notion of antilocality refers to the movement of a phase head’s complement itself, not movement out of this complement. In a situation like (14), a phase head X triggers a movement operation targeting WP, which is itself complement to a non-phase head. Thus WP is accessible for syntactic operations (according to the PIC), and movement to the specifier of X is licit. Also, a new agreement configuration is established, satisfying antilocality conditions (15):

Returning to the \( \phi \) issue at hand: if it was possible to make DP be contained in a phase’s complement (instead of itself being the complement), it could be attracted on its own by a triggering REL. One way to achieve this would be stipulating more material between \( \phi \) and DP and thereby voiding antilocality effects, making the movement to \( \phi \)'s specifier licit. Another possibility is changing the syntactic environment of DP which is stuck in the complement position of a phase head. If DP was contained in a non-phase, it would readily be accessible to extraction triggered by a higher phase head X without the need to move to an escape hatch position first. This latter solution is the one I will follow and develop in the next section. The mechanism which separates \( \phi P \) and DP needs to obey both the PIC and antilocality restrictions, which seem contradictory for the present purposes. The former requires
an element to move to a specifier position, while this movement is banned by the latter. Since both conditions crucially draw their effects from the phasehood status of a projection, this status has to be changed in order for stranding to occur.

3.2.3 Phase Extension

The idea that phasehood is not set once and then remains static is not entirely new. Several proposals have been made to the effect that a projection can start out as a phase and end up as a non-phase, or vice versa. These accounts of changing phasehood have been labeled dynamic phases, reprojections, phase sliding, or phase extension in the literature (Donati 1997, 2000; Hornstein and Uriagereka 2002; Gallego 2006; den Dikken 2006, 2007; Alexiadou et al. 2014; Bošković to appear, among others). Here, I will follow den Dikken (2006) for an illustration of the general idea. He proposes that movement of a lower phase head into the position of a higher phase head extends the higher head’s phasal domain to include that of the lower one (16):

(16) Phase Extension:

Syntactic movement of the head \( H \) of a phase \( \alpha \) up to the head \( X \) of the node \( \beta \) dominating \( \alpha \) extends the phase up from \( \alpha \) to \( \beta \); \( \alpha \) loses its phasehood in the process, and any constituent on the edge [or in the complement]\(^8\) of \( \alpha \) ends up in the domain of the derived phase \( \beta \) as a result of Phase Extension.

(\text{den Dikken 2006, 1})

He applies this concept to, among other things, the phenomenon of *Predicate Inversion*: it is assumed that the a) sentence in (17) is derived from b), due to den Dikken’s predicational approach:

---

\(^8\)My addition; den Dikken is not concerned with the accessibility of complements here, but there appears to be no logical reason to exclude them, given that the phasehood of \( \alpha \) has been voided.
3 A Derivational Analysis of Resumptive Pronouns in Relativization

(17)  
   a. This book is the #1 best-seller in the country.  
   b. The #1 best-seller in the country is this book.

   (den Dikken 2006, 2, his 4a,b)

The structural representations of these examples are given in (18) and (19), where this book is the subject of the nominal predicate phrase the #1 best-seller in the country, connected by the relator is, a phase head:

(18)

   \[ \begin{array}{c}
   \text{RP}_{\text{phase}} \\
   \text{Subject} \quad \text{RP} \\
   \quad \text{Relator} \quad \text{Predicate}
   \end{array} \]

In order to raise (invert) the predicate to a position above the subject (and thereby deriving b) in (17), a functional phase head F is introduced to trigger this operation:

(19)

   \[ \begin{array}{c}
   \text{FP}_{\text{phase}} \\
   \text{F} \quad \text{RP}_{\text{phase}} \\
   \text{Subject} \quad \text{RP} \\
   \quad \text{Relator} \quad \text{Predicate}
   \end{array} \]

After the introduction of the functional head F two problems arise. First, how can F access the complement of the relator phase (given the PIC)? Second, how can the predicate move across the subject to the specifier of FP (given Relativized Minimality, Rizzi 1990)? One way to resolve both issues at once is to void the phasehood of RP and thereby extending it to FP. This would make the predicate
3.2 The Structure and Creation of Gaps and RPs

accessible again from outside RP, because it is not subject to the PIC anymore. In addition, it would now be situated in the same minimal domain as the subject, namely the c-command domain of F, circumventing Relativized Minimality (cf. also Chomsky 1995 on *equidistance*, but see also Heck 2015). Den Dikken achieves this by first moving head R to head F, extending R’s domain, and subsequently moving the predicate to F’s specifier (20):

(20)

If this mechanism was transferred to the φP case at hand without further provision, the stranding derivation would look like (21), schematically, below:

(21)
The first movement operation takes the $\phi$ phase head and adjoins it to the v phase head,\(^9\) thereby extending its domain to that of v.\(^{10}\) Now that $\phi$ is no longer a phase itself, the REL marked DP does not have to move through its specifier, because the PIC does not apply. Once it is attracted by the REL feature on v, it can move directly to the edge of v. Antilocality is not an issue here any longer, because DP is not the direct complement of v, but only contained in it. $\phi$P is stranded in this scenario, and a resumptive pronoun can be inserted in its place later at PF. The DP at the edge of v is accessible for further movement operations until it has reached its final operator site in matrix SpecCP position. While this yields part of the desired result – the DP can be extracted on its own – the mechanism performs an incorporation which often does not occur overtly in resumption cases. Arguably, if $\phi$ took all $\phi$ material with it, later insertion of a resumptive would always occur at the incorporation site, maybe as a clitic to v, contrary to fact.\(^{11}\) In order to avoid this issue while extending phasehood, a second notion will be invoked in the next section.

Up to now, a static notion of phasehood prevented the derivation of RPs under the assumptions of the present approach. Using the independently motivated mechanism of phase extension, the stranding of DP can now be facilitated.

### 3.2.4 Head Movement as an Instance of Agree

In this section, the concept of phase extension which was just introduced shall be made utilizable for the derivation of resumptive patterns. According to den Dikken

---

\(^9\)This step might be taken to violate the Head Movement Constraint (Travis, 1984) because V is skipped. However, under Relativized Minimality (cf. Rizzi 1990), V can be said to not be a suitable goal for v’s probing due to its lack of relevant features. Thus, v can manipulate $\phi$ across V.

\(^{10}\)Nothing appears to hinge on v already being a phase. $\phi$ can still give up its phasehood.

\(^{11}\)Even if a resumptive sometimes cliticizes onto the verb, it would be better not to have this as the default outcome. A $\phi$P which is stranded in its base position derives most of the RP cases just fine, and it can still be moved individually to also cover cases of cliticization or moving RPs (e.g. Polish, see chapter 5.4).
3.2 The Structure and Creation of Gaps and RPs

(2006), the change of a head’s phasehood status involves head movement. However, in order to leave an RP behind, we do not want this resumptive (\(\hat{\phi}\)) head to move. Thus, it will be illustrated how the operation Agree might be exploited in order to extend a phase.\(^\text{12}\)

Roberts (2010) argues for a reinstatement of head movement as a narrow syntactic operation, instead of a post-syntactic one, contra Chomsky (2001) (but see also Matushansky 2006; Lechner 2007; Nevins 2011). In the Minimalist Program, it is assumed that the manipulation of syntactic objects can have consequences for the interfaces of both the Logical and the Phonological Form. The model is such that the output of a syntactic operation is made available to these interfaces in a sort of “Y”-fashion, i.e. the information branches out to both interfaces at some point in the derivation. This means that operations in the syntactic component affect the input to both interfaces, but a post-syntactic operation in the Phonological Form cannot influence the input to the Logical Form (or vice versa). Roberts argues for placing head movement back into narrow syntax by providing evidence of head movement which plays a role at LF (e.g. the licensing of polarity items, 8ff.).\(^\text{13}\)

After he motivates head movement as part of syntax, Roberts discusses the relation of head movement to XP movement. Simplifying somewhat, he proposes to treat XP movement as follows: two heads enter an agreement relation, then the lower head moves to the specifier of the higher head and pied-pipes its complement: the result on the surface is movement of an entire phrase. Head movement, similarly, can be construed as Agree and internal Merge without pied-piping, under certain assumptions. As an example, Roberts’ derivation of cliticization shall be illustrated. First, in (22), we see a standard example of an agreement relation between a v head.

\(^{\text{12}}\)Wurmbrand (2011), in a side note, proposes that “head-head selection (i.e., valuation) also voids phasehood” (69). The combination of den Dikken (2006) and Roberts (2010), which is argued for here, adds a theoretical and empirical foundation to that notion.

\(^{\text{13}}\)Even if there is no LF effect for certain cases of head movement, it should not be ruled out that the movement takes places in narrow syntax. As Roberts argues, A-movement also has no clear semantic effect but is still considered part of narrow syntax (Roberts, 2010, 8).
and the D head of a direct object DP (adapted from Roberts 2010, 59):

(22)  

```
(23)  

The v head has unvalued φ features and probes the DP in order to obtain these missing values. DP, on the other hand, is missing a case value and is assigned accusative due to this agreement relation (23). In a sense, both the probe and the goal had missing values to be set and are complete now. Roberts next illustrates another example where the goal is defective, meaning here that it is missing the case feature slot (24). Thus, Agree between v and this defective φ head, as he calls it, leads to the following outcome (25), adapted from (Roberts, 2010, 60):

---

14 Roberts mentions that case assignment happens due to an additional v property which he does not discuss at this point.
3.2 The Structure and Creation of Gaps and RPs

Roberts takes clitics to be $\phi$ heads. They lack case, and they end up affixed to their host (e.g. $v$). He argues that Agree in this case is indistinguishable from Move, so that $\phi$ is incorporated into $v$ (26):

Since now, under a copy theory of movement, both instances of $\phi$ are exactly the same, one of them (the lower one) can be deleted, following the notion of chain reduction (cf. Nunes 2004) Without chain reduction, one and the same element could both precede and follow itself (in the form of an exact copy) and thus not

Note that Roberts (2010) does not discuss cases of “incorporation” of a head contained inside a specifier position into the head projecting this specifier. See section 3.2.8 for how it becomes relevant here.
be linearized properly at PF. The constituent not deleted usually is the one c-commanding the other instances, the “head” of the chain (Roberts, 2010, 61).

However, an RP should neither be moved nor deleted; the lower “instance” has to remain visible to PF in its original position. In example (23) above, in contrast to example (26), DP’s features are not identical to the φ values on v, because it has an additional case feature. If this reasoning is adapted to v/C’s agreement with φ heads, the operation Agree can be made responsible for changing φ’s phasehood status. The structurally lower φ agrees with and moves to the higher v/C, thereby triggering phase extension (cf. den Dikken 2006). Due to the additional case feature, the conditions for chain reduction are not met, and the lower φ is not deleted (27):

(27)

```
  vP
   ▼
  v
 ▼
  VP
   ▼
   v
      \  
      V
 ▼
  φP
   ▼
   φ
      \  
      DP
         ▼
           +φ, +CASE
          ▼
            AGR
              ▼
                AGR_VALUE
```

Thus, Agree can cause φ’s phase status to be voided, such that v’s phase domain now includes φ and its complement (see section 3.2.5 below).

Two important notes regarding Agree need to be made here: first, I assume case assignment not to be contingent on Agree, following Marantz (1991); McFadden (2004); Baker (2015); Bobaljik (2015). Case is assigned upon merger of the relevant case assigning head (v). This is necessary because, in the present approach, Agree can happen after movement out of a position that is assigned case. Second, I fol-

16Note that φ’s features ultimately may or may not show up on the verb, depending on the properties of the respective language.
3.2 The Structure and Creation of Gaps and RPs

low Assmann et al. (2015) and assume a spec-head bias for agreement relations. If suitable goals are present in both complement and specifier position, a probing head will prefer to target its specifier first, which will play a role for certain interference effects (see section 3.2.8):

(28) Specifier-Head Bias:

Agree between (first) specifier and head is preferred to other instances of Agree.

This section was to show how the notions of den Dikken 2006 (phase extension via head movement) and Roberts 2010 (head movement as Agree) can be combined in order to void \( \phi \)’s phasehood under Agree. As will become clear later, Agree with a \( \phi P \) can also occur if it is situated in the *specifier* position of a phase head (see also Baker 2008). While I do not rule out upward Agree, downward incorporation (= movement) is definitely ruled out. As a consequence, in a Spec-head configuration, the head cannot trigger phase extension of \( \phi P \). Agree and Move are formally distinguishable here due to their conflicting requirements, and Roberts (2010) does not apply (see section 3.2.8).

3.2.5 Interim Summary

Up to now, arguments were made for several of the core assumptions of this approach. Recall the ingredients in section 3.2: a \( \phi P \) structure was motivated for the movement/stranding approach to resumption pursued here. Next, the problematic notion of antilocality was taken into consideration, a principle which could prevent stranding altogether. In order to circumvent antilocality, a theory of phase extension was adopted. \( \phi P \)’s phasehood can be voided by head to head movement, such that subextraction of DP (= stranding of \( \phi \)) becomes possible. Finally, this kind of head movement was shown to be triggerable via the operation Agree under certain
Before the orders of operations is addressed, and additional operations are introduced, the interplay of the assumptions so far will be illustrated in this section. With the help of these, the derivation of basic gap and RP cases can already be demonstrated. At the stage of a derivation depicted in (29), $\phi_P$ has already merged with $V$ which, in virtue of not being a phase head, has no operations to trigger (Chomsky, 2000, 2001) (and will sometimes be left out for reasons of visual clarity). Note that $T$ is also not considered a phase head for the purpose of the present work – instead, a mechanism of feature inheritance from $C$ to $T$ is assumed. When $v$ is merged, case is assigned to $\phi_P$, and the situation looks as follows:

(29)\[
\begin{array}{c}
vP_{Phase} \\
v \\
REL \\
Pers:__ Num:__ \\
\end{array}
\begin{array}{c}
VP \\
V \\
\phiP_{Phase} \\
\phi \\
DP \\
Pers: A Num: B Case: Acc \\
\end{array}
\]

The $\phi$ probe on $v$ searches its c-command domain for a matching set of $\phi$ features that can set its missing values. A suitable goal, the $\phi$ head, is found, and Agree / Move in the sense of Roberts (2010) ensues. $v$ receives $\phi$’s values for its features, which can (but need not) be spelled out at PF as the appropriate inflection, depending on other properties of the language. At the same time, because a lower phase head has formally incorporated into a higher one ($\phi$ into $v$), phase extension occurs: the lower $\phi$ head loses its phasehood, and its projection becomes part of the higher $v$’s accessible c-command domain. This results in the following picture (30):
Due to phase extension, operations triggered on v have access not only to the φ head, but also its complement DP. This is exactly the configuration that we were aiming for in order to extract DP from φP. The intermediate REL feature on v locates a suitable goal which also carries a REL feature: DP. In order to make DP available for further movement operations (ultimately up to its final operator position), intermediate movement is triggered by v. DP is no longer trapped by antilocality and can move to the specifier of vP, leaving behind φP, i.e. the resumptive pronoun (31):
At this point, the importance of ordered operations already becomes clear. If phase extension occurs before movement induced by REL, the derivation (31) above obtains. Conversely, a gap derivation occurs if phase extension does not happen before REL movement is triggered by v. Without the extension, DP cannot extract from φP due to antilocality. Thus, the only way for the operator DP to leave the direct object site in order to end up in matrix operator position at a later stage is to pied-pipe its φP shell along, thereby circumventing antilocality. The economical cost of this derivation appears to be higher, because more structure is moved than the actual DP which carries the REL feature. However, since this is the only way to save the derivation from crashing at this point, it meets the economy condition in (32) (cf. Chomsky 1995; Heck 2008):

---

17This means that the operations Agree and Move behave differently with regard to the PIC: Agree can locate its REL target beyond φ’s phase boundary, but movement of DP must not violate the PIC (cf. Bošković 2003, 2007). As a solution, pied-piping is induced to still enable Move.
3.2 The Structure and Creation of Gaps and RPs

(32) Economy Condition on Generalized Pied-Piping

F carries along just enough material for convergence.

(Chomsky 1995, 262)

In our case, the abstract feature F translates into REL on DP, and if it cannot be extracted, φP has to be “carried along”. This derivation starts out the same up to the merger of v (33):

(33)

```
  vP_{phase}
    v
    VP
      REL
      Pers:__  V
      Num:__  φP_{phase}
                φ
    DP
      Pers: A  REL
      Num: B
      Case: Acc
```

This time we assume REL Move and Agree to be triggered in the reverse order on v. Thus, phase extension cannot happen and DP_{Rel} pied-pipes its φP along to SpecvP.\(^\text{18}\)

\(^\text{18}\)I assume here that v can check REL on DP via m-command even though it is contained in φP in this scenario. Another possibility would be to assume that movement-inducing features such as REL are checked via Move itself. In the same scenario, upward Agree does not pose a problem, because φ’s information is arguably reachable via φP.
Once the $\phi P$ containing the operator DP is in SpecvP, it is accessible to further movement (pied-piping) operations triggered by a higher phase head (C) and can subsequently reach its final SpecCP landing site. $v$ can also still (upward) agree with $\phi$ in its specifier after the movement step. This kind of Agree will not trigger phase extension of $\phi P$ for two reasons: first, phase extension relies on formally identical conditions for head to head movement and Agree (see sections 3.2.3 and 3.2.4 above). However, since the $\phi$ head cannot move downward to adjoin to $v$, this identity is not given. Agree can take place, head movement cannot. Thus, phase extension is not triggered, and subextraction will not be enabled. Second, since the $\phi P$ which contains DP has already been moved to Spec$v$, it is an island for independent reasons (*Freezing Principle*, cf. Wexler and Culicover 1980, but see also Müller 2014b). In short, for the purpose of creating an RP, Agree happens *too late* if ordered after Move.

This section illustrated the central mechanism of the present approach to derive resumptive pronouns and gaps in extraction sites. In the next section, it will be discussed how the decision between both derivations is made, and how it can be refined to not only put resumptive pronouns and gaps in certain places, but to also account for entire RP/gap patterns across languages.
3.2.6 The Order of Operations

In the previous section, we have seen the interaction of certain, independently motivated syntactic operations (Agree, Move) that yields a resumptive in a site where originally a $\phi P$ was merged. A higher phase head ($v$, $C$) is merged and triggers an agreement relation which, via phase extension, makes the DP contained in $\phi P$ accessible to syntactic manipulation (extraction). The intermediate $\text{REL}$ feature on $v$ can then move $\text{DP}_{\text{REL}}$ to its specifier, the escape hatch for further movement. The same operations can interact in a different way to produce a gap in an extraction site. Phase extension happens too late, and pied-piping of $\phi P$ takes place.

Note how these derivations hinge on the fact that the agreement operation either happens before the movement operation or after it. Agree makes DP accessible, and only then can Move extract DP from $\phi P$. Move, on the other hand, removes DP (and, with it, $\phi P$) from a configuration where Agree could make it accessible. Thus, we have two operations triggered on one phase head whose effects depend on the order in which they are triggered.

The fact that multiple operations can interact in certain ways has been discussed before (cf. e.g. Anand and Nevins 2005; Bruening 2005; Müller 2009; Halpert 2012; Assmann et al. 2015 for Merge/Agree, see especially Georgi 2013, 2014a,b for an in-depth discussion). Up to now, this approach also makes use of two operations which interact.19 Since we know what each of these operations does, their interaction is transparent – in broad terms: Move before Agree results in a gap, Agree before Move results in an RP. The application / output of one operation can feed (= create the input requirement for, (35)), or bleed (= destroy the input requirement for, (36)) the other, depending on their order:

---

19Note that Merge, in its capacity to introduce the subject into a derivation, will be added in section 3.2.8.
3 A Derivational Analysis of Resumptive Pronouns in Relativization

(35) Feeding: Operation 1 creates the context for Operation 2
Structure A $\xrightarrow{\text{Op}_1} \text{Output B}$, then Input B $\xrightarrow{\text{Op}_2} \text{Output Structure C}$

(36) Bleeding: Operation 1 destroys the context for Operation 2
Structure B $\xrightarrow{\text{Op}_1 \text{Input B}} \text{Output D}$, then Input B $\xrightarrow{\text{Op}_2} \text{Output Structure C}$

This is exactly the kind of interaction this approach encounters with respect to resumption. Agree can feed Move of DP (via phase extension) if it applies first, and Move can bleed Agree and the extraction of DP from $\phi$P if it applies first. Now, how is the order of these operations on v and C determined? Three logical possibilities arise (cf. e.g. Chomsky and Halle 1968): 1) Operations can apply to the same structure simultaneously (cf. Pullum 1976, 1979), 2) they can apply sequentially in any order (cf. Koutsoudas et al. 1974; Lakoff and Kisseberth 1972), or they can 3) apply sequentially and ordered (cf. Chomsky 1965; Williams 1974). These major proposals are illustrated below (see also Perlmutter and Soames 1979 for a detailed discussion): 20

- Simultaneous Application Hypothesis, SAH:
  Two (or more) rules apply simultaneously to the same input structure:
  Input Structure $\xrightarrow{\text{Rule}_1} \text{Intermediate Structure} \xrightarrow{\text{Rule}_2} \text{Surface Structure}$
  This means that all rules apply to the same underlying structure such that no feeding or bleeding interactions can take place. There is no intermediate stage where one rule has applied and the other still has to.

- Unordered Sequential Application Hypothesis, USAH:
  Two (or more) rules apply sequentially but without a fixed order; two (or more) orders can occur at random:
  Input Structure $\xrightarrow{\text{Rule}_1} \text{Intermediate Structure} \xrightarrow{\text{Rule}_2} \text{Surface Structure}$

---

20 Two rules that do not affect each other, such that the output of one rule does not change the input conditions of the other, can of course apply in either of these fashions.
3.2 The Structure and Creation of Gaps and RPs

or, interchangably:

Input Structure $\xrightarrow{\text{Rule 2}}$ Intermediate Structure $\xrightarrow{\text{Rule 1}}$ Surface Structure

Transparent interactions can be derived.

- **Strict Ordering Hypothesis, SOH:**

  Two (or more) rules apply sequentially, and their order is set:

  Input Structure $\xrightarrow{\text{Rule 1}}$ Intermediate Structure $\xrightarrow{\text{Rule 2}}$ Surface Structure

  or, exclusively:

  Input Structure $\xrightarrow{\text{Rule 2}}$ Intermediate Structure $\xrightarrow{\text{Rule 1}}$ Surface Structure

  Transparent interactions can be derived.

  The SAH can be discarded right away, because it does not allow for the kind of transparent interactions that we need, i.e. there is a stage where Agree has applied and triggered phase extension, but Move has not applied yet. Both the USAH and the SOH have the capacity to derive transparent interactions, so an empirical decision has to be made between them. As we have seen in the overview in chapter 2.3, the majority of resumptive languages does not allow for completely free alternation between gaps and RPs under relativization. If optionality was the ruling principle, i.e. if both derivations always converged, then the USAH would always yield correct results, because it would derive resumptives and gaps in a random fashion. However, as optionality is often ruled out by a preference for either resumptives or gaps in certain extraction positions, the USAH is bound to generate illicit resumptives where gaps are the only option, and vice versa. It will thus be assumed that the SOH is responsible for the orders that lead to either a licit resumptive or gap construction.

  This raises the question of how the decision between two strict orderings is made. Either the operations are ordered *intrinsically*, according to independent principles of the system, or they are ordered *extrinsically*, without a direct connection to the system, i.e. by stipulation. If operation 1 referred to a syntactic object (SO) which is only made accessible by operation 2, and this SO can be shown to have changed
according to operation 1, then an intrinsic factor could be assumed behind the order
operation 2 > operation 1: before the availability of an SO it cannot be manipu-
lated. This is independent of the exact nature of the rules. In the present system,
though, the SO to be relativized (φP) is already in place when the operations Agree
and Move become available on v/C.21 Both have access to the SO, so unless there
is an independently motivated reason to have Agree always apply before Move, we
cannot assume an intrinsic order. Thus, it is concluded that the order of operations
on phase heads is set extrinsically. In summary, two operations, trivially, result in
two possible different orders (note that an operation to the left of “>” applies before
the one to the right):

**Agree > Move:** The φ-Agree operation on v/C is triggered before the REL-Move
operation. Phase extension occurs. Subsequent Move is thus fed by Agree and can
subextract DP_{Rel}. The result is a resumptive pronoun in the extraction site.

**Move > Agree:** REL-Move applies before φ-Agree. φP is moved away from its po-
position in the configuration where phase extension could have any effect. Move thus
bleeds Agree and moves the entire φP due to pied-piping. Agree can still occur with
the specifier position, but it comes too late for phase extension. The result is a gap
in the extraction site.

These two orders can now be set for certain languages, meaning that phase heads
(v, C) which trigger operations have to trigger them in exactly that order, if at all.
Under the assumption that all phase heads obey the same sequence, we not
only get a derivation for one particular extraction position such as the direct object,
but for all (embedded) subject and object positions.22 An order of operations thus

---

21Note that the subject can be introduced and interfere after the φP to be relativized is already
present. For details of this particular interaction, see section 3.2.8 below.
22For implications of this approach for positions other than subjects and objects, see chapter 5.
3.2 The Structure and Creation of Gaps and RPs

establishes an entire resumptive/gap pattern for a given language.²³

This concludes the section about the interaction of operations as determined by their application hierarchy. It was suggested that only the Strict Ordering Hypothesis can derive the empirical findings, and that the decision between two orders is a property extrinsic to the system. With the means developed so far, two patterns (translating into gaps or RPs in all extraction positions) can be derived. In the following, we will see how the system can be refined to account for more patterns.

3.2.7 Optionality and Split Move

In the data section, five patterns were identified which account for the distribution and variation that occur in (embedded) subject and object resumption. Pattern 2 covers languages which can host resumptives in all of the four canonical extraction positions (matrix subject, embedded subject, matrix object, embedded object). Pattern 1 derives languages without any grammatical resumption, with only gaps in every extraction position. In the previous section, we have seen how these two patterns can be accounted for by the two basic orders of operations, summarized below:

**Pattern 1: Agree > Move:** RPs in all subject and object extraction positions.

**Pattern 2: Move > Agree:** gaps in all subject and object extraction positions.

A third type of language can be accounted for by assuming that some languages

²³It should be pointed out that this way of denoting the sequence of certain syntactic operations in a given context presents but one possibility. A sequence like Agree > Move, where Agree (triggered by a feature 1) is ordered to precede Move (triggered by a feature 2) if the context for both is given, can easily be notated in terms of e.g. a stack of features on a phase head (X):

```
XP
  X
 FEATURE 1
 FEATURE 2
```
can choose between different orders. Yiddish (chapter 2.2.18), for instance, allows for free alternation between resumptives and gaps in all positions, so it cannot logically be derived by a single sequence of operations. The most reasonable approach to this kind of optionality, as was discussed in chapter 2.3, is to identify the smallest number of patterns which cover the alternation and permit a choice between these patterns. For Yiddish, which displays optionality between patterns 1 and 2, the free alternation between gaps and RPs can thus be accounted for by letting its grammar choose between Agree \(\rightarrow\) Move and Move \(\rightarrow\) Agree.\(^{24}\) With these two patterns down, there are still three to account for. Two operations can only yield two patterns, because only two different orders of Move and Agree are logically possible. Accordingly, the only way to increase the number of patterns is to increase the number of operations which can be ordered with respect to each other. One important restriction on any additional operation should be heeded, though: it should be independently motivated, i.e. not be invented purely for reasons of resumption. This severely narrows down the options for triggering features on phase heads. Let us take a look at the available options. Agree and Move, as very basic operations, have their roles in resumption already assigned. Luckily, however, Move appears to have some potential for further refinement. As Georgi (2013, 2014a, b) shows in great detail, a single Move operation is not enough to account for certain phenomena traditionally ascribed to movement. For illustration, she identifies four different patterns of certain morphological reflexes of successive cyclic movement which are traditionally located on the C element of the clause to whose SpecCP position an item is moved. In other words, movement through the specifier of CP of a clause can cause C to take a certain morphological form.

Below, abstract patterns for movement reflexes (R) on every C in long extractions are illustrated (37), (39), (41), (43). The first one is exemplified by data from Irish,

\(^{24}\)This is not to be confused with the SAH or USOH, since the choice is extrinsic (and maybe based on factors yet to be discovered), not random.
where the complementizer is *go* in an environment where no movement takes place. If an item moves through the clause, however, its complementizer takes on a form which is glossed as *aL*. This, as in (38), is seen as a reflex of *the name* moving from its embedded position to its relative operator site:

(37) Pattern 1 \([CP_1 \, XP_{wh} \, [C \, C-R \, ... \, [CP_2 \, C-R \, ... \, [CP_3 \, C-R \, ... \, t_{XP} \,]]]])\]

(38) Irish

\begin{verbatim}
an tainm a hinmeetd dünna 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’
\end{verbatim}

(Georgi 2014b, 4, from McCloskey 2002, 3)

A different pattern arises where none of the Cs show any movement reflex (39):

(39) Pattern 4 \([CP_1 \, XP_{wh} \, [C \, C \, ... \, [CP_2 \, C \, ... \, [CP_3 \, C \, ... \, t_{XP} \,]]]])\]

In Wolof, a prefix on C can signal agreement with the class of an XP in SpecCP. It can, however, also show no sign of agreement along a movement chain (= default agreement), as in (40) below:

(40) Wolof

\begin{verbatim}
K-an l-a-ūn wax l-a jigéen j-i foog l-a ma
CL-Q EXPL-A-3.PL say EXPL-a woman CL-DEF.PROX think EXPL-a 1.SG
díór ___
hit
‘Who did they say that the woman thinks that I hit?’
\end{verbatim}

(Georgi 2014b, 5, from Torrence 2012, 1173f.)
Patterns 1 and 4 are thus at the extreme ends of a spectrum of movement reflexes. The remaining patterns 2 and 3 which Georgi (2014b) lists and illustrates, however, are much more interesting. Pattern 2, (41), shows a reflex *only* on the matrix C, while embedded complementizers remain unaffected by long movement, as in Chamorro (42):

(41) Pattern 2 \([CP_1 \, XP_{wh} \, [C\, C-R \ldots [CP_2 \, C\ldots [CP_3 \, C\ldots t_{XP}] ]]]\]

(42) Chamorro

\begin{verbatim}
manu na lepblur o malagu'niha na u-taitai
which R book C WH.OBL.want.AGR C WH.OBJ.AGR-read
\end{verbatim}

‘Which book do they want to read?’

(Georgi 2014b, 5, from Chung 1998, 230)

To complete the picture, pattern 3 (43) exhibits reflexes only on the embedded Cs which are crossed by a moving item, not the matrix C. The following example (44), again from Wolof, illustrates this. Only the highest C element is realized by the default form I, the other C elements signal word class membership of the moved XP (k):

(43) Pattern 3 \([CP_1 \, XP_{wh} \, [C\, C \ldots [CP_2 \, C-R \ldots [CP_3 \, C-R \ldots t_{XP}] ]]]\]

(44) Wolof

\begin{verbatim}
\end{verbatim}

‘Who did they say that the woman thinks that I hit?’

(Georgi 2014b, 5, from Torrence 2012, 1173f.)
3.2 The Structure and Creation of Gaps and RPs

The interesting property of these last two patterns (2 and 3) is that they appear to single out the highest C element in a long movement chain. Georgi (2014b) argues that there must be something special about the final movement step in comparison to intermediate ones. In essence, she proposes that Move should be viewed as twofold, depending on the stage of the derivation. Intermediate movement steps which ensure successive cyclicity are triggered by one type of feature (edge features), while final movement steps are triggered by a criterial feature on a phase head which is satisfied by the moved item’s landing in its specifier. A given language may or may not morphologically reflect the occurrence of final / intermediate movement features on the respective Cs.

This independently motivated refinement of Move into two similar, yet mutually exclusive operations can be used to enrich the mechanism developed here in the following way. All movement steps which do not take a φP from a SpecvP position (subject or moved object) to the specifier of the highest (matrix) C due to a (criterial) final movement feature on C are, by that definition, non-final. Thus, they are of the intermediate variety, triggered by intermediate movement features on all v heads and non-matrix C heads. If we now split the operation Move, accordingly, into these two varieties (intermediate movement, IM, and final movement, FM), we have one more operation which can be ordered in relation to Agree. Crucially, this only affects the orders of operations if both movement types are not adjacent in the trigger hierarchy. If FM and IM are not separated by Agree, there is no effect on the derivation in comparison to a unified Move operation (i.e. FM, IM > AGR / AGR > FM, IM). They cannot occur on the same phase head and thus cannot interact directly.\(^{25}\)

On the other hand, if Agree is ordered between both movement types, there is a

\(^{25}\)Note that, for present purposes, movement inducing features on the phase head whose specifier is the final landing site of an element are considered criterial/final, even though they do not receive a special label.
direct influence on the possible patterns. As we have seen, Move can be fed by Agree to derive resumption, or Agree can be bled by Move, thereby deriving a gap. With two types of movement, Agree can now be bled by one but not the other, yielding different effects for the distribution of gaps and resumptives. Below, the preliminary list of orders has been enriched by the additional operation:

**Pattern 1**: Final Movement, Intermediate Movement $\rightarrow$ Agree: Gaps in every position; all movement bleeds Agree.

**Pattern 2**: Agree $\rightarrow$ Final Movement, Intermediate Movement: RPs in every position; Agree feeds all movement.

**Pattern 3**: Final Movement $\rightarrow$ Agree $\rightarrow$ Intermediate Movement: RPs everywhere but in highest subject position; Agree feeds intermediate movement steps, the final movement step bleeds Agree.

**Pattern 6**: Intermediate Movement $\rightarrow$ Agree $\rightarrow$ Final Movement: Gaps everywhere but in the highest subject position; Agree feeds the final movement steps, intermediate movement steps bleed Agree.

We have seen the first two orders above already, but orders 3 and 4 arise due to the split of Move. Order 3 readily derives pattern 3 (GRRR, Highest Subject Restriction, see also chapter 5.1). Order 4 derives a pattern which is not attested as of now, but which the current approach predicts (RGGG). To take stock: we now have three syntactic operations, which, depending on their relative order, derive 4 patterns of RP / gap distribution. 3 of these are attested. However, we need to account for 5 attested patterns in total, so we still need at least one additional operation to allow for more orders. This operation is the external merger of the subject, as will be proposed in the next section.

---

26This is a notational variant for Gap/RP/RP/RP.
3.2.8 External Merger of the Subject

Recall that, in the present system, a spec-head bias is in effect. This means that a suitable goal in specifier position of a probing head H will be preferred by a probing phase head to an equally suitable goal in complement position of H. Up to now, the basic derivational examples have involved a phase head v and an object φP, but no subject yet. Since, however, the subject is a φP, too, it is as suitable a goal for v’s φ probing as the object φP is. Thus, if no subject is present, Agree occurs with the object (45). In case both the object and the subject are present at the point in the derivation when Agree applies, the subject can interfere with object agreement (46):

(45) \[ \begin{array}{c}
  \text{vP} \\
  \text{v} \\
  \text{VP} \\
  \text{V} \\
  \phi \text{P} \\
  \phi \text{DP}_{\text{Rel}} \\
  \text{AGR} 
\end{array} \]

(46) \[ \begin{array}{c}
  \text{vP} \\
  \phi \text{P}_{\text{Subject}} \\
  \text{v'} \\
  \text{VP} \\
  \text{V} \\
  \phi \text{P} \\
  \phi \text{DP}_{\text{Rel}} \\
  \text{AGR} 
\end{array} \]

It needs to be determined when the subject is merged before Agree takes place. As with the other basic syntactic operations, this is by no means a matter of randomness. The stage in the derivation when the subject is merged, let us call it External Merger of the subject, is an operation like the others, and as such has to be ordered like the others. With regard to an order such as AGR > FM > IM, which has been shown to result in RPs in every position, an interfering subject means that no phase extension takes place with the object to be relativized. Agree is “spent” on the subject, and DP_{Rel} has to pied-pipe φP when IM becomes available.\footnote{This entails that languages with obligatory object agreement in certain circumstances would have...}
Move is ordered before Agree, the timing of External Merger is not crucial, because phase extension for the object is already bled by Move and cannot be bled twice. If External Merger can cause gaps in object position under these restricted order conditions, two more patterns can be accounted for:

**Pattern 1: Final Movement, Intermediate Movement > Agree**: Gaps in every position; all movement bleeds Agree.

**Pattern 2: Agree > Final Movement, Intermediate movement**: RPs in every position; Agree feeds all movement.

**Pattern 3: Final Movement > Agree > Intermediate Movement**: RPs everywhere but in highest subject position; Agree feeds intermediate movement steps, the final movement step bleeds Agree.

**Pattern 4: Final Movement > External Merger > Agree > Intermediate Movement**: RPs in matrix subject position are bled by Final Move. RPs in object positions are bled by External Merger. The result is a resumptive only in the embedded subject position, and gaps in the other extraction positions.

**Pattern 5: External Merger > Agree > Final Movement > Intermediate Movement**: RPs in object positions are bled by External Merger. RP formation is fed in subject positions. The result is a resumptive only in matrix and embedded subject positions, and gaps in object positions.

**Pattern 6: Intermediate Movement > Agree > Final Movement**: Gaps everywhere but in the highest subject position; Agree feeds the final movement steps, intermediate movement steps bleed Agree.

---

To be derived in a different fashion whenever the subject intervenes as shown here. However, this bleeding of object agreement only plays a role in patterns 4, 5, and 6, and the respective languages do not exhibit obligatory object agreement (Welsh, Hausa, Tuki, Yata, Yoruba). It remains to be seen if this picture reflects a coincidence or a generalization, namely that grammatically resumptive languages cannot have obligatory object agreement. Languages with obligatory object agreement only are assumed not to exist (Gilligan, 1987; Bobaljik, 2015).
3.2.9 The Operations and their Interactions

As can be seen, six patterns arise when four operations are involved. Theoretically, one could expect 16 possible patterns, because each of the four extraction positions can assume either the value “gap” or “RP”. The number of possible orders is even higher: there are four different positions in the hierarchy of operations. Each operation can take one of the four positions, which leads to 24 different orders. In practice, however, these four operations do not interact on every phase head. Below, in (47), it will be illustrated which individual interactions are possible on the four phase heads relevant to this proposal (matrix and embedded C,v). One important assumption needs to be mentioned with regard to these orders: they are set at the same time for all phase heads of a given language. This ensures the predictive power of this approach; it would be undesirable to allow for free local re-ranking of these operations, because then all possible patterns would be expected, contrary to fact:

(47) Possible operation interactions on phase heads

**Embedded v and matrix v**: Both kinds of v head can trigger Agree, Intermediate Move, and External Merger

- Orders which make Intermediate Move available first lead to gaps in object positions (IM > . . . > . . .)

- Orders which make Agree available first lead to RPs in object positions (AGR > . . . > . . .)

- Orders which make External Merger available first lead to gaps in object positions (EM > . . . > . . .)
Embedded C: The embedded C head can trigger Agree and Intermediate Move\textsuperscript{28}

- If Agree is made available first, the result is an RP in embedded subject position (AGR > IM)
- If Intermediate Move is made available first, the result is a gap in embedded subject position (IM > AGR)

Matrix C: The matrix C head can trigger Agree and Final Move

- If Agree is made available first, the result is an RP in matrix subject position (AGR > FM)
- If Final Move is made available first, the result is a gap in matrix subject position (FM > AGR)

The four operations only interact in very limited ways on a subset of the four relevant phase heads. In combination with the fact that the relative order of both Move operations, if adjacent, is irrelevant, this leads to the emergence of only six different gap / RP distribution patterns. 24 orders of operation do not produce all 16 possible patterns, but only six. We will take a more detailed look at all possible orders in section 3.4.

This discussion of ordering syntactic operations was the final building block of the analysis proposed here. The introduction of the concepts of $\phi$P, antilocality, phase extension and head movement as Agree ties in with the non-simultaneous triggering of the relevant operations on phase heads during a derivation. Depending on the order, gaps or RPs are derived in a given position. Now that all the necessary mechanics are in place, they will be applied to derive actual language patterns in the following section.

\textsuperscript{28}Technically, embedded C can of course also trigger Final Move, if a phrase has its final landing site in SpecCP of the embedded clause. This is not the case in the core examples here, but see chapter 4 on islands for other examples.
3.3 Sample Derivations: Vata

With all assumptions and the background of interactions in place, it is time to turn to the derivations themselves. In the following, one sample derivation for each extraction position (embedded object, embedded subject, matrix object, matrix subject) will be illustrated in detail. In order to show both the derivation of gaps and resumptives, an order which produces both will be chosen: \( EM > AGR > FM > IM \) (Pattern 5). This pattern derives the resumption facts of Vata (cf. chapter 2.2.16). Thus, this example also shows how one consistent order on every phase head manages to derive the distribution of gaps and RPs for an entire language. As the mechanism of phase extension has been discussed in detail in section 3.2.3, the notation will be reduced for the sake of visual clarity. Agree will still be indicated with a dotted line, Move operations with a solid one.

3.3.1 Extraction from embedded Object Position: Gap

Below, the entire spine of a matrix plus embedded clause is depicted (48). Since the embedded object is the one targeted by relativization, it carries the REL operator feature which is supposed to reach its matrix SpecCP scope position. Note that the order \( EM > AGR > FM > IM \) is valid for every single phase head along the way. The REL features on intermediate phase heads are to be regarded as facilitating the intermediate movement steps, while the REL feature on matrix C facilitates the final movement step for the operator. Both V and T projections are inert for our purposes but included for completeness. Note that the structure is built up incrementally, and that the illustration shows the derivation after the final step has taken place. Step-by-step explanations follow below the example:
An embedded object is to be extracted, leaving behind a gap. In the following derivation, embedded v has already been merged, EM has applied first, thus both subject and object are present:
3.3 Sample Derivations: Vata

➀: AGR is up next. The subject interferes (due to spec-head bias) and is agreed with, and phase extension with the object does not happen.

➁: IM causes DP_{Rel} to pied-pipe φP along to SpecvP. A gap is left behind.

➂: With C, the next operational cycle starts. EM is not triggered by Cs, so AGR applies with the closest goal (the moved φP).

➃: FM is not triggered by embedded C. Phase extension does not happen with moved elements, so IM moves the entire φP to C’s specifier.

➄: Next v cycle: EM applies first again, and AGR happens with the subject.

➅: IM moves φP from the edge of the embedded clause to SpecvP of the matrix clause.

➆: Final C cycle: AGR occurs with the moved φP.

In sum, this derivation proceeds straightforwardly after the decision between a gap and an RP has been made. In this case, the entire φP is moved from its base position, leaving behind a gap. It is then, successive-cyclically, moved to its final operator site, as facilitated by operations on the phase heads in an ordered fashion.

3.3.2 Extraction from embedded Subject Position: RP

In this example, the embedded subject is marked to be relativized. The order and the language are still the same: EM > AGR > FM > IM, Vata. We start out with the merger of embedded C. The subject to be relativized has already been merged into SpecvP of the embedded clause during the previous cycle.29 The derivation looks as follows (49):

29The order of operations triggered by embedded v does not matter for the extraction of the subject. Recall that agreement with a specifier does not trigger phase extension (cf. sections 3.2.5, 3.2.8). Thus, only C can decide the subject’s fate.
(49) Embedded subject extraction; RP strategy; order: EM > AGR > FM > IM

The embedded subject DP is to be subextracted, leaving behind a φ shell / RP. Embedded C has already been merged, and the subject is present in SpecvP:

①: AGR is the first operation on C. The goal is the subject φP, and phase extension takes place. DP₆, contained in φP, is now accessible to operations on C.

②: IM causes DP₆’s extraction from φP. DP is then placed in SpecCP of the embedded clause. The φP shell is left behind and can be realized by an RP at PF.³⁰

³⁰This step constitutes the extraction from a subject, which constitutes a syntactic island according to e.g. Ross (1967). However, this is not a very robust observation crosslinguistically (cf.
3.3 Sample Derivations: Vata

③: Matrix v cycle: EM takes place first. AGR targets the newly merged subject.

④: IM targets DP_{Rel} at the edge of the embedded clause and moves it to SpecvP of the matrix clause.

⑤: Final C cycle: AGR does not find suitable $\phi$ features on the moved subject and thus targets the matrix subject further below in its complement.

⑥: FM places DP_{Rel} in its final landing site, matrix SpecCP.

As before, this derivation proceeds straightforwardly after the order has facilitated phase extension. DP_{Rel} is able to move on its own. Again, successive-cyclic movement takes it to its final operator site.

3.3.3 Extraction from matrix Object Position: Gap

The extraction of a matrix object proceeds identically to that of the embedded object, except for a fewer number of movement steps until the operator reaches its final landing site. The same order applies (EM > AGR > FM > IM), and the result is a gap in the extraction site, just as in the embedded object case (50):

---

Stepanov 2007). Should a language investigated here exhibit subject island effects outside resumption, it could be argued that the RP which is stranded remedies these violations (see also chapter 5.6 on coordinated subjects).
Object extraction; gap strategy; order: EM > AGR > FM > IM

The matrix object is to be relativized and leaves behind a gap. Matrix v has already been merged, and EM causes the subject to be merged as well:

1: AGR is the second operation on v. The subject interferes, and phase extension with the object does not happen.

2: IM causes DP_{Rel} to pied-pipe φP along to SpecvP.

3: Matrix C cycle: AGR targets the moved object in the outer SpecvP.

4: FM moves the object φP to its final operator position in SpecCP.

3.3.4 Extraction from matrix Subject Position: RP

The outcome of matrix subject extraction is identical to that of embedded subject extraction. The only difference, along with fewer operational cycles, is the fact that
no intermediate movement steps are necessary. The same order applies \((\mathrm{EM} > \mathrm{AGR} > \mathrm{FM} > \mathrm{IM})\), and the result is an RP in the subject extraction position (51):

\[
(51) \quad \text{Subject extraction; RP strategy; order: EM > AGR > FM > IM}
\]

When the matrix subject is to be relativized, the only relevant phase head is matrix C. Matrix C has already been merged, and the subject is present in Spec\(vP\):

1: Final C cycle: AGR is the first operation. \(\phi P_{\text{Rel}}\) is targeted, and phase extension occurs.

2: FM now has access to the minimal carrier of \(\text{REL}, \text{DP}\), subextracts it, and places it in its final operator site, Spec\(\text{CP}\).

This concludes the illustration of the present analysis for Vata, a language that, under relative extraction, hosts resumptives in subject positions, but gaps in object positions. The crucial interactions between the syntactic operations on the phase heads \(v\) and C revolve around Move in relation to Agree, with External Merger sometimes interfering where otherwise phase extension would be expected. In the next and final section of this chapter, all possible orders of operations will be pre-
sented and grouped according to their effects on the distribution patterns of gaps and resumptives. Also, we will return to the generalizations which were identified in chapter 2.

3.4 Analysis Summary: All Orders and Patterns

With all four syntactic operations which are relevant to this approach in place, we can now complete the set of patterns that are derivable. For the sake of visual clarity, the operations will be indicated with their respective shorthands: FM (Final Move), IM (Intermediate Move), AGR (Agree), and EM (External Merger). Four different operations logically yield 24 different orders which are listed below:

1. FM > IM > AGR > EM
2. FM > IM > EM > AGR
3. FM > AGR > IM > EM
4. FM > AGR > EM > IM
5. FM > EM > IM > AGR
6. FM > EM > AGR > IM
7. IM > FM > AGR > EM
8. IM > FM > EM > AGR
9. IM > AGR > FM > EM
10. IM > AGR > EM > FM
11. IM > EM > AGR > FM
12. IM > EM > FM > AGR
13. AGR > FM > IM > EM
14. AGR > FM > EM > IM
15. AGR > IM > FM > EM
16. AGR > IM > EM > FM
17. AGR > EM > IM > FM
18. AGR > EM > FM > IM
19. EM > FM > IM > AGR
20. EM > FM > AGR > IM
21. EM > IM > AGR > FM
22. EM > IM > FM > AGR
23. EM > AGR > FM > IM
24. EM > AGR > IM > FM

Each of these 24 different orders of operations can be applied to the phase heads involved in subject and object relative extractions (v and C), both embedded and matrix. While one might expect 24 different resumptive / gap patterns to obtain from these orders, three facts readily counter this intuition. First, the patterns
themselves cannot differ in such a way as to yield 24 different configurations, because there logically can only be 16 different ones (four positions – embedded and matrix subjects and objects – and a binary choice of RP / gap for all of them). Second, as we have already seen, some orders turn out to be redundant, such as permutations of FM/IM if they remain adjacent to each other: FM does not play a role on all phase heads (only on matrix Cs), IM does not, either (only on heads other than matrix C). Third, the insertion of the subject (EM) also cannot have an influence on every phase head; there is no subject merger into SpecCP. Thus, only the v domains can be influenced by EM.

In the listing below, all orders are grouped with respect to the gap / RP pattern they invoke in a particular language. For each of the four relevant phase heads, it will be identified which operation / interaction leads to the decision between gap and RP in the respective position. Note again that “X > Y” prescribes a certain order, while “X, Y” signals that the operations can be in any order without interacting in different ways:

**Order 1-8**: FM, IM > AGR > EM / FM, IM, EM > AGR → Pattern 1: GGGG

C, Subject: Final Move bleeds Agree / phase extension
C, emb. Subject: Intermediate Move bleeds Agree / phase extension
v, Object: Intermediate Move bleeds Agree / phase extension
v, emb. Object: Intermediate Move bleeds Agree / phase extension

**Order 9-14**: AGR > FM, IM, EM → Pattern 2: RRRR

C, Subject: Agree feeds phase extension / Final Move of DP
C, emb. Subject: Agree feeds phase extension / Intermediate Move
v, Object: Agree feeds phase extension / Intermediate Move
v, emb. Object: Agree feeds phase extension / Intermediate Move
Order 15-16: FM > AGR > IM, EM → Pattern 3: GRRR

C, Subject: Final Move bleeds Agree / phase extension
C, emb. Subject: Agree feeds phase extension / Intermediate Move
v, Object: Agree feeds phase extension / Intermediate Move
v, emb. Object: Agree feeds phase extension / Intermediate Move

Order 17-18: FM, EM > AGR > IM → Pattern 4: GRGG

C, Subject: Final Move bleeds Agree / phase extension
C, emb. Subject: Agree feeds phase extension / Intermediate Move
v, Object: External Merger interferes with Agree / phase extension
v, emb. Object: External Merger interferes with Agree / phase extension

Order 19-20: EM > AGR > FM, IM → Pattern 5: RRGG

C, Subject: Agree feeds phase extension / Final Move
C, emb. Subject: Agree feeds phase extension / Intermediate Move
v, Object: External Merger interferes with Agree / phase extension
v, emb. Object: External Merger interferes with Agree / phase extension

Order 21-24: IM, EM > AGR > FM / IM > AGR > EM, FM → Pattern 6: RGGG

C, Subject: Agree feeds phase extension / Final Move
C, emb. Subject: Intermediate Move bleeds Agree / phase extension
v, Object: Intermediate Move bleeds Agree / phase extension
v, emb. Object: Intermediate Move bleeds Agree / phase extension

For an alternative overview which spells out every order and maps it onto a pattern, see the table below.
### 3.4 Analysis Summary: All Orders and Patterns

(52) All possible orders and their patterns

<table>
<thead>
<tr>
<th>Order</th>
<th>Subject emb. Subject</th>
<th>Object emb. Object</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FM &gt; IM &gt; AGR &gt; EM</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>2</td>
<td>FM &gt; IM &gt; EM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>3</td>
<td>FM &gt; EM &gt; IM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>4</td>
<td>IM &gt; FM &gt; AGR &gt; EM</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>5</td>
<td>IM &gt; FM &gt; EM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>6</td>
<td>IM &gt; EM &gt; FM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>7</td>
<td>EM &gt; FM &gt; IM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>8</td>
<td>EM &gt; IM &gt; FM &gt; AGR</td>
<td>G</td>
<td>G G G G</td>
</tr>
<tr>
<td>9</td>
<td>AGR &gt; FM &gt; IM &gt; EM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>10</td>
<td>AGR &gt; FM &gt; EM &gt; IM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>11</td>
<td>AGR &gt; EM &gt; FM &gt; IM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>12</td>
<td>AGR &gt; EM &gt; IM &gt; FM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>13</td>
<td>AGR &gt; IM &gt; FM &gt; EM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>14</td>
<td>AGR &gt; IM &gt; EM &gt; FM</td>
<td>R</td>
<td>R R R R</td>
</tr>
<tr>
<td>15</td>
<td>FM &gt; AGR &gt; EM &gt; IM</td>
<td>G</td>
<td>R R R R</td>
</tr>
<tr>
<td>16</td>
<td>FM &gt; AGR &gt; IM &gt; EM</td>
<td>G</td>
<td>R R R R</td>
</tr>
<tr>
<td>17</td>
<td>EM &gt; FM &gt; AGR &gt; IM</td>
<td>G</td>
<td>R G G G</td>
</tr>
<tr>
<td>18</td>
<td>FM &gt; EM &gt; AGR &gt; IM</td>
<td>G</td>
<td>R G G G</td>
</tr>
<tr>
<td>19</td>
<td>EM &gt; AGR &gt; FM &gt; IM</td>
<td>R</td>
<td>R G G G</td>
</tr>
<tr>
<td>20</td>
<td>EM &gt; AGR &gt; IM &gt; FM</td>
<td>R</td>
<td>R G G G</td>
</tr>
<tr>
<td>21</td>
<td>IM &gt; EM &gt; AGR &gt; FM</td>
<td>R</td>
<td>G G G G</td>
</tr>
<tr>
<td>22</td>
<td>IM &gt; AGR &gt; EM &gt; FM</td>
<td>R</td>
<td>G G G G</td>
</tr>
<tr>
<td>23</td>
<td>IM &gt; AGR &gt; FM &gt; EM</td>
<td>R</td>
<td>G G G G</td>
</tr>
<tr>
<td>24</td>
<td>EM &gt; IM &gt; AGR &gt; FM</td>
<td>R</td>
<td>G G G G</td>
</tr>
</tbody>
</table>
3 A Derivational Analysis of Resumptive Pronouns in Relativization

The proposed analysis thus predicts six distinct distribution patterns for gaps and resumptives in relativization contexts. Five of these are readily attested by the languages investigated so far, so the approach does not undergenerate but covers the necessary data.\footnote{Müller (2014b) argues independently that instances of Intermediate Move should never be ordered before instances of Final Move (pace the ISC / ISA in chapter (7)). If this is true, the following orders could be eliminated on independent grounds: 3, 4, 5, 6, 8, 12, 13, 14, 20, 21, 22, 23, 24. The interesting result would be that the attested patterns 1 to 5 would still be covered by the remaining orders of operation, while the unattested pattern 6 would disappear completely. If no example of a resumptive language that follows pattern 6 can be found, this might be an explanation in terms of an external restriction on the orders.} In addition, these patterns turn out to be sufficient to model the RP / gap optionality cases: as was shown in table (1) in chapter 2, one language is listed for two patterns at most. As was laid out above, each relevant pattern is independently made available by the orders of operations, and cases of optionality boil down to a choice between those orders which derive the two necessary patterns. Below, all patterns which the present system generates will be listed in (53), in addition to the remaining $16 - 6 = 10$ possible patterns which are ruled out under the assumptions made here. For the sake of completeness, these unexpected patterns will be listed, too. This represents one core result of this analysis; it can derive (and thus rules in) patterns 1–6, while it cannot derive (and thus rules out) patterns 7–16:

(53) All Patterns, distributions and languages

<table>
<thead>
<tr>
<th>P</th>
<th>Subject emb. Subject</th>
<th>Object emb. Object</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gap</td>
<td>Gap</td>
<td>Czech, Hebrew, Irish, Mandarin (Chinese, Serbo-Croatian, Spanish, Ukrainian, Yiddish)</td>
</tr>
<tr>
<td>2</td>
<td>RP</td>
<td>RP</td>
<td>Asante Twi, Hausa, Lebanese (Arabic, Mandarin Chinese, Serbo-Croatian, Spanish, Tuki, Ukrainian, Yiddish)</td>
</tr>
</tbody>
</table>
3.4 Analysis Summary: All Orders and Patterns

<table>
<thead>
<tr>
<th>P</th>
<th>Subject</th>
<th>emb. Subject</th>
<th>Object</th>
<th>emb. Object</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Brazilian Portuguese</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Czech, Ga, Hebrew</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Irish, Palestinian</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arabic, Polish</td>
</tr>
<tr>
<td>4</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Welsh</td>
</tr>
<tr>
<td>5</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Hausa, Tuki, Vata</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yoruba</td>
</tr>
<tr>
<td>6</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>not attested yet</td>
</tr>
<tr>
<td>7</td>
<td>Gap</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>8</td>
<td>RP</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>9</td>
<td>RP</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>10</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>11</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>12</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>13</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>14</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>15</td>
<td>Gap</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>not predicted or attested</td>
</tr>
<tr>
<td>16</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>RP</td>
<td>not predicted or attested</td>
</tr>
</tbody>
</table>

Now is the perfect time to return to the generalizations drawn in section 2.4.1. The explanatory power that is needed to address them lies in the analysis, and we will look at each point again in turn:

**Number of gap / RP patterns:** The systematic and transparent interactions of the four relevant syntactic operations rule out most of the possible 16 patterns. In grammatically resumptive languages, it appears that RPs are not inserted based on the level of embedding (a processing factor), but on the basis of grammatical
Few matrix subject RPs: Languages which only allow for a gap in the highest subject position after extraction form roughly one half of the investigated sample. The other half does allow for (null) resumptives in that position. Both kinds of pattern follow from the same operations which interact in different ways, turning the decision into one of operational orders. If the Highest Subject Restriction reflects a principled ban on RPs in a certain position, it needs to provide a mechanism to circumvent this ban. For more details, see chapter 5.1.

Objects: As it turns out, both matrix and embedded direct object positions behave identically when it comes to the choice between gaps and RPs. The explanation for this behavior lies in the nature of the syntactic operations which bring about gaps and RPs. The relevant operations for the stranding of an RP or leaving behind a gap in object positions are Agree and Intermediate Move, both of which have no means of discerning matrix objects from embedded objects. Thus, none of them can be singled out and syntactically treated differently from the other. As a result, all possible patterns which show different behavior for both object contexts are ruled out (marked in boldface in patterns 9–16 in (53)).

Subjects: Subjects, unlike objects, can show different behavior when it comes to the gap vs. RP strategy. This is because there is only one movement step for a matrix subject under relativization. Since there is a syntactic operation which specifically triggers movement into final positions (Final Move), it can be used to single out the highest subject position, while Intermediate Move is responsible for all other extraction positions.

Object RPs \(\rightarrow\) embedded subject RPs: Whenever direct objects obligatorily host a stranded RP, the embedded subject position follows suit and also hosts an RP. The explanation is similar to the one for the identical behavior of objects above.
3.4 Analysis Summary: All Orders and Patterns

For the embedded subject, just as for both direct object contexts, the relevant interaction happens between Agree and Intermediate Move. Just as both operations cannot distinguish between matrix and embedded objects, they cannot single out the embedded subject position. This is why patterns 7 and 8 are ruled out – the offending embedded subject gap is marked in boldface.

**Embedded subject RPs → object RPs:** The reverse is not necessarily true: an RP in embedded subject position does not automatically entail RPs in any direct object position. This is because External Merger, which can bleed the stranding of RPs in object positions, only applies on v heads, not C heads. No subject is externally merged in SpecCP and could bleed the stranding of a subject RP below in SpecvP. Thus, when the order is such that RPs occur in object and embedded positions, External Merger can still intervene and bring about languages which only have an RP in the embedded subject, but no object position (e.g. Welsh). This explains why all resumptive languages investigated here at least have an RP in that position, Welsh being a case in point.

This concludes the proposal of a derivational analysis for the distribution of gaps and RPs across languages. The starting point was the identification of the relevant moving parts of a syntactic machine for resumption. The main ingredients were a φP with an internal structure that is capable of stranding, four independently necessary syntactic operations (Agree, Final Move, Intermediate Move, External Merger), and a theory of ordering and interaction. Each of these assumptions were motivated and discussed in turn, and then applied to the empirical facts about resumptive patterns which were summarized in chapter 2. As it turned out, the transparent interplay of these ingredients readily account for most of the distribution of RPs in the investigated languages. Except for one pattern (RGGG), all logically possible but non-attested patterns were ruled out on systematic grounds.
3 A Derivational Analysis of Resumptive Pronouns in Relativization

The following chapters will be dedicated to further phenomena of resumption in the investigated languages, and to certain predictions which spring from the design of the present analysis. As we will see, most of these predictions are borne out and readily account for these further RP properties.
4 Resumptive Pronouns in Islands

This chapter will take a closer look at one of the additional observations mentioned in chapter 2.4.2: resumption and its interaction with islands. One of the most notorious properties of resumptive pronouns in most grammatically (and also intrusively) resumptive languages is their ability to void expected island effects. In the case at hand, the relativization of, say, a direct object should not lead to a grammatical result if movement of an object crosses an island boundary. However, in the overwhelming majority of resumptive languages, such constructions are fully grammatical. This section will provide an analysis of resumption in islands based on the assumptions made so far. First, a representative set of data will be given (see the appendix in chapter 7 for the full data). Then, three types of islands will be discussed within the present framework in turn: wh-islands, adjunct islands, and complex NP-islands.

4.1 Island Data

The examples below show how extraction from syntactic islands are acceptable under the RP strategy:

(1) Czech, wh-island

To je ten clap co ted nevim jesli sme mu nedali dva this is the guy C now I.not.know whether AUX him we.not.gave two lístky tickets
‘This is the guy that I now don’t know whether we didn’t give him two
tickets.’

(Toman 1998, 306f.)

(2) Tuki, adjunct island

i mu manya ama ama\{i\} avan dze o timbita pro\{i\} o yanam o suwa
it is food this before that you touch it you must INF wash
amboo roo
hands your

‘It is this food that before you touch, you must wash your hands.’

(Biloa 1990, 220)

(3) Hebrew, complex NP island

ra\{i\}iti 3et ha-yeled \(\#\) dalya makira 3et ha-\(\#\)isha \(\#\) ohevet \(\#\) oto
saw-I ACC the-boy that Dalya knows ACC the-woman that- loves him

‘I saw the boy that Dalya knows the woman who loves him.’

(Borer 1984, 221)

(4) Welsh, complex NP island

y dyn yr credodd Dafydd y si yr gwelodd Mair o
the man C believed.3.SG David the rumor C saw.3.SG Mary him

‘the man that David believed the rumor that Mary saw him’

(Suñer 1998, 361, from de Freitas and Noonan 1991)

Below, in (5), the available empirical evidence for relativization from different is-
lands is summarized. An empty cell indicates that no island data could be obtained,
while an “X” indicates that neither the gap nor the RP strategy leads to an accept-
able result:
(5) Relativization from island contexts

<table>
<thead>
<tr>
<th>Language</th>
<th>Wh-Island</th>
<th>Adjunct Island</th>
<th>CNP-Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asante Twi</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Brazilian Portuguese</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Czech</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Ga</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Hausa</td>
<td>RP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hebrew</td>
<td>Gap / RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Irish</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Lebanese Arabic</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Mandarin Chinese</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Palestinian Arabic</td>
<td>Gap / RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Polish</td>
<td>Gap / RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Serbo-Croatian</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Spanish</td>
<td>RP</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tuki</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
<tr>
<td>Vata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welsh</td>
<td>RP</td>
<td>X</td>
<td>RP</td>
</tr>
<tr>
<td>Yiddish</td>
<td>RP</td>
<td>RP</td>
<td>X</td>
</tr>
<tr>
<td>Yoruba</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
</tr>
</tbody>
</table>

As can be seen, the resumptive strategy is by far the most prominent one across the island scenarios. In rare cases, wh-islands optionally feature a gap (Hebrew, Polish), or obligatorily so (Ga). These will be treated as rare exceptions here, from which neither a pattern, nor a generalization can be drawn. The goal of this chapter is to devise a mechanism that causes relativizations from islands to strand a resumptive.
In order to do so, an approach to islands based on *maraudage* will be presented in the next section, followed by its application to the different kinds of islands.

### 4.2 Feature Maraudage and the Intermediate Step Axiom

The island theory which will be adopted here for the derivation of island constraints is one of feature *maraudage* (Georgi et al. 2009). Müller (2010b), based on Müller (2010a), develops a framework which reverses more traditional assumptions about the way in which operator islands prohibit extractions. According to Relativized Minimality (Rizzi, 1990), an element in SpecCP of an embedded clause can act as an intervener for another element of a similar kind which wants to leave the embedded clause via SpecCP:

\[
(6) \quad ?^{*}[DP_1 \text{Which book}] \text{ do you wonder } [CP [PP_2 \text{to whom}] \text{John gave } t_1 \ t_2 ] ?
\]

(Müller 2010b, 1)

In this highly deviant example, one wh-marked phrase (*which book*) has crossed another wh-marked phrase (*to whom*) in order to leave the embedded CP with no intermediate stop. However, in the Minimalist Program, a phase-based framework with local operations, long-distance movement proceeds via intermediate positions. In addition, the possibility of multiple specifier positions exists, such that there is a second landing position for the element which wants to leave the embedded CP. This way, embedded C can attract both elements to its specifiers first. Matrix C can then later attract the *intermediately* moved element to its own specifier without offensive crossing. Relativized Minimality is obeyed, and island effects need a different explanation.

Müller (2010b) makes use of two notions towards such a new account: feature maraudage (see also Georgi et al. 2009) and the *Intermediate Step Corollary (ISC)*. According to maraudage, elements which move into the checking domain of a certain
head can “unintentionally” check features of this head, even though they were not meant for them:

\[(7) \text{ Maraudage}\]

Certain goal features of Agree or Merge operations (among them PERSON and ANIMATE) are checked if the structural conditions for checking are met.

\[\text{(Müller 2010b, 6)}\]

Müller wants to account for the fact that, in German, topic extraction from a wh-island is significantly more acceptable than vice versa.\(^1\) The basic assumption now is that certain operators carry more featural weight than others. If these operators move to the embedded SpecCP position in order to leave the CP, they can check more features on C than would be necessary for a convergent derivation, due to \((7)\). Thus, features originally intended for the phrase which, in traditional terms, erects the island in the first place are checked before they can attract this island erecting operator. This probably leads to problems (e.g. with unchecked features of the operators, or the interpretation of the island clause) and, ultimately, ungrammaticality. Island effects are thus, in a way, effects of islands not being established. An abstract illustration is given below (simplified for ease of exposition):

---

\(^1\)Extractions of a wh-operator from a wh-island is illicit in German; the same is true for topics.
Let us assume that operator 1 is the one which needs to reach matrix SpecCP, reflected by the fact that it bears the feature $x$ which needs to be checked by the matrix C head. It has to proceed via the embedded SpecCP and carries $y$ along with $x$. Operator 2 needs to end up in embedded SpecCP where it will be responsible for the establishment of an operator island; it only carries a $y$ feature. If operator 1 were to move first, it would end up in the specifier of the embedded CP and be able to check both $x$ and $y$ on C, thereby rendering it inert. It could keep moving to its intended matrix position, but operator 2 would not reach its embedded SpecCP position, and the resulting derivation would be ungrammatical (for the reasons mentioned above):
4.2 Feature Maraudage and the Intermediate Step Axiom

(1): Operator 1 moves to SpecCP of the embedded clause.

(2): Operator 1 is now in a position to check both X and Y features on C (maraudage).

(3): C can thus not attract Operator 2.

(4): Even if Operator 1 kept moving to matrix SpecCP, the “wrong” / uninterpretable in-situ position of Operator 2 would crash the derivation.

As has been laid out in the course of this work so far, the order of operations plays a crucial role in derivational and local approaches. Since both operators’ movements are triggered by the embedded C, their order can, in principle, be reversed. In (10), the island-erecting operator is attracted first:
Operator 2 can establish the island, and operator 1 can still be attracted by X and leave the embedded clause. The result is a converging derivation with an extraction from an island. If the order of operations here was random, island violations would be expected to occur all the time, basically rendering “island” inert as a syntactic term. This is why Müller invokes the ISC:
4.3 Resumption and Wh-Islands

(11) Intermediate Step Corollary: Intermediate movement steps to specifiers of X (as required by the PIC) must take place before a final specifier is merged in XP. (Müller 2010b, 5)

This corollary stems from certain technical assumptions by Müller as to how this movement is ensured. The same technical framework cannot be adopted here, thus I will use the term Intermediate Step Axiom (ISA), but basically mean the same thing: intermediate movement has to occur if intermediate and final movement steps compete on two elements, respectively.²

Since the island-erecting operator has its final landing position at the edge of the embedded CP, while the “escaping” operator only stops there intermittently, the latter is bound to move first. Within the system established above, this would mean that maraudage has to happen all the time, and island circumvention cannot be derived. With both maraudage and the ISA in place, the only way to provide for different outcomes is a change in the feature setup of the operators involved. If, in German, a TOP-marked topic is able to leave a wh-marked CP, then the former operator must be equipped with a proper subset of features of the latter. It has to move first (ISA), but it does not maraud wh’s features. Vice versa, since wh-extractions out of a topic island are ungrammatical, WH marauds the topic’s features, because it carries a superset of them.

4.3 Resumption and Wh-Islands

With these two notions in place, we can now turn to the resumptive cases at hand. First, the maraudage approach for resumption into wh-islands will be discussed. In the following sections, we will turn to adjunct and complex NP islands.

One of the core concepts of the present proposal is the way that φPs are ei-

²This can be seen as another instance of rule-ordering of the kind treated by Georgi (2014a).
ther moved as one unit, or φP is stranded and only DP moves. We thus have an inherent structural difference between two kinds of elements which can undergo REL-movement. It is a robust generalization that extractions from islands are possible if a resumptive is stranded inside the island. This means that only DP can ever leave an island, because the extraction of φP would leave an illicit gap. In order for the maraudage approach to work, certain kinds of feature sets are necessary. This is where the structural difference of φP vs. DP can be exploited: it is plausible to associate a larger syntactic structure with more syntactic features than a smaller one. φP, together with the DP it contains, carries more features than DP alone. By assumption, within φP (in relativization), REL is located on DP, and an OP feature is located on φ (cf. Müller 2010b), because both features need to be separable:

(12) φP
    \[ \begin{array}{c}
        \phi \\
        \downarrow \\
        DP \\
        \downarrow \\
        OP \\
        \downarrow \\
        D \\
        \downarrow \\
        NP \\
        \downarrow \\
        REL
    \end{array} \]

The interrogative operator, on the other hand, needs to carry a subset of these features; by assumption, this is the set \{OP\}. In addition, its lack of φ features prevent it from bleeding object agreement (but see below for possible difficulties). Both extraction scenarios are illustrated for a wh-island case below:

(13) a. *[DP those songs [CP that we don’t know [CP who composed ____ ]]]
    b. [DP those songs [CP that we don’t know [CP who composed them ]]]

The gap / maraudage case, (13-a): The assumed order is FM > IM > AGR > EM, which is one of the orders responsible for all-gap patterns (and non-resumptive languages in general). The situation is different from non-island relativizations in
two important ways. First, the order $FM > IM$ is overridden by the Intermediate Step Axiom. The ISA is assumed to apply phase-based, and only if there is a competition to be resolved. It has no effect if only one element is moved, because the triggers of Intermediate and Final Move for one and the same element never occur on the same phase head, and thus they never compete. Here, it is assumed that the ISA does not apply a priori to all the possible orders laid out in chapter 3.4; if $FM > IM$ was always ruled out, regardless of whether there is a competition to resolve, patterns 3 and 4 could not be derived. In the island case, however, the Intermediate Move of $\phi P$ has to precede the Final Move of the interrogative element which erects the island, because its final destination is outside the embedded clause. Second, since the interrogative *who* is the external argument in this example, (13-a) and (13-b), its merger is triggered by EM. However, the exact point of merger is not relevant here, because WH is not an element capable of bleeding an Agree relation for the object. In a sense, this reduces the complexity of the order of operations in island cases to the choice of Move before or after Agree. The following derivation illustrates the derivation of the unacceptable gap case:
The details of every numbered step are as follows:

①: Intermediate Move targets φP and puts it in SpecvP. Agree did not happen prior to this, thus neither did phase extension.

②: Agree occurs between φP and v, checking the latter’s φ and intermediate REL features. The subject (the interrogative operator in this example) is merged.

③: Due to the Intermediate Step Axiom, the Intermediate Move of φP precedes the Final Move of WH.

④: Agree takes places between the moved object φP and C. Since its features exhaustively match C’s, maraudage happens and both REL and [OP] on C are checked (along with φ).

⑤: The only feature on C which could have attracted the island-erecting WH has already been checked. WH is not attracted, and the embedded clause will not be headed by an operator despite being marked as an operator clause. The derivation will not converge, even if φP moves on. The illicit island / gap derivation terminates.
The RP case, (13-b): For the felicitous RP derivation to work, the order of operations will be set such that Agree precedes Move (e.g. AGR > FM > IM > EM, an all-RP pattern). With object bleeding out of the picture (but see below), there is no language in the set which does not have access to an RP order of operations. The GRRR pattern only has a gap in a non-embedded context, and both GRGG and RRGG cases turn into GRRR and RRRR, respectively, once object bleeding does not occur. The derivation proceeds as follows:

(15)

①: Agree precedes Move, phase extension occurs, and DP becomes accessible for extraction.
②: Intermediate Move targets DP Rel and puts it at the edge of vP (WH is merged
4 Resumptive Pronouns in Islands

in an outer specifier in this example). \(\phi\) is stranded.\(^3\)

③: The \(\phi\) probe on C does not find a suitable goal within its phase domain (both DP and WH do not carry \(\phi\)). It thus receives a default value (cf. Preminger 2014).

④: Intermediate Move of DP takes precedence over Final Move of WH (ISA). DP, however, only checks REL on C. OP is not marauded.

⑤: WH is attracted by OP on C. The island boundary is thus established, but DP is free to move on to the matrix clause in the next cycle.

One potential challenge must be pointed out here: while all the “simple” interrogative operator cases found in the data can be derived as described above without problems, the situation might be different in cases where the operator is more complex (such as English which car or the inflected German welches). Arguably, there actually is \(\phi\) material present in such phrases, and they could qualify as proper \(\phi\)Ps, after all (the same is true for adjuncts). Now, recall that a \(\phi\)P can have a bleeding effect, because Agree obeys a spec-head bias:

\[
(16) \quad \begin{array}{c}
\text{vP} \\
\begin{array}{c}
\text{WH-}\phi\text{P} \\
\text{v'}
\end{array}
\end{array}
\]

This was desirable in order to derive gaps in object positions for some patterns, but these patterns do not occur in island contexts where every position hosts an RP. The spec-head bias must thus be avoided here.

A technical solution might look as follows. It could be argued that the operator

\(^3\)Since the OP feature associated with \(\phi\)P need not be checked, no problem arises due to its remaining in situ (cf. Müller 2010b).
feature of the island-erecting element causes Agree to skip the spec-head bias. Maybe it projects an OP-layer above φP which would deflect Agree, because v cannot probe into its specifier beyond that first layer:

(17) \[ \begin{array}{c}
\text{vP} \\
\text{OP} \\
\text{Op} \\
\text{φP} \\
\phi \text{DP} \\
\bullet \bullet \bullet \phi \text{AGR}
\end{array} \]

This line of reasoning takes care of operators in subject position. However, there still remains a challenge when it comes to adjunct islands. For an extension of this solution to adjuncts, see section 4.4 below. This concludes the section on how an RP can help circumvent island restrictions in relativization, and why a gap derivation is bound to crash. In the following sections, the mechanism will be applied to adjunct and complex NP islands.

### 4.4 Resumption and Adjunct Islands

In almost all relativization cases from adjunct islands, the RP derivation is the felicitous one. In order to make adjuncts compatible with the maraudage approach adopted here, they need to be assigned an OP feature. This is where the extensive work in Rubin (1994, 1996, 2002, 2003) comes into play. He argues for a unified structure of adjuncts as complements to a modifier head which projects a ModP. Following Murphy (2015), Mod’s specifier position is assumed to host an operator:
This (empty) operator can be argued to create a semantic link between the adjunct phrase and the clause it is embedded into.\textsuperscript{4} This operator is base merged into SpecModP in order to satisfy a feature on the Mod head. This situation can be exploited in order to make the mechanism introduced above compatible to adjunct islands, as well. If an adjunct is adjoined to vP, the adjunct’s specifier represents an additional position for a φP/DP to move through on its way out of the clause.\textsuperscript{5} Now, instead of two movement operations, one base merger and one movement operation compete. If φP reaches SpecModP first (leaving behind a gap in its base position), it will maraud both the intermediate REL feature, and the OP feature originally intended for the merger of the adjunct operator. Thus, the semantic linkage is not established, and ungrammaticality ensues (19):

\textsuperscript{4}In contrast to other types of island, such as WH or complex NP, the island erecting element here does not receive a theta role.

\textsuperscript{5}Under the assumption that Mod is a phase head.
If, however, only DP is moved – for the same reasons laid out in the section above – it will only check the REL feature on Mod (➀), such that the remaining OP feature can trigger the base merger of Op (➁). DP can then move on and leave the adjunct island without violation. An RP remains in this case (20):

As stated above, a potential problem arises with adjuncts in connection with the spec-head bias. The ModP layer could be argued to void the spec-head bias here, as well. However, if an adjunct is adjoined to v, a situation could arise where a regular subject φP triggers spec-head biased Agree, because it has no OP layer:

As stated above, a potential problem arises with adjuncts in connection with the spec-head bias. The ModP layer could be argued to void the spec-head bias here, as well. However, if an adjunct is adjoined to v, a situation could arise where a regular subject φP triggers spec-head biased Agree, because it has no OP layer:
The result would be an illicit object gap within an adjunct island. The technical solution sketched above could be extended to include these cases by assuming that adjuncts have to be merged to v before the subject. Since the spec-head bias is assumed to only hold for the first/inner specifier position, the bleeding situation is averted. 

(22)

\[ \text{vP} \]

\[ \text{Subject} \]

\[ \text{vP} \]

\[ \text{ModP} \]

\[ \text{v'} \]

\[ \text{v} \]

\[ \phi P \]

\[ x \]

\[ \text{AGR} \]

This concludes the section on how RPs can facilitate extraction out of adjunct islands. In the final section, complex NP islands will receive a closer look.

### 4.5 Resumption and Complex NP Islands

Relativization from complex noun phrase islands can be distinguished into two broader classes: one in which extraction is attempted from the clausal complement of a noun, and one in which the island is formed by a relative clause which modifies a noun. For the purpose of this analysis, there is only a superficial difference to be made between these two kinds of islands. In noun complement islands (NCIs), the operator is an overt noun (e.g. *the rumor* in the Welsh example above (4), while in relative clause islands (RCIs), the operator is typically covert (3). As all arguments are assumed to be (or contain) $\phi$Ps, this difference is not relevant to the derivation.

\[ ^6 \text{Note that in (20) above, the intermediate step of DP to Spec}v \text{ would be omitted if the adjunct is merged to the inner specifier of v.} \]
Thus, in terms of the maraudage approach presented here, two elements of the same kind “compete” over movement to the specifier of the embedded CP. Let us assume the island-erecting $\phi P$ is the subject of an embedded clause (embedded under an operator layer, see above), while the $\phi P$ to be relativized (long) starts out as the object. Both carry an OP feature plus a REL feature on their contained DPs. Now, a language like Brazilian Portuguese follows the order FM $>\text{AGR} > \text{EM, IM}$, such that the object DP can be subextracted, leaving behind an RP. Embedded C is equipped with an OP and REL feature which needs to be checked by a suitable element (or elements) in its specifier. The derivation proceeds as follows:

(23)

①: AGR extends the object $\phi P$, making DP accessible for extraction.
②: IM moves DP to a specifier of $v$.
③: EM merges the subject $\phi P$ in another specifier of $vP$.
④: IM takes place before FM due to the ISA. DP is moved to a specifier of the em-

\[ \text{Diagram}\]
bedded C (from where it will continue to move the the specifier of matrix C). C’s REL feature is checked.

④: FM can take place now; the island-erecting φP is moved to another specifier of embedded C, triggered by OP on C.

⑤: AGR takes place between C and the island-erecting φP.

After the derivation has reached this stage, DP will successive-cyclically move on to become the operator of the matrix relative clause. Again, it is ensured that only the RP derivation ultimately succeeds, because only the subextracted DP leaves a feature on embedded C untouched so it can trigger movement of the island-erecting φP (the OP feature). If either the island-erecting or the full object φP moves first, it will check both the REL and OP feature, such that the respective other phrase will not be moved to its intended SpecCP position. The result is ungrammaticality for these relative operator island cases. Note that the solution for the spec-head bias problem (sketched above) also holds here. If the subject / operator was merged into the inner specifier of v, it would be invisible for the purpose of the spec-head bias due to its OP layer. Thus, bleeding would not occur, and the result always is an RP.

This concludes the chapter on islands in resumption. Different cases of island resumption could be integrated into the current approach using the concept of feature maraudage. Moreover, the analysis advanced here provides a structural footing for the widespread acceptability of islands with resumptives as opposed to islands with gaps. Differences between φP and DP were exploited for the integration of island scenarios into the non-island framework established above. Potential challenges involving object RP bleeding in a few languages could be circumvented by assuming that operator features interact with the spec-head bias in a certain fashion. The next chapter will be concerned with a range of phenomena outside of “simple” subject and direct object resumption and their integration into the proposed approach.
5 Further Implications

In this chapter, the additional set of observations made in chapter 2.4.2 will be discussed. First, we will turn to the Highest Subject Restriction (HSR), which states that an RP is prohibited in matrix subject positions (cf. McCloskey 1990), and its role in the current framework. Then, the behavior of the C domain in gap and RP cases will be discussed, followed by a closer look at complementizer alternations in Ga and Irish. The fourth section will deal with (the non-existence of) multiple and intermediate RPs within a single chain, as well as with the mobility of $\phi$P after DP has been subextracted. RPs in prepositional structures and coordination will be discussed in the final two sections.

5.1 The Highest Subject Restriction

One of the generalizations which were drawn from the data in chapter 2 was the tendency of many resumptive languages not to allow for an RP in the highest (= unembedded) subject position. Eight of the investigated languages follow this generalization, with a few examples repeated here:

(1) Ga

a. Nuu le ni ____-kpee Dede le je Tema
   man DEF REL gap-marry woman CD be.from Tema

b. *Nuu le ni e-kpee Dede le je Tema
   man DEF REL 3.sg-marry woman CD be.from Tema

   ‘The man that married the woman is from Tema.’
   (S. Korsah, p.c.)
5 Further Implications

(2) Hebrew

a. ha-?iš še-_____ ?ohev ?et Rina
   the-man that-gap loves ACC Rina
b. *ha-?iš še-hu ?ohev ?et Rina
   the-man that-he loves ACC Rina

   ‘the man who loves Rina’

   (Shlonsky 1992, 445)

(3) Irish

a. y dyn a welodd _____ fi
   the man c saw gap me
b. *y dyn a welodd ef fi
   the man c saw he me

   ‘the man that saw me’

   (Suñer 1998, 343, from McCloskey 1990)

(4) Palestinian Arabic

a. l-bint ?illi _____ raayḥa ʿalbeet
   the-girl that (you-F) gap going to.the.house
b. *l-bint ?illi hiy raayḥa ʿalbeet
   the-girl that (you-F) she going to.the.house

   ‘the girl that is going home’

   (Shlonsky 1992, 446)

According to Boeckx (2006), the first observations of this phenomenon were made as early as Borer (1984), followed by McCloskey (1990) who labeled it HSR, and Shlonsky (1992), where all of the languages in question (Hebrew, Irish, various dialects of Arabic) obeyed the HSR. It was derived by placing a ban on overt pronouns which are Ā-bound too locally, such as the Ā-disjointness requirement (cf. e.g. Aoun and Li 1990; McCloskey 1990; Aoun and Choueiri 1996). Boeckx (2006) draws a connection to Ouhalla (1993)’s Anti-Agreement Effect which occurs in subject extraction cases. However, as soon as one starts to look at a larger set of resumptive
languages, the generalization is weakened to some extent.\(^1\) In the present sample, eleven of 19 languages actually allow for a resumptive pronoun in the highest subject position. Since the HSR only bans overt pronouns, it could be said to still hold for cases in which the subject resumptive occurs in its null form\(^2\). Even then, several cases would remain in which overt pronouns occupy the highest subject position after extraction has taken place. This means that, in a considerable number of languages, a requirement which is modeled on Binding Principle B does not hold. The HSR might still have the right explanation for the gap cases, but provisions need to be made to allow for the exceptions.

Within the framework of the current proposal, no recourse to binding principles is necessary in order to account for the empirical facts. Languages which do not allow for a pronoun in the highest subject position follow patterns 3 and 4 (Brazilian Portuguese, Czech, Ga, Hebrew, Irish, Palestinian Arabic, Polish, and Welsh): the orders behind these patterns rank Final Move before Agree, thus bleeding the occurrence of a subject RP (orders 15-18 in chapter 3.4)\(^3\). Languages which can host resumptives in that position follow pattern 2, 5 and 6 (Asante Twi, Hausa, Lebanese Arabic, Mandarin Chinese, Serbo-Croatian, Spanish, Tuki, Ukrainian, Vata, Yiddish, Yoruba). Since the orders of operations are set extrinsically, there is no way to predict which language will choose which order. However, the HSR does also not cover the fact that many languages can circumvent it (even the ones apparently obeying it, see section 5.6 below)\(^2\). In addition, the attempts to derive the HSR up

---

\(^1\)(Aboh, 2010, xiii) states that certain Kwa languages have to be added to a list of only two languages noted by Keenan (1985) to show subject RPs. Similarly, (Asudeh, 2012, 28) points out that the HSR, originally invoked for Irish, Hebrew, Welsh and Palestinian Arabic, “should not be treated as a general linguistic principle, although it could potentially be parameterized” in the light of facts from Vata, a language that allows for RPs only in subject positions. Also, (Asudeh, 2012, 265) acknowledges that he is “not aware of any explanation of this cross-linguistic variation, but [that] it would be an interesting area for future research”.

\(^2\)The A-disjointness requirement does not hold for traces. If that includes copies / null pronouns in more current Minimalist terms, then these cases do not touch the HSR. If, however, “traces” exclusively refer to gaps, then null RPs pose an additional problem for the HSR.

\(^3\)Trivially, orders which result in gaps in all positions also derive the HSR (orders 1-8 in chapter 3.4).
Further Implications

to now (e.g. Aoun and Li 1990) have assumed a mechanism which would have to be changed so it can also cover the opposite of what it was intended to do. The current proposal simply treats the HSR as one of several possible routes which a resumptive language can take, all of which are derived from the same systematic interactions.

5.2 Resumption and the C Domain

There appears to be an interesting correlation between the foot of the relativization chain and the form which the C domain takes. In some languages, if a gap is left behind upon extraction, an overt relative pronoun can be merged in the specifier of matrix C. If a resumptive is stranded, the same specifier position is left empty, and an invariant complementizer is merged in C position. This is further support for an observation first made by Merchant (2004) who connects a non-case-marked (and thus covert and uninflected) SpecCP position to the occurrence of a resumptive in 17 languages:

(5) Case and resumptive-binding operator generalization:

No resumptive-binding operator can be case-marked. (Merchant 2004, 1)

In the same vein, de Vries (2005) declares it a universal that, in relative clauses, “a relative pronoun excludes a resumptive pronoun, and vice versa”. In the current sample, this is true of Czech, Serbo-Croatian and Yiddish, and in certain cases in Polish and Ukrainian, while the rest of the languages in the sample make use of an invariant C in both gap and RP cases. The basic alternation can be illustrated with e.g. Czech, which allows for a gap / RP alternation in the direct object position:

(6) Czech

a. chlap kerýmu ____ nikdo nevěří
   man REL gap nobody believes
5.2 Resumption and the C Domain

In the a) sentence, it is the overt and inflecting relative pronoun *kerýmu* which introduces a relative clause with a gap in the object extraction position. The same sentence is headed by *co*, an invariant complementizer, when a resumptive is stranded. The reverse combinations, i.e. *kerýmu* + RP or *co* + gap are ungrammatical. When it comes to CP, four abstract configurations arise. Both the specifier and complementizer can be filled or not:

a) \[CP \text{ Spec } [C' C [ ... ]]] \]

b) \[CP \text{ Spec } [C' \emptyset [ ... ]]] \]

c) \[CP \emptyset [C' C [ ... ]]] \]

d) \[CP \emptyset [C' \emptyset [ ... ]]] \]

A completely empty CP system (d) is easily illustrated by a regular English relative clause (7), and a doubly filled one (a) can be found in Swabian German (8):

(7) You have met the woman _____ I know.

(8) dr Ma, *den wo* mer troffe hånd

the man, *who that* we met have

‘the man who we have met’  

(F. Heck, p.c.)

According to Lavine (2003), Slavic languages only have access to the b) and c) options. Only one position can be overtly filled. Due to the resumptive mechanism proposed here, the derivation of this fact follows naturally. Recall that the properties of the moved structure differ in the gap vs. resumptive scenarios. In the former, the entire φP is relativized and moved (successive-cyclically) to the matrix SpecCP position. This means that, along with the REL operator on DP, a full set of φ features is present in the specifier position. These features are visible to PF as an overtly filled
5 Further Implications

specifier and will be pronounced as such, while the C position will go unpronounced, in line with the fact that Slavic disallows doubly filled complementizers:

(9)  \[ \text{CP}_{\text{Matrix}} \Rightarrow [\text{CP Relative pronoun } \emptyset ] \]

On the other hand, if \( \phi \)P is stranded, and only DP is moved to matrix SpecCP, the \( \phi \) feature set is incomplete (= carries a gender feature at most) and does not provide enough information for the pronunciation of an overt, inflected relative pronoun. Since (at least) Slavic languages do not allow for a completely empty CP system, a complementizer is inserted as a strategy to remedy this violation. It remains invariant, because it is inserted too late for any syntactic agreement:

(10)  \[ \text{CP}_{\text{Matrix}} \Rightarrow [\text{CP } \emptyset \text{ Invariant C }] \]

Thus, the very robust connection between RPs and invariant complementizers is a structural consequence of this proposal. Note that the presence of \( \phi \) features in SpecCP does not have to lead to the insertion of an overt relative pronoun. If the language does not have the necessary vocabulary items to fill SpecCP, or if other language specific factors play a role, it can still revert to just filling C with an appropriate invariant item (cf. Harlow 1981; Bondaruk 1995). In fact, most of the investigated languages make use of the C form, as can be seen below:\(^4\)

\(^4\)Polish and Ukrainian can in fact use the invariant C for gaps, but also allow for relative pronouns (see also Dziwirek 1994).
5.2 Resumption and the C Domain

<table>
<thead>
<tr>
<th>Language</th>
<th>CP in gap cases</th>
<th>CP in RP cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asante Twi</td>
<td>invariant C $aa$</td>
<td>invariant C $aa$</td>
</tr>
<tr>
<td>Czech</td>
<td>relative pronoun, e.g. <em>ktery</em></td>
<td>invariant C $co$</td>
</tr>
<tr>
<td>Ga</td>
<td>invariant C $ni / ake$</td>
<td>invariant C $ni / ake$</td>
</tr>
<tr>
<td>Hausa</td>
<td>invariant C $da$</td>
<td>invariant C $da$</td>
</tr>
<tr>
<td>Hebrew</td>
<td>invariant C $še$</td>
<td>invariant C $še$</td>
</tr>
<tr>
<td>Irish</td>
<td>invariant C $aL$</td>
<td>invariant C $aN$</td>
</tr>
<tr>
<td>Lebanese Arabic</td>
<td>invariant C $yalli$</td>
<td>invariant C $yalli$</td>
</tr>
<tr>
<td>Mandarin Chinese</td>
<td>invariant C $de$</td>
<td>invariant C $de$</td>
</tr>
<tr>
<td>Palestinian Arabic</td>
<td>invariant C $illi$</td>
<td>invariant C $illi$</td>
</tr>
<tr>
<td>Polish</td>
<td>relative pronoun, e.g. <em>która</em></td>
<td>invariant C $co$</td>
</tr>
<tr>
<td>Serbo-Croatian</td>
<td>relative pronoun, e.g. <em>koga</em></td>
<td>invariant C $što$</td>
</tr>
<tr>
<td>Spanish</td>
<td>invariant C $que$</td>
<td>invariant C $que$</td>
</tr>
<tr>
<td>Tuki</td>
<td>invariant C $odzu$</td>
<td>invariant C $odzu$</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>relative pronoun, e.g. <em>yakiy</em></td>
<td>invariant C $ščo$</td>
</tr>
<tr>
<td>Vata</td>
<td>invariant C $nā$</td>
<td>invariant C $nā$</td>
</tr>
<tr>
<td>Welsh</td>
<td>invariant C $y(r)$</td>
<td>invariant C $y(r)$</td>
</tr>
<tr>
<td>Yiddish</td>
<td>relative pronoun, e.g. <em>velkhe</em></td>
<td>invariant C $vos$</td>
</tr>
<tr>
<td>Yoruba</td>
<td>invariant C $ni$</td>
<td>invariant C $ni$</td>
</tr>
</tbody>
</table>

Importantly, if a language has the possibility to use (inflected) relative pronouns in SpecCP, these are exclusively found in the gap column, where $ϕ$ features are available. All RP relatives are headed by an invariant C, in support of the proposed $ϕP / DP$ movement dichotomy. In Ga and Irish, there are two different invariant complementizers. While Ga makes a distinction between relative clauses ($ni$) and complement clauses ($ake$), Irish famously appears to encode Cs which head a gap construction ($aL$) differently from those which head an RP construction ($aN$). The next section will present a more detailed discussion of these facts.
5 Further Implications

5.3 Alternating C in Ga and Irish

In this section, some light will be shed on two more peculiar cases of complementizer behavior in resumption. While most languages only have one invariant complementizer at their disposal, which they, in most of the cases, use for both gap and RP relativization, two pieces of data stand out. First, the case of Ga will be considered, where different Cs appear to be inserted based on relativized vs. complement contexts. Then, the slightly more complex (and notorious) case of Irish will be discussed, where complementizers vary according to the relativization strategy, rather than embedding.

5.3.1 Ga Complementizers

As was shown in the section above, Ga uses invariant complementizers for both its gap and RP relativizations. Below, both an unembedded example (with C *ni*) and an embedded one (with both *ni* and *ake*) are illustrated:

(11) Ga, unembedded relativization context

\[
\text{Mi-na yoo } l\epsilon \text{ ni Kwei kpee } l\epsilon \text{ l}\epsilon \\
\text{1.SG.SUB-see woman DEF REL Kwei marry 3.sg.obj CD}
\]

‘I saw the woman that Kwei married.’

(S. Korsah, p.c.)

(12) Ga, embedded relativization context

\[
\text{Mi-na yoo } l\epsilon \text{ ni o-ke}e \text{ ake Kwei kpee } l\epsilon \text{ l}\epsilon \\
\text{1.SG.SUB-see woman DEF C 2.SG-say C Kwei marry 3.sg.obj CD}
\]

‘I saw the woman that you said that Kwei married.’

(S. Korsah, p.c.)

Apparently, we need to reconcile the mechanism which causes incomplete φ features (in the case of a moved DP) to be computed into a certain invariant C at PF with this evidence of different Cs in long extraction. PF has access to those parts of a
syntactic structure which are made available to it via Transfer. Since, according to the PIC, the complement of a phase head is in a different spellout domain than the head and its specifier, PF will at some point have access to \([CP \text{ Spec } [C' C]]\) and be able to determine the kind of specifier (e.g. filled with φP, DP, or empty).

If this reasoning is on the right track (at least for Ga), the following structure can be assumed for the long extraction example above. Only the relevant parts and derivational steps are included:

At two stages in the derivation, PF is presented with two different SpecCP+C chunks:
At the stage when the embedded CP is shipped off to PF, a complementizer form can be inserted based on the fact that its specifier is (now) empty – which is an indicator of a complement clause in Ga (recall that the availability of copies is not assumed in the present approach). As a result, the regular complementizer akɛ is inserted. Next, once matrix CP is finished, PF determines that its specifier is filled with a relativized DP operator (albeit a covert one). The derivation has terminated, creating the unembedded, relativization context in which PF needs to insert the appropriate C element, ni.

Alternatively, one could assume that the kind of movement has a direct influence on the complementizer to whose specifier an element is moved (cf. McCloskey 2006; Georgi 2014a). All movement steps but the last one in (13) are intermediate (IM), including the one which puts DP<sub>Rel</sub> into the specifier of the embedded CP. If embedded C was sensitive to this operation, the insertion of akɛ could stem from that. Matrix C, on the other hand, has its specifier filled with DP<sub>Rel</sub> via a final movement operation (FM). This could trigger the insertion of “ni”.

5.3.2 Irish Complementizers

In Irish, the situation with complementizers is not as straightforward as in Ga. The kind of relativization strategy (gap vs. RP) plays a crucial role, but embedding also appears to have an influence (cf. McCloskey 1990; Duffield 1991; McCloskey 2002, among others). First, there is a default C marker go for finite Irish complement clauses:

---

5Thanks are due to Philipp Weisser for a discussion of this alternative.
5.3 Alternating C in Ga and Irish

(14) Irish, finite clause

Creidim gu-r inis sé bréag
I. believe go-PAST tell he lie

‘I believe that he told a lie.’ (McCloskey 2002, 2)

As soon as an element is extracted from a complement clause, the form of C changes accordingly and is notated with respect to the phonetic effect it has on the following elements: aL, for lenition (gap constructions), and aN for nasalization (RP constructions). Below, a minimal pair shows both scenarios:

(15) Irish, object relativization

a. an fear aL bhuaill tú  ____
   the man C struck you gap

b. an fear aN bhuaill tú  é
   the man C struck you him

‘the man that you struck’  (McCloskey 1990, 18)

In a), a gap leads to the insertion of aL for matrix C, while in b), the resumptive leads to aN. If we take a look at the structural representations for these first three examples, the derivation seems to be simple. Depending on the situation PF is faced with, three different kinds of specifiers lead to three different kinds of C insertion:

- **Finite complement:** ... believe \([CP \, ____ \, [C^\prime \, C]]\) he told a lie
  Spec is empty, insertion of go

- **Gap extraction:** ... the man \([CP \, \phi P \, [C^\prime \, C]]\) struck you ____
  Spec hosts \(\phi P\), insertion of aL

- **RP extraction:** ... the man \([CP \, DP \, [C^\prime \, C]]\) struck you him
  Spec hosts DP, insertion of aN
5 Further Implications

For the finite complement example, the level of embedding is irrelevant. “go” will be inserted for every C which might be daisy-chained in this fashion. Unfortunately, the level of embedding is relevant to the relativization cases. As soon as the extraction dependency spans two or more CPs, complementizer behavior is not entirely predictable anymore:

(16) Irish, embedded object relativization under the gap strategy

\[
\text{cuid den fhilócht a chualaí an sheanmháthair á rá a cheap an sagart úd _____ composed the priest DEMON gap}
\]

‘some of the poetry that you heard your grandmother saying that that priest composed’

(McCloskey 2002, 3)

(17) Irish, embedded object relativization under the RP strategy

\[
\text{an fear a-r shíl sé go dtabharfadh sé an duais dó}
\]

‘the man aN-PAST thought he go would.give he the prize to.him

(McCloskey 2002, 12)

The RP example appears to be more straightforward than the gap one. If we assume the same conditions as for the Ga examples in the previous section, the structural representations of these two long distance configurations look like this:

- **Gap:** \( [CP \phi P [C^r C]] \) heard \( [CP _____ [C^r C]] \) composed \( _____ \)

- **RP:** \( [CP DP [C^r C]] \) thought \( [CP _____ [C^r C]] \) would.give \( _____ \) him

In the long distance RP scenario, a derivation similar to the Ga situation presents itself. The embedded specifiers are empty (after DP has moved through them) as the respective chunks of structure reach PF upon Transfer. The default complementizer
go is inserted if the associated specifier is empty. The resumptive complementizer aN is substituted for matrix C, because its specifier is filled with DP, signaling the RP derivation. 

The gap derivation, however, poses a problem for the current proposal. In order for all complementizers to be replaced with the same element (aL) at PF, we would expect all specifiers to look the same to PF, as well. In the representation above, the embedded specifier positions are just as empty in the gap cases as they are in the RP cases. We cannot allude to a difference in the element which has been moved through the specifier for successive cyclicity ($\phi$P vs. DP). Both have left the embedded specifier before the CP+C chunk is transferred to PF (namely in the higher vP phase cycle). Two possible circumvention strategies come to mind, though both are not elegant in the context of this framework. First, a copy theory of movement could be assumed, after all. PF would then at least have access to a copy of either $\phi$P or DP and could insert a complementizer accordingly. This assumption has not been made for this approach until now for a good reason: we would have to install more devices in order to prevent copies to be spelled out in base and intermediate positions (see also chapter 5.4 below). A restriction of the copy theory to only Irish would keep this problem from spreading to the other resumptive languages, but the basic dilemma remains. Second, one could argue for a complementizer that could somehow track which element has moved through its specifier. This information could then also be used at PF for insertion purposes. This, however, would entail more representational properties for this derivational approach, because C would have to “remember” what kind of element exactly has checked its features.

---

6The easiest route might be an agreement account with a one to one relation between C agreement and the form of C. Unfortunately, this is not available in the current stage of the approach, because C can agree with a moved object, a subject, or nothing at all, depending on the order of operations. There is no stable connection to be made between e.g. subject agreement and the insertion of aL, for example.
5 Further Implications

5.4 Multiple, Intermediate and Moving Resumptives

This section will be concerned with certain behaviors of resumptive constructions with respect to their movement chains. There are three observations to be made pertaining to where an RP can and cannot occur: 1) A resumptive does not occur multiple times along its movement path, 2) a resumptive does not occur in an intermediate position along \( \phi P \)'s movement path, and 3) a resumptive can occur in a position other than where \( \phi P \) was merged.

1) No multiple RPs: One of the implicit predictions of the present movement account of resumption is that the \( \phi \) material of the argument to be relativized can only be stranded once. The subextracted DP is not capable of leaving behind identical \( \phi \) features in every position it passes on its way to matrix SpecCP (e.g. for the steps ➀ to ➃ in (18)). Thus, a configuration like the one in (18) is predicted to be unacceptable, which is shown by the Polish example in (19):

(18)
5.4 Multiple, Intermediate and Moving Resumptives

(19) Polish

??Chłopiec co go ja wiem że go Marysia powiedziała że go znam Boy c him I know that him Mary said that him know jest przystojny is handsome

‘A boy that I know that Mary said that I know him is handsome.’

(Szczegielniak 2004, 59)

This is a direct consequence of the mechanism employed here: stranding can only happen once, for robust structural reasons. This highlights one advantage of the present approach: if RPs were assumed to be merely overtly pronounced copies of moved phrases, pronunciation would have to be severely restricted (cf. Nunes 2004).

2) No intermediate RPs: The second observation here concerns the fact that resumptives cannot be stranded anywhere else but in the base merger position of the φP argument. Given the Phase Impenetrability Condition and the ensuing successive-cyclic (long) movement, it could be expected that an RP appears in one of the available intermediate landing positions. This is closely related to the previous observation: if a resumptive can only be stranded once, why does that rule out stranding in an intermediate position, leaving the base position empty? This possibility is sketched below:

---

7This pattern is reminiscent of preposition stranding (cf. Postal 1972). P cannot be stranded intermediately: *Whom_k did you say about_j Peter talked _____j _____k. This could also be taken as support for a stranding approach to RPs.
Two circumstances rule out this scenario: first, since moved elements are islands for extraction on independent grounds (Wexler and Culicover, 1980), the \( \phi P \) cannot first be moved from its base position to the edge of \( vP \) ➀, then get its phasehood extended, so that DP can be subextracted and strand an RP there ②. This prediction is also borne out, as can be seen from the Czech example in (21). The RP \( ji \) occurs at the edge of Spec\( vP \), and the result is ungrammatical:

(21) Czech

*Ta ženská, co si myslíš, že ten chlap \( ji \) miluje, odešla
the woman REL REL refl think.2.SG COMP the man her loves left

‘The woman that you think the man loves left.’  
(R. Šimík, p.c.)

Second, this is also banned theory-internally. Since the order of operations is assumed to be the same on every phase head, it cannot be the case that a lower phase head triggers pied-piping of \( \phi P \), while a higher phase head triggers subextraction from the formerly pied-piped \( \phi P \). Thus, the present proposal does not provide for Agree / phase extension to apply anywhere else but in the position where \( \phi P \) arguments are first merged.
3) Moving RPs: The third and final observation of this section is closely connected to the second. While it was shown above how resumptives cannot simply occur anywhere along the successive-cyclic movement path of \( \phi P \), there are indeed examples of RPs which do not end up in e.g. their direct object base position (e.g. optionally in Tuki, where they move to a preverbal position (Biloa, 1990); Polish, where RPs frequently occupy sentence-second positions—among others—, cf. (Bondaruk, 1995); Brazilian Portuguese, where prescription requires object RPs to move to a preverbal position in formal language (cf. chapter 7.2). Consider the Czech example below in (22). It is the counterpart to (21), but the RP is now in a licit position next to C (Wackernagel position\(^8\)):

(22) Czech

Ta ženská, co si myslíš, že ji ten chlap miluje, odešla
the woman REL REFL think.2.SG COMP her the man loves left
‘The woman that you think the man loves left.’ (R. Šimík, p.c.)

This indicates that the RP must have left the position in which it was originally stranded by DP. Recall that stranding is only possible in the base position of \( \phi P \). However, nothing rules out the movement of \( \phi P \) after DP has been subextracted from it. This kind of remnant movement is depicted below:

---

\(^8\)Thanks are due to Radek Šimík for a discussion of these facts.
First, DP is subextracted under phase extension, leaving behind the \( \phi P \) shell, and lands in SpecvP ➀. In a separate movement step, the stranded \( \phi P \) is moved to its final position, also a specifier of vP ➋. Note that this movement is probably triggered by separate features on \( v \), so that this particular operation also has to be ordered properly with respect to the operations necessary for relativization. Step ➃ finally moves the operator to its final landing site. Note that SpecvP is simply a suggestion for a landing site of RP here, a resumptive (clitic) possibly moves even further. A language might require movement through other or additional (functional) specifier positions, but these language specific facts are not within the scope of this investigation.

The important point is that movement of a resumptive can be permitted language specifically, but intermediate stranding of an RP cannot. It is precisely this distinction which derives the possibility of certain RP movement in e.g. Czech or Polish, but bans the “apparent” movement (=intermediate stranding) of RPs into other positions in the same language. Note also that intrusive resumption appears not to allow for syntactic movement of the RP in the English example below:
5.5 Prepositional Objects

Another environment in which resumptive pronouns seldom alternate with gaps is when they occur as objects of prepositions. Gaps are possible if P in the resumptive language pied-pipes $\phi$, which is not the case for the majority of the languages investigated here. Spanish and Yoruba allow for an alternation (see below), while an RP is obligatory for the rest of the set, as in the examples below:

(25) Hausa

Wàa ka yi màganàa dà shii
go 2.SG.M.CPL do talking with 3.SG.M

‘Who did you talk with?’ (Crysmann 2012, 56 from Tuller 1986, 158)

(26) Palestinian Arabic

a. *l-bint ?illi fakkarti fìi-__
   the-girl that (you-$f$) thought on-gap

b. l-bint ?illi fakkarti fìi-ha
   the-girl that (you-$f$) thought on-her

‘the girl that you thought about her’ (Shlonsky 1992, 445)

---

9Note that RPs are not attested in positions lower than the respective gap, which supports the movement mechanism proposed here, because lowering movement is ruled out independently.
5 Further Implications

(27) Tuki

okutu odzuŋ ngu mu bina na aŋ
woman that I P1 dance with her
‘the woman who I dance with’  (Biloa, 1990, 215)

(28) Welsh

y bobl werthodd Ieuan y ceffyl iddyn nhw
the people sell.PAST.3.SG Ieuan the horse to.3.PL them
‘the people that Ieuan sold the horse to’  (Willis 2011, 190)

Much like in the island cases, the challenge here is to reconcile the fact that these languages show gap / RP optionality in other subject and object relativization scenarios, but not in these prepositional contexts. Again, structural properties can be exploited to integrate prepositional objects into the distributional patterns. A prepositional phrase (PP) is assumed to have the following structure:

(29) PP

\[ \text{P} \quad \phi \text{P} \]
\[ \phi \quad \text{DP} \]

Thus, there is “extra” structure between the \( \phi \text{P} \) argument to be relativized and the next higher phase head \( \text{v} \). If we further make the assumption that P is a phase head (cf. Abels 2003), the order of operations can account for the phase extension of \( \phi \text{P} \) and subsequent stranding of an RP. This can be illustrated with the Welsh example above (28). The order of operations for Welsh is \( \text{EM, FM > AGR > IM} \), but the subject does not play a role within the PP. It cannot bleed phase extension for the P-object, regardless of where \( \text{EM} \) is ordered within the operational hierarchy (recall that direct object positions usually host gaps in Welsh because of the bleeding effect). Agree precedes PP-internal movement of the object, and stranding takes place:
5.5 Prepositional Objects

①: φP has merged with phase head P; according to the order of operations, Agree is triggered first, extending φP’s phase and making DP accessible.

②: Next, IM moves DP to SpecPP, stranding φP, with a resumptive being inserted later at PF.

③: v is merged and triggers the insertion of the subject (EM). After Agree occurs with the subject, IM moves DP further along to SpecvP (from where it will continue to SpecCP).

The φ agreement step is visible in the Welsh example (28), where to appears in 3rd person plural, the same as the RP them. Thus, prepositional objects can be seamlessly integrated into the resumptive mechanism proposed here. However, we still need to account for the two (optional) gap cases. Let us first look at Spanish:
5 Further Implications

(31) Spanish

a. Me hablas de un asunto sobre el que yo no puedo opinar
   to.me talk.2.sg of a topic about which I not can opine
gap

b. Me hablas de un asunto que yo no puedo opinar sobre él
   to.me talk.2.sg of a topic that I not can opine about it
   ‘You are talking to me about something on which I have no opinion.’

(Suñer 1998, 340)

Both a gap and a resumptive are allowed to occur in the prepositional extraction site. Spanish does not make use of a special relative pronoun and instead uses invariant *que* for both cases. The most straightforward way to derive the gap case is to allow for a choice of orders, just as we did with the subject and direct object scenarios. Since Spanish has access to an all-gap pattern (pattern 1), the same pattern will hold for PPs. Any order of operations in which Intermediate Move is triggered before Agree will move the φP object before phase extension can happen:

(32)

\[ PP \]
\[ \phi P \]
\[ P' \]
\[ P \]
\[ \lambda \phi \]
\[ [REL] \]
\[ ① \]
\[ ② \]

①: IM precedes AGR, thus φP gets pied-piped to SpecPP, and stranding is bled.
②: AGR can now happen with the specifier, but it happens too late for stranding, because the element was already moved.
Yoruba is worth a special mention in this respect, because the complexity of its P heads appears to correlate with gap and RP extractions:

(33) Yoruba

a. Ìre ni Olú da omi sí ____
   rice be Olu pour water to gap
b. *Ìrei ni Olú da omi sí i
   rice be Olu pour water to it
   ‘It was rice that Olu poured water into.’ (Adesola 2005, 90f.)
c. *Adé ni a sòrù nípa ____
   Ade be C we talk about gap
d. Adé ni a sòrù nípa rè
   Ade be C we talk about him
   ‘Ade was the person that we talked about.’ (Adesola 2005, 92)

In (33) a) and b), the preposition sí is simple and non-inflected (cf. Adesola 2005, 90), and it only occurs with a gap. In c) and d), on the other hand, the P head is complex nípa – from the preposition ní and the nominal item ipa for “path” (cf. Adesola 2005, 92) – and only the RP strategy is felicitous. This could be taken as support for Bošković (to appear)’s argument that the complexity of a (prepositional) head can sometimes be an indicator of its phasehood status. In this view, Yoruba’s simple P is not a phase head, and thus AGR will not be triggered at all. Only at the v stage would the order of operations be relevant again, the P object is treated like a direct object, and a gap occurs. In the RP case, the complex P would be a phase head and thus be able to trigger Agree. This concludes the section on resumption in prepositional phrases. It has been shown that the commonality of RPs in the object position of PPs can be explained by the present approach.
5 Further Implications

5.6 Coordinated Subjects and Objects

The final section of this chapter shall be concerned with constructions in which one member of a coordinated phrase is relativized under the stranding of a resumptive. Coordinated structures are one of the island contexts identified by Ross (1967), which usually prohibit extraction of one conjunct to the exclusion of the other(s). In many resumptive languages, the positions of extracted conjuncts are filled with RPs, which appears to void this particular island constraint. Some examples of the available data can be found below. They are mostly on subjects, but several informants report that there is no asymmetry in object cases, either:

(34) Czech

a. Ten chlap, co on a jeho přítelkyně vykradli banku, odešel.
   the man c he and his girlfriend robbed bank left

b. Ten chlap, co jeho přítelkyně a on vykradli banku, odešel.
   the man c his girlfriend and he robbed bank left

   ‘The man such that he and his girlfriend robbed a bank left.’

   (R. Šimík, p.c.)

(35) Hebrew

a. *ha-?iš še-Ruti ve-___ ?ohavim kesef
   the-man that-Ruti and-gap love money

b. ha-?iš še-Ruti ve he?iš ?ohavim kesef
   the-man that-Ruti and he love money

   ‘the man that Ruti and him love money’

   (Shlonsky 1992, 450)

(36) Coordinated subject, RP

a. z?hink-a š?co Petro ta vona graly proty nas
   woman-NOM.SG c Peter and 3.sg.f.nom play.PAST.3.PL against us

   ‘the woman that Peter and her played against us’
5.6 Coordinated Subjects and Objects

b. žhink-a ščo vona ta Petro graly proty nas
  woman-NOM.SG 3.sg.f.nom and Peter play.PAST.3.PL against us
  ‘the woman that she and Peter played against us’

  (I. Zalevskaya, Y. Kushnir p.c.)

(37) Welsh

  y dyn yr soniais amdano ef ac Ann
  the man C spoke.1.SG about.3.SG.M him and Ann
  ‘the man that I spoke about him and Ann’

  (Suñer 1998, 361, from de Freitas and Noonan 1991)

These examples attest that extraction from a coordination island can be licit for both conjuncts. This is also true of most of the other languages (see the appendix in chapter 7): Brazilian Portuguese, Ga, Irish, Lebanese Arabic, Mandarin Chinese, Polish, Serbo-Croatian, Yiddish and Yoruba. The most striking fact is that all languages which have been argued to obey the Highest Subject Restriction do not only allow for but demand an RP if one conjunct is extracted. Thus, as soon as the matrix subject position is occupied not by a single subject, but by a coordinated one, the HSR is voided. While this might present yet another problem for accounts based on locality and Principle B (see chapter 5.1 above on the HSR), the facts can be derived naturally within the present framework.

Recall that languages which do not (or only optionally) obey the HSR have access to certain orders of operations where Final Move is triggered after Agree, thus enabling the occurrence of an RP in the highest subject position. Since languages which do obey the HSR cannot simply switch to another order in these coordination

---

10Toman (1998) simply assumes a feature labeled *conjunct* which is assumed to necessitate overt phonetic support for the dependents of a conjunction. It can possibly also be assumed that the conjunct phrase changes locality facts, such that Principle B-based explanations of the HSR could be circumvented.
cases, the reason for their circumvention of the HSR must lie in the structure of the coordination. Somehow, movement from inside the coordination phrase must not be the final step that places a conjunct into SpecCP. This is why the structure of coordinations plays a crucial role here. In the following, I will adopt Collins (1988a,b)’s account of a conjunction phrase (&P) with recursive specifiers (but see also Weisser 2014 for a more recent treatment of coordination). He argues for &Ps which provide a separate head for each conjunct, and with specifiers to their right, hosting the conjuncts. Thus, a coordination such as *Tom and Mary* would be represented as:

(38) (Progovac 1998, 4)

The hierarchically higher & head will ultimately not be pronounced. With respect to the issue at hand, this structure provides (at least) one additional functional head (&) between either of the two conjuncts and matrix C, since the coordinated subject is located in SpecvP. If we further assume & to be a phase head – much like we did for P above in chapter 5.5 – then it can trigger Move and Agree operations. Even in the HSR languages for which Final Move is triggered first, the conjunct to be relativized now first has to be moved to a specifier of &P. The orders which derive the HSR are $FM > AGR > EM > IM$ and $FM > AGR > IM > EM$. For a subject *conjunct*, FM gets delayed because of the intermediate movement step via &P. The derivation of an extraction from the first conjunct looks as follows:
5.6 Coordinated Subjects and Objects

(39) \[
\begin{array}{c}
\text{CP} \\
\text{DP}_{rel} \\
\text{C'} \\
\text{C} \\
\text{vP} \\
& \text{P}_1 \\
& \phi \text{P}_{1 relativized} \\
& \text{P}_2 \\
& \phi \text{P}_{2 relativized} \\
& \text{v'} \\
& \text{v} \\
\end{array}
\]

①: FM plays no role yet on the & head, so Agree is triggered and extends the φP to be relativized. DP becomes accessible.

②: EM plays no role on any & head, so IM is triggered next, moving DP to Spec&P, stranding φ in its first conjunct position.

③: On C, the next operational cycle starts with FM, because now the conditions for its application are met. DP is further moved to SpecCP, its final operator landing site. The result is a resumptive in the first conjunct.

This derivation naturally transfers to cases where the second conjunct is to be relativized; movement then presumably cycles through the specifier of &1 as well. It also works for coordinated objects in an identical fashion.\(^{11}\) Note that this was

\(^{11}\)J. McCloskey (p.c.) points out that, in Irish, for objects of sentences like This is the man that I kicked and punched both conjuncts can also be extracted under the RP strategy: This is the man that I kicked him and punched him. These cases can also be handled within the present framework, because both relevant verbs have their own v shell with the respective RP orders.
5 Further Implications

to show the applicability of the present mechanism to resumptive phenomena in coordination; it does not provide an independent explanation for why the Coordinate Structure Constraint (cf. Ross 1967) can be violated via movement here. The maraudage account which was invoked for other island cases in chapter 4 cannot work for the CSC, because only one element moves and there is no competition. Ultimately, this movement operation does not leave behind an empty position in one of the conjuncts, but an RP, such that across-the-board movement does not become necessary in order to obey the CSC.\textsuperscript{12}

This concludes the section on coordination and relativization in resumptive languages under the analysis proposed here. Together with the section on the HSR it has been shown that both the existence of this restriction, as well as its circumvention, can be derived within the system proposed here. It concludes the chapter on a set of further RP observations to which this thesis can provide explanations. The following final chapter will offer a conclusion to the proposals made here.

\textsuperscript{12}In more representational accounts (such as base generation), a movement step which is potentially offensive is not necessary. For a discussion of whether the CSC ought to be interpreted in a representational or derivational fashion, see Weisser (2014).
6 Conclusion

In this final chapter, a summary of the proposal presented here will be given. The goals that were formulated in the introduction will be juxtaposed with the answers which the novel analysis could provide. In addition, questions which have not yet received a satisfactory answer will be identified, and suggestions for further research into the matter will be given.

6.1 Summary: The Generalizations and their Analyses

This thesis set out to answer the following question (in its simplest wording): how is it that languages with grammatical resumption show a certain distribution of gaps and RPs under relativization? 19 languages were investigated, and relative constructions were chosen for the available breadth of crosslinguistic data. The main focus was on the behavior under extraction from four canonical positions: non-embedded and embedded subject and (direct) object positions, which is where the most variation in terms of gap / RP distribution can be found. As a core result of the empirical part of this thesis, the following distributional patterns were identified (repeated from chapter 2):
(1) Crosslinguistic distribution of gaps and RPs under relativization

<table>
<thead>
<tr>
<th>P</th>
<th>Subject</th>
<th>emb. Subject</th>
<th>Object</th>
<th>emb. Object</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>Gap</td>
<td>Czech, Hebrew, Irish, Mandarin Chinese, Serbo-Croatian, Spanish, Ukrainian, Yiddish</td>
</tr>
<tr>
<td>2</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Asante Twi, Hausa, Lebanese Arabic, Mandarin Chinese, Serbo-Croatian, Spanish, Tuki, Ukrainian, Yiddish</td>
</tr>
<tr>
<td>3</td>
<td>Gap</td>
<td>RP</td>
<td>RP</td>
<td>RP</td>
<td>Brazilian Portuguese, Czech, Ga, Hebrew, Irish, Palestinian Arabic, Polish</td>
</tr>
<tr>
<td>4</td>
<td>Gap</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Welsh</td>
</tr>
<tr>
<td>5</td>
<td>RP</td>
<td>RP</td>
<td>Gap</td>
<td>Gap</td>
<td>Hausa, Tuki, Vata, Yoruba</td>
</tr>
</tbody>
</table>

This table summarized the variation found in resumption under relativization, and the main goal of the analysis developed in this thesis was to derive these patterns in a systematic way. A closer look at the data revealed certain concrete generalizations which also were to receive an explanation in the course of the analysis: 16 patterns are logically available (four positions with a binary choice of gap / RP for each), but only five are attested; the Highest Subject Restriction only holds for roughly half of the languages; embedded and non-embedded direct objects pattern identi-
6.1 Summary: The Generalizations and their Analyses

cally; embedded and non-embedded subjects do not necessarily pattern identically; the possibility of RPs in object positions entails the possibility of RPs in embedded subject positions, but not vice versa. Finally, certain related phenomena were identified which do not pertain directly to these distributional patterns, but have to do with resumptives in other constructions: RPs almost standardly void islandhood constraints; the form of C appears to correlate in certain ways with the extraction strategy; RPs never surface more than once or in any intermediate movement position, but they still can move; RPs frequently occur as the objects of prepositions or as conjuncts in coordinations.

In order to explain these patterns and phenomena in a unified and systematic way, a novel, derivational analysis was developed. Both gaps and resumptives were construed to be related to their antecedent (the relative operator) via syntactic movement. Thus, a single mechanism could be exploited for both extraction strategies, given that gaps and RPs behave the same in the majority of cases. The two core ingredients were a re-interpretation of the more traditional Big DP, a φP, which consists of a φ head which can be stranded (in RP extractions), and a DP part which can pied-pipe φ (in gap extractions). This is repeated schematically for both strategies below:

\[\text{(2) Gap relativization} \quad \text{(3) RP relativization}\]

\[\begin{align*}
\text{[} & vP \ [φP \ φ\ DP] \ [v \ v \ gap] \text{]} \\
\text{PIED-PIPE} & \quad \text{STRAND}
\end{align*}\]

The operation Agree was identified as being capable of deciding between both strategies on a local level. If it applies between e.g. \(v\) and \(φP\) before Move, then DP (marked with REL) becomes accessible for subextraction. Agree induces phase extension and, thus, voids antilocality, such that only the minimally necessary relative operator (DP) can move, as in (3). If Move applies first, however, DP is not acces-
sible, and it has to pied-pipe its φP shell along in order to still become the operator later on, as in (2). Stranded φ information can be used to compute an overt (or null) RP at PF, while a gap leaves no such information.

Both mechanisms, on their own, can only account for two of the five attested patterns: pattern 1 with gaps in all extraction positions (GGGG), and pattern 2 with RPs (RRRR), see (1). In order to account for the variations in the other patterns, two more operations were introduced as crucial to resumption. One was External Merger, which is crucial in the present approach for the insertion of the subject. The other one came about by splitting Move into two parts, one for intermediate movement steps of elements in order to obey phasehood, and one for final movement steps which ultimately satisfy a requirement by placing the element in its ultimate target position. One possible derivation involving all operations is exemplified below:

(4)
This derivation illustrates the relativization of a direct object under the RP strategy. The steps are as follows: •0: $\phi P$ merges with V. Since V is not a phase head, it does not trigger any operation. •1: $v$ enters the derivation, and Agree is triggered. The $\phi$ probe on $v$ agrees with $\phi$, inducing phase extension. As a consequence, $\phi$ loses its phasehood, and the REL-marked DP becomes accessible for further syntactic operations. •2: Aside from $\phi$, $v$ also carries a REL feature to ensure successive cyclic movement of the element to be relativized to $v$’s phase edge. Since DP can be moved on its own via Intermediate Move, and does not have to pied-pipe $\phi P$ (due to phase extension), the latter is stranded and will be computed into an RP. •3: External Merger is triggered on $v$, and the subject is merged. •4: $T$ is merged but does not trigger an operation. $C$ merges and $\phi$ probes its domain. Since the subject is nothing but a $\phi P$ itself, it serves as a goal (DP is arguably closer, but devoid of $\phi$ features after stranding them). •5: The REL feature on $C$ triggers Final Move of DP to SpecCP, where it has reached its final operator position.

As becomes clear, several assumptions were made implicitly. The most important one was that two or more syntactic operations triggered by the same phase head do not apply randomly, but in an extrinsically set order. In the example above, the order for $v$ and $C$ alike was Agree before Intermediate Move / Final Move before External Merger\(^1\), or, in the shortened notation: AGR $>$ IM $>$ FM $>$ EM. This order of operations emerged as one out of 24 logically possible orders, which in turn resulted in six different gap / RP distribution patterns for subject and object positions. Five of these directly represent the data, one pattern is unattested as of yet:\(^2\)

---

\(^1\)The order of both movement operations, if adjacent, did not matter, because they cannot be triggered by the same phase head.

\(^2\)But see footnote 31 on page 116 for a possibility to rule out pattern 6 independently.
<table>
<thead>
<tr>
<th>P</th>
<th>Distribution</th>
<th>Orders of operation</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GGGG</td>
<td>FM &gt; IM &gt; AGR &gt; EM</td>
<td>Czech, Hebrew, Irish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FM &gt; IM &gt; EM &gt; AGR</td>
<td>Mandarin Chinese</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FM &gt; EM &gt; IM &gt; AGR</td>
<td>Serbo-Croatian, Spanish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM &gt; FM &gt; AGR &gt; EM</td>
<td>Ukrainian, Yiddish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM &gt; FM &gt; EM &gt; AGR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM &gt; EM &gt; FM &gt; AGR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM &gt; FM &gt; IM &gt; AGR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM &gt; IM &gt; FM &gt; AGR</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RRRR</td>
<td>AGR &gt; FM &gt; IM &gt; EM</td>
<td>Asante Twi, Hausa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGR &gt; FM &gt; EM &gt; IM</td>
<td>Lebanese Arabic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGR &gt; EM &gt; FM &gt; IM</td>
<td>Mandarin Chinese</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGR &gt; EM &gt; IM &gt; FM</td>
<td>Serbo-Croatian</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGR &gt; IM &gt; FM &gt; EM</td>
<td>Spanish, Tuki</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AGR &gt; IM &gt; EM &gt; FM</td>
<td>Ukrainian, Yiddish</td>
</tr>
<tr>
<td>3</td>
<td>GRRR</td>
<td>FM &gt; AGR &gt; EM &gt; IM</td>
<td>Brazilian Portuguese, Czech</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FM &gt; AGR &gt; IM &gt; EM</td>
<td>Ga, Hebrew, Irish</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Palestinian Arabic, Polish</td>
</tr>
<tr>
<td>4</td>
<td>GRGG</td>
<td>EM &gt; FM &gt; AGR &gt; IM</td>
<td>Welsh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FM &gt; EM &gt; AGR &gt; IM</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>RRGG</td>
<td>EM &gt; AGR &gt; FM &gt; IM</td>
<td>Hausa, Tuki, Vata, Yoruba</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM &gt; AGR &gt; IM &gt; FM</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RGGG</td>
<td>IM &gt; EM &gt; AGR &gt; FM</td>
<td>predicted but not attested yet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM &gt; AGR &gt; EM &gt; FM</td>
<td></td>
</tr>
</tbody>
</table>

More than one order of operations can lead to the same result due to the way Intermediate Move, Final Move, Agree and External Merger interact on v and C,
respectively. The derivation of these gap / RP patterns across many different languages was one of the core goals of the presented approach. It was accomplished based on the systematic interactions of primitive syntactic operations.

In addition to distribution patterns, several generalizations and observations also fell out naturally from the system developed here. First, the ones connected to the patterns shall be briefly addressed. The fact that only six out of 16 logically possible patterns arise is due to the ways that the four syntactic operations interact; not every order has a different effect, and not every phase head triggers every operation. The HSR was shown to hold for roughly half of the investigated languages, while the other half allows for subject resumptives. It is thus not a very strong restriction cross-linguistically and basically constitutes one out of five attested possible patterns. It could be derived as one natural path resumption can take, but it does not appear to be based on universal principles. Embedding plays no role for object RPs because the relevant interaction of Agree and Intermediate Move does not distinguish between both kinds of position. They cannot be treated differently. At the same time, embedding can make a difference with respect to subject positions. Final Move is relevant for the highest subject, while Intermediate Move applies to embedded subjects. Since both operations can be ordered differently with respect to Agree, variation is expected and, more importantly, derivable. If a language allows for RPs in (embedded and non-embedded) object positions, it also does so in the embedded subject position. This is because the interaction of Intermediate Move and Agree in a given order is the same for all three kinds of positions. The reverse, however, is not true: RPs in embedded subject positions do not necessarily entail RPs in object positions. The operation External Merger was shown to be able to bleed the occurrence of RPs in object positions, but it is only triggered on v, not C heads, thus leaving embedded subjects unaffected.
Finally, the findings for further, related phenomena shall be briefly summarized. The most notorious feature of RPs is their ability to void islandhood violations which would normally be expected when extracting from islands. It was shown how the structure of φP, in addition with a recent theory of islands (maraudage), can be exploited to account for this behavior. The structurally (and featurally) “lighter” DP is able to escape an island, leaving behind its φP shell. The latter, if moved entirely, would maraud features intended for an island-erecting operator, thus bringing about the perceived violation. An apparent correlation between complementizer selection and the occurrence of gap vs. RP could be shown to stem from the structure of φP, as well. In gap cases, it moves in its entirety, taking along φ material which can be used for spellout of overt relative pronouns in SpecCP. In RP cases, on the other hand, φ is stranded to form an RP at PF. The operator DP in SpecCP cannot be pronounced, thus an invariant C is inserted.3 RPs never appear in intermediate positions along the successive-cyclic movement path of the relativized element, because φP can only be stranded in its base position (or never). This also explains why no multiple RPs are either found or expected; φ is only stranded once (or not at all). However, there is evidence for RPs in non-base positions (e.g. in Czech, Polish, Hebrew). This is because nothing inherently prevents φP from moving after DP has been subextracted out of it, which presumably happens due to additional movement triggers on phase heads. Finally, it could be shown how RPs frequently occur as objects of prepositions and conjuncts of coordinations, regardless of the subject / object distribution pattern. In the former case, the P head was argued to be a phase head, too, capable of triggering the formation of RPs. The latter case was derived by applying the same logic to a certain structure of coordination – with -heads triggering syntactic operations.

3This basic scenario was also carried over to case studies of Ga and Irish.
6.2 Outlook: Potential Challenges and further Research

This was a brief overview over what could be accomplished within the confines of this thesis. As it was to be expected for a phenomenon with such deep connections to basic syntactic operations and non-local effects, the proposed solutions did not come without potential challenges and shortcomings. These shall be laid out in the second part of this chapter.

6.2 Outlook: Potential Challenges and further Research

The following will highlight certain issues of the approach which could not be dealt with in order to keep this thesis focused. Where possible, ideas for extensions and future research directions will be given. Some issues are theory-internal and arise from the assumption of the proposal in its current state. Others come about because more data is needed, or because existing data has to be interpreted in different ways.

6.2.1 Other resumptive Constructions

As was stated in the introduction, sections 1.1 and 1.2, this thesis focused on the syntactic properties of grammatical resumption, not its semantic dimension. It is believed that semantic effects can be derived from syntactic properties, and focusing on one side of the story was reasonable due to the crosslinguistic breadth. The semantic impact of RPs vs. gaps has only been acknowledged and studied thoroughly for very few languages (e.g. Hebrew, Doron 2011), while syntactic data is more readily available and lends itself to a deeper investigation. Thus, while it is not an inherent shortcoming of this treatment to exclude semantic effects, it would be desirable to find a way of properly mapping them onto the syntactic mechanics. While quite a number of seemingly unrelated phenomena connected to resumption could be derived, it has to be emphasized that the subject matter were relative constructions. Again, this was due to the relative abundance of empirical data, but that does not
mean the approach automatically carries over to other constructions. Most notably, interrogatives appear to behave differently, with resumption being far less common there than in relatives (cf. e.g. Safir 1986; Boeckx 2003; for a processing related analysis cf. Hawkins 2004). In addition to A-dependencies, possible correlations between A-movement and resumption should be investigated, as there is evidence of resumption in e.g. passive constructions (Rezac 2011).

Another interesting field to explore would be possible resumption phenomena in ergative languages. In the work presented here, no ergative resumptive languages were found, and it would be enlightening to find out whether this poses a generalization in itself. If there actually were ergative examples to be found, this account would have to be adapted to cover them.

6.2.2 Epithets

One challenge that directly concerns the syntax proposed here has to do with so called epithets. These are resumptive elements which have semantic content of their own and can sometimes be inserted instead of RPs: \(^4\)

(5) Lebanese Arabic, RP and epithet

a. təlmiiiz-ə, l-kəsleen ma baddir nəabbir wala mʕallme, ?ənno student-her the-bad NEG want.1.PL tell.1.PL no teacher that huwe zaʕbar b-l-fahs he cheated.SG.M in-the-exam.

‘Her bad student, we don’t want to tell any teacher that he cheated on the exam.’

b. təlmiiz-ə, l-kəsleen ma baddir nəabbir wala mʕallme, ?ənno student-her the-bad NEG want.1.PL tell.1.PL no teacher that

---

\(^4\)Note that this is Left Dislocation, not relativization. However, since it would be desirable to adapt the approach presented here to other constructions, the epithet challenge remains the same.
6.2 Outlook: Potential Challenges and further Research

ha-l-maṣduub za‘ībar b-l-fahṣ
3-the-idiot.sg.m cheated.sg.m in-the-exam.

‘Her bad student, we don’t want to tell any teacher that this idiot cheated on the exam.’ (Aoun et al. 2001, 380f.)

Both the RP he and full DP (φP) the idiot are grammatical after the extraction of her bad student. Recall that only φP is assumed to be stranded, while DP, carrying the semantic information, is subextracted to become an operator. It is thus unclear how the stranded φ information can be computed at PF into anything other than, at most, a pronoun. Even if DP was able to somehow transmit its semantic information prior to subextraction (in a Big DP kind of approach like the one presented here), it would be far from clear how student can be pronounced idiot in another position. Something else appears to be at work here in addition to the syntactic resumption mechanism. Note that this puzzle arises in any framework: in base generation, on the one hand, binding would have to apply between two separately inserted, seemingly unrelated elements which can each stand on their own. On the other hand, copy-spellout approaches cannot explain how two presumably exact copies can receive two wildly different pronunciations (while a regular RP already is a reduction that needs explanation).

6.2.3 More Data

One very simple way to shed more light on the nature of resumption is the collection of more language data. On the one hand, that would broaden the base for crosslinguistic comparisons in general, especially if constructions other than relativizations are sought out, too. On the other hand, and more specifically, it could tell us more about the status of resumption as a syntactic mechanism. Resumption could be regarded as a relatively rare and restricted phenomenon, at least if only instances of
grammatical resumption are counted. On the other hand, the 19 languages treated here are not meant to be an exhaustive set. If resumption is assumed to be essentially the same phenomenon independently of the construction it appears in (e.g. if it also features in Left Dislocation, interrogatives), the list already grows, and calls into question a view of resumption as a simple repair phenomenon. Also, dialectal variation could be accounted for in more detail, because the data often stem from only one or two sources based on a certain variety of the respective language. Moreover, for the approach presented here, in particular, more data would be helpful to determine potential frequency effects with regard to the patterns. As was shown in (52) of chapter 3.4, certain orders of operation collude to yield the same distribution pattern. If the sample size grew, maybe the number of orders per pattern would start to correlate with the relative amount of languages which exhibit that pattern. For example, eight orders derive an all gap and an all resumptive pattern, respectively. The number of languages which make use of these two patterns, both mandatorily and optionally, is also relatively high. However, the account presented here was not designed to reproduce this kind of empirical frequency, but it would be interesting to see if a connection could still be established.
Bibliography


Adger, David (2008): Bare resumptives. Ms. UCL.


Bibliography


Bošković, Željko (to appear): ‘Now I’m a phase, now I’m not a phase - on the variability of phases with extraction and ellipsis’, *Linguistic Inquiry* pp. 1–64.


Chomsky, Noam (2005): On phases. Ms. MIT.


Bibliography


den Dikken, Marcel (2006): Phase extension - contours of a theory of the role of head movement in phrasal extraction. Ms. CUNY.


Georgi, Doreen and Martin Salzmann (to appear)): ‘The matching effect in resumption: a local analysis based on case attraction and top-down derivation’, *Natural Language and Linguistic Theory*.


Bibliography


Heck, Fabian and Malte Zimmermann (2004): Phasenentwicklung in der Entwick-
lungsphase – Randphänomene der DP. Conference handout, GGS Mannheim.


**Bibliography**


Korsah, Sampson and Andrew Murphy (2015): Tonal reflexes of successive-cyclic movement in Asante Twi. NELS 46, Concordia University, Montreal.


Ott, Dennis (to appear): ‘Connectivity in left-dislocation and the composition of the left periphery’, *Linguistic Variation*.


Bibliography


Salzmann, Martin (2006): Resumptive prolepsis. LOT.


7 Appendix: Additional Data

This appendix gathers data from resumption in relativization contexts which do not involve subject and (direct) object positions. Island cases and examples from prepositional and coordinated phrases can be found here. While the main data in chapter 2 served as a basis for the analysis proposed here, the following facts receive explanations in chapters 4 and 5.

7.1 Asante Twi

(1) Wh-island, RP

a. *Abofra no aa Kofi n-nim nípa aa ɔ-pɛ ___ no
   child DEF REL Kofi NEG-know person REL 3.SG.SUBJ-like gap CD
b. Abofra no aa Kofi n-nim nípa aa ɔ-pɛ no
   child DEF REL Kofi NEG-know person REL 3.SG.SUBJ-like 3.sg.obj
   no
   CD gap
   ‘the child that Kofi doesn’t know the person that likes him’

   (S. Korsah, p.c.)

(2) Adjunct island, RP

a. *akyerekyerẹni no aa ye-be-du-ui ansa ye-hu-u
   teacher DEF REL 3.PL-come-reach-PAST before 3.PL-see-PAST
   ___ no
   gap CD
7 Appendix: Additional Data

b. ṭkyerckyerɛnɪ no aa Ye-be-du-ui ansa Ye-hu-u
teacher DEF REL 3.PL-come-reach-PAST before 3.PL-see-PAST
no no
3.sg.obj CD

‘the teacher that we arrived before we saw him’ (S. Korsah, p.c.)

(3) Complex NP island, RP

a. *Abofra no aa Kofi te-e atetesem bi ɛ Amma hu-u
child DEF REL Kofi hear-PAST rumor INDEF C Amma see-PAST
___ no
gap CD

b. Abofra no aa Kofi te-e atetesem bi ɛ Amma hu-u
child DEF REL Kofi hear-PAST rumor INDEF C Amma see-PAST
no no
3.sg.obj CD

‘the child that Kofi heard the rumor that Ama saw him’

(S. Korsah, p.c.)

(4) Prepositional object, RP

Maamɛ nó ɛɛ papa nó máa no aduane nó
woman DEF C man DEF give.PAST 3.sg food CD

‘the woman to whom the man gave food’ (Saah 2010, 100)

7.2 Brazilian Portuguese

(5) Prepositional object, RP

a. *o homem que eu conversei com ___
the man that I talked with gap

b. o homem que eu conversei com ele
the man that I talked with him

‘the man that I talked with’ (Grolla 2005, 3)
7.2 Brazilian Portuguese

(6) Wh-island, RP

Este é o rapaz que eu não sei se você gosta dele
This is the guy that i don’t know whether you like him
‘This is the guy that i don’t know whether you like him.’

(M. C. T. Heberlein, p.c.)

(7) Adjunct island, RP

Esta é a garota que nós chegamos antes de encontrar com ela
This is the girl that we arrived before we met her
‘This is the girl that we arrived before we met her.’

(M. C. T. Heberlein, p.c.)

(8) Complex NP island, RP

a. Este é o rapaz que a Maria conhece a garota que ama ele.
   this is the boy that Maria knows the girl who loves him
b. Este é o rapaz que a Maria conhece a garota que o ama.
   this is the boy that Maria knows the girl who him loves

‘This is the boy that Maria knows the girl who loves him.’

(M. C. T. Heberlein, p.c.)

(9) Coordinated subject, RP

a. esta é a mulher que você e ela me bateram
   this is the woman that you and she hit me
   ‘this is the woman that you and she hit me’
b. esta é a mulher que ela e você me bateram
   this is the woman that she and you hit me
   ‘This is the woman that she and you hit me.’ (M. C. T. Heberlein, p.c.)

1The informant notes that the a) case is colloquially widespread, while b) is “correct” according to prescriptive grammars. This means that the more formal version involves movement of the RP (cf. chapter 5.4) to a preverbal position and its reduction to a clitic at PF.
7 Appendix: Additional Data

7.3 Czech

(10) Wh-island, RP

To je ten clap co ted nevím jesli sme mu nedali dva this is the guy C now I.not.know whether AUX him we.not.gave two listky
tickets

‘This is the guy that I now don’t know whether we didn’t give him two tickets.’ (Toman 1998, 306f.)

(11) Adjunct island, RP

To je ten muž, co jsme přijeli, než jsme ho this is the man C AUX.PAST.1.PL arrived before AUX.PAST.1.PL him
potkali met

‘This is the man that we arrived before we met him.’ (R. Šimík, p.c.)

(12) Coordinated subject, RP

To je ten chlap co von a Karel hráli proti nám this is the guy C he and Karel played against us

‘This is the guy that he and Karel played against us.’ (Toman 1998, 311)

7.4 Ga

(13) Wh-island, RP

a. *Gbeke le ní Kwei le mò ni sumó le child DEF REL Kwei know person REL like gap CD
b. Gbeke le ní Kwei le mò ni sumó le child DEF REL Kwei know person REL like 3.sg.obj CD

‘the child that Kwei knows a person who likes him’ (S. Korsah, p.c.)
7.5 Hausa

(14) Adjunct island, RP

a. *Tsɔɔl le ní wɔ-ɓa-shə dani wɔ-ŋa  ____ le
teacher DEF REL 3.PL-come-reach before 3.PL-see gap CD
b. Tsɔɔl le ní wɔ-ɓa-shə dani wɔ-ŋa le le
teacher DEF REL 3.PL-come-reach before 3.PL-see 3.sg.obj CD

‘the teacher that we arrived before we saw him’ (S. Korsah, p.c.)

(15) Complex NP island, RP

a. *Abekε le ní Kwei nu akɛɛakə ko ake Dede na  ____ le
cild DEF REL Kwei hear rumor INDEF C Dede see gap CD
b. Abekε le ní Kwei nu akɛɛakə ko ake Dede na le le
cild DEF REL Kwei hear rumor INDEF C Dede see 3.sg.obj CD

‘the child that Kwei heard the rumor that Dede saw him’ (S. Korsah, p.c.)

7.5 Hausa

(16) Prepositional object, RP

Wàa ka yi màganàa dà shii
who 2.SG.M.CPL do talking with 3.SG.M

‘Who did you talk with?’ (Crysmann 2012, 56 from Tuller 1986, 158)

(17) Wh-island, RP

Littaaﬁn dà ka san wàa ya rubiutaay nRP
book REL 2.SG.M.CPL know who 3.SG.M.CPL write nRP

‘the book that you know who wrote’

(Crysmann 2012, 56 from Tuller 1986, 80)
7 Appendix: Additional Data

7.6 Hebrew

(18) Prepositional Object, RP

a. *ha-ʔiš še-xašavti ʿal-___
   the-man that- (I) thought about-gap
b. ha-ʔiš še-xašavti ʿal-av
   the-man that- (I) thought about-him

‘the man that I thought about’ (Shlonsky 1992, 445)

(19) Coordinated subject, RP

a. *ha-ʔiš še-Ruti ve-___ ʔohavim kesef
   the-man that-Ruti and-gap love money
b. ha-ʔiš še-Ruti ve hu ʔohavim kesef
   the-man that-Ruti and he love money

‘the man that Ruti and him love money’ (Shlonsky 1992, 450)

(20) Coordinated object, RP

raʔiti ʔet ha-yeled še- rina ʔohevet ʔoto ve- ʔet ha-xavera shelo
saw-I ACC the-boy that Rina loves him and ACC the-friend of-his

‘I saw the boy that Rina loves him and his girlfriend.’ (Borer 1984, 221)

(21) Wh-island, gap or RP

a. ze ha-ʔiš še-Rina yodaʾat mi hika ___
   this the-man that-Rina knows.F who hit gap
b. ze ha-ʔiš še-Rina yodaʾat mi hika ʔoto
   this the-man that-Rina knows.F who hit ʔoto

‘This is the man that Rina knows who hit him.’ (O. Preminger, p.c.)
7.7 Irish

(22) Adjunct island, RP

ze ha-bimay še-Omer azav lifney še-hu ra’a oto
this the-director that-Omer left before that-he saw him
‘This is the director that Omer left before he saw him.’

(O. Preminger, p.c.)

(23) Complex NP-island, RP

ra’iti ?et ha-yeled še- dalya makira ?et ha-?isha še- ?ohevet ?oto
saw-I ACC the-boy that Dalya knows ACC the-woman that- loves him
‘I saw the boy that Dalya knows the woman who loves him.’

(Borer 1984, 221)

7.7 Irish

(24) Prepositional object, RP

an fear ar labhair mé lena mhac
the man C spoke I with his son
‘the man that I spoke to his son’

(McCloskey 2006, 3)

(25) Wh-island, RP

na hamhráin sin nach bhfuil fhios cé a chum iad
the songs DEM C.NEG is knowledge who C composed them
‘those songs that we don’t know who composed them’ (McCloskey 2006, 5)

(26) Complex NP-island, RP

an fánaidhe a n-abradh daoine nár thuig é go rabh sé
the wanderer C would-say people C.NEG understood him C was he
éadtrom sa cheann
light in the head
7 Appendix: Additional Data

‘the wanderer that people who didn’t understand him would say that he was soft in the head’ \hspace{1cm} (McCloskey 2006, 5f.)

(27) Adjunct island, RP

Néréé Caron, nach bhfuil ann ach tamall beag ó bhí sí
Néréé Caron C.NEG is in.it but time small since was she
dóigheanhail feiceálach
beautiful attractive
‘Néréé Caron, who it is only a short time since she was beautiful and attractive’ \hspace{1cm} (McCloskey 2006, 6)

7.8 Lebanese Arabic

(28) Prepositional object, RP

a. *el-binit yalli inta fakaret fiy-_____ the-girl that you thought.2.SG about-gap
b. el-binit yalli inta fakaret fiy-a the-girl that you thought.2.SG about-her

‘the girl that you thought about’ \hspace{1cm} (Dima Zeidan, p.c.)

(29) Wh-island, RP

l-mšallme ?aaSaSit l-walad yalli laila bta‘rif miin nRP
the-teacher punished.3.SG.F the-boy that Laila know.3.SG.F who nRP
Darab hit.3.SG.M

‘The teacher punished the boy that Laila knows whom he hit.’ \hspace{1cm} (Aoun 2000, 17)
7.9 Mandarin Chinese

(30) Adjunct island, RP

laila bta'rif l-walad yallì l-m'allme fallit ?ablma nRP
Laila knows.3.SG.F the-boy that the-teacher left.3.SG.F before nRP
γallaS
finished.3.SG.M

‘Laila knows the boy that the teacher left before he finished.’

(Aoun 2000, 17)

(31) Complex NP-island, RP

t'arrafna łała l-mużríq yallì laila 'eefit l-masrafiyye yallì nRP
met.1.PL on the-director that Laila saw.3.SG.F the-play that nRP
?agrāga
directed.3.SG.M-it

‘We met the director that Laila saw the play he directed.’ (Aoun 2000, 17)

(32) Coordinated subject, RP

a. haida el-rijjeil yallì huwwe w dima shefooni
this the-man that he and Dima saw.3.PL.me

‘this is the man that he and Dima saw me’

b. haida el-rijjeil yallì dima w huwwe shefooni
this the-man that Dima and he saw.3.PL.me

‘this is the man that Dima and he saw me’ (Dima Zeidan, p.c.)

7.9 Mandarin Chinese

(33) Complex NP-island, none

a. *Wo pengdao-le Xiaoqian renshi yongbao-gui gap de na-wei
I meet-PERF Xiaoqian know embrace-EXP gap C that-CL
niútóngxué de Faguo yingxing
female.student C French star

2Pan (p.c.) states that both gap and RP strategies are also illicit with wh-islands.
7 Appendix: Additional Data

b. *Wo pengdao-le Xiaoqian rensi yongbao-gui ta1 de na-wei
   I meet-PERF Xiaoqian know embrace-EXP 3.masc.sg C that-CL
   nütongxue de Faguo yingxing
   female.student C French star

   ‘I met the French star that Xiaoqian knows the girl who embraced him.’

   (Pan 2015, 5)

(34) Adjunct island, none

a. *Yinwei Mali qin-le ___ zheng-ge xue xiao de nanlaoshi dou
   because Mary kiss-PERF gap entire-CL school C man.teacher all
   hen yumen de na-ge yisheng
   very unhappy C that-CL doctor
b. *Yinwei Mali qin-le ta1 zheng-ge xue xiao de nanlaoshi
   because Mary kiss-PERF 3.masc.sg entire-CL school C man.teacher
   dou hen yumen de na-ge yisheng
   all very unhappy C that-CL doctor

   ‘the doctor that all of the male teachers of the school are unhappy be-
   cause Mary kissed him.’

   (Pan 2015, 4)

7.10 Palestinian Arabic

(35) Prepositional object, RP

a. *l-bint ?illi fakkarti fii-___
   the-girl that (you-F) thought on-gap
b. l-bint ?illi fakkarti fii-ha
   the-girl that (you-F) thought on-her

   ‘the girl that you thought about her’

   (Shlonsky 1992, 445)
7.11 Polish

(36) Prepositional object, RP

Tego domu co w nim straszy nikt nie chce kupić
this house in it haunts nobody not wants buy
‘Nobody wants to buy the house that is haunted.’ (Bondaruk 1995, 36)

(37) Coordinated subject, RP

To są ci ludzie co oni i ich synowie umieją łowić ryby
these are these people they and their sons can catch fish
‘These are the people who themselves and their sons can catch fish.’

(Bondaruk 1995, 41)

(38) Wh-island gap or RP

a. Czy to ten mężczyzna, którego Ewa nie chce ci
powiedzieć kiedy zaprosi ____?
to.say when will.invite gap

b. Czy to ten mężczyzna, co Ewa nie chce ci powiedzieć
kiedy go zaprosi?
when acc.masc.sg will.invite

‘Is this the man that Ewa doesn’t want to tell you when she will invite him?’

(Bondaruk 1995, 42)

(39) Complex NP-island, gap or RP

a. To jest ten samochód, który mój sąsiad właśnie
this is the car which my neighbor just
dał ogłoszenie, że sprzeda ____
gave advertisement that will.sell gap
b. To jest ten samochód, co mój sąsiad właśnie dał
this is the car NOM.MASC.SG C my neighbor just gave
ogłoszenie, że go sprzedą
advertisement that ACC.MASC.SG will sell
‘This is the car that my neighbor just placed an advertisement that he wants
to sell.’ (Bondaruk 1995, 40)

7.12 Serbo-Croatian

(40) Wh-island, RP

a. *Dečak što ne znamo ko ___ voli
boy that not know.1.PL who GAP loves
b. Dečak što ne znamo ko ga voli
boy that not know.1.PL who HIM loves
‘the boy that we don’t know who likes him’ (Z. Puškar, p.c.)

(41) Adjunct island, RP

a. *čovjek koga je zaboravio gdje _____ je upoznao
man REL is forgotten where GAP is met
b. *čovjek što je zaboravio gdje ga je upoznao
man C is forgotten where HIM is met
‘the man who he knows where they met’ (Bošković 2007, 1)

(42) Complex NP-island, RP

a. *Čovek što je Asia poverovala glasini da _____ je Zoka videla
man that is Asia believed.F.SG rumor that GAP is Zoka seen.F.SG
b. Čovek što je Asia poverovala glasini da ga je Zoka videla
man that is Asia believed.F.SG rumor that HIM is Zoka seen.F.SG
‘the man that Asia believed the rumor that Zoka saw him’
(Z. Puškar, p.c.)

3 The Serbian informant strongly disagrees with Bošković’s judgment of the b) case. The “što” +
RP construction is actually fine (Z. Puškar, p.c.), which is in line with the rest of the data.

210
7.13 Spanish

(43) Prepositional object, gap or RP

a. Me hablas de un asunto sobre el que yo no puedo opinar
to.me talk.2.sg of a topic about which I not can opine

<table>
<thead>
<tr>
<th>gap</th>
</tr>
</thead>
</table>

b. Me hablas de un asunto que yo no puedo opinar sobre él
to.me talk.2.sg of a topic that I not can opine about it

‘You are talking to me about something on which I have no opinion.’

(Suñer 1998, 340)

(44) Wh-island, RP

¿qué libro me dijiste tú que no recuerdas donde lo pusiste
which book to.me told you that no remember.2.sg where it put.2.sg
‘Which book did you tell me that you don’t remember where you put it?’

(Suñer 1998, 335)

(45) Adjunct island, none

*Éste es el director que María se fue antes de verle
this is the director c Maria left before she saw.him
‘This is the director that Maria left before she saw him.’

(M.B. Verdejo, p.c.)

4 The informant states that the sentence does not work, but that the RP has to be present anyway.
Appendix: Additional Data

(46) Complex NP island, none

a. *Ésta es la mujer que María creyó el rumor de que Luis ____
   this is the woman c Maria believes the rumor c Luis gap saw vio

b. *Ésta es la mujer que María creyó el rumor de que Luis la
   this is the woman c Maria believes the rumor c Luis her saw vio

   ‘This is the woman that Maria believed the rumor that Luis saw her.’

(M.B. Verdejo, p.c.)

(47) Coordinated subject, RP

a. *Ésta es la mujer que ____ y Luis ganaron el partido
   this is the woman c gap and Luis won the game

b. Ésta es la mujer que ella y Luis ganaron el partido
   this is the woman c her and Luis won the game

   ‘This is the woman that she and Luis won the game.’

(M.B. Verdejo, p.c.)

7.14 Tuki

(48) Prepositional object, RP

okutu odzu, ngu mu bina na a,
woman that I P1 dance with her

‘the woman who I dance with’

(Biloa, 1990, 215)

(49) Coordinated object, RP

a. okutu odzu odzu Mbara a m una nRP 1 na Puta
   woman this whom Mbara SM P2 kill nRP and Puta

   ‘This is the woman that Mbara killed her and Puta.’

(Biloa, 1990, 228)
b. okutu odzu odzu, Mbara a ma mu, una na Puta 
woman this whom Mbara SM p2 her kill and Puta
'This is the woman that Mbara killed her and Puta.' (Biloa, 1990, 227)

c. *okutu odzu odzu, Mbara a m una Dima na gap
woman this whom Mbara SM p2 kill Dima and gap
'This is the woman that Mbara killed Dima and her.' (Biloa, 1990, 228)

d. okutu odzu odzu, Mbara a m uma Dima na a, 
woman this whom Mbara SM p2 kill Dima and her
'This is the woman that Mbara killed Dima and her.'
(Biloa, 1990, 228)

(50) Wh-island, RP

a. okutu odzu odzu, Mbara a kambim andzu a ma berana nRP 
woman this that Mbara SM wonders who SM p2 call her

(51) Adjunct island

i mu manya ama ama; avan dze o timbita nRP; o yanam o
it is food this before that you touch it you must INF
suwa amboo roo
wash hands your

'It is this food that before you touch, you must wash your hands.'
(Biloa, 1990, 220)

(52) Complex NP island, RP

a. okutu odzu odzu, Mbara i dzimam mutu odzu a ma noba nRP 
woman this whom Mbara SM knows man who SM p2 beat nRP
Appendix: Additional Data

b. okutu odzu odzu; Mbara i dzipam mutu odzu a ma mu, noba woman this that Mbara SM knows man that SM P2 her beat

‘the woman that Mbara knows the man who beat’ (Biloa, 1990, 217)

7.15 Ukrainian

(53) Prepositional object, gap or RP

a. *žhink-a yaku ty dumaw pro ___
  woman-NOM.SG C you.NOM.2.SG think.PAST.2.SG about gap
b. žhink-a ščo ty dumaw pro neji
  woman-NOM.SG C you.NOM.2.SG think.PAST.2.SG about her.3.sg

‘the woman that you thought about’ (I. Zalevskaya, Y. Kushnir p.c.)

(54) Coordinated subject, RP

a. zžhink-a ščo Petro ta bona graly proty nas
   woman-NOM.SG C Peter and 3.sg.f.nom play.PAST.3.PL against us
   ‘the woman that Peter and her played against us’

b. žhink-a ščo bona ta Petro graly proty nas
   woman-NOM.SG C 3.sg.f.nom and Peter play.PAST.3.PL against us
   ‘the woman that she and Peter played against us’

   (I. Zalevskaya, Y. Kushnir p.c.)

(55) Wh-island, RP

žhink-a ščo my ne znažemo kogo
  woman-NOM.SG C we.NOM.1.PL NEG know.PRES.IMPERF.2.PL who
  bona vdaryla
she.nom.3.sg hit.PAST.3.SG

‘the woman that we don’t know who she hit’

   (I. Zalevskaya, Y. Kushnir p.c.)

214
(56) Adjunct island, RP

žhink-a ščo jiji tilky neschodavno zustriv
woman-NOM.SG C her.3.sg recently since meet.PAST.3.SG
cholovik
man.NOM

‘the woman that it is only a short time since the man met her’

(I. Zalevskaya, Y. Kushnir p.c.)

(57) Complex NP-island, RP

žhink-a ščo lyudy yaki jiji ne
woman-NOM.SG C people.NOM C her.ACC.3.SG NEG

znayut kažhut scho vona
know.PRES.IMPERF.3.PL say.PRES.IMPERF.3.PL C she.3.sg.f.nom
bozhevilna
crazy

‘the woman that people that don’t know her say that she is crazy’

(I. Zalevskaya, Y. Kushnir p.c.)

7.16 Welsh

(58) Prepositional object, RP

y bobl werthodd Ieuan y ceffyl iddyn nhw
the people sell.PAST.3.SG Ieuan the horse to.3.PL them

‘the people that Ieuan sold the horse to’

(Willis 2011, 190)

(59) Wh-island, RP

rhyw affwydd na ŵyr neb be ydi o
some affliction C.NEG know no.one what be.PRES.3.SG it

‘some affliction that no one knows what (it) is’

(Willis 2011, 214)
7 Appendix: Additional Data

(60) Adjunct island, none

*p* cyfarwyddwr wnaeth Peter gadael cyn welodd ef
the director did Peter leave before see.PAST.3.SG him
‘the director that Peter left before he saw him’  
(S. Roberts, p.c.)

(61) Complex NP-island, RP

y dyn yr credodd Dafydd y s i yr gwelodd Mair o
the man C believed.3.SG David the rumor C saw3.SG Mary him
‘the man that David believed the rumor that Mary saw him’

(Suñer 1998, 361, from de Freitas and Noonan 1991)

(62) Coordinated object, RP

y dyn yr soniais amdano ef ac Ann
the man C spoke.1.SG about.3.SG.M him and Ann
‘the man that I spoke about him and Ann’

(Suñer 1998, 361, from de Freitas and Noonan 1991)

7.17 Yiddish

(63) Wh-island, RP\textsuperscript{5}

\begin{itemize}
  \item a. der man vos mary veyst vemen er hot geshlogn
      the man that Mary knows who he has beat
      ‘the man that Mary knows who he has hit’
  \item b. der man vos mary veyst ver hot im geshlogn
      the man that Mary knows who has him beat
      ‘the man that Mary knows who has hit him’  
\end{itemize}

\textsuperscript{5}The informant states that complex NP-islands are out with either strategy.

216
(64) Adjunct island, RP

a. mir hohn geredt mit dem rezhisor vos mary hot farlozt eyder er
   we have talked with the director that Mary has left before he
   hot zi gezen
   has her seen
   ‘we have talked to the director that Mary left before he saw her’

b. mir hohn geredt mit dem rezhisor vos Peter hot farlozt eyder er
   we have talked with the director that Mary has left before he
   hot im gezen
   has him seen
   ‘we have talked to the director that Peter left before he saw him’

(I. Gottesman, p.c.)

7.18 Yoruba

(65) Prepositional object, gap or RP

a. Ìre ni Olú da omi sí ___
   rice be Olu pour water to gap

b. *Ìre ni Olú da omi sí i
   rice be Olu pour water to it
   ‘It was rice that Olu poured water into.’

(Adesola 2005, 90f.)

c. *Adé ni a sòrò nípa ___
   Ade be c we talk about gap

d. Adé ni a sòrò nípa rè
   Ade be c we talk about him
   ‘Ade was the person that we talked about.’

(Adesola 2005, 92)

(66) Coordinated subject, RP

a. *Olú ni Ojó àti ___ rí Sadé
   Olu be c Ojo and gap see Sade

b. Olú ni Ojó àti òun rí Sadé
   Olu be c Ojo and him see Sade
   ‘It was Olu that Ojo and him saw Sade.’

(Adesola 2005, 93)
7 Appendix: Additional Data

(67) Wh-island, RP

a. *Olú àti Adé ni mo bèèrè pé kí ____ rà
Olu and Ade be I ask C what gap buy
b. Olú àti Adé ni mo bèèrè pé kí wón rà
Olu and Ade be I ask C what they buy

‘It was Olu and Ade that I asked what they bought.’

(Adesola 2005, 94)

(68) Adjunct island, RP

a. *Ta ni Adé bínú kúrò nílé nítorí pé mo fèràn ____
who be Ade angry leave from-house because taht I meet gap
b. Ta ni Adé bínú kúrò nílé nítorí pé mo fèràn rè
who be Ade angry leave from-house because that I meet gap

‘Who did Ade leave home in annoyance because I liked him?’

(Adesola 2005, 93)

(69) Complex NP-island, RP

a. *Olú ni omòbirin tí ó ri ____ wá ní áná
Olu be C girl C she see gap come at yesterday
b. Olú ni omòbirin tí ó ri i wá ní áná
Olu be C girl C she see him come at yesterday

‘It was Olu that the girl that saw him came here yesterday.’

(Adesola 2005, 92)