The Diachronic Typology of Relative Clauses

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Declaration

This thesis is an account of research undertaken between August 2004 and October 2007 at The School of Language Studies, Faculty of Arts, The Australian National University, Canberra, Australia.

Except where acknowledged in the customary manner, the material presented in this thesis is, to the best of my knowledge, original and has not been submitted in whole or part for a degree in any university.

Rachel Hendery
October, 2007
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Abstract

This thesis investigates the diachronic behaviour of relative clauses across a broad sample of constructions from genetically and geographically diverse languages. Previous studies of change in relative clause constructions have most frequently been restricted to individual languages or language families. By comparing such studies with each other and with the historical records of languages that have less commonly been the focus of diachronic syntactic works, I examine the strength of evidence for developments that are predicted by earlier literature to be "natural" or even "universal" pathways of change (for example, various sources of relative clause markers, the development of hypotaxis out of parataxis, shift from prenominal to postnominal relative clause position). I also look for evidence of changes that synchronic typological studies of relative clause constructions might lead us to expect to find (i.e., diachronic variation in the same parameters by which relative clause types distinguish themselves synchronically).

I conclude that the sources of relative clause markers and the results of the extensions of these markers into other constructions are more varied than has generally been thought to be the case, including, for example, such sources as classifiers and discourse markers. Changes in other features of relative clauses, however, such as verb forms, embeddedness, and the relative position of the relative clause and its head tend to be remarkably stable over long periods of time.

The factor that appears to have the greatest influence on whether changes in these otherwise stable features do occur is language contact. Features of relative clauses, markers, and even entire constructions can be copied from other languages, competing with pre-existing constructions until in some cases one replaces the other, and in others the two are redistributed according to considerations such as restrictiveness, animacy, case role or similar.

These results point to the importance of incorporating the effects of language contact into models of language change rather than viewing contact situations as exceptional. There are also implications for the definition of relative clauses, their syntactic structures, and the relationships between the different "subtypes" of this construction.
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Abbreviations

Note: in some cases there are multiple abbreviations for the same term, since I have cited examples from different sources and retained the original glosses.

1 1st person  FUT  future tense
2 2nd person  G  genitive case
3 3rd person  GAP-S “gap strategy”
7 word class 7  GEN  genitive case
9 word class 9  I.O. indirect object
A accusative case  IHRC internally headed relative clause
ABS absolutive case  IMPERF imperfect
ACC accusative case  IMV imperative
ADJ adjective marker  INDEF indefinite pronoun
ADPOS adposition  INDIC indicative
ADV adverbial  INF infinitive
ADV adverbial  INST instrumental
AF independent suffix  INSTR instrumental
AG agentive marker  INT interrogative pronoun
AH accessibility hierarchy  INVAR invariant
AOP aorist participle  IOV indirect object version
AOR aorist  L1 first language
ART article  L2 second language
ASL American Sign Language  LOC locative
ASP apect-marker  LOC locative case
ATT attributive  M masculine
AUX auxiliary  MKR marker
CL classifier  N nominative case
COMP complementizer  NAR narrative (erg) case
COMPAR comparative  NEG negation
COMPL complement  NEU neuter
CONDIT conditional  NMLZR nominalizer
CONJ conjunction  NOM nominative case
CONTR contrast  NOML nominalizer
CORREL correlative construction  NP noun phrase
CP clause projection  NPMain the RC’s referent
D.O. direct object  NPREL co-referent NP in RC
D dative case  NR-S “full NP strategy”
DAT dative case  NUMP number projection
DEF definite article/suffix  NV neutral version
DEM demonstrative  OBJ object (marker)
DET determiner  OBL oblique
DG diachronic generalisation  OF construct state
DI the “patient trigger” prefix di OHG Old High German
DP determiner phrase  OV objective version
ERG ergative case  P plural
F feminine  PARAM parameter
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>FOC</td>
<td>focus marker</td>
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<tr>
<td>PART</td>
<td>particle</td>
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<tr>
<td>PAST</td>
<td>past tense</td>
</tr>
<tr>
<td>PER</td>
<td>person</td>
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<tr>
<td>PERF</td>
<td>perfect</td>
</tr>
<tr>
<td>PIE</td>
<td>Proto Indo-European</td>
</tr>
<tr>
<td>PL</td>
<td>plural</td>
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<tr>
<td>POSS</td>
<td>possessive</td>
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<tr>
<td>POSTNOM</td>
<td>postnominal RCs</td>
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<tr>
<td>POT</td>
<td>potential</td>
</tr>
<tr>
<td>PRENOM</td>
<td>pronominal RCs</td>
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<tr>
<td>PRES</td>
<td>present tense</td>
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<tr>
<td>PRET</td>
<td>preterite</td>
</tr>
<tr>
<td>PREV</td>
<td>preverb</td>
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<tr>
<td>PRO-S</td>
<td>“anaphoric strategy”</td>
</tr>
<tr>
<td>PRON</td>
<td>personal pronoun</td>
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<tr>
<td>PROX</td>
<td>proximate</td>
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<tr>
<td>PRT</td>
<td>particle</td>
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<tr>
<td>PRTV</td>
<td>partitive</td>
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<tr>
<td>RC</td>
<td>relative clause</td>
</tr>
<tr>
<td>REFL</td>
<td>reflexive</td>
</tr>
<tr>
<td>REL-S</td>
<td>“relative pronoun strategy”</td>
</tr>
<tr>
<td>REL</td>
<td>relative clause marker</td>
</tr>
<tr>
<td>RRC</td>
<td>restrictive relative clause</td>
</tr>
<tr>
<td>S, V, O</td>
<td>subject, object, and verb</td>
</tr>
<tr>
<td>SAE</td>
<td>South African Indian English</td>
</tr>
<tr>
<td>SG</td>
<td>singular</td>
</tr>
<tr>
<td>STD</td>
<td>standard</td>
</tr>
<tr>
<td>SU</td>
<td>subject</td>
</tr>
<tr>
<td>SUB</td>
<td>subordination marker</td>
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<tr>
<td>SUBJ</td>
<td>subject</td>
</tr>
<tr>
<td>SUBJ</td>
<td>subjunctive</td>
</tr>
<tr>
<td>TAM</td>
<td>tense, aspect, mood</td>
</tr>
<tr>
<td>TOP</td>
<td>topic marker</td>
</tr>
<tr>
<td>TP</td>
<td>tense projection</td>
</tr>
<tr>
<td>TS</td>
<td>thematic suffix</td>
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<tr>
<td>VOC</td>
<td>vocative case</td>
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Introduction

This thesis examines cross-linguistic patterns in the development of and change in relative clause constructions and explores reasons why some developments are commonly observed while others that we might expect to find are rare or non-existent.

Studies in diachronic typology such as this thesis build upon two main traditions. The first is the synchronic typological tradition, one of the main concerns of which is the identification of general trends and universals that can describe the distribution of certain features (or in the case of syntax, certain constructions) across the languages of the world, and their co-occurrence or lack of co-occurrence with other features. Although the idea of true “universals” has fallen out of favour somewhat in recent years (Bickel 2005), typologists still focus on the geographical and genetic distribution of features, and on the question of what is possible in human language. The search for implicational universals and general trends has not been entirely abandoned either: new statistical methods and larger databases of comparative data have ensured that universals discovered in earlier studies have been the focus of new examinations, some of which support the earlier conclusions, while others illuminate their flaws. Typologists are also concerned with the details of how to classify the construction or feature that is their object of study: in other words how it relates to similar constructions or features, including whether these can be arranged into a hierarchical classification system. The second tradition on which diachronic typological studies build is that of the historical linguistic investigation of change in a single language or language family. This is usually an in-depth study of a particular change in one variety over time, in which the aims are to identify internal and external factors that contributed to the change, and the actual mechanism(s) of change involved.
Diachronic typology brings both of these approaches together, in that it involves cross-linguistic studies that explore the genetic and areal distribution of the features of interest and attempt to determine the patterns of their co-occurrence with other, related features. But in this case, the features of interest are changes rather than states, and the purpose of the study is often aligned with interests traditionally associated with historical linguistics: investigating mechanisms of change, and relevant internal and external factors that may have influenced the changes. The question of whether universal constraints or trends exist becomes even more controversial in this case. Few historical linguists would suggest that we can ever predict whether a change will or will not happen, even if all the potentially relevant contextual details are known. Universals can still play a part in diachronic typology, but more commonly from the opposite direction; diachronic processes and common changes discovered in a diachronic study are used to explain why synchronic universals exist.

The existence of studies of both types mentioned above—cross-linguistic investigations of synchronic typological patterns, and in-depth historical studies of individual languages or families—is a prerequisite for a diachronic typological study such as this one. The first provides a framework for discussing the feature of interest, while the second provides the case-studies to be compared. Both types of study commonly raise research questions and suggest hypotheses that could be addressed with a diachronic study or a broader comparative investigation, both of which a diachronic typology can provide.

Turning specifically to cross-linguistic studies of syntactic change, in recent years these have been dominated largely by questions relating to "grammaticalization": specifically whether it characterises a clearly definable phenomenon or class of phenomena, whether it has any predictive power or is merely descriptive, and in particular the existence of regular paths of grammaticalisation and claims of unidirectionality that are sometimes made for these paths. A variety of stances on this issue can be found, ranging from e.g. Campbell (2001), who argues that the concept of "grammaticalization" is derivative, has no explanatory power, and is at most an umbrella phrase to encompass well-known phenomena such as reanalysis and extension, through to those who, like Heine and Kuteva (2002) subscribe to "grammaticalization theory" as a motivated...
set of principles characterising a coherent phenomena, along with the associated tenets of unidirectionality and a cataloguable set of regular pathways of change. The very existence of this debate has led, perhaps, to a rather intense focus in the literature on identifying commonly trodden pathways of change, and in a characterisation of such pathways as direct, clearly defined routes between source and “target”, which latter term even suggests a degree of predetermination. Alternative approaches do exist, however, as illustrated by Yap et al. (2004), in which a series of similar changes are modeled as a network of possible extensions, focusing on the processes of change involved and any resulting implications for constraints on what is possible and what is likely.

This thesis will more closely approximate the latter approach rather than following the stricter assumptions of grammaticalization theory as adhered to by Heine and Kuteva (2002). One of the main reasons for this is that most of the phenomena discussed here are not grammaticalization as this is usually defined: even the sources of relative clause marker development and the outcomes of change involving these are often grammatical rather than lexical items, so that we cannot speak of a development from lexical to grammatical, or even, in many cases, of any semantic bleaching. For this reason, even if we assume that true grammaticalization is unidirectional, unidirectionality would be unlikely to be a feature of the changes discussed here. The unidirectionality of grammaticalization proper presumably derives from the fact that speakers have no access to the lost lexical sense of the now grammatical item. If the grammatical functions of the source and outcome of each change discussed here are similar enough that speakers extended one to the other in the first place, there seems a priori to be no reason why later speakers would not be able to make the reverse analogy.

Just as grammatical or lexical elements may be related to each other historically, so can entire constructions. The various synchronic “types” of a construction, too, can be envisaged as points in a network of possible diachronic connections. A diachronic typological study of a particular construction addresses the question of which of these potential connections are attested, and under what circumstances. Ultimately such an investigation can inform synchronic typologies as well, if we assume that diachronic interaction between two types (e.g. speakers changing one
construction on analogy with another, or extending one type to contexts generally restricted to the other) is an indication that the two constructions should perhaps be classified as subtypes of one type of construction.

In the case of a construction as well studied from a typological and individual-language perspective as the relative clause, the framework is already in place for this sort of diachronic study. There already exist numerous hypotheses, competing synchronic typologies to build on; case-studies to compare; analytic and typological approaches to apply.

Besides the main questions of what changes are attested and therefore possible, which seem to be rare or non-existent, and possible reasons for this, a cross-linguistic diachronic study is well positioned to address matters such as the reasons for synchronic universals, the diachronic implications of syntactic analyses (and whether they are borne out by the observed patterns of change), the relationship between how external and internal factors affect change, and the details of actual mechanisms of change. Paradoxically, although a broad cross-linguistic diachronic study is a level of abstraction far from the individual speaker, it can be an effective way to get at the psychological reality of constructions for speakers. The sorts of analogies that take place, extensions, sources and redistribution of markers, and contact-related phenomena (borrowings of markers or whole constructions) can all be interpreted as indications of how speakers view the construction in question and how they view its relationship to other constructions either in the same language or in other languages they are in contact with.

Based on comparison of changes found in the relative clauses of multiple geographically and genetically unrelated languages, this thesis will examine whether it is possible to generalise about the sorts of changes that occur, and the circumstances under which these changes take place. Building on the framework provided by synchronic typological studies of relative clauses, I will compare studies of relative clause change from the literature on individual languages and language families. Some languages and language families are particularly well-represented in this literature, while others are not. Fortunately the most well-represented languages cover various unrelated families and several geographical areas, including Indo-European, Caucasian, Semitic, Tibeto-Burman and Sinitic. The languages from which my sample of relative clause constructions is taken
go beyond these five groups, however, and are discussed further in Section 2.4, and detailed in full in the appendix.

While change in relative clause markers seems to be relatively common, there are comparatively few examples of change in other features of the relative clause. From my comparison of examples of each of these, I will show that language contact appears to play a large role in both cases, and new relative clause constructions are even sometimes copied wholesale: marker, position, verb type, and other associated features. Excluding relative clause markers, it is in fact difficult to find attested examples in which only one feature (e.g. verb type, relative clause position) changes, so that we would be able to interpret the new alternative as a continuation of a pre-existing construction. Analogy, both with pre-existing relative clauses and perhaps even more frequently with other non-relative constructions, seems to be an important mechanism of change. Pre-existing markers with multiple functions sometimes “prime” the distribution of a new marker. In other cases, a new marker creeps into a language’s set of relative clause constructions through a few very specific contexts (e.g. bridging constructions) and then spreads through the whole “paradigm”, either on analogy with another marker, or as a process of simplification: changing their distribution from a list of arbitrary contexts to one functionally-determined rule. A similar process may be responsible for the spread of new relative clause constructions as a whole (e.g. prenominal non-finite constructions in a language that previously have only finite postnominals).

In the next chapter I will review the relevant literature in order to situate this study with regard to the various threads touched on above: the purpose(s) of diachronic typology, the relevant debates in the historical, synchronic typological and syntactic literature that a study such as this can address, and the framework of analytical traditions it seeks to build on. I will conclude that chapter with a summary of the methodology used in this study.

The rest of the thesis divides roughly into two parts. The first part, Chapters 3 and 4, explores changes in relative clause markers: first their sources, then the various changes they can undergo, including loss, redistribution and extension to other functions. Chapters 5 and 6 investigate changes in other features of the relative clause, such as the relation-
ship between the subordinate clause and the main clause (particularly its head), and the position of the relative clause with regard to its head. In all of these chapters I focus primarily on identifying the changes which are found to occur at all, and where possible also factors that may have contributed to or even triggered these changes. Other matters, including the role of language contact, implications of various changes for the syntactic analysis of the relative clause, and the relationship between formal and functional changes are also discussed as they arise.

It will be seen that a greater variety of sources and results of change in relative clause markers exist than have previously been identified. Change in other features of the relative clause, such as embeddedness, verb form, or position, are relatively rare in the languages included in this study. When changes in these do occur, influence from other languages seems to be an extremely important factor: far more so than other hypothesised triggers. One of the main findings in this thesis is that the changes investigated are only rarely gradual and continuous. Frequently a new relative clause construction is created, often influenced by those found in another language, and this competes with the pre-existing alternative. Some languages have had multiple relative clause constructions over a long period of time, and although their distribution frequently shifts (see Chapter 4), one construction does not necessarily always replace the other(s). In order adequately to account for the changes observed, it is necessary to adopt a view of syntactic change that allows for the effects of contact, and also for complex analogical relationships both among subtypes of relative clause constructions and also between these and non-relative constructions.
Literature review and methodology

Since synchronic studies of the relative clause far outnumber those with a diachronic focus, and since diachronic studies build on the terminological, syntactic and typological framework established by their synchronic counterparts, I will therefore begin this review with an overview of the relevant synchronic literature, and will then turn to the themes that are more specific to diachronic studies and will survey the literature on these.

2.1 Defining relative clauses

Any investigation of variation, whether synchronic or diachronic, must begin by identifying the construction of interest in a way that enables cross-linguistic and/or diachronic comparison. This is no trivial matter. If a typologist wishes to protect against bias in the later identification of which features of the construction can and cannot vary, it is necessary to define the construction without reference to particular features’ values. For example, if a synchronic typologist wishing to study relative clauses were to define them as “finite clauses with an initial pronominal marker” this would preclude the finding that relative clauses can vary cross-linguistically with regard to features such as verb finiteness and marker type. On the other hand, it is necessary to have some constraints on the scope of the study.

For this reason, synchronic typologists often prefer a semantic or functional definition. Most definitions of relative clauses in the typological literature rely, in fact, on a combination of semantic, functional and formal criteria. An example of a definition that by his own description in-
cludes both semantic and syntactic criteria is the one in Lehmann (1986), reproduced below.

(1) **Lehmann’s definition:**

A relative construction is a construction consisting of a nominal (or a common noun phrase, in the terms of categorial grammar) (which may be empty) and a subordinate clause interpreted as attributively modifying the nominal. The nominal is called the head and the subordinate clause the RC. The attributive relation between head and RC is such that the head is involved in what is stated in the clause.

(Lehmann 1986:664)

More recently, Mark de Vries’ (2002a) definition of relative clauses, and that of Andrews (In press) also include both syntactic and semantic or functional notions.

A definition that is almost entirely semantic/functional is Keenan and Comrie’s (1977), and Downing’s (1978), both of which allow the inclusions of a large number of syntactically very diverse constructions, which is arguably desirable for a cross-linguistic study. Keenan and Comrie’s definition is given below.

(2) **Keenan and Comrie’s definition:**

We consider any syntactic object to be an RC if it specifies a set of objects (perhaps a one-member set) in two steps: a larger set is specified, called the domain of relativization, and then restricted to some subset of which a certain sentence, the restricting sentence, is true.

(Keenan and Comrie 1977:63–64)

One problem with a purely semantic/functional definition of relative clauses is that it is very difficult to exclude adjectives, as the border between participial relative clauses, participial modifiers, adjectives that, historically, were participles, and true adjectives is often impossible to specify except on formal criteria. In mixed definitions, such as those of Lehmann, de Vries, and Andrews, the inclusion of syntactic notions such
as “subordinate clause” makes it possible to exclude adjectival phrases.

In general, the more the definition relies on functional rather than formal criteria, the more cross-linguistic variables can be investigated in the study. Conversely, the more formal criteria that are stipulated as part of the definition, the less variation will be found cross-linguistically. This can be an advantage if the typologist has a particular reason to be interested in a narrow subset of the construction’s features—perhaps because of hypothesised interaction between only these few. Because so little has been done on diachronic changes involving relative clauses, and that which has been done has often investigated a narrow a range of variables (e.g. only relative clause markers), it is not known precisely which features of a relative clause are of most interest. Therefore I have chosen to use an almost purely functional definition of the relative clause.

As a basis for my definition I have used the definition from Andrews (In press), but where he has made reference to the syntactic notion “subordinate clause”, I have rephrased this to require only that the RC contain some sort of verb (i.e. is a clause, broadly defined) and be linked to another clause (i.e. it cannot be a stand-alone main clause).

The definition of constructions which I will be calling relative clauses in this thesis is therefore as follows:

Relative clauses, by definition, have the following features:

1. They contain some form of a verb (not necessarily finite)
2. They are linked in some way to another clause
3. They delimit the reference of an noun phrase by specifying the role of the referent of that noun phrase in the situation described by the relative clause

The first two criteria are deliberately vague enough to include a large number of different constructions, although I have deliberately excluded adjectives (through the first criterion).

This is not to say, however, that I have included every construction that falls within the scope of this definition in this study. In particular, some more marginal types of relative clause are not always described for each of the languages I am interested in. Diachronic information on headless relative clauses, infinitival relative clauses and even non-restrictive
relative clauses is hard to come by except in the most thoroughly described and documented languages. The purpose of the above definition is first and foremost to establish common ground with the reader so that when I refer to the term “relative clause” it is clear that I do not only mean, for example, postnominal, finite relative clauses with pronominal markers, and secondly as an initial indication of what variation we might expect to find: e.g. change in degree of verbiness, change in type of clause linkage, change in the way in which the RC specifies the role of NPrel. Each of these are types of changes that conceivably, if drastic enough, could push the RC over the border of what is a relative clause and what is not: if, for example, it loses all verbiness; if it begins to be used as a stand-alone clause; or if its function changes from the delimitation of an NP in the other clause to something entirely different (as is the case with deft structures in many languages).

2.1.1 Synchronic studies

Since synchronic typological studies of the relative clause far outnumber the diachronic works and also have a longer tradition in the literature, and since they provide in many senses the framework for a diachronic investigation, I will begin with an overview of some synchronic typologies. As was noted by Lehmann (1984:4) already in the early eighties, so much has been written on the synchronic typology of relative clauses that an exhaustive discussion of such works is not practical. Since even more typological literature has appeared since 1984, it would be equally impractical for me to attempt to cover it all here, in a work that unlike Lehmann’s does not even have a primarily synchronic focus. I will therefore restrict myself to an in-depth look at the most recent studies, as well as those older works that have become “standard references”: i.e. those which are cited again and again in the literature. A further restriction on this section is that I will only discuss those studies where the primary focus is the relative clause construction, rather than typologies of complex clauses in general or typologies of other related constructions that include short sections on relative clauses.

Lehmann (1984) mentions some older works that are of little interest here, as the data they refer to is also included in later works with more modern and widely accepted analyses. Steithal’s (1847) “philosophi-
cal/philological” treatise on the relative pronoun includes data from a wide variety of languages, but is rather inaccessible, and Lehmann is extremely critical of Steinthal’s conclusions.\footnote{Lehmann refers to the work’s “undurchsichtig[en] oder fehlende[en] Systematik” (opaque or non-existent organisational principle), so Steinthal’s constant judging of the languages he describes, and he complains: “die theoretische Verständniss des RSes erfordert sie wenig. Eine eigentliche Typologie des RSes ist nicht angestrebt. Es kommt heraus, was man schon wußte, daß nämlich der einzige ‘richtige’ RS der der indogermanischen Sprachen ist.” (It advances the theoretical understanding of the relative clause little. An actual typology of the RC is not attempted. The conclusion is only what everyone already knows, namely that the only “proper” relative clause is that of the Indo-European languages.) The translations here are my own.} Other early works covered by Lehmann in his summary are Korš (1877), Benveniste (1957), and Seiler (1960), about all of whom he is more complimentary than he is about Steinthal. All three, however, are criticised for the fact that their typology is based almost exclusively on data from Indo-European languages. And of the three, only Benveniste’s study has had a noticeable influence on the later literature (in the continuation and extension of the idea that the relative pronoun—relative clause structure is in many ways parallel to a determiner–noun structure; see e.g. Siloni (1997) for a recent study that incorporates this idea).

Lehmann’s summary of the (comparatively) more recent literature covers Bach (1965), Schwartz (1971), Peranteau et al. (1972), Andrews (1985), Downing (1978), Keenan and Comrie (1977), Touratier (1980), and Kurzová (1981). I will not go into detail on Bach’s study here, as it is heavily dependent on the formulation of transformational grammar that was current at the time. Peranteau et al. (1972) is a collection of independent articles on relative clauses in various languages, so is not comparable with true cross-linguistic studies. Touratier (1980) is minimally cross-linguistic, in that his data is almost entirely from Latin, with the occasional non-Latin (but mostly Indo-European) example as comparison. His is therefore first and foremost a typology of the Latin relative clause structures. The works that I will include in the discussion that follows, therefore, are the remaining studies in Lehmann’s summary of the early literature, Lehmann’s own typology, and the most relevant works that have been published since 1984.
2.1.2 Taxonomies

Many cross-linguistic studies have sought to define types and subtypes of relative clause constructions by determining the features that can vary, and the ways in which such features “cluster”. The features that are taken into account when establishing such taxonomies are different in different studies, but almost always include the position of the relative clause with regard to its head. Minimally, one has to distinguish at least three positions here: relative clauses that precede the head, relative clauses that follow the head, and relative clauses that contain the head. Some typologies, such as that outlined by Andrews (1985, In press) or the one proposed by de Vries (2002a), first distinguish between internally and externally headed (embedded) relative clauses, and have relative clauses that precede and follow their head as subtypes of the externally headed class.

Terminology for these types can vary. Internally-headed relative clauses are called “circumnominal” by Lehmann (1986) and de Vries (2002a). Sometimes “prenominal” and “postnominal” are terms used for all relative clauses that precede or follow the main clause; other authors reserve these for embedded RCs, and call adjoined RCs “preposed” or “postposed” instead (Lehmann 1986, Andrews 1985, Andrews In press). Sometimes the latter are used as the default terms, no matter whether the RC in question is adjoined or embedded. For the sake of simplicity, and because it is not always practical or even possible to determine from the limited descriptions available whether a construction should be analysed as embedded or adjoined, I will use the terms “prenominal” and “postnominal” for relative clauses that precede and follow their referent respectively, regardless of their embedded status. When it is necessary to distinguish adjoined relative clauses, I will refer to these as preposed, correlative, or postposed relative clauses.

The classification of correlative relative clauses is also controversial. Many earlier works simply count these as a type of prenominal relative clause. Sometimes they are classed as internally headed (De Vries 2002a:Fn. 6). Under other analyses, correlative constructions are not accounted for at this level of classification at all, as externally and internally headed relative clauses are subtypes of embedded relative clauses, and correlatives are adjoined, a separate type entirely (Andrews 1985, An-
drews In press). The very definition of what is meant by the concept “correlative construction” is also sometimes vague, however, so it is worth briefly discussing this here.

The term “correlative” (alternatively: “corelative” or “co-relative”) has been used in multiple ways in the literature. Some authors have used it to mean any two clauses containing NPs that are marked by “correlative markers” (i.e. including adverbial clauses and/or comparative clauses) (den Dikken 2004, Lühr 2005). Especially in older works on Indo-European a language is sometimes said to have correlatives if it has correlated sets of relative and demonstrative pronouns (i.e. with similar forms), even though a relative clause using both of these does not necessarily exist. Others require that a construction be adjoined, but allow it to be either left-adjointed or right-adjointed, and refer to both as correlatives.

I will follow the most widespread convention in the typological literature, however, which is to reserve the term “correlative RC” to refer to a subtype of adjoined relative clauses, specifically those that are left-adjointed and have a nominal phrase in the adjoined clause that is co-referent with a nominal phrase in the main clause. The former NP is marked with (or sometimes substituted by) either a relative clause marker or an interrogative, and the correlated NP in the main clause is marked by an anaphoric marker of some sort, commonly a demonstrative. (Others who reserve the term “correlative” for these constructions include Klaiman (1976), Andrews (1985, In press), Izvorski (1996), and Bhatt (2003).)

The prototypical correlative RC is found in the Indo-Aryan languages and is exemplified by the Hindi sentence in (3).\(^2\) The most thorough treatment of the Indo-Aryan correlatives is found in Srivastav (1991), who provides convincing arguments for treating these as a separate type of construction from the right-adjointed relative clauses also found in many of these languages.

(3) \(\text{jo laRkii khaRii hai vo lambii hai}\)

REL girl standing is DEM tall is

“The girl who is standing is tall” (Srivastav 1991:639, ex. 3a )

\(^2\) Throughout this thesis, except where otherwise stated, any glosses and translations are taken directly from the same source as the corresponding example.
Srivastav shows that the main differences between the two types are that the true correlative RCs must contain a demonstrative-marked phrase or demonstrative pronoun, while this is optional for the right-adjointed constructions; the true correlatives can have multiple heads, which is not possible for the right-adjointed RCs, and the correlative RC can have a full NP as the relative clause’s counterpart to the DEM-XP, while this is not possible in the right-adjointed construction. Using the term “correlative” for right as well as left-adjointed relative clauses prevents us from capturing these distinctions (Srivastav 1991).

Some languages, for example most of the Indo-Aryan family, have correlative constructions as a major strategy for forming relative clauses, and these are true equivalents to other relative clauses in the language. In other languages they are a rarer alternative and commonly limited to generalising relatives, such as the Lezgian example in (4).

(4) Wuż k’anik akat-aj-t’a, hada wici-n
who:ABS below come-AOP-CND that(ERG) self-GEN
q’ušun-ər q’ulqʰ c’ugwa-da
troop-PL back pull-FUT
“Whoever is defeated shall withdraw his troops (Haspelmath 1993: 345–346)

Although ostensibly I have so far been dealing with the different positions of relative clauses with regard to their heads, it can be seen that the discussion of this in the literature is inextricably tied up with another variable: embedding. As we saw was the case for relative clause position, there are also various competing usages of terminology and conflicting definitions of embedding, which I will briefly survey here before continuing with an overview of how people have characterised its interaction with relative clause position and other features of relative clause constructions.

The term “embedded relative clause” is usually used to mean a syntactic configuration where the relative clause is subordinate to its head, i.e. embedded under the NP it refers to. However, in some traditions, “embedding” is also used as shorthand for what is also known as “centre-
embedding”, i.e. when the relative clause is surrounded by material from the matrix clause, as in the English sentence, “The girl [who just left] bought the last book”. An example of an author who uses the term “embedding” in this way is Lehmann (1986). Sometimes “embedded” and “subordinate” are treated as synonyms, while others view embedding as a formal feature that is present in some, but not all subordinate clauses (Hasselmann (1995), cf. Cristofaro (2003)).

Cristofaro, whose study of subordination (Cristofaro 2003) is the most recent thorough typological work on this subject, defines subordination as a “functional asymmetry” between two linked clauses, which can be identified by assertiveness tests such as sentential negation, questioning and tag questions. Embedding is therefore not entirely identical with this, although it overlaps, since embedding is a syntactic configuration and subordination the semantic interpretation that admittedly generally corresponds to this.

It is not always possible to determine from the few examples and brief description of relative clauses that are available in the description of a language whether these should be analysed as syntactically embedded; nor is it possible to perform Cristofaro’s assertiveness tests without access to native speaker judgements or a large corpus of examples and contexts. For that reason, the indications of subordination or embedding that are available for a cross-linguistic study of relative clauses are the formal features that are frequently associated with these phenomena. As Cristofaro explains, the formal features associated with subordination include centre-embedding, the presence of subordination markers, the “deranking” of a verb form (i.e. the use of special forms of agreement or patterns of agreement, special TAM markers, or the absence of usual verb affixes), special word order, special marking of constituents, or the absence of constituents that would normally be present (e.g. the agent or the patient). There is no subset of these formal features that are unambiguously present in subordination in every language (Cristofaro 2003:18), and Cristofaro seems to assume a model in which constructions can be said to exhibit different “degrees” of subordination. Cristofaro is not alone in the adoption of this continuum model of subordination/embedding. A similar concept underlies the discussion of subordination in e.g. Haiman and Thompson (1984), Matthiessen
and Thompson (1988), and Lehmann (1984, 1986). Since, however, the underlying syntactic structure of the sentences in question is a binary choice—the relative clause should be analysed either as embedded under the NP, or as adjoined to the main clause—I prefer to say that a clause is either embedded or it is not: the significance of the “sliding scale” of associated features is that the more of the above-mentioned features that are present, the more certain we can be that the underlying syntactic configuration is that of an embedded clause.

I have now mentioned three parameters that can vary in relative clause constructions: internal/external position of the head, prenominal/postnominal position of relative clauses with an external head, and conjunction/embedding, which itself can be broken down into features such as the presence/absence of subordination markers, balanced/de-ranked verb forms, special word order/main clause word order, etc. These variables are not independent of each other, but rather “cluster” into sets of features that commonly co-occur, so that “types” of relative clauses can be identified. A common approach to classifying relative clauses into these types is to put the variables into a hierarchy so that each define subtypes of the type above it. This can be illustrated by the representation in 2.1, which is based on the hierarchy laid out in Andrews (Andrews In press).

In this case the internal/external position of the head is a feature that distinguishes subtypes of embedded relative clauses, and the position of the entire clause determines subtypes of externally headed relative clauses (by whether they precede or follow their head, or whether this can vary),

![Fig. 2.1: Classification of relative clause types based on the discussion in Andrews (In press)](image-url)
and also subtypes of adjoined relative clauses (by whether they precede or follow the whole main clause).

A slightly different example of a hierarchy of these variables is found in Lehmann (1986), and is represented below.

<table>
<thead>
<tr>
<th></th>
<th>adjoined</th>
<th>embedded</th>
</tr>
</thead>
<tbody>
<tr>
<td>internal-head</td>
<td>preposed</td>
<td>circumnominal</td>
</tr>
<tr>
<td>external-head</td>
<td>postposed</td>
<td>postnominal</td>
</tr>
</tbody>
</table>

Tab. 2.1: Typology of relative clause types based on Lehmann (1988)

The main difference between Lehmann’s and Andrews’ taxonomies is that Andrews has internal and external headedness as a subdivision of embedded relative clauses, while Lehmann sets internal/external headedness and adjunction/embedding as parameters of equal status that, as he puts it, “cut across” each other (1986:666). This is simply a difference in how the term “head” is understood. If it is seen as a syntactic term, which is presumably the way Andrews uses it, then it does not make sense to speak of “head position” in relation to adjoined clauses at all. Lehmann uses a broader definition of “head” to mean the nominal referent of the relative clause. The full identity of this referent can be specified either in the main clause (in which case it is frequently referred back to anaphorically in the relative clause), in the relative clause itself (“internally headed” in Lehmann’s sense), or in neither (“headless” relative clauses).

As well as the question of how the various relative clause constructions are related to each other, synchronic typologists are also interested in how relative clauses are related typologically to other constructions. I will not go into the literature on this in depth here, as the synchronic relationships between these constructions are only peripheral to my study. The other constructions of interest here include possessive constructions, other modifying constructions such as adjectives and adverbials, and, of course, subordinate clauses. Most commonly, subordinate clauses are divided into classes based on their syntactic relationship to the main clause, such as embedded questions, noun complement clauses, relative clauses, verb complement clauses, and adverbial clauses. For a detailed typology of subordinate structures the reader is referred to Cristofaro (2003). Particular subordination constructions have been said to have a particularly
close relationship to the relative clause: noun complement clauses (Comrie 1998a), embedded questions (Schwartz 1971), comparative clauses (Bresnan 1972, Andrews 1985), cleft constructions (Drubig and Schaffar 2001). The synchronic similarities between all of these constructions and relative clauses have been thought, at least in some languages, to correspond to a diachronic relationship, so will be discussed in Chapter 3 and 4.

2.1.3 Relative clause markers

Although there are correlations between relative clause marker type and other parameters discussed above, such as relative clause position (De Vries 2002a, Andrews In press), these are less absolute than correlations between the other properties. If we were to distinguish subtypes of each of the relative clause types in 2.1 above on the basis of relative clause marker type, and even if we only distinguished four types of marker (e.g. on the model of Lehmann (1984) gap, relative affix, relative particle and relative pronoun), this would still lead to a proliferation of subtypes that perhaps does not capture any significant generalisations, since most types of relative clause (defined on the basis of position, embeddedness and external/internal headedness) can be found with most types of marker; it is just that some combinations are rare and others common.

This is presumably why most typologists do not include markers in their initial series of distinctions they use to define relative clause types but rather treat them as a matter for investigations into universals.\footnote{Keenan and Comrie (1977) are an exception here, but for relative clause marker types they distinguish only [+case] and [-case] treatments of NPrel, meaning that e.g. a gap and an invariant particle are treated as an instance of the same strategy, as are relative pronouns and resumptive pronouns. They also note that there are many other variables that they have not included in their typology (which besides the presence of a case-coding relative clause marker only takes into account the position of the RC), since they are interested in those differences between relative clause constructions that are connected to hearers' ability to interpret the referent of the relative clause (Keenan and Comrie 1977:64-65).} For example, the most thorough list of possible universals and tendencies affecting relative clauses, Downing (1978), includes implicational universals such as those reproduced below, linking relative clause marker type with other properties of the relative clause.

F. A relative pronoun in a postnominal relative clause is always placed
in clause-initial position (sometimes as part of a NP which contains it), either preceding or following the relative particle, if any. (p. 390)

K. With few exceptions, if postnominal relative clauses contain a distinctive verbal affix, the verb appears in clause-initial position. (p. 391)

P. In prenominal relative clauses there is no movement of the relative NP to either the beginning or end of the clause; initial or final relative markers (if any) are not pronouns. (p. 396)

These are unlike the rest of the universals and tendencies explored by Downing, since the rest relate properties of the relative clause to properties of the language, as in the following examples:

M. If a language places relative pronouns that are not interrogative in form in initial position in postnominal relative clauses, then either that language has initial interrogative pronouns in questions or it has a general topicalization process that places thematic material in initial position (p. 391)

O. With few exceptions, RRC's are prenominal only if in the basic word order of the language verbs follow their objects. (p. 392)

Relative clause markers are therefore unique among the features of relative clauses in that people frame their co-occurrence patterns with other features of the relative clause as “universals” rather than using them to establish types and subtypes of the construction. This is presumably at least partly because taking relative clause marker types into account when establishing such taxonomies would result in a much larger number of subtypes, perhaps unmanageably so.

While it is not practical to define subtypes of each positional/embeddedness type on the basis of the different types of relative clause marker, there are other ways of accounting for relative clause markers in the establishment of a typology. De Vries (2002a) treats relative clause markers as a “scalar property” of relative clauses. By the terms “absolute” and “scalar”, he distinguishes between binary properties such as an internal/external head, and features such as relative clause markers that have
multiple possible values.\footnote{The term “scalar” is more often used with regard to a continuum, but it does not appear from de Vries’s discussion that he wishes to imply that relative clause marker types are not discrete.} By defining properties of the relative clause into these categories of absolute and scalar, it seems that de Vries also intends to capture the difference between properties for which we can predict with absolute certainty whether they will co-occur with others, and those which are only statistically likely or unlikely to co-occur. This becomes clear in the discussion immediately following the tables in which he lays out the absolute and scalar properties: “Concerning relative elements: correlative preferably use a relative pronoun, whereas this is in fact impossible for prenominal relatives that are usually on the other end of the scale” (De Vries 2002a).

The solution of dividing properties into absolute and scalar is ultimately not very different from defining relative clauses on the basis of positional and embedding properties, and adding universals to capture the co-occurrence patterns of relative clause markers. Moreover, the labels and definitions de Vries uses for the positional types of relative clause are such that the co-occurrence patterns of these with an absolute property such as internal/external headedness are inevitable. For example, if “postnominal” is defined as “follows its head nominal”, then it is no surprise that these are externally headed. The classification system in which characteristics such as “prenominal” and “postnominal” define subtypes of the externally headed relative clause type, such as Andrews (In press) system therefore seems more natural.

Perhaps the simplest way to incorporate relative clause marker types into a typology of relative clause types is to define a series of “prototypical” relative clause constructions and to classify relative clauses based on their similarity to these, instead of using a flow-chart-like taxonomy. This is what many typologists already appear to do for a limited subset of relative clause types, e.g. Indo-European-style postnominal relative clauses, and also for correlative constructions. The prototypical correlative is left-adjointed, has “balanced” verbs (in the sense of Cristofaro (2003)), and contains a fronted relative pronoun (often based on an interrogative pronoun) or relative adjective and noun in the first clause; a corresponding fronted demonstrative in the second. Any one of those characteristics could differ and the construction would still more closely
§2.1 Defining relative clauses

resemble the prototypical correlative than it would any other common
type of relative clause, which is why some definitions allow for right-
adjointed correlatives, and/or for correlatives in which the markers are
not fronted, and/or for correlatives in which the second clause has no
Corresponding element at all.

This prototype approach to defining the various relative clause types
has not often been used explicitly, but there is a tendency in the literature
to eschew definitions of relative clause types in favour of examples, and
also a tendency to refer to types of relative clause as “the English type”
C1 “the Japanese type” or even the “Standard Average European type”
(Comrie 1998a). This suggests that many linguists do have prototypes
in mind rather than more strictly defined clusters of characteristics when
discussing variations in relative clause constructions.

The typology of relative clause markers has also been widely discussed
in the synchronic literature independently of the question of how they
relate to the other variable characteristics of relative clauses. As already
stated, Keenan and Comrie (1977) distinguish only between case-coding
and non-case-coding relative clause marking strategies. The opposite
extreme is de Vries (2002b, 2002a), who distinguishes 18 subtypes of
“relative element” divided into five broader classes: relative pronouns,
resumptive pronouns, relative complementisers, relative markers, and
relative affixes, the latter three being subtypes of the higher class of
“relative particles”. The elements in an all-inclusive typology such as De
Vries’ cover a variety of syntactic and morphosyntactic functions. Some
of them serve merely to mark the boundary between the main clause
and the relative clause (e.g. English that). Others cross-reference the
nominal the relative clause refers to. (E.g. English who is specified for
animacy, specifically humans). Some serve to indicate the case role that
NPrel has in the relative clause (e.g. to a limited extent, English who, whom, whose). Some elements combine these functions. In languages
in which the relative element does not appear in non-relative construc-
tions it further serves to identify a relative clause as distinct from other
constructions.

One reason why many typologies of relative clause elements are not
as detailed as De Vries’ is that typologists commonly include only some
of these functions as defining characteristics of relative clause markers,
and therefore discount other elements that are present but serve other functions. For example, relative affixes typically do not cross-reference the head nominal, nor do they indicate the role of NPrel in the relative clause. They serve only to distinguish relative clauses from main clauses, and in some cases to mark the clause boundary, but are redundant in this latter function, since the verb they attach to is also a reliable indication of the boundary. This is presumably why those studies that treat relative elements only in a discussion of the treatment of NPrel do not include relative affixes in their discussion (e.g. Schwartz (1971), Keenan and Comrie (1977), Maxwell (1982)), or treat them separately in a discussion of reduction, nominalisation and/or verb morphology (e.g. Lehmann (1986), Andrews (In press)).

A study such as this one, on the other hand, needs to include all the different types of relative clause marker and treat them in a similar way. This is because the border between the various types of relative clause marker is diachronically and synchronically more fluid than it is sometimes portrayed as being. There has been much debate in the literature about the status of relative *that* in English. The main arguments for its status as a relative pronoun or complementiser are summarised by Van der Auwera (1985), and taken up again more recently in Seppännen (1997, 2000), Seppännen and Kjellmer (1995) and Bergh and Seppännen (2000). Seppännen (2004) discusses the similar problem of deciding on the status of Old English *pe*, while Perdomo (1993) outlines a similar debate for Spanish *que*. It is not necessary to re-summarise the arguments here, as the actual status of *that*, *pe*, or *que* is not relevant to the point I wish to make, which is that determining the status of a relative element is not always a simple matter, as the border between complementisers and “relative pronouns” is not necessarily clear cut. This is the case diachronically as well as synchronically. Seppännen and Kjellmer (1995) and Seppännen (1997) suggest that the relative element *that*, while not originally a “relative pronoun” is becoming more pronominal (through e.g. the innovation and spread of a genitive form *that’s*). As I will show in Chapter 4, it is not only the boundary between relative pronouns and complementisers that is diachronically fluid, but also that between particles and affixes. There are even cases in which it appears that an element began as a relative pronoun, became a particle, and then an
affix. This shows that for a diachronic study, at least, all the relative elements in the sense of De Vries (2002a) need to be treated together. I will distinguish between inflecting markers, invariant markers, and affixes. The further distinctions that De Vries (2002a) makes, such as between interrogative-based and demonstrative-based pronouns, and between invariant markers that also function as general complementisers and those that are specialised for the relative clause, etc., will be a matter for the discussion of diachronic sources of markers and the outcomes of marker extensions, in Chapters 3 and 4.

2.1.4 Relative clauses and universals

Besides typologies that organise and classify the various types of relative clause construction, cross-linguistic synchronic studies have often focused on the question of whether there are universal constraints on relative clauses, so that, given certain typological characteristics of a language, we could predict what sort of relative clauses it could and could not have. One approach to this is is to investigate the distribution patterns of multiple relative clause types within a single language. Many languages have more than one way of forming a relative clause, and often each is subject to different constraints. An influential generalisation about this is the Noun Phrase Accessibility Hierarchy, first proposed by Keenan and Comrie (1972) and further developed in what is perhaps their better-known paper five years later (Keenan and Comrie 1977). The basic idea behind this hierarchy is that NPs vary in their “accessibility” to relativisation depending on what their role will be in the relative clause. The order of accessibility is as follows:

(5) \( \text{subj} > \text{d.o} > \text{l.o.} > \text{obl} > \text{gen} > \text{obj \ of \ comparison} \)

In a language with only one relative clause “strategy”, this strategy must minimally be available for subjects. Each strategy is available only to NPs whose roles lie along a continuous portion of the AH: i.e. if a language has a strategy that can be used for direct objects and genitives, the AH predicts that this strategy is used for indirect objects as well. For the generalisation to hold, the different strategies must be defined according to Keenan and Comrie’s criteria: two relative clauses are formed using different strategies if the relative position of the head and the RC differ.
or if one has an element in the RC that expresses the case role of NPrel and the other does not (Keenan and Comrie 1977:65).

Certain modifications to the Accessibility Hierarchy have since been proposed in the literature (see, e.g. Keenan and Comrie (1977), Bosson (1982), Maxwell (1982), Joseph (1983), Fox (1987), Gordon (2005)). Most importantly, it has been pointed out that the definition of subject and object must be carefully rethought in order for the AH to work for active and ergative languages. The general concept, however, is still frequently invoked as an explanation for the distribution of different relative clause strategies in a language or even to explain data from language acquisition or language change studies. For recent examples of this, see Rani (1990) (with reference to Telugu data), or Song (2002) (who applies the AH to a study on L1 and L2 language acquisition). Maxwell (1982) infers a series of generalisations about relative clause change based on the Accessibility Hierarchy, which I will return to in my discussion of the diachronic literature below.

The other major influence on studies of relative clause distribution, this time across languages rather than within a single variety, is Downing (1978). This is the largest list of proposed universals regarding relative clauses and forms part of Greenberg’s larger collection, Universals of Human Language (Greenberg 1978). Downing outlines 35 universals, implicational universals and general tendencies, primarily concerned with the correlations between word order, clause order, NP-rel marking (including omission and pronominalisation), and relative clause marking strategies. Some of Downing’s universals obviously have implications for language change as well, a matter which will be discussed further in Chapter 6. At no point in this article does Downing explicitly say which languages he uses to motivate which universals, nor does he discuss his sampling technique. A list of the 51 languages and dialects he refers to in the course of the article is given at the end and presumably these constitute the sample he bases his generalisations on. Although 51 languages might seem to be a relatively large sample for testing any one potential universal on, it should be noted that the majority of Downing’s generalisations refer to a small subset of these (e.g. languages with a particular word-order, languages with relative pronouns, etc). Nearly a third of the languages in the sample are Indo-European.
Nevertheless, Downing's generalisations provide a good starting point for exploring the question of universals in relative clause formation and many have since been more thoroughly tested. The generalisations relating the basic constituent order of a language to the types of relative clauses that it allows, for example, have more recently been subject to cross-linguistic investigation with larger samples and more modern statistical analysis (Dryer 1992, De Vries 2005), which has confirmed some of Downing's generalisations and shown others to be incorrect. While Downing suggested that the correlation between the presence of postnominal relative clauses and VO word order was a commutable relationship (1978:383), it has since been shown that there is only a one-way implication, namely that VO word order implies the existence of postnominal RCs, and not the other way around (Dryer 1992, De Vries 2005). Downing also claimed universal status for two of his correlations (correlative relative clauses and internally headed RCs only being present in OV languages), while later studies have found exceptions to these rules, so that they can only be said to be statistical tendencies rather than true universals. These correlations will be discussed in more detail in 6.

The search for universals has in any case come under criticism in recent years by some typologists (Bickel 2005), who argue that it is unreasonable to expect to be able to find true universals or even strong tendencies, given the vast numbers of dead and undocumented languages which typologists do not have access to. Bickel (2005) argues that the discovery of universals is moreover an outdated goal, since it puts typology in the role of a mere set of methods subservient to the goals of syntactic theory (as a means of discovering principles of universal grammar), rather than it being an independent field of investigation with its own focus, as he contends that it has now become. Bickel suggests that the primary goal of modern typology is instead to identify geographical and genetic skewings in the distribution of features across the world’s languages and to explain how these came to be: the “what’s where why” approach to typology.

Although I believe that the aims and approaches that Bickel endorses are a valuable new perspective from which typology is now benefiting, I think he goes too far in arguing that this is the only way forward. Certainly he is incorrect to frame the study of universals as an area that
has been abandoned by modern typologists. Even just looking at research on relative clauses, it is apparent that the earlier universals posited in the literature of the 70s and 80s continue to be a subject of investigation today (e.g. De Vries (2005)), influencing not only syntactic theory but also ideas about language processing (Gordon and Hendrick 2005), first and second language acquisition (e.g. Song (2002)) and language contact (see e.g. Johanson (2002:120–134.)).

Since the data available is such a tiny percentage of all human languages, and an infinitely small percentage of all possible human languages, Bickel is correct that we can never be certain how universally a generalisation holds. Nevertheless, the proposal of possible correlations between characteristics of a language and its relative clause type(s) is just as important to diachronic typology as generalisations pertaining to the distribution of the various types (both within and across languages). Some “universals” or tendencies may be the result of historical processes, so that they provide clues to the sorts of changes that might occur and therefore can be a starting point for a diachronic study such as this one. Conversely, if principles of syntactic processing, “universal grammar” or constraints on language acquisition and contact processes underlie synchronic “universals”, then similar principles presumably also constrain what can occur diachronically as well. In this case, they can be appealed to as an explanation for some changes observed.

### 2.2 Diachronic studies

The study of grammatical change is not new. Campbell (1993) demonstrates that many of the popular modern ideas and approaches to such phenomena as grammaticalization, reanalysis and the relationship between language acquisition, language contact and grammatical change have their roots in work from the nineteenth century and earlier, in some aspects even as far back as Aristotle, the Sanskrit grammarians and the Arabic linguistic tradition (see Harris & Campbell (1995:16–17)).

Then, as now, the research programme has been multifaceted, but of enduring interest have been the mechanisms and motivations of change. Studies of diachronic universals have sought to identify possible limits on types and directions of change. Causes of change have often been
explored from the perspective of language acquisition; both that of native (child) learners and in the specific processes of language acquisition that take place in contact situations (see e.g. Ziegeler (2000)). Most recently, one area of focus in particular has been especially well-represented in the literature: the concept of “grammaticalization”.

2.2.1 Grammaticalization

The status of the term “grammaticalization” has often been debated: while adherents to so-called “grammaticalization theory” claim that it accounts for a coherent class of phenomena, having explanatory and to a limited extent predictive power (Heine and Kuteva 2002), there are also critics of this model, who argue that “grammaticalization” explains nothing that cannot already been accounted for by traditionally accepted mechanisms of language change such as analogy, metaphor, extension and reanalysis (Newmeyer 2001, Campbell 2001). Moreover, some of the individual claims associated with “grammaticalization theory” have been criticised, particularly the idea of unidirectionality of pathways of change.

There are various different formulations of grammaticalization. Two very different examples are, Roberts and Roussou’s conception of grammaticalization in minimalist terms—a reanalysis of Move as Merge, i.e. the lexical insertion of a functional head replacing a transformational operation (Roberts and Roussou 2003:34)—and Heine and Kuteva’s perhaps more standard, and certainly less theory-dependent approach, in which grammaticalization is a co-occurring set of semantic and formal processes, including semantic bleaching, a shift from denotation of the concrete to the abstract, extension, loss of morphosyntactic properties associated with lexical items, and phonetic reduction (Heine and Kuteva 2002:2–3). Under Roberts and Roussou’s analysis, these processes are not the mechanisms of change themselves, but rather the surface reflections of the underlying syntactic change.

Ultimately, whether or not “grammaticalization theory” is a coherent set of processes with explanatory power, the term “grammaticalization” can be a convenient shorthand for a set of changes that do frequently co-occur: extension, change in status from more lexical to more grammatical, phonetic reduction, semantic bleaching, and change in morpho-
syntactic properties. This is the only sense in which I will use the term in this thesis. Grammaticalization and “grammaticalization theory” is not, however, particularly central to a study such as this one. Changes in most of the features of the relative clause (embedding, verb types, head position, relative clause position) are not the sorts of change that are generally considered to fall within the domain of grammaticalization theory, which is, after all, primarily concerned with individual lexemes.

The changes in individual words that do take place in relative clauses—i.e. the development of and changes affecting relative clause markers—are also generally not a case of change from a lexical to a grammatical item, or even necessarily from less grammatical to more grammatical, but rather the extension of one grammatical element (e.g. demonstratives, interrogatives, possessive markers) into a different grammatical context (relativization). There are exceptions to this, such as the development of generic nouns into classifiers and/or relative clause markers, or arguably the development of discourse particles into relative clause markers, as discussed in Chapter 3, but these are relatively rare compared to the many other sources and outcomes of change. Heine and Kuteva (2002:4) argue that the term “grammaticalization” should not be restricted only to the development of grammatical elements from lexical forms, and then specifically give the development of demonstratives into relative clause markers as an example of grammaticalization that does not strictly follow this pattern. However, they frame this and similar changes as “items already part of the inventory of grammatical forms giv[ing] rise to more strongly grammaticalized items”. They do not explain how to determine whether one grammatical form is more or less grammatical than another, however, and include in their discussion such examples as temporal conjunctions becoming causal or concessive conjunctions, which seems to me difficult to justify as a case of change from less to more strongly grammatical. In the absence of an independent measure of the position of a given element on the lexical—grammatical continuum that Heine and Kuteva seem to be assuming, I prefer not to classify most of the changes involving relative clause markers as “grammaticalization”.

Furthermore, as I will show in Chapters 3 and 4, the various sources and outcomes of change involving these items are not necessarily con-
nected in a straightforward, linear manner, and even multiple languages that have relative clause markers derived from the same source may have taken different “routes” to get there. Unidirectionality is therefore not a relevant principle, although this is unsurprising in light of the fact that most of the changes involved are not from lexical to grammatical. An approach to diachronic relationships in which the connections between the elements in question are modelled by networks rather than unidirectional paths is therefore more appropriate. Such networks are not uncommonly used in the literature, even in works that at least nominally situate themselves within the framework of grammaticalization (see Yap et al. (2004) for an example of this).

2.2.2 Diachronic typology

To discover the general nature of the diachronic relationships between different “types” of a construction, a cross-linguistic approach is desirable, which means that it is necessary to borrow from the methods and aims of (synchronic) typology. Synchronic typological studies first of all identify constructions, i.e. clusters of features that correspond with a particular function in a language. The diachronic side of this is the question: “How did these features get associated with (a) each other and (b) this function?” This can be thought of as investigating the “etymology” of constructions.

As discussed in 2.1.1 above, another common aim of synchronic typology is to identify universals and implicational tendencies of language. The diachronic typologist whose goal is to “explain” synchronic typological findings will then investigate the possibility that diachronic mechanisms have caused these correlations (see e.g. Bybee (1988), Croft (2000) for examples of this approach). This approach has sometimes been used to explain the well known “word order harmonies”, in which the basic word order of a language has been argued to be a good predictor of the word order of certain constructions in that language, particularly heads and their modifiers. Languages with VO word order, for example, are said to more commonly have prepositions than postpositions. Givón (1975) has argued that this can be explained diachronically by the fact that adpositions often come from serial verbs (e.g. “I took machete cut wood” becomes “I with-machete cut wood”). This could be seen as “di-
achronic typology” as it draws on diachronic information for the purpose of understanding (synchronous) typological findings. Synchronic typologists are also interested in areal or genetic skewings of features (Bickel’s “What’s where why?” question (Bickel 2005)). If a feature is found only around the Pacific Rim, for example, typologists then look for historical events and processes (e.g. contact and population movement) to explain this. Each of these cases is an example of where historical information has been taken into account in the service of primarily synchronic typological studies. I would like to suggest, however, that a diachronic study can have value in its own right.

Each of the interests of synchronic typology as described above has its diachronic counterpart: for example, if a synchronic typology is the study of correlations among features and constructions, a diachronic typology would be the study of correlations among changes in features and changes in constructions. A synchronic typology of the relative clause would first identify clusters of features that occur in constructions that function as relative clauses in various languages (i.e. types of RC), then investigate the correlations between the occurrence of these types and other features of the language, and finally examine the distribution of these types around the world and in certain language families. An equivalent diachronic typology would first identify changes that affect constructions that function as relative clauses in various languages (i.e. types of changes); then the correlations between the occurrence of these types of changes and other features of the languages; then the distribution of these changes around the world and in certain language families.

It might be helpful to see side-by-side the functions of synchronic typology, the ways in which diachronic information can assist synchronic typology, and the functions of diachronic typology:

Given that it is only the activities in the right-hand column that involve the investigation of diachronic information for its own sake, it would seem fair to describe these as the “core” of diachronic typology, while the functions in the middle column can be better categorised as “applied diachronic typology”, or simply as an area of interaction between diachronic and synchronic typology. For this reason, my study is mainly an attempt to address the three areas of investigation in the right-hand column. Although sometimes I will discuss matters relating
§2.2 Diachronic studies

<table>
<thead>
<tr>
<th>Synchronous Typology</th>
<th>Diachronic Support</th>
<th>Diachronic Typology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying cross-linguistic variation in a construction.</td>
<td>Explaining how these different features (and feature values) became associated with the construction.</td>
<td>Identifying diachronic variation in a construction.</td>
</tr>
<tr>
<td>Identifying implications relating a feature $F$ to other features.</td>
<td>Finding explanations for these correlations in the origin of the relevant construction.</td>
<td>Identifying implications relating a change $C$ to other features or changes.</td>
</tr>
<tr>
<td>Identifying genetic or areal skewings of features.</td>
<td>Explaining how these skewings arose.</td>
<td>Identifying genetic or areal skewings of changes.</td>
</tr>
</tbody>
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**Tab. 2.2: Functions of synchronous and diachronic typology**

to the centre column, and even touch on those on the left, these will not be the main focus of this thesis.

### 2.2.3 Diachronic approaches to relative clauses

Very little has been written about the cross-linguistic diachronic typology of the relative clause. I am not aware of any book or paper that is entirely, or even primarily devoted to the topic. As will be mentioned in the literature review below, Lehmann (1984) includes a chapter in his book *Der Relativsatz* ("The relative clause") on the diachronic typology of relative clauses, but otherwise his primary focus is synchronous typology. Kurzova’s study of the relative clause in Indo-European languages (Kurzova 1981) is also primarily synchronous, but includes some discussion of diachronic data from Latin, Greek and Hittite. Harris and Campbell’s work on historical syntax in general (Harris and Campbell 1995) contains a chapter on complex clauses, which includes a discussion of the relative clause. Heine and Kuteva in their *World Lexicon of Grammaticalization* (Heine and Kuteva 2002) have lists of “grammaticalization pathways” that involve relative markers. A few works on language contact also refer to relative clause change in the context of discussing the various ways in which one language has influenced another (e.g. Johanson (2001, 2002) for the Turkic languages). The vast majority of studies of relative clause change, however, are analyses of what is found in an individual language.
or language family, occasionally with brief references to a handful of other languages for comparison’s sake. In this section I will first survey the few true cross-linguistic studies, in particular the aims of their investigation and the conclusions they reach. I will then turn to the studies with a narrower focus. Some of these propose generalisations that might have more universal validity outside of the language or family they have investigated, and I will discuss how the research questions arising from these are addressed in this thesis.

Some studies, particularly those that situate themselves within the framework of “grammaticalization theory”, have restricted themselves to lexical change involving relative clause markers. This is the case for the information on relative clauses included in Heine and Kuteva’s *World Lexicon of Grammaticalization* (Heine and Kuteva 2002). As its title suggests, this is less an in-depth discussion of any particular language changes, than an attempt to list exhaustively those changes that have been discussed in the literature elsewhere. Although Heine and Kuteva do not discuss every change in great detail themselves, they give brief examples of most and list useful sources where appropriate. Their mentions of relative clause markers in this work are remarkable for the surprising combination of the greatest number of languages taken into account and the fewest “pathways of change” proposed to account for the data. According to Heine and Kuteva, the sources of “relative conjunctions” are (1) demonstratives, (2) the word “here”, (3) interrogatives (Heine and Kuteva 2002:335). The only “target of change” of a relative clause marker given is “complementisers” (p. 324). The development from demonstrative to relative element is described by Heine and Kuteva as: “probably the most frequent way in which relative clause markers evolve” (p. 115).

Even if Heine and Kuteva are correct and the above are the only possible direct pathways, this does not necessarily exclude the possibility of an indirect connection to other sources or results of change that are commonly mentioned (e.g. definite articles, copulas, possessives, focus markers etc). For example, Heine and Kuteva state explicitly that a

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5 This seems to be their general term for relative elements.

6 I have used Heine and Kuteva’s terminology here, but when describing what relative markers turn into I will generally refer to “outcomes” or “results” of a change, rather than “targets”, since the latter has unfortunate connotations of intentionality.
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demonstrative can develop into a copula (330), which can become a possessive marker (335), or even a focus marker (331). Demonstratives can also develop directly into focus markers without becoming copulas first (331). This means it is quite possible that languages might use the same or similar items as copula, possessive marker, focus marker and /or relative element without it being the case that the relative element developed from or to any of these.

The paths given in Heine and Kuteva’s Lexicon constitute a hypothesis that will be tested against the data discussed in Chapters 3 and 4. For them to be correct, we would have to find that whenever a relative element resembles anything other than a demonstrative, interrogative, word for “here” or complementiser, this resemblance can plausibly be explained either by chance, or by assuming an indirect pathway of change via a demonstrative, interrogative, word for “here” or complementiser. It will be shown that this is not the case, and that in fact there are other sources of relative clause markers besides demonstratives and interrogatives, while the word for “here” does not need to be posited as a source, since the Tok Pisin element which is their only evidence for this pathway may not be a relative clause marker at all, and even if it is, it has possible alternative origins as a demonstrative (as noted by Heine and Kuteva themselves as well (Heine and Kuteva 2002:174)), or as a discourse marker.

As might be expected, given the large scope of his study, Lehmann (1984) suggests a greater variety of sources of relative clause markers: definite articles and demonstratives (pp. 367–370, 373, 378–381), interrogatives and indefinite pronouns (pp. 369–373, 383–384), and (as sources of verb suffixes) nominalisers (p. 376) and possessive markers (p. 377–378). He gives several examples of each, some attested and some reconstructed. He also notes that relative clause markers can be extended to function as a “universal conjunction” [Universalkonjunktion] (p. 393), a marker of embedded questions or conditional clauses (p. 394), a definiteness marker on adjectives (p. 395), and a general linking particle (p. 396).

Lehmann’s discussion of the origins of relative clause markers is systematic and thorough, woven through his more general account of the origins of the various “types” of relative clause he distinguishes synchron-
ically. His analysis of relative clauses classifies RCs according to three operations: attribution, subordination, and “empty-place formation” (Lehmann 1984, Lehmann 1986). His conceptualization of the various possible origins for relative clauses therefore involves non-relative constructions which already involve one or two of these operations being extended to the rest, thus becoming relative clauses. For example an embedded question involves subordination and “empty place formation” (pronominalisation), but not attribution. For an embedded question to become a relative clause, some bridging context must lead to speakers reinterpreting the construction as being attributive to some head nominal.

A list of the sources of relative clause constructions described by Lehmann in this chapter is given in (6), grouped according to the operation he claims was initially present in the construction.

(6) **Constructions that become RCs**

**Subordination:** (unmarked) complement clauses (383); conditional clauses (384); embedded questions (385).

**Attribution:** deverbal nominals, which can develop subordination and empty-place formation by becoming participles that can take arguments; appositions such as OHG *ich bin Gabriel thie ažantu foru gote*, “I am Gabriel, the standing before God”; possessive constructions.

**Empty-place formation:** adjoined clauses with anaphoric pronouns (these can become subordinate and develop an attributive function, thus becoming RCs).

The relative clause markers discussed by Lehmann are therefore also classified according to how they perform these functions. Interrogatives and indefinite pronouns are already anaphoric (i.e. performing his operation of “empty-place formation”), and in embedded clauses function as subordinators as well. Therefore, as Lehmann points out, they already perform two of the three functions required for relativisation: they just

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7 These are his own English translations from Lehmann (1986) of the three operations, which originally appeared in German as *Nominalisierung, Attribution* and *Leerstellenbildung* (Lehmann 1984: e.g. p. 365).
need to have an overt referent in the main clause and then they come to mark the RC as attributive as well. Markers of nominalisation and possession are markers of attribution, and can be extended to subordination, but they do not in themselves perform an anaphoric function. Finally, Lehmann's scenario for the development of pronominal elements such as demonstratives is that these begin as anaphors in an adjoined clause, and that this "grammaticalizes" into an embedded clause so that the anaphor comes to perform the functions of attribution and subordination as well.

While Lehmann's three-operation framework provides the organizational principle for his discussion of the origin of relative clauses and their markers, it is less prominent in the section on relative clause change. The section on the development of relative clauses concentrates on their development from other, non-relative constructions, but the section on change and loss is predominantly devoted to a discussion of shifts from one type of relative clause to another (e.g. from adjoined to embedded, or from prenominal to postnominal and vice versa). There are brief mentions of the extension of relative clause patterns to non-relative functions (pp. 393–398), i.e. the reverse of what Lehmann discussed in the first half of the chapter, but these are clearly not the main focus of his investigation, and he does not frame this discussion as a systematic investigation of the role each of his three operations plays in such extensions. I will show in Chapter 4 that the four outcomes of relative clause marker change mentioned by Lehmann (1984)—"universal conjunctions", markers of embedded questions or conditional clauses, definiteness markers on adjectives, and general linking particles—are only a subset of the many extensions that can occur, and that these and the other extensions found can be at least partially explained by the similarities between the source (relative clause marker) and outcomes of the extensions in terms of Lehmann's three operations.

Other statements about the origins and development of relative clause marking in the literature are made as passing comments in studies of related phenomena (see for example the occasional references to relative clause in Harris and Campbell's discussion of the origins of subordination (1995:298–313)), or they are the result of studies which limit their scope to a handful of languages (e.g. Yap et al. (2004)), or to one type of source (e.g. Aristar (1991), Diessel (1999: Chap. 6)). These will all be
drawn on for the detailed investigation into relative clause marker sources and outcomes of change in Chapters 3 and 4, but will not be outlined individually here in the review of the literature.

As well as theories about where relative clause markers can come from and what they can become, generalisations have been made about the nature of the processes involved in such changes. Most of these are based on observations from limited language data and have not yet been evaluated in light of the range of data considered in this thesis. Romaine (1984c) proposes various generalisations about the replacement of some types of relative elements (or RC marking “strategies”) by others based on evidence from Germanic languages, creoles and Konkani (a Dravidian language). These are summarised in (7) below.

(7) A list of Romaine’s (1984c) generalisations (paraphrased)

1. A language which uses an invariant relativising strategy cannot change directly into a type which uses pronominalisation, but only gradually, e.g. via having both strategies present in the language for a time.

2. Languages can change from any one relativising strategy (“state”) to any other, although sometimes only via an indirect route.

3. New strategies will enter the Keenan-Comrie hierarchy in reverse order (“sneaking in” via the least frequent positions).

4. “Natural” change will take place first in the most marked environments, and spread to the less marked environments. In creoles the opposite direction of change is found.

5. There is a universal tendency (but not an absolute universal) that languages replace invariable relative markers with pronominalisation strategies.

6. Change in a rightwards direction along the continuum, “adjunction—embedding” tends to correlate with change on the continua of “pragmatic constraints—grammatical constraints” and “invariant particle—pronominalisation”.

Not every generalisation made here can be tested in this study, and
some are unlikely ever to be verifiable, given the difficulties involved with testing diachronic "universals" statistically. There are not enough attested cases of the development of a pronominal relative clause marker in a language that formerly only had invariant markers to make it possible to evaluate generalisation (1). Hypothesis (2), that any strategy can change to any other, could theoretically be proven correct if we were fortunate enough to find examples of each strategy changing into every other type, but this is not a realistic expectation. Neither can it ever be disproved, as lack of evidence for a change does not necessarily mean it is impossible.

I will show, however, that depending on how one interprets them, generalisations (3) and (4) are supported by the data discussed in this thesis (see Section 3.2). Generalisation (5) is not incompatible with the data available to me, but neither is it clearly indicated, and it must also be remembered that the attested cases of relative clause marker change represent only an unquantifiably tiny proportion of all those that have occurred in the languages of the world throughout the ages. Generalisation (6) depends very much on the definitions of the terminology used, i.e. what characteristics one uses to determine where a construction falls on what Romaine calls the continuum of adjunction—embedding. To the extent that it can be evaluated, I will compare it to the data available in Chapter 5.

At least one collection of generalisations, those proposed by Maxwell (1982), is not the product of observations of actual diachronic data at all, but instead results from logical reasoning based on Keenan and Comrie's (1977) Accessibility Hierarchy (see above for details on this hierarchy). Some of Maxwell's generalisations apply to situations that are rare or non-existent in the diachronic examples available to me, so I will not be able to evaluate their validity. This is the case for generalisations specifically pertaining to the development and loss of the "gap" strategy and the strategy by which NPrel is realised as a full NP.

The remaining predictions, paraphrased in (8), will be discussed in Chapters 3 and 4, and it will be seen that they are generally compatible with the data available to me.
A paraphrase of Maxwell’s (1982) generalisations from 139–140; 150–151

1. When anaphoric pronominalisation initially arises, it must be able to apply to the lowest position already relativisable.

2. No strategy may skip any position(s) when spreading across the AH.

3. No strategy may skip any position(s) while receding along the AH. The strategy of omission can only recede upward.

4. Directly before it dies out, the pronominalisation strategy must still be available for the lowest position relativisable by another strategy in the language.

5. As one strategy in a language advances, another generally recedes.

6. Any new strategy that arises must share some syntactic features with those already present, since it derives from these.

In the list below, I paraphrase further generalisations that have been made about the diachronic development of relative clause markers. I have not included in this list those generalisations made by Maxwell (1982) and Romaine (1984c) which I have already summarised separately above.

Further generalisations from the literature

1. Relative clause marking on the verb can evolve through the reanalysis of a “binding anaphor” as verb morphology. This is especially likely to be the case when a language shows identity in the form of the possession marker and the relative clause marker (Aristar 1991).

2. If demonstratives become general markers of modifier phrases, their use to mark relativisation precedes any use as possession markers (Shi and Li 2002).

3. Extension of a relative clause marker to other types of modifier (e.g. possession) is only possible if these modifier-head structures have the same ordering as the RC-head structure (Shi and Li 2002:14).
§2.2 Diachronic studies

4. Relative pronouns (in the sense of Comrie and also de Vries (2002a)), when found outside Europe, almost always have arisen through the influence of European languages (Comrie 1998b).

5. When a relative clause arises through analogy with another construction, structural features of this source construction “shape the path and degree of grammaticalization” of the marker (Shi and Li 2002).

6. The most common source of relative clause markers is demonstratives (Heine and Kuteva 2002).

In Chapters 3 and 4 I will evaluate these claims as far as possible against data from a broader group of languages than they have been tested against before.

Besides Lehmann (1984), few cross-linguistic studies focus on change in the relative clause in general, rather than simply change affecting the markers. One that does is Harris and Campbell’s chapter devoted to “the development of complex constructions” (Harris and Campbell 1995), parts of which refer to relative clauses. As they state in the introduction to the chapter, they concentrate mainly on attested changes. Their study covers a wider range of non-Indo-European languages than most others. Because the chapter deals with complex clauses in general, many of the actual examples given are not relevant to my study, except insofar as they illustrate that some processes of change are not particular to the relative clause construction, but can be seen elsewhere as well.

First Harris and Campbell discuss the prevailing myth that parataxis is the source of hypotaxis (pp. 283–285). They point out that this development is not attested anywhere. In fact, although many languages have complementisers that have developed out of demonstratives or question words, which is sometimes taken as “evidence” for a paratactic origin, this conclusion is not the only logical possibility, nor is it borne out by a study of languages where these complementisers arose during periods for which we have written records. I will return to this issue in Chapter 5.

They then investigate the types of lexical and grammatical element that are extended to subordination marking. Their explanation for why some elements are sources of subordination marking and others are not hinges on the argument that most (though not all) subordinate clauses
are non-assertions. The markers that are extended to subordination
have a (possibly secondary) function as markers of non-assertion and
this facilitates their extension. Questions, time, manner and purpose ad-
verbials, noun complements, reduced complement clauses, conditionals,
some “because” clauses, and one reading of “although” clauses are also
non-assertions (304), which would seem to predict that we are likely to
find languages which use the same strategy for marking these as for the
types of relative clause listed above.

Some further main-clause non-assertions such as imperatives are ar-

brush not to be well suited to subordination marking, since they are often
limited to second person forms or bare verb stems (306–307). Wishes,
desires and counterfactuals are often marked with subjunctive mood,
which is found in general subordination marking too, including on rel-
ative clauses. The final section of this chapter in Harris and Campbell
(1994) deals with the question of subordination’s ultimate origin. Harris
and Campbell’s hypothesis relies only on the well-understood process of
reanalysis. Non-finite verb forms are said to be ambiguous in nature:
they can often function as nouns or adjectives, but can equally well be
interpreted as a verb. A verb, even without complements, is suscepti-
tive to being (re)analysed as a clause. In short, non-finite verbs can poten-
tially be diachronically reanalysed as having complex initial structure
(310–311). They suggest this might provide a way for languages with no
subordination processes at all to develop them. I will discuss this sort of
reanalysis further in Chapter 5.

The remaining diachronic studies of relative clauses that I have not
discussed so far are those which are only minimally or not at all cross-
linguistic, restricting themselves to a single language or language family.
These can be classified as falling into a few different categories, depending
on the goal of the study.

Some studies are primarily synchronic studies of relative clauses within
a family or language, using historical reconstruction or facts only to
explain the synchronic situation. This is the case, for instance, with
Genetti’s (1992) comparison of the relativisation systems of seven lan-
guages of Nepal, or DeLancey’s (1986) study of relativisation and nom-
inalisation in various Tibeto-Burman languages. Such studies also ex-
ist for the relative clauses of (some) Australian languages (Dixon 1969,
Hale 1976), Akkadian (Deutscher 2001), German dialects (Fleischer 2004, Romaine 1981), Dravidian (Ramarao 1992), Portuguese (Tarallo 1996, Tarallo 1998), Tok Pisin (Sankoff and Brown 1980, Aitchison 1992), Georgian (Hewitt 1987), Russian (Leckey 1992), and even new English dialects (Newbrook 1998, Mesthrie and Dunne 1990). A study with a similar aim is Shi and Li’s paper on the Chinese particle *de*, as they seek to explain its modern distribution (including relative clause marking function) by illuminating its historical origins (Shi and Li 2002).

Other studies have reconstruction of the grammar of the proto-language as their goal, so although the data is still often primarily synchronic, the author is concerned with drawing as many diachronic conclusions from it as possible. A good example of this is Frązyngier’s study of the complex sentence in Chadic languages (Frązyngier 1996). Most of the book is devoted to a very detailed typology of the Chadic relative clause, describing the different strategies that are found and their distribution among the languages. Frązyngier then addresses the question of the sources of the relative markers found, and concludes by proposing a reconstruction of the relative clause system in Proto-Chadic, such that a minimal series of plausible changes could lead to the different dialect forms. Works with similar aims include Haader’s study of complex sentences in Hungarian (Haader 2002), and McConvell’s study of subordination strategies in some Australian languages (McConvell 2006). In such cases the changes are usually reconstructions only, so these will not be relied on heavily in the rest of this thesis.

Thirdly, there are studies that take the approach of tracing a construction through the known history of a language, or through one line of a family tree. Lehmann (1979) traces the relative clause backwards from modern Italian, to medieval Italian, Vulgar Latin, Classical Latin and Proto-Indo-European. Other examples include Ziegler’s study of Celtic relativisation (Ziegler 1993), Rivero’s study of Spanish relative clauses (Rivero 1986), Givón’s investigation into the development of Biblical Hebrew relative clauses (Givón 1991), and Nicholas’ thesis on the history of the Greek complementiser *pu* (including, but not limited to, its relative clause marking function) (Nicholas 1998). Yap et al. take a comparative approach, but essentially follow the same method, for elements with multiple functions, including relativisation, in Chinese, Japanese and Malay.
(Yap et al. 2004). This approach can only be taken with a limited number of languages, since it requires written records from a fairly long period of time, and is therefore most commonly used by Indo-Europeanists. Then there are studies that are primarily concerned with the synchronic analysis of the relative clause in terms of a particular syntactic theory, but that draw on diachronic data from a particular language family for this purpose. This is the case in Coene (1995) (who analyses certain relative structures in Romanian and Spanish), Auger (1995), in her analysis of French “resumptive pronouns”, Engdahl (1997) for Scandinavian, Rapaport (1995), who argues for a wh-in comp analysis of Slavic relative clauses on the basis of their historical variation, Kikuta (2002), with her analysis of the Japanese internally headed relative clause, Hirschbühl and Rivero (1982), for their syntactic analysis of the variation among Romance relative clauses, and to a lesser extent in Hock (1991) who uses developments in Germanic relative clauses to argue for a particular analysis of the relative clauses reconstructed for PIE.

Finally, some studies cannot be classified as having any one of these goals as their primary aim. Rather they are first and foremost designed to contribute to the field's knowledge about the history of a particular language, and through their investigation into this also generally contribute to each of the above areas: understanding of the syntactic structure of relative clauses, knowledge about the pathways taken by individual constructions, reconstruction of pre-historical stages of the language in question, and understanding of how the history of the language determined the grammar of each synchronic stage. Studies with this sort of wider scope include Harris’s study of the history of Georgian relative clauses (Harris 1994), Hewitt’s comparison of Old Armenian and Modern Armenian relativisation strategies (Hewitt 1978), Allen’s thesis with its extensive discussion of relative clauses in Old and Middle English (Allen 1980), and Kurzová’s study of relative clauses in the Indo-European languages (Kurzova 1981).

All of the above-mentioned studies are primarily relevant to this thesis because of their descriptions of the changes that have taken place in the various language families they discuss. Some, however, also propose generalisations or predictions based upon these observations. For example, Frayzyngier claims that “[t]he lighter the functional load of the rela-
tive marker, the more likely it may be omitted” (Frajzyngier 1996:419). Deutscher suggests that what he terms “case misalignment” (where a relative pronoun agrees in case with its head rather than being assigned a role within the RC) is disfavoured and will vanish soon after a language begins embedding (rather than adjoining) its relative clauses (2001:417). Givón (1991) hypothesises that the development of nominalisations into finite relative clauses and from relative clauses into adverbials constitutes a common pathway of change cross-linguistically, and that analogical change proceeds gradually through bridging constructions and generalisation of speech error. I will address such generalisations as they arise in the discussion of the language data.

2.3 Unresolved questions

As can be seen from the survey of the literature above, the vast majority of work on language change involving relative clauses has not been truly cross-linguistic, and most cross-linguistic studies have had a primarily synchronic focus. Of those studies which are both diachronic and cross-linguistic (Lehmann 1984, Harris and Campbell 1995, Heine and Kuteva 2002), only Lehmann (1984) is exclusively concerned with relative clauses; the others are more general but make some reference to the relative clause as well. Particularly lacking are studies of change in the relative clause construction that go beyond change in relative clause marking strategies and investigate change in other parameters, such as head position, position of the relative clause, embedding and the formal characteristics associated with embedding. These are features of the relative clause that have really only been investigated from a synchronic perspective, or in studies of individual languages. By comparing the findings from these latter studies, and exploring the relationship between these changes and other factors that synchronic studies have suggested might be relevant, Chapters 5 and 6 of this thesis will investigate changes in these parameters in more depth than been attempted in the past.

My examination of changes in relative clause marking in 3 and 4 will also be more exhaustive than previous studies. Unlike Lehmann (1984), I place equal weight on the origins of relative clause markers and the changes they can undergo. Extensions of relative clause markers to
other constructions has received little attention in the literature outside of more narrowly-focused studies. By comparing and synthesising the findings of studies of individual extensions, I show that it is possible to generalise about the sorts of extensions that take place, why they occur, and about the details of the processes involved in such extensions. I also consider changes in the distribution of multiple relative clause types within languages (see 4.3), which has not been examined from a cross-linguistic perspective before.

Finally, I should note that until recently, much of the literature on language change has made a sharp distinction between “natural change” and contact-induced change. Language contact has been seen as the exception rather than the norm, and cases of language change have either been “explained” by contact, or in cases where contact does not provide a clear source for the change, the change has been treated as occurring in a vacuum. Lehmann (1984) in particular takes this approach: he discards the development of interrogatives into relative clause markers in Germanic as being “of limited value for generalisation” [von begrenztem Allgemeinwert] since it is the result of influence from the Romance languages (Lehmann 1984:385). His model of language change, in which “der Sprachwandel [...] macht, wie die Natur, keine Sprünge” [language change, like nature, makes no leaps] (p. 367) also establishes gradual change without external influence as the norm, and copying and replacement as something exceptional.

One could say there has been a dichotomy in the diachronic literature on relative clauses, such that some studies investigate “natural change”, i.e. “grammaticalization” of relative clause markers, while cases of copying, replacement and external influence in general are left to the literature on contact (see e.g. Newbrook (1998), Johanson (2002), Haspelmath (1998)).

In the more general literature on language change, this dichotomy has begun to disappear and there has been a gradual realisation that contact considerations need to be integrated into any model of language change in order for it to be of general explanatory or even descriptive value. Most languages of the world are in contact relationships with other languages, or at least with other dialects of the same language. Multilingualism is not the exception. These sorts of considerations have resulted in studies
such as Heine and Kuteva (2005).

This is not to say that extremely intensive contact situations, or special cases such as creoles and pidgins might not display differences in the changes that occur: this does in fact seem to be the case, as is discussed here particularly in Chapter 6. Some features and types of relative clauses also seem to be more susceptible to being transferred from one language to another than others do. Yet the influence of language contact in each case is a matter of degree, rather than a binary feature. We can distinguish between gradual change in a construction and the replacement of one construction by another, but language contact can play a role in both of these processes. Unlike previous studies of relative clause change, in this thesis I therefore acknowledge the relevance of contact and multilingualism and rather than contrasting “natural” and “contact-induced” change, I integrate the question of the role of external influences into the discussion of the individual changes.

2.4 Methodology

Unlike synchronic typology, diachronic typology is not a well defined area of linguistics with general consensus on the appropriate tools and methods. In light of the purposes of diachronic typology as discussed in the introduction and literature review, I will discuss how the methods of synchronic typology can be adapted to a diachronic study. It will be seen that there is an overlap between the set of methods used for synchronic typology and those used for diachronic studies, but that practical considerations prevent the wholesale adoption of the former’s methods. In terms of my own study, I will outline the steps I have taken to establish the focus of my investigation. This includes selecting variables of interest (types of change), selection of appropriate data (languages and sources included in the sample) and how this data was compared and analysed (the methodological “tools” used).

2.4.1 Identifying the features of interest

After defining the construction in a way that allows cross-linguistic comparisons to be made at all, the next task of the synchronic typologist is to identify the features of this construction that can vary from language
to language. This is usually a two-part task itself: first identifying the features that might be hypothesised to vary, then investigating to see whether they actually do. For the *diachronic* typologist this amounts to identifying the features that can might be expected to vary across time, then seeing whether examples of these changes can be found.

A logical starting point for a hypothesis about what might be expected to vary across time is that these might be the same features that vary from language to language. The variables in the list below are those that have been found in synchronic typologies of the relative clause to vary among different languages:

- Relative clause marker type and position (pronominal, invariable, verb affix, clause initial/final, etc)
- Head/RC ordering (pronominal, postnominal)
- Relationship between the main clause and RC (adjoined, embedded, head-internal, correlative)
- Type of verb in the relative clause (participial, full finite verb, nominalised, general subordinate form)

The next step is to discover which of these actually do vary over time in relative clause constructions.

The biggest problem encountered at this point is the impossibility of proving a negative when the available data is limited. Ideally a typologist would like to make statements of the sort: “In all possible human languages, construction C can take form X or Y but not Z”, as well as implicational universals of the type: “In any possible human language, we will only find feature X if feature Y is also present.” For the diachronic typologist, these statements equate to: “In all possible human languages, feature F in construction C can change from the value F₁ to F₂, but not to F₃” and “In any possible human language, we will only find change X if feature Y is present”.

Since typologists have access to neither all possible human languages or even all currently spoken human languages, it is impossible to make such strong statements. Even a large representative sample of known languages is such a tiny proportion of the languages that have ever been
spoken\(^8\) that we cannot and should not generalise from our samples to these. Unlike, for example, in surveys of human behaviour, where the number of humans sampled might well be an equally small proportion of the population, we have absolutely no knowledge about how representative of all languages any sample we take really is, so we cannot even calculate the possible error.

This is a problem common to both synchronic and diachronic typologists, although diachronic studies are even more limited, as the number of languages for which historical data is available is much smaller than the number for which synchronic typological information exists. The only solution to this problem is simply not to generalise to “all possible human languages”, but rather to remember the limitations of the data. The best conclusions that can be hoped for in the case of synchronic typologists are to say, “In currently spoken languages of X family, Y family, and Z family...” and for diachronic typologists, “In the languages for which historical records exist...” Whether the findings then indicate a trend that is worth investigating further in other languages (if at all possible) depends on whether there is independent reason to think that it might be more widespread, for example if motivations for the trend can be found in historical events, the way the human brain is known to work, or similar.

It is therefore also necessary to accept that a diachronic study will never be able to prove that a particular change cannot occur. Most likely, it will only show up the very common changes. It may also indicate correlations between changes and other features of the language or construction, but these cannot be taken to be absolute prerequisites for a change, simply because the sample is not large or representative enough. Rather any correlations found are more likely to be indicative of statistical tendencies.

\(^8\)Even under conservative assumptions, such as 5000 languages every 1000 years (i.e. including new languages forming through e.g. splits, creolisation, etc. and also existing languages changing sufficiently that we would want to view them as different languages from those which went before) and that humans have had language for only 100 000 years, we would have to accept that at least 500 000 languages have existed so far. Even a large sample of 200 languages is only 0.04% of this.
2.4.2 Sample selection

Since traditional statistical methods are so difficult to apply to typological linguistic studies, and completely inappropriate for diachronic typological studies, the importance of drawing a random, well balanced sample diminishes. The point of preferring a random sample to a non-random one (i.e. a sample of convenience) is that statistical theory can only be applied to a random sample. Even with a non-random sample, it is desirable to avoid excessive bias with regard to language family or geographical area, since it may well be that certain areas and families are homogenous with regard to relative clause formation strategies. Similar relative clauses may well undergo similar changes, and one of my aims is to give information about as many of the possible changes, sources and development outcomes as I can. Small biases with regard to these factors are not, however, as serious as they would be in a statistical study; as I do not intend to generalise about frequency of changes, the worst sort of error such biases would introduce into my study is that I might miss out on observing certain rarer changes that might be obvious in a broader sample.

Traditionally samples for typological studies consist of languages, no matter what the object of investigation is. In a grammatical study, the typologist wishing to investigate a particular construction in each language documents that construction for each language in his or her sample. This is not an ideal approach, because the list of languages in the sample does not neatly map to the list of constructions investigated. For one thing, frequently a language has more than one variant for a specific construction. Other languages may have no equivalent of that construction at all. The typologist then has to discard that language from his/her sample. It makes more sense in such cases to directly sample constructions and to view the language that each is found in as a feature of the construction (its geographical/genetic distribution), since this is the way it is generally treated in the study itself.

Now consider a sample designed for a study of diachronic change in relative clause constructions. What we actually want to measure is not languages themselves, or even relative clause constructions, but changes in relative clause constructions. For the same reason that most typologists do not sample constructions, I cannot directly use a sample of
changes. When a synchronic typology of a construction is first established, the typologist does not know in advance what constructions exist. A list of languages is much easier to come by, and the typologist can then investigate the constructions found in each of these. As thorough studies of the changes affecting relative clause constructions have not previously been carried out, such changes cannot form the basis of my sample. Unlike the hypothetical synchronic typologist, however, I do not have to get at these changes through a list of languages, because synchronic typologies of relative clauses already exist, as do numerous studies of individual relative clause constructions, and so my sample can be a list of relative clause constructions, and the results of my investigation a list of attested changes in these.

Not all of the relative clause constructions described in the literature are of relevance to my study, since many of them have not undergone any changes that we know of, and many more have not been adequately described from a historical perspective. My sample therefore consists of two types of relative clauses (which overlap to a large degree): (1) those which are widely believed to have undergone change of some sort, and the circumstances of which change are attested or can be reconstructed, and (2) relative clauses from languages with a long documented history (approximately 500 years or more), such that we know they have not undergone change for a long period of time. Mine is therefore a convenience sample of constructions which fall into these categories: i.e all of these for which sufficient information was available to me. The precise details of which constructions are included are given in the appendix to this thesis. At times I will rely on examples from beyond this sample for comparison's sake, but such examples will not form the basis of any generalisations I draw.

2.4.3 Collection of the data

As is usual in typology, I have relied on a combination of grammars and less immediate sources in this study. For each construction I have included in my main sample, I have triangulated evidence from several sources, relying primarily on work by specialists in that language, rather than only on information from wider cross-linguistic studies or databases. In the case of languages for which I do not have sufficient background
myself to assess the accuracy of information presented, it is hoped that this approach will minimise the potential problem of inaccurate analysis of a language (or of further dissemination of inaccuracies from earlier works).

Several problems that are particular to diachronic typologists when it comes to source reliability are (a) separating out stages of a language and (b) dealing with reconstructions. Both problems can be illustrated with the example of a language family like Indo-European.

For the Indic branch of Indo-European, for instance, I have access to descriptions labeled as Proto-Indo-European, “Old Indic”, Vedic, Sanskrit, “Rigvedic” and descriptions of some of the modern Indic languages like Hindi, Urdu, Bengali, etc. These are not linear descendants of each other and cannot be treated as such. Some of these categories even overlap, in that Rigvedic, for example, is a sub-period of Vedic. The regional dialects most represented in the texts also differ from period to period due to political considerations, and especially in the earliest periods there are gaps in the historical record. For all these reasons, it is not possible to draw conclusions such as: “If the relative clause at stage x had a finite verb and prepositional relative pronoun, and at stage x+1 it had a participial verb and invariable marker, then the two changes finite > participial verb and pronominal > invariant marker must have taken place.” It is possible that this is what happened, but it is also possible (a) that both constructions were present all along, but one was attested at stage x and the other at stage x+1, (b) that they were both present at stage x and only one was attested, and that, at stage x+1, the second construction had out-competed the first, (c) that they were dialectal variants and two different dialects are represented by the different stages or (d) that the first was replaced by the second, which was a calque on a construction found in a neighbouring language.

The approach I have taken to minimise unwarranted conclusions such as these is that I have avoided drawing my own conclusions on which changes “must have” occurred based on the constructions attested at two different stages of a language. Rather I have based my study on changes that linguists working in that language family say occurred, assuming that they have the necessary background to decide between possibilities (a) through (d).
The other problem mentioned above is that of reconstructions. In the case of the Indic branch of Indo-European this is the problem of whether or not to include changes that are reconstructed to have occurred between PIE and Vedic. For example, Vedic has both left-joined and right-joined relative clauses, with correlative pronouns and without (Lühr 2005), while Proto-Indo-European is thought to have had, at most, only left-joined correlatives. Do we then say that this is a case of left-joined correlatives becoming right-joined correlatives and/or of correlatives becoming non-correlative RCs? It is tempting to do so, since allowing reconstructions increases the number of languages available for this study. On the other hand, the reconstruction of syntax is not as well developed or as certain a science as the reconstruction of phonology or even morphology, and it is wise not to place too much faith in reconstructed syntax. In fact, one of the main grounds for reconstructing one type of construction over another if multiple types are represented in the daughter languages is by appealing to known “pathways of change”. As common pathways of change are something which this study aims to discover, including reconstructed changes that are based on these would be presupposing my conclusions. In the end I have not included reconstructed changes in any of my counts of how frequently a change is found, nor have I made heavy reference to them in the text. At times, however, I have brought them into the discussion to compare and contrast with changes that are attested, but I have always made it clear which changes are known from the historical record and which are only reconstructions, and I have also included a brief discussion of what the reconstruction is based on and how solid it is.

These two problems: (1) that we cannot assume linearity of attestation and (2) the danger of relying on reconstructions, are in some ways two sides of the same coin. Every “change” must, at some level, be reconstructed. No matter how well attested a language is, changes do not happen in the texts: they happen in the speakers’ minds, in the transmission of language between generations, and over a period of time. For those engaged in synchronic typology, constructions can be collected from texts or recordings and analysed. Changes, on the other hand, cannot be collected, but must rather be inferred. What we have in texts is only a reflection of what has happened in the speakers’ minds or during
transmission: a reflection from which we can hope to reconstruct what has actually taken place.

This is reconstruction of a different degree from the kind in which first an earlier syntactic form is reconstructed and then the change that would lead from this to the attested form. In the latter case, two instances of reconstruction take place instead of just one. But even if the only reconstruction involved is the inference of a change from the presence of two different attested constructions, this is still not the same as knowing for certain what change took place.

In the case of an individual lexeme such as a relative clause marker, for instance, there are at least three possibilities for what we might know about the source, each possibility being of a different degree of reliability:

1. The hypothesised source is not attested, but can be reconstructed.

2. The hypothesised source is attested, but the actual process of development from this to the resulting relative clause marker can only be inferred.

3. The hypothesised source is attested earlier than the resulting relative clause marker, and there is further evidence of the process of development (e.g. bridging contexts, blended constructions, etc).

The evidence for a change therefore differs in strength from language to language, even for languages for which both the "before" and "after" forms of the construction are attested. Likewise, there are similar possibilities for entire constructions. This means that, unlike constructions or words themselves, changes cannot be labeled with the binary categories attested/unattested, but rather there is a continuum of strength of evidence. In the sections of this thesis where I discuss individual cases, I therefore discuss the above considerations and make it clear how strong the evidence for any given change actually is.

2.4.4 Comparison of the data

In comparing data from different languages, it is necessary to be extremely clear about terminology so as not to be comparing two different types of construction with each other simply because they are both labeled as the same "type" by authors who use the same term in two
different ways. This means that I have sometimes had to undertake a process of “translation” of one author’s terminology into my own. Where, for example, grammars of two different languages use the term “embedded” to mean two different things, the “embedded” relative clauses of each language cannot be directly equated with each other. Rather I have had to find out what these relative clauses are in terms of the classification system adopted here and then work out which other RCs from other languages they are comparable to. The “triangulation” of evidence from different sources is of great help here, as even if one author does not clarify what s/he means by a term, other descriptions of the same language often will.

I have also tried to base the terminology I use myself on what seem to be the most common conventions, so as to minimise the amount of “translating” necessary and thereby any possibility of mistaken interpretations. This is a reason why the relative clause lends itself well to a study such as this, since there has been enough synchronic typological work done that terminological conventions have begun to be established, even if there are sometimes rival interpretations, or if the conventions have not always been taken on by people working on individual languages.

The terms that I will use, their abbreviations and their definitions are listed in the front of the thesis, discussed in detail in the literature review, and resummarised in the chapters in which the respective terms are most used.

2.4.5 Analysis of the data

Because of the constraints inherent in typology, and even more so in diachronic typology, the data collected is not a random sample, neither can it be compared to a “control”. Even if we could produce a truly random geographical or genetic sample, a diachronically random sample would be impossible, given that we cannot even be certain how long human language has existed for, and for most of the relevant time period there would be no documented varieties available in any case. This means that conventional statistical analysis of the data and generalisation to the whole population (i.e. all human languages) is impossible.

Recently, synchronic typologists have begun using newer statistical methods such as randomisation testing, which allows conclusions to be
drawn as to how likely it is that any skewing observed in the data is a non-significant product of historical accident (Bickel 2005). Although this sort of testing could presumably be adapted to diachronic studies, the small sample size of a study such as this one, and the number of different variables that are hypothesised to correlate with the various changes would mean that such statistical testing would still not tell us more than we can see for ourselves. The small sample size (and the fact that we do not even know what proportion of the population any sample size represents) would mean that, even with the best statistical results, we cannot generalise beyond the sample, or calculate anything like a margin of error. Because of the large number of variables that might correlate with the changes, and with each other, either multiple individual studies would have to be undertaken to test the effects of each variable, or a complex model would need to be developed to predict and test the interaction of each variable. I do not believe that the state of knowledge in linguistics about the causes of syntactic change is yet at the stage where it would benefit from the formulation of such a model, but rather that studies such as this one need to be carried out first to get a sense of which factors seem to be most relevant and how they interact.

The amount and type of data available varies for the different sorts of change. For example, much has been written on sources of relative clause markers, but such studies are often based on reconstruction and even speculation. Very little has been written on changes in subordinate verb forms (and even less on changes affecting verb forms found only in relative clauses). For changes affecting the relationship between the main clause and relative clause, such as whether the relative clause is embedded or adjoined, the focus in the literature has been on a handful of languages, but the changes in these have been described in depth. On the other hand, for almost any language that has been described, someone, somewhere, has speculated about the source of its relative clause marker.

Because of these differences in the information available, there is no one methodological approach that is ideal for investigating all types of

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9 Even reliability testing, as described by Janssen, Bickel and Zúñiga (2006) does not allow us to calculate a margin of error that is of much practical value. This is because, although it might show that the results obtained are still significant even if a few languages exist that we haven’t taken into account, in reality it is unlikely that an investigation of the entire population would cause the results to vary by a few languages here and one language there, but rather by hundreds or thousands.
change. Rather, I have used slightly different approaches for each chapter, depending on what is necessary to make sense out of the information available. For the investigation of relative clause marker sources in Chapter 3, for instance, I started with a large scale comparison of all the marker sources that have been suggested for each of the languages in this study, categorising these by “type” (e.g. “interrogative”, “demonstrative”, “nominal sources”, etc), and breaking the lists of examples for each source down into further categories depending on factors such as strength of evidence, whether it is known to have been borrowed, etc. This is similar to the approach I take in Chapter 6, where I compare changes in relative clause position across many different languages and look for correlations with other factors that have been hypothesised to affect the relative order of heads and RCs.

For certain other variables, however, either changes have not occurred in the majority of the languages I have looked at, or if they have, there are not adequate descriptions of these changes available. This is a particular problem for Chapter 5. When this has proven to be the case, I have instead taken more of a case-study approach, where I have compared a handful of representative languages for which information is available, and discussed similarities and differences in how these changes have played out, concluding with generalisations that could be tested if more cases of the particular change were found.

2.4.6 Conclusions

As initially stated above, decisions about the appropriate methodology for a study depend entirely on the purposes of the study. Not all of the methods commonly used in synchronic typology are transferrable to diachronic typology, since the aims of the two types of typology are not all the same.

The primary purpose of this study is to typologise the changes found to occur in relative clause constructions. I do this by showing which changes interact with each other (clustering of changes), and also which changes correlate with which synchronic typological features of a language or of the language’s relative clause.

As was discussed in literature review, certain hypotheses have already been proposed in the literature about what changes can and cannot occur
in relative clauses, and which typological features might make certain changes more or less likely. These hypotheses have sometimes been made explicitly (most often when generalisations are drawn from a study of one language or language family and predicted to apply more widely), and sometimes implicitly, through the adoption of a theoretical model or the formulation of a synchronic universal that makes diachronic predictions. The discussion in each chapter of this thesis therefore explores whether such generalisations hold up when tested against the wider range of data that is investigated here.

Due to the general limitations of the field, and as the field of diachronic typology is still relatively new and unexplored, there are no tried-and-true methods of analysis available. Rather, different approaches are appropriate for different studies, depending on the sort of data available to the researcher. Some general considerations apply, however, and I have discussed these in detail above.

In short, any diachronic typological study must go through the process of (a) defining the construction of interest, (b) identifying features of the construction that might be expected to vary diachronically, (c) finding appropriate sources in which examples of this variation can be found, (d) interpreting these sources in a way that allows comparison between different instances of change and (e) drawing conclusions from this comparison. In the sections above I have described how this study deals with the various challenges encountered at each of these stages.
Sources of relative items

3.1 Introduction

In this chapter I will examine the question of what sorts of lexical items are co-opted for use as “relative clause markers”, i.e. items with either or both of the following functions: delimiting the boundary between a main clause and relative clause, and representing the head noun within the relative clause. I have chosen not to limit my study to such items that are used only in relative clauses, but have also included those with multiple functions (e.g. English that, which is used as a general complementiser as well as a relative clause marker).

3.1.1 Resummary of generalisations from the literature

Here I would like briefly to revisit the themes and issues from the literature on relative items that I discussed in depth in the literature review (Chapter 2).

Previous works have presented differing conclusions on the sources of relative clause marker/relative item. These are summarised in Table 3.1. I have included both the studies I am aware of that specifically state they aim to list all the known sources (Heine & Kuteva (2002) and Lehmann (1984)). Of studies of individual languages or families, I have only included studies here which (a) propose a relative element source that is not included in either of the more exhaustive studies and (b) claim that this source is cross-linguistically more widespread, whether they support this claim by drawing on comparative data from unrelated languages or not. In these latter cases, the authors do not claim that the new source(s) they propose are the only sources of relative clause
markers.

There are also other sources that to my knowledge have only been suggested in studies that do not make claims beyond the language or language family they are focused on. These are not included in Table 3.1, as they do not constitute a generalisation. Such studies, however, provide much of the data for the in-depth discussion in the rest of this chapter and will be referred to extensively there, as will further studies supporting the generalisations made in Heine & Kuteva (2002), Lehmann (1984) and others.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heine &amp; Kuteva (2002)</td>
<td>dem, words meaning “here”, int</td>
</tr>
<tr>
<td>Lehmann (1984)</td>
<td>def, dem, int, indef, nmlzz, poss</td>
</tr>
<tr>
<td>Harris &amp; Campbell (1995:298–307)</td>
<td>“markers of non-assertions (e.g. int)</td>
</tr>
</tbody>
</table>

Tab. 3.1: Sources of relative items from generalisations in the literature

* “NP-pronominal” is Yap et al’s term for an element that stands in for the possessed noun in a possessive construction. E.g. when Taroo no hon (“Taroo’s book”) is abbreviated to Taroo no (“Taroo’s”), the element no is said to be acting as an “NP-pronominal” (Yap et al. 2004:141).

As Kurzová (1981), Yap et al. (2004) and Harris and Campbell (1995) do not claim to be exhaustive, and since at least some of the differences among the sources given by each of the references in Table 3.1 can be attributed to differing definitions of “relative clause marker”, “relative pronoun” or “relative element”, my intention in repeating them here is not to show that one is right and others wrong, but rather so that the reader has a point of reference when reading this chapter to see which sources have been discussed before and by whom, and which have not.

Additionally, it should be noted that the elements listed in Table 3.1 are a mixture of functionally-defined and formally-defined classes, so that some of the them overlap to an extent. Anaphors, demonstratives, interrogatives and indefinites are not necessarily four distinct types of lexical item.
§3.1 Introduction

Besides claims about the sources of relative elements, there have also been generalisations and predictions made in the literature about the processes involved in the development of relative elements from their sources.

The predictions in Maxwell (1982), discussed in more detail in Chapter 2, are not based on empirical evidence but rather on logical conclusions drawn from Keenan & Comrie’s Accessibility Hierarchy (Keenan and Comrie 1977). In short, Maxwell concludes that new relative elements generally advance at the expense of others (i.e. the more positions relativisable by the new element, the fewer relativisable by alternative elements) and that new elements cannot skip any position on the Accessibility Hierarchy when extending the range of positions they can relativise. Specifically for the strategy of anaphoric pronominalisation he claims that these pronominal elements must, upon becoming relative markers, be able to apply to the lowest AH position already relativisable in the language (Maxwell 1982:139–140; 150–151).

As also mentioned in Chapter 2, Romaine has also suggested some generalisations pertaining to the diachronic processes affecting relative elements (Romaine 1984c). Her statements are based on evidence from Germanic languages, creoles and Konkani (a Dravidian language). To briefly summarise those of her predictions that relate to the origin of relative elements, she claims that new types of relative element will enter the language via the most marked sort of relative clauses (i.e. the lowest positions on the Accessibility Hierarchy) and will then spread (if at all) to less marked environments in order. In creoles, however, she expects the direction of change to be reversed.

Finally, I should recall a claim made by Comrie (1998b) about the development of what he calls true relative pronouns (i.e. case-coding, clause-initial relative elements). He states that whenever they have developed outside Europe, they almost always have arisen through the influence of European languages.

At least as important as these explicit generalisations about the origin of relative elements are the predictions implicit in the theoretical literature about grammatical change. A recurring observation in studies of grammaticalisation phenomena is that the lexical source of a grammatical element continues to influence it in terms of its subsequent path
of change, its eventual distribution and other idiosyncrasies (Sweetser 1988, Lichtenberk 1991, Bybee et al. 1994). Shi and Li (2002) formulate a version of this claim specifically for relative elements that takes into account the fact that relative clause markers generally do not have purely lexical sources. They suggest that when a relative clause arises through analogy with another construction, structural features of this source construction “shape the path and degree of grammaticalization” of the marker (Shi and Li 2002:1).

The generalisations I have just summarised in this section have not all been thoroughly tested against cross-linguistic data before. To do so will be one of the major goals of this chapter.

3.1.2 Research questions

The research questions that I intend to address in this chapter are the following.

1. How well attested are the developments of relative markers from each of the various sources suggested in the literature (summarised earlier in Table 3.1)?

2. Is there any evidence that the number of sources in this list should be extended or reduced?

3. To what extent are generalisations or predictions from the literature regarding the origin of relative elements and the processes by which they develop valid for further languages beyond those used for the formulation of the original generalisation?

4. Can any further typological, genetic, or even language external factors be shown to have any bearing on the type of item that becomes a relative element?

3.1.3 Structure of this chapter

In the rest of this chapter I will proceed by examining the sources of relative clause markers found in the historically better-documented cases of the development of relative clauses. A thorough list of the languages and constructions I have taken into account can be found in the appendix.
Less well-attested and reconstructed developments will be drawn upon as supporting evidence only: I will not discuss proposed sources which are only found in controversial examples.

In this survey of the individual sources, I will discuss the generalisations that can be drawn from the existence (and distribution) of these sources, comparing the relative strength of the evidence for the various sources and examining questions such as whether there are correlations between particular sources and the typological characteristics of the relative elements they become; and whether other language internal and external factors determine which sources become relative elements in a language.

It will be seen that the development of new relative clause markers generally proceeds in one of two different ways: through fossilisation of an element that happens to appear in relative clauses or on the clause boundary for reasons unrelated to the relative clause itself, as is the case for some generic nouns, classifiers, and various discourse markers; and also through analogy with other constructions that resemble the relative clause, for example possessive and comparative constructions. A few sources, such as interrogatives, appear to have primarily spread through language contact, which can also be viewed as a sort of analogical process, as the first speakers to bring them into the new language are presumably doing so on analogy with the relative clause constructions in their other language.

3.2 Pronominal elements

3.2.1 Interrogative pronouns

The development from interrogative pronoun to relative clause marker is extremely common, especially in the European languages, and is well accepted in the literature. Both interrogatives and demonstratives are in fact among the most common sources of relative elements, and have been accepted as such in the literature for some time. Diessel (2003) in his discussion of relative, indefinite and personal pronouns, states that: “the most common historical sources of these three types of pronouns are probably demonstratives and interrogatives” (Diessel 2003:635). There-
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fore, like demonstratives, but unlike most of the other sources discussed in this chapter, interrogative-based relative clause markers do not require so much of the discussion to be devoted to ambiguous evidence and to proving that they really do exist. I will give here an in-depth summary of how they developed in English, since this is perhaps the best-documented example available, and will mention a few others to give an idea of how widespread this development is.

English is an example of a language in which the interrogative-based relative clause markers entered via the “low end” of the Accessibility Hierarchy. The first uses of the who series of relative clause markers found in English are possessive whose and oblique whom, both of which are found as early as Chaucer (Jespersen 1927:80). The subject interrogative relative clause marker who is not found until the 15th century (Rýden 1983:126–127) and even at that stage is rather uncommon. The other interrogative-based relative clause marker which was around earlier, from the 12th century onwards, although it was not very common until the 15th century (Grijzenhout 1992). Not only were the who-based forms initially found only in low Accessibility Hierarchy positions, they were also originally confined to non-restrictive clauses (Grijzenhout 1992:45–46). They gradually spread out of these restricted positions into other types of relative clause and entered a complex process of competition and redistribution with the other English relative clause markers, which will be discussed in more detail in Chapter 4.

The development of interrogative-based relative clause markers appears to support the hypotheses of Maxwell (1982) and Romaine (1984c), that relative clause markers, especially pronominal markers, begin in the lower positions of the Accessibility Hierarchy (i.e. relativising obliques and/or possessives) and gradually spread up the scale to the core relatives. Romaine’s more general claim, that these relative clause markers begin in the more “marked” contexts and spread to the unmarked environments may also be supported by the data on interrogative-based relative clause marker development, depending on how one defines “marked”.

In many, perhaps all of the languages sufficiently well-documented for us to understand the process of development of their interrogative-based relative clause markers, the development can be viewed as a progression from some context that is in a sense more “marked” to less “marked” or
less restricted contexts. In some cases this means a spread from headless to headed relative clauses, in others a spread from contexts restricted by features such as number, gender and animacy, and in others the element was initially restricted to lower positions on the Accessibility Hierarchy and has spread to include higher positions as well.

Examples of interrogative-based relative clauses whose development can be seen as a development from more “marked” to less “marked” environments include English (who, which (Grijzenhout 1992) (see 4.3.3 for more details), Greek ((h.o)poi and (h.o)stis) (Nicholas 1998) (see also 4.2 for more details), Georgian (various interrogatives, see Hewitt (1987) for more information), Quechua (various interrogatives that are limited to oblique RCs and headless RCs in some dialects, and may have originally been only used in correlatives (Lefebvre and Muysken 1982, Lefebvre 1988)), and Russian koloryj (Leckey 1992:16-17, 21) (if we assume correlatives to be a “marked” construction in Russian. See 4.3.2 for more information.)

Because of the problematic and controversial nature of the terms “marked” and “unmarked”, I would prefer to say that these examples are cases of relative clause markers beginning in restricted contexts and spreading into more general use. In Section 3.2.2 we will see that this is not so clearly a feature of the development of demonstrative-based relative clause markers, so perhaps Romaine’s and Maxwell’s generalizations do not apply across the board, but are due to some particular characteristic of interrogatives.

One potential explanation is the particular type of interrogative that most commonly gets conscripted as a relative clause. It seems that place interrogatives are very common relative clause markers in languages or language varieties that have interrogatives only as a secondary option for relative clause marking (e.g. many German varieties, as shown in Fleischer (2004:227)). This could be a consequence of the fact that many languages that do not allow interrogative markers for relative clauses do have interrogatives in adverbial clauses: “The place where I sleep” or “The town where I was born.”1 This pattern is then available for extension into similar clauses in which the nominal can be metaphorically

1 Although I have used English for these examples, this is merely for the sake of simplicity. I do not mean to imply that the development outlined here was the case for English where.
seen in spatial terms: “The music where I like to dance”, “The season where it gets very hot” or “The part of the story where I always cry”. Enough use of a place interrogative in these bridging contexts could make the extension of this pattern to other relative clauses more likely.

In terms of distribution, interrogative-based relative clause markers are more restricted than might be expected, given how well documented they are. It has been said that fronted, inflecting interrogative-based relative clause markers are primarily found in European languages (Comrie 1998b:131). Interrogative-based relative clause markers very often are fronted (Downing 1978) and inflected for case, gender, number, etc, so the generalisation could be restated as interrogative-based pronouns in general being a European phenomenon. Typologically they seem to be rare outside of postnominal or correlative relative clauses, and I am not aware of any cases of relative clause marking verb affixes that are based on interrogative pronouns.

It should also be noted that this is a type of relative clause marker that is often calqued or borrowed from other languages. This is the case in Basque and many creoles, has been suggested for English, and is also thought to have been the case in Nahuatl, Quechua, and the Uralic and Turkic languages that have interrogative-based relative clause markers. It has even been suggested that this is “nearly always” the case when interrogatives are found in non-Indo-European languages (Comrie 1998b:131). This may be a reason why the path of development followed by interrogative-based relative clause markers is often from restricted to less restricted contexts. Perhaps lexical items are more likely to be borrowed into restricted contexts than straight into all environments at once.

### 3.2.2 Demonstratives

Like interrogatives, demonstratives are a well-documented source of relative clause markers cross-linguistically. I will therefore not go into detail about individual examples here but merely refer the reader to the table in the appendix for a list of languages, and to Lehmann (1984:373–375) or to Heine and Kuteva (2002:113–115) for more comprehensive and detailed discussions of various cases.

Demonstratives may even be a more common source of relative clause
markers than we can know. They are the source of many other grammatical markers, so that in some languages where it appears, for example, that a definite article, a focus marker, or a third person pronoun might have become a relative clause marker, it could in fact be instead that both are derived independently from demonstratives. Heine and Kuteva (2002) list eight different types of element that can derive from demonstratives, all of which have also been linked diachronically with relative clause markers. For some of these, e.g. definite articles, there are no examples that I am aware of in which we can be certain that a relative clause marker derived from this rather than from the related demonstrative. Since relative clause markers derived from demonstratives are widespread and well documented, it makes sense in such ambiguous cases to apply Occam’s Razor and assume that the demonstrative is the source unless there is strong evidence to the contrary.

Relative elements derived from demonstratives are found in many unrelated families and in diverse geographical regions which have had no contact with each other. Demonstrative-based relative elements occur in at least the following families: Austronesian, Kartvelian, Indo-European, Niger-Congo, Quechuan, Semitic, Sino-Tibetan, Uralic and Uto-Aztecan, as well as in some creole languages (see details in the appendix). They are found in postnominal relative clauses (English *that*), pronominal relative clauses (Chinese *de*) and correlatives (Hindi *us*). They can be found clause-initially (English) and clause-finally (Chinese). They can also form part of a compound relative clause marker (Tocharian *kus/c* for a fused example, Middle English *who that* or Old English *se þe* for a sequence of free lexemes). If we take into account languages in which the demonstrative origin of the relative clause marker is not documented, but is assumed on the basis of a solid reconstruction, evidence from related languages and formal identity between the relative and demonstrative, then we can also see that demonstrative-based markers can equally well be invariant (Modern English *that*), inflected for case, gender, number or other features as well (Akkadian *ša, šu*, etc). They can even be found as affixes to the verb (e.g. in the Nguni languages (Zeller 2004)).

Language contact does not seem to be a factor nearly so often in the development of demonstrative-based relative clause markers as it is for interrogatives. Rather, demonstrative-based RCs commonly are thought
to have arisen through language-internal processes such as clause boundary reanalysis, as seems to have been the case in Akkadian (Deutscher 2001), or nominalisation of relative clauses, as perhaps was the case in Chinese (Shi and Li 2002). This reanalysis of the relative clause boundary is similar to that by which generic nouns can become relative clause markers, as will be discussed in 3.3: the nominal element or demonstrative is originally the head of the relative clause and this whole complex NP is set in apposition to another NP. Later the original head is reanalysed as a marker inside the RC, and the other NP becomes the head of the construction.

We have seen that certain interrogatives (especially “where”) are more commonly conscripted as relative clause markers than others. It has been suggested that this is also the case for demonstratives (Diesel 1999). Diesel notes that demonstrative-based relative pronouns can develop from either pronominal demonstratives or adnominal demonstratives (as Lehmann shows was the case in Latin and German respectively, although he does not explicitly distinguish between the two types of demonstrative himself (Lehmann 1984:379)). Pronominal demonstratives are either used as anaphors or as the “pivot of a bi-clausal construction”, while adnominal demonstratives link an attribute with its nominal head. (Diesel 1999:123). In other words, when the demonstrative origin of a relative clause marker is pronominal (a stand-alone demonstrative), it originates as a method of resumption, or as a stand-in for the head. When it is adnominal (“this noun”), it arises by analogy between the sequence det noun and the sequence det RC, often through bridging contexts involving nominalised relative clauses (participial relatives, appositions, etc) (Diesel 1997, Diesel 1999:122–123). There may exist indirect synchronic evidence for this analogical development in correlations between the orders of relative clause marker, relative clause, noun, and determiner, adjective, noun, especially if languages with unusual typological configurations in one show a matching pattern in the other. This will be discussed further in Chapter 6, but a broader synchronic typological study with statistical significance would be needed to settle the question.

Demonstratives and interrogatives have many similarities, and it is presumably some of these that are responsible for their suitability as relative clause markers. Diesel (2003) notes that they both instruct the
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hearer to search for information outside of the discourse. The difference is that the demonstrative is used when this information is assumed to be shared between speaker and hearer, while the interrogative is used to inform the hearer that the speaker does not possess the information. Given these pragmatics, we might expect demonstratives to develop into relative clause markers more commonly than interrogatives (which may indeed be the case, if interrogative-based relative clause markers are truly a European areal phenomenon), but it is also easy to see how both types of pronoun are naturally suited to the relative clause marking function.

The second similarity between demonstratives and interrogatives that Diessel mentions is that both often have morphological marking or allomorphs corresponding to certain features. Most languages have different demonstrative and interrogative forms or marking for animate, inanimate and location; many also distinguish between time, manner, direction and amount (Diessel 2003:641). In a relative clause marking function, this information carried by the form of the demonstrative/interrogative facilitates the identification of the head noun, which is especially useful in sentences which might otherwise have an ambiguous reading.

It is clear that these characteristics of demonstratives and interrogatives make them well-suited to extension into the function of relative clause marking. However, demonstratives and interrogatives are not the only elements which share at least some of these features. I would now like to turn to some other, similar types of pronoun which we might also expect to be predisposed to extension into relative clause marking, but which are much less well-attested in this function than interrogatives and demonstratives are.

3.2.3 Indefinite pronouns

Another type of pronoun which is controversial as a source of relative clause markers is the indefinite pronoun. Although the etymologies of relative clause markers are sometimes given as indefinite pronouns, as for example the Indo-European reflexes of PIE *kwe/i (Kurzoňa 1981:35), or the relative clause markers aakin and Lein in Nahuatl (Rosenthal 1972, Langacker 1975), all such cases I am aware of can alternatively be interpreted as a development from an interrogative pronoun. It is very common for languages to have one element that functions as both inter-
rogative and indefinite (i.e. "who" and "whoever"/"anyone") (Haspelmath 1997). As the development from interrogative to relative clause marker is very common and the development from indefinite marker to relative clause marker in languages with distinct forms for interrogative and indefinite is, as far as I know, unattested, we should continue, in cases of doubt, to assume that an interrogative rather than an indefinite pronoun was the source of the relative clause marker.

In Chapter 4 I will discuss an alternative perspective on the diachronic relationship between indefinite pronouns and relative clause markers, namely Haspelmath’s observation that indefinite pronouns are sometimes derived from relative clause markers or even through the reduction of entire relative clauses (Haspelmath 1997:133–134, 181).

3.2.4 Personal pronouns

Like indefinite pronouns, personal pronouns are an interesting source of relative clause markers because the development is not attested as often as we might expect.

Most other pronominal elements have been shown able to be conscripted into service in the relative clause (interrogative pronouns, demonstrative pronouns, indefinite pronouns), and personal pronouns have the added advantage that we know they are very commonly present in the RC as resumptive pronouns. Despite this, there are very few examples of personal pronouns becoming relative clause markers. The only language I know of in which this seems indisputably to have been the case is Gothic, and there they are fused onto a more common source of relative clause markers (ei, from PIE demonstrative *ío) rather than having developed into markers all by themselves (Bennett 1980). I should note that the process of development in Gothic is not attested, although it is certain that the relevant morphemes in the relative clause markers did have personal pronouns as their source, since they have an identical form to the contemporary pronouns and almost the entire paradigm is represented.

(1) mith Mariin sei in fragíttim was imma qeins
with Mary **REL** in marriage was his wife
“with Mary who was his wife in marriage” (Luke 2:5)
\[\text{§3.2 Pronominal elements}\]

<table>
<thead>
<tr>
<th></th>
<th>PRONOUN</th>
<th>RELATIVE FORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SG</td>
<td>ik</td>
<td>ikei</td>
</tr>
<tr>
<td>2 SG</td>
<td>thu</td>
<td>thuei</td>
</tr>
<tr>
<td>3 SG MASC</td>
<td>is</td>
<td>izei</td>
</tr>
<tr>
<td>3 SG FEM</td>
<td>si</td>
<td>sei</td>
</tr>
<tr>
<td>1 PL</td>
<td>weis</td>
<td>izei</td>
</tr>
<tr>
<td>2 PL</td>
<td>jus</td>
<td>juzei</td>
</tr>
<tr>
<td>3 PL MASC</td>
<td>eis</td>
<td>izei</td>
</tr>
</tbody>
</table>

**Tab. 3.2:** Comparison of Gothic pronouns and relative markers

For third person plural pronouns in Gothic the demonstrative *thai, thōs, thō* (nominative plural masc, fem, neut.) can be used, and the singular forms of these demonstratives are optionally used instead of *is* and *si* in the third person singular (*sa, só, thata*, relative *saei, sei, thatei*) as well. A third person plural feminine pronoun other than the demonstrative is not attested, and *eizei* the third person plural masculine form we would expect from eis is replaced by the singular izei (Braune 1966:93).

The fusion of these personal pronouns to the relative clause marker does not appear to be simply an orthographic convention, as there are also indications that morphological and phonological changes have taken place. An *s* directly preceding the *ei* suffix becomes *z* and a weakly stressed *a* is lost, as in *is ei > izei* and *thata ei > thatei* (Bennett 1980:63–64).

A similar fusion of a personal pronoun and relative clause marker looks as though it may have been the source of the Egyptian relative clause markers *ntj, ntt, ntj.w* (Gardiner 1966, Loprieno 1995), but there is not enough known about the origin of these to be certain. In many other languages, the relative clause marker and third person pronouns share the same form, but this is attributable to the fact that third person pronouns in these languages are actually demonstratives, so without historical evidence to the contrary, there is no reason to distinguish these from the more common development of demonstrative to relative clause marker.

What we do commonly find, of course, is personal pronouns functioning as resumptive pronouns in the relative clause. Unless they distinguish themselves from the form or behaviour of the pronoun one would expect to find filling the role of NPrel (e.g. through unusual case-marking pat-
terns, fronting, fusion to a RC-specific morpheme, or co-occurrence with another element representing NPrel), I see no reason to treat these as a case of diachronic change.

3.2.5 Other pronouns

For the sake of completeness I would very briefly like to mention a few remaining types of pronouns, which puzzlingly are completely unattested as sources of relative clause markers. I will use the terminology from Haspelmath (1997) and refer to these as “mid-scalar quantifiers” (“few, several, many”), “generic pronouns” (English one, German man, French on, “universal quantifiers” (all, every), “identity pronouns” (other, same) and “negative pronouns” (no one, nothing).

For those that are only applicable in specific semantic contexts, it is easy to see why they might not become relative clause markers. For example, we are not likely to find the identity pronoun other as a source of relative clause markers, since the two salient entities in a relative clause, the head noun and NPrel, are the same by definition. Similarly, it is hard to imagine many circumstances in which a “generic pronoun” would be semantically appropriate in a relative clause, which means that they probably occur too infrequently in this context to be generalised. Infrequency may also be the reason why negative pronouns are rarely, if ever found as relative clause markers. Words for “same” and quantifiers, on the other hand, might be expected to make an appearance. In some languages, at least, they can be pronominal and anaphoric, sometimes inflecting for case and/or agreement with their referent NP, which are the features of demonstratives and interrogatives that we identified as being relevant factors in their adoption as relative clause markers. One might imagine that quantifiers could become relative clause markers through the same process(es) that demonstratives do. I am, however, not aware of any languages in which this is the case.

\footnote{Negative pronouns such as none or nothing may be a source for the special forms of negative relative clause markers found in languages such as Egyptian and Tamil. However, I am not aware of any language in which the development of negative relative clause markers is well enough attested to be certain of their source.}
3.3 Classifiers and generic nouns

Not only pronominal elements, but also certain types of full noun are commonly adopted as relative clause markers. As was the case with some demonstratives, we will see that this is most likely due to a reanalysis of the relative clause boundary. In other words, rather than an analogy being drawn between relative clauses and some other construction, a lexical or grammatical item just happened to be in the wrong place at the wrong time and was kidnapped into the relative clause. In this section I will discuss not only what I will call here “generic nouns” but also classifiers, because the development of these into relative clause markers both parallels and interacts with that of generic nouns.

What I am calling “generic nouns” here are nouns that function as the head of a relative clause but add very little to the meaning of the sentence, except for giving information about what kind of an entity the relative clause refers to. These commonly include equivalents of “time”, “place”, or “thing”. An example from Malay is given in (2).

(2) kantor tempat mereka dibayar
    office place 3Pl Di:pay
    “the office where they were paid” (Cumming 1991)

These elements are to the head noun of the relative clause as classifiers are to the head noun in their NP. Givón (1991:259) even calls such nouns “classifier generic nouns”, and notes that they are widely attested as markers of relative clauses.

Although it is widely believed that generic nouns can be a diachronic source of classifiers (cf. Grinevald (2002:264) and Simpson (2005:833)), it has been suggested that each may be an independent source of relative clause markers in some cases as well, which is why they will both be discussed here.

3.3.1 Classifiers as sources of RC markers

The development of relative clause markers from classifiers is thought to have taken place in “multiple languages from Amazonia” (Aikhenvald 2000:93), in the Tibeto-Burman language Newari (DeLancey 1986), and
also perhaps in Cantonese (Shi and Li 2002) and Thai (Sornhiran 1978). Aikhenvald does not give many details about the Amazonian languages that have developed classifier-based relative clause markers, so I cannot discuss them here, except for repeating an example from the language Tuyuca in (3).

(3) ti-ba-re  ādō-pé  kīi
that-CL:PATH-RE here-THEM.CONTR 3msg
ati-a-ri-bā-pi
come-recently-SG.NOM-CL:PATH-LOC
hoā-wa-yiğį
start.down.path-go-3msg.PAST.EVIDENTIAL
“He started down that path over here [that he had recently come on]” (Aikhenvald 2000:93)

She does suggest, however, that the characteristic of classifiers that leads them to develop into relative clause markers may be their ability to function anaphorically. An example of this anaphoric use can be seen in the example from Akatek (more commonly known as Akateko) in (4).

(4) yeeşin si nax tšonwom sīey tšotan nax
all.right said CL:MAN merchant sat down CL:MAN
smāxa šyetsmane nax satk’al k’am tšen
waiting waited CL:MAN long.time there.was.no CL:ROCK
tumin
money
“All right, said the merchant and sat down to wait, he waited, he waited a long time, but there was no money.” (Aikhenvald 2000:88)

Aikhenvald notes that this anaphoric use of classifiers is common not only in Amazonian languages, but also for example in Japanese, Malay, Burmese and Vietnamese, Hmong, Cantonese and Minangkabau (Aikhenvald 2000:329). Although Aikhenvald does not mention it, Thai classifiers can also be used anaphorically (Haas 1942:204). I have not been able to find information on whether classifiers are used anaphorically in Newari, but it seems possible that this is the case, since the related language Burmese does use them this way. If Newari does use its classifiers
anaphorically, then all the examples of languages listed above in which classifiers appear to have become relative clause markers also demonstrate this anaphoric use of classifiers, which would support Aikhenvald’s view that this property is a step on the path between classifiers and relative clause markers.

Another feature of classifiers that may be relevant to their development into relative clause markers is the wide range of other elements they occur with. Perhaps the most well-known classifiers are those that occur with numerals, but in many languages they also accompany possessives, deictics, adjectives, articles, bare nouns, and verbs (Aikhenvald 2000:1–4, 8). In the languages that I am aware of that have developed relative clause markers from classifiers, the element in question occurred in several of these contexts, so we are not necessarily talking about an extension from numeral classifiers directly to relative clause markers, but rather one that may have been mediated by their occurrence with e.g. adjectives or possessives.

Cantonese is a language that illustrates the wide range of contexts in which such classifier elements can appear. Historically, the Cantonese element *ge* had both a demonstrative use and a classifier use (originally denoting lengths of bamboo, later extended to arrows, then candles and certain animals, then to fruit, birds and people, and modernly used as a general “default” classifier (Aikhenvald 2000:410)). It also came to be used in possessives, adjective phrases, adverbial phrases and to link demonstratives to the corresponding noun (Matthews and Yip 1994:88–90). Like other classifiers, it could also appear with a bare noun, as the numeral “one” is optionally left unexpressed when a classifier is present. Since *ge* modernly co-occurs with other classifiers in some of these functions, it has clearly been extended to a “general linking particle” rather than still functioning as a classifier in these contexts. But because the order of its historical spread into the various functions is unclear (Shi and Li 2002), we cannot be certain whether the relative clause marking function of *ge* was an extension of these other functions or if it preceded them. Furthermore, there is the added complication that it may have simply been the demonstrative function of *ge* that was extended to relative clause marking, a common extension already discussed above in Section 3.2.2.
An example in which the progression of change is much clearer is that of phuu, a Thai classifier for humans that is now “archaic and very formal” (Sornhiran 1978:123), but commonly found in relative clauses. Sornhiran (1978) shows that the optional absence of “true” relative clause markers such as thii in subject relative clauses makes phuu look as though it is functioning as a relative clause marker itself. This is an accident of word order. As a classifier, phuu follows the noun and any quantifier, as in the phrase khon thii phuu “person every CL” = “every person” (Sornhiran 1978:123). Relative clauses are postnominal, and a relative clause headed by the phrase “every person” would follow directly after phuu. In subject relative clauses, the relative clause marker thii (or any other) can optionally be omitted. Thus in a subject relative clause with a human noun as head, it sometimes appears as though phuu is standing in the relative clause marker slot instead of a true relative clause marker such as thii. Because phuu stands alone only in these subject relative clauses, and because it is only used with human antecedents (as is also the case for classifier phuu), Sornhiran (1978) concludes that the behaviour of phuu in these contexts is still consistent with its classifier function and that it need not be analysed as a relative clause marker. Yet phuu must have at least started to move away from its classifier function, since as a classifier it is supposedly “archaic”, yet it commonly appears in relative clauses, and although Thai classifiers are usually used with quantifiers, demonstratives, interrogatives, or adjectives (Haas 1942:203), phuu in relative clauses can appear after a bare noun (as illustrated in (5)).

(5) sattri phuu mii waphrip
    woman PHUU have wit
    “the woman who possesses wit” (Sornhiran 1978:124, ex. 29)

As in Cantonese, any change that has occurred has perhaps been facilitated by an analogy between relative clauses and adjectives, since classifiers commonly occur with these (ma tua-leg = “dog CL-little” = “the little dog” (Haas 1942:204)), and also by the fact that Thai classifiers can be used anaphorically in certain circumstances (as in (6)).

(6) a. khun tagkan tua-naj
    you want CL-which?
Which one do you want?

b. **tua-lég**

**CL-little**

"the little one" (Haas 1942:204)

Whether, as Sornhiran suggests, *phúu* is still a classifier even in the relative clause contexts, or whether it is already functioning as a relative clause marker, as claimed by Ekniyon (1971) (cited in Sornhiran (1978)), this situation illustrates one of the ways by which a classifier element can "migrate" across the clause boundary into the relative clause.

De Vries (2002b:170–171) has a synchronic analysis of classifiers in relative clauses that accounts for the Thai situation rather well. He suggests that in many classifier languages classifiers can function as “partially visible relative pronouns”, and are actually the (only) visible instantiation of a determiner position outside of the relative clause. He takes as his starting point a raising analysis whereby a DP from the relative clause raises into SpecCP of this clause, and then the NP raises out of this DP further to become the head of the RC. The D left behind by this second raising movement is an element that is overt in some languages (and analysed as a relative pronoun) and unexpressed in others. In classifier languages, De Vries assumes a general rule that both determiners and nouns at least underlyingly always have classifiers attached to them. (He assumes that deletion of the classifier under certain conditions accounts for why e.g. a DP consisting of a determiner and noun does not have two classifiers attached.) So in a classifier language there is therefore a D and its attached Classifier in SpecCP. For languages in which this D is unexpressed, it may look as though the classifier is functioning as a relative clause marker. One could even argue that it *is* functioning as a relative clause marker, since it marks the boundary between the head noun and the relative clause.

In languages like Thai, where the classifier (here *phúu*) has become archaic in its classifier function but continues to be found in relative clause constructions, I believe we have evidence that the structure suggested by de Vries, if correct, is sometimes reanalysed by speakers with the element *phúu* ceasing to be dependent on an (unexpressed) determiner. In some circumstances, though not necessarily in the case of *phúu*, it is possible that the former classifier is reanalysed as being in C rather than SpecCP,
i.e. a true complementiser. In other cases, it is presumably seen as the full instantiation of D⁰ in SpecCP, i.e. a nominalising morpheme.

### 3.3.2 Generic nouns as sources of RC markers

Generic nouns are perhaps even more widely attested as sources of relative clause markers than classifiers are. Examples from some of the many languages that have such markers are given in Table 3.3.

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>MARKER</th>
<th>SOURCE</th>
<th>DETAILS IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hebrew</td>
<td>(a)she(r)</td>
<td>“place”</td>
<td>Givón (1975), von Soden (1995), Berman (1997)</td>
</tr>
<tr>
<td>Korean</td>
<td>kes</td>
<td>“thing”</td>
<td>Simpson &amp; Wu (2001)</td>
</tr>
<tr>
<td>Malay</td>
<td>tempat</td>
<td>“place”</td>
<td>Cumming (1991)</td>
</tr>
<tr>
<td>Malay</td>
<td>waktu</td>
<td>“time”</td>
<td>Cumming (1991)</td>
</tr>
<tr>
<td>Malay</td>
<td>saat</td>
<td>“moment”</td>
<td>Cumming (1991)</td>
</tr>
<tr>
<td>Thai</td>
<td>thi</td>
<td>“place”</td>
<td>Kuno (1981)</td>
</tr>
<tr>
<td>Lhasa Tibetan</td>
<td>sa</td>
<td>“earth, place”</td>
<td>DeLancey (1986)</td>
</tr>
<tr>
<td>Newari</td>
<td>mha</td>
<td>“body”</td>
<td>DeLancey (1986)</td>
</tr>
</tbody>
</table>

Tab. 3.3: Generic nouns as relative clause markers

Again, though, as for classifiers, the process of change is not well-documented. In some cases (e.g. Malay, Tibetan), a noun with the same form as the relative clause marker is attested or even still exists, and the source-outcome relationship is not in any doubt. Other cases (e.g. Hebrew) are reconstructions, but generally accepted, while others still (e.g. Japanese) are more controversial. No matter how certain the direction of change is, the process by which the noun “migrated” across the clause boundary can only be a matter for speculation.

Of the languages listed in 3.3, the two Tibeto-Burman languages are perhaps the ones which has been discussed in the greatest detail in the literature, most prominently by DeLancey (1986). Newari has three different relative clause markers, mha, and pî and gu(li), used for singular animates, plural animates and inanimates respectively. The singular animate relative clause marker mha is also an independent noun meaning “body” (DeLancey 1986). The other two elements are not independent nouns in the modern language, but DeLancey suggests that they may...
once have been nominal, since they take case inflections. He suggests that their appearance in the relative clause is due to an originally appositive construction such as that illustrated in (7-a). The modern structure is given for comparison’s sake in (7-b).\(^3\)

\begin{align*}
(7) & \quad \text{a.} & [ & [ \text{ji-i \ nyan-a-} & \text{mha} ] \text{ [nya]} & [NP \ [CP \ I-ERG \ buy-PART]\text{-live.thing} \ [NP]\text{fish} ] \\
& \qquad \text{“the fish, the live thing I bought”} \\
& \quad \text{b.} & [ & [ \text{ji-i \ nyan-a-mha} ] \text{ nya} & [NP \ [CP \ I-ERG \ buy-PART]\text{-REL} \ [fish] ] \\
& \qquad \text{“the (live) fish I bought”}
\end{align*}

DeLancey suggests that this reanalysis of an appositive construction underlies the development of not only mha, which has a clearly nominal origin, but perhaps also some of the other Tibeto-Burman relative clause markers. There are some, like Lhasa Tibetan sa, which also have a clearly nominal origin (“earth”, “place”), and DeLancey suggests that the process described here might have occurred in this case too. Others, such as pī and gu(li) are not synchronically nouns, but may once have been.

Interestingly, all three of the Newari relative clause markers, mha, pī and gu(li) are also classifiers. DeLancey does not commit himself to an explanation of how the classifier function of these elements fits into their history, but his hypothesis of relative clause markers developing directly from nouns via an appositive construction does not leave room for classifiers as an intermediate step, which suggests that the classifier function may have developed from the generic noun in an independent development.

One more factor that should be taken into account in the Newari development is the anaphoric nature of the element in question (which presumably arose as a consequence of its bleached nominal origin). As in the other examples discussed above, Newari mha can “stand in” for a noun in all sorts of constructions. Several examples are given in (8).

\begin{align*}
(8) & \quad \text{a.} & \text{ji-i \ nyan-a-}\text{mha} \\
& \quad \text{I-ERG \ buy-PART-MHA}
\end{align*}

\(^3\) The bracketing in these structures is mine, but based on the discussion in DeLancey (1986).
“the (living) thing that I bought” (DeLancey 1986)

b. Ram-ya-mha
   Ram-GEN-MHA
   Ram’s (animate) thing

It is easy to see how such constructions could develop as a consequence of *mha’s* nominal origin. It is also easy to imagine that extension of these constructions could lead to the sort of classifier distribution we find in Newari (cf. Aikhenvald 2000:212), so that the elements in question (*mha*, *gu*/*li*, *pi*) became attached to quantifiers, adjectives, demonstratives and so on. Extension to a relative clause marker need not have been via an appositional construction such as DeLancey suggests, but could have occurred on analogy with these constructions. There is no way of knowing for certain which of these was the case, or whether it was some sort of combination of the two (e.g. an appositional construction created on analogy with the classifier pattern).

### 3.3.3 Generic nouns as sources of classifiers

As the Newari case shows, the distinction between generic nouns and classifiers is not always clear cut. It is commonly accepted that classifiers can develop from generic nouns historically (Grinevald 2002:264), and in many languages a “repeater” classifier construction, in which a whole noun is repeated in place of a more generic classifier (“house one-house”), exists as a synchronic process. If a generic noun became a classifier in this way, presumably it could then develop into a relative clause marker through the same sort of process as outlined for Thai above. I am not aware of any direct evidence for this, but it should be noted that all but one of the languages listed in Table 3.3 as having relative clause markers from generic nouns are also classifier languages.

Simpson (2005:831–833) suggests a synchronic analysis of some unexpectedly classifierless NPs in certain languages that may be relevant here. He notes that in an unspecified “wide range of languages”, nouns such as “year”, “time”, “day” and “person”, among others, do not require the presence of classifiers, even in contexts where they would otherwise be obligatory. Simpson’s synchronic analysis of this is that these nouns are
generated in N, but can then raise to the functional projection where classifiers generally sit (in the DP structure assumed by Simpson, this is a separate functional projection, CL) (Simpson 2005:831). These nouns therefore function both as classifiers and nouns simultaneously. Simpson uses this analysis to also account for “repeater” classifiers, and suggests that reanalysis of this raising movement as base-generation might be responsible for the diachronic development of full nouns into classifiers (Simpson 2005:833).

If generic nouns can become classifiers by this or a similar process, it raises the question of whether perhaps only one of the two types of element is a source of relative clause markers. For example, is it possible that relative clause markers which can be reconstructed to generic nouns did not derive directly from these, but rather from classifiers related to these nouns. This is unlikely always to be the case, because of the counter-example of Hebrew: a non-classifier language in which a relative clause marker (asher) is believed to have developed from a generic noun (“place”). Even in some of the languages that do have both classifiers and relative clause markers that appear to be derived from nouns, we may not want to assume that the relative clause marker came from the classifier. Rather it is possible that both derived independently from the noun. Of course, even if this is the case, it is still possible that the presence in the language of adjective-classifier constructions contributed to the evolution of either or both new functions of the noun in question.

3.3.4 Conclusions regarding classifiers and generic nouns

In summary, while there is reason to believe that both classifiers and generic nouns have diachronic connections to relative clause markers, there is not enough documentation of the processes involved to be certain of the details. There are plausible pathways by which both generic nouns and classifiers could independently develop into relative clause markers, and also by which generic nouns can develop into classifiers. Two features of classifiers that are likely to have facilitated their development into relative clause markers in some cases are their ability to be used anaphorically, and also the wide variety of constructions they are
§3.4 Discourse marking elements

found in: co-occurrence with adjectives and in possessive constructions in particular might well be sources of analogy, since these are often seen by speakers as analogous to relative clauses (see Section 3.5 above, and also Sections 4.2.7 and 4.2.5 of Chapter 4 for a more detailed discussion of this.) Generic nouns, on the other hand might become relative clause markers either by first developing into classifiers, developing into anaphoric elements like those found in Newari, or perhaps through re-analysis of an appositive construction, as proposed by DeLancey (1986) for Tibeto-Burman languages.

3.4 Discourse marking elements

Discourse marking elements, under which I include items that are sometimes referred to as “topic markers”, “topicalisation markers” and/or “focus markers”, as well as other elements that fall under the more general term “discourse markers” or “discourse connectives”, are another example of elements that become relative clause markers not through any sort of analogical process, but simply through fossilisation of a relatively common collocation.

Until now, discourse markers as a source of relative clause markers has received little or no attention in the literature. A detailed overview of discourse markers as commonly defined in the literature can be found in Schourup (1999). While there is some controversy over whether such items can formally be grouped into a class, Schourup (1999:230–234) argues that they commonly share some or all of the following characteristics:

- connectivity
- optionality
- non-truth-conditionality
- weak clause association
- initiality
- orality
- multi-categoriality
§3.4 Discourse marking elements

The elements that I will discuss here as having become relative clause markers share most of these characteristics, with the exception, perhaps of weak clause association, which Schourup notes is probably not a necessary characteristic of discourse markers, but only a common one (Schourup 1999:232–233). They undeniably have the function of connectivity. During the process of fossilisation into relative clause markers (or part of a relative clause marking complex), optionality was generally lost. In at least one case that will be discussed below (Georgian), however, we can be certain that the particle was originally optional, and in other cases, this seems a likely part of the change. None of the elements discussed in this section, as far as I can tell, contributes to the truth-conditions of the sentence it is found in. None of the items introduces the relative clause, but most of them cliticise to the first element, so I would still classify them as “initial”. As for “orality”, it is impossible to know whether many of the markers under consideration here were primarily associated with oral language or not. All we know is that they do occur in the written language as well. This is true of “primarily oral” discourse markers in English, however, too. Finally, “multi-categorality” is intended as a feature of discourse markers as a set, rather than of each individual marker (Schourup 1999:234). It is certainly true that the elements discussed in this section do not all belong to the same word-class.

Over and above these primarily formal characteristics, all of the elements discussed in this section have at least one function in common as well, namely to give prominence to an element in the sentence for a discourse-related purpose, for example to establish it as shared knowledge between the speaker and hearer, or to contrast it with something else in the discourse context. I will argue that it is such discourse functions, along with other prototypical characteristics of discourse markers, such as connectivity, initiality and non-truth-conditionality, that makes these elements ripe to become markers of relative clauses.

In at least four languages, discourse markers have truly become part of the relative clause marking system (Tocharian, Quechua, Georgian and Basque); in one further language (Proto-Indo-European) this may have happened, although there is less evidence; and in two further languages, examples exist that demonstrate how discourse markers can become associated with relative clauses, although a fossilisation of these in the
3.4 Discourse marking elements

relative clause context has not (yet) taken place.

Tocharian

Tocharian A is an example of a language in which it appears that a former discourse marking element has become obligatory in the relative clause. Relative clauses in Tocharian A were correlative constructions, formed as shown in (9).\(^4\)

\[(9) \text{Kusne} \text{ ni } kāsu \ yāmās, \ camik \ nāš \]
\[\text{REL} 1SG.DAT \text{ good.do.PRET.3SG DEM.GEN} 1SG.NOM \]
\[\text{omāsk(ēm)} \ pālskā \]
\[\text{badly think.PRET.1SG} \]
\["I thought badly of the one who treated me well" (Schulze et al. 1931:180) \]

Looking more closely at kusne, it is found to consist of the interrogative ku, from PIE \(*kw*i/\*kw*o\), fused with the demonstrative element \(s/c\), from PIE \(*so/\text{to}\) (Pedersen 1949:113, 121), and the clitic ne, from PIE \(*nai\) (Adams 1999:346). Alternative, less common, relative clause markers (for example āntsanne) also have the structure \text{interrogative + demonstrative + ne} (Krause and Thomas 1960:166). The interrogative/demonstrative stem can inflect for case, and to a lesser extent for number (Schulze et al. 1931:178, 180), and the clitic ne follows this inflection, as in kucene (nominative plural) (Krause and Thomas 1960:165). This ne cliticises either to the kuc/kus element or to the noun in NRel if one is present, for example kuc ṣurmaŋ ne “for which reason” (Krause and Thomas 1960:166).

In non-relative contexts, ne is usually translated as “indeed”, as is the Tocharian B cognate nai, which is not found in the relative clause (Adams 1988). Krause gives the translation of the particle nai as “wohl, nur, doch” (“probably, only, really”) but gives no examples (Krause and Thomas 1960:172). Pedersen cites several examples of Tocharian B sentences with nai, which are repeated in (10) below.

\(^4\) The sources I have consulted for Tocharian (Schulze et al. 1931, Pedersen 1949) do not gloss their examples. I have added in the glosses with help from the word lists given at the back of each text. The English translations, based on the German in the sources, are my own.
(10) a. Cwim nai kalas.
   DEM NAI bring.IMV
   “Just bring (it) to him.” [jenem doch bringet!]

b. Cwim nai tän onkoríaí kalas.
   DEM NAI DEM broth.ACC bring.IMV
   “Just bring the broth to him.” [jenem doch den Brei bringt!]

c. Mā nai råkta pränkòs me.
   NEG NAI god.VOC turn-away.IMV PRON.1PL
   “But do not, O God, turn us away.” [nicht doch, o Gott, weise uns zurück!] (Speisung 25, 42, 29) (Pedersen 1949:195)

This element has a cognate in Ancient Greek (also nai), which is used in “strong affirmation”, especially in oaths, and is usually translated “yea, verily”, “yes” (Liddell and Scott 1940) or “indeed” (see (Smith 1910:12), (Fraenkel 1932:19)). A typical example from Homeric Greek is given in (11).

(11) Nai de tauta ge, teκnon etέtumon ou
   NAI indeed DEM.NOM in-any-case child.VOC truly not
   kakon esti [...] evil be.PRES.3SG [...] [nicht doch, o Gott, weise uns zurück!]
   “Yea verily, my child, no blame is in this [...]” (Iliad 18.128)

Comparing the two languages Tocharian A and Tocharian B, one of which does not use ne as part of the relative clause while the other always requires it, we can infer that a change has taken place. The direction of the change can be inferred from the fact that cognates of this ne element are not found in relative clauses in other Indo-European languages. Therefore it would seem likely that this is an innovation in Tocharian. Because the element is obligatory, we can assume it has salience for speakers as a relative clause marker. I would therefore argue that Tocharian A ne has

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5 I have used the transliteration system laid out in the Greek section of the ALA-LC Romanization Tables: Transliteration Schemes for Non-Roman Scripts (1997). The Greek text is from the edition by Walter Leaf (1987:370), and the English translation from Lang (1891). Instead of “Yea verily, my child”, a more modern translation has, “Yes, child, this is true” (Hammond 1987:312). The gloss is my own.
developed from a discourse marking element to a relative clause marking clitic.

Proto Indo-European

Comparable processes may have taken place in other Indo-European languages, although the evidence for these is not so strong as it is in Tocharian. The generally accepted reconstruction of the element reflected in Tocharian A as *ku* is a Proto Indo-European interrogative (or dual function interrogative/indefinite) with stem *kw*/*kw* o-, but it has also been claimed that this element was primarily a “topic marker” (Justus 1976). It is not clear what Justus means by this, as she makes unusual use of the terms “topic” and “focus”, seemingly treating topic marking as a subtype of focus marking. Nevertheless, she presents convincing evidence that there is a close connection between discourse marking and relative clauses in Hittite, at least.

More recently, Proto Indo-European *kw*/*kw* o- has been analysed as “a focussing form” (Boley 2004:149). Boley notes that this is “similar” to the topicalising function Justus (1976) sees in Hittite *ku*š. Boley goes on to speculate that *ko*, another PIE form that went on to become a relative clause marker in some Indo-European languages, and which is usually analysed as a demonstrative, was also originally a “focussing form” (Boley 2004:162). She analyses the other PIE demonstratives *so/*to as elements that respectively established or reinforced the main topic of the discourse, and “integrated or topicalised elements of the discourse that were not immediately central to the syntax and/or couldn’t be topicalised by other means” (Boley 2004:162). The pathway by which these forms developed into true relative markers is said to be extension: they originally mark NPs, and later entire clauses (Boley 2004:165).

Any reconstruction of Proto Indo-European relative clause system can only be speculation, given that we do not have robust methods for reconstructing syntax, and, more importantly, because the PIE daughter languages show multiple different relative clause constructions. What sort of relative clauses Proto Indo-European had, if it had any at all, is still a matter of debate. Nevertheless, the arguments in Boley (2004) and Justus (1976) show that there is most likely some sort of relationship between discourse processes such as topicalisation and relative clauses or
their sources in the Indo-European languages. Perhaps, in light of the material I will discuss in the rest of this section, it is worth considering that this connection in Indo-European might be a reflection of a more general cross-linguistic pattern.

Quechua

A relative clause construction found in some dialects of Quechua gives clues to at least one way in which the development of a relative clause marker from a discourse marking element may have proceeded.

Quechua has a few different constructions that serve as relative clauses, including nominalised non-finite clauses with internally and externally headed variants, and, in at least some dialects, a finite adjoined construction. In some of these, a marker qa or ka (depending on the dialect) can appear (Cole 1985:47–60). This marker is often called a “topic marker”, but its functions are more complex than those usually implied by this term (Weber 1989:393–411). It is, in any case, an item that falls into the category of discourse marking elements as defined here.

Although qa is optional in most of these types of relative clause, in the above-mentioned adjoined construction it seems to have become an obligatory, bound part of the marker ćagqa. This construction is exemplified in (12).6

    woman-ACC see-1   COMP, she-AF speak-1/3-FUT
    “The woman will talk to me if/when I see her.”
    OR: “The woman that I see will talk to me.” (Lefebvre and Muysken 1982:54)

Although this construction is ambiguous between a temporal/conditional meaning and a relative clause, the fact that it can function as a relative clause in some contexts (if given in answer to the question “Which woman will talk to you?”, for example), means that it can be considered a relative

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6 This example is from Cuzco Quechua. In other varieties of Quechua, this construction may also exist (Cole 1985:65), however it is not clear to me whether it has the relative clause interpretation in these other varieties, or simply functions as a conditional. Note also that the qa in the future tense marker -nqa is (as far as I am aware) unrelated to the topic marker under discussion.
clause under the functional definition I am relying on in this thesis.⁷

The Quechua marker ćayqa consists of a former discourse marking element -qa attached to a demonstrative-based relative clause marker/-complementiser ćay. The process by which the element qa became part of the relative clause marker is suggested by the fact that relative clauses of this adjoined finite type formerly had to be in topic position. Although the relative clause in (12) above can be analysed as being in topic position, this is no longer obligatory in the modern language (Lefebvre and Muysken 1982:55). In non-relative contexts, the element qa is still described as a topic marker (Muysken and Veenstra 1995:377). From these two facts we can infer that qa in relative clauses was originally a marker on the whole clause, to show that it had been topicalised. Presumably when the position of the relative clause became more flexible qa was generalised. It was no longer interpreted as a topic marker, nor, probably as a marker on the whole relative clause, but rather as a morpheme belonging to the relative clause marking element. Lefebvre and Muysken (1982:54) confirm that the element ċayqa is no longer transparent to speakers as *demonstrative + topic marker*.

**Georgian**

A Georgian example that parallels the Tocharian and Cuzco Quechua situation is the development of the element -ca/-c. In the Georgian case the development has taken place during attested history, which allows us to be sure of the path taken by this item.

The Old Georgian relative clause was of the form illustrated in (13).⁸

(13) yirso mama-o, **romel-man-ca** locv-ita Čenita
worthy father-VOC **which-NAR-PRT** prayer-INST your
comanic’oś ćleva-y esmak’tay
he/give/it/to.me power-NOM devils
“Worthy father, who by your prayers will give to me the power of devils” (Xangšt. ey, v. 42; in Čižiguri (1973, p 233); in Harris (1994).)

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⁷ The ambiguity between relative clause/conditional/temporal clause is not limited to the Quechua construction but is also found in correlatives in Australian languages, for example Warlpiri (Keenan 1985).

⁸ The glosses and translations in this example are from Harris (1994).
§3.4 Discourse marking elements

The relative clause marker, here *romelmanca*, consists of an interrogative pronoun\(^9\) its inflection, and the particle *ca*, which in Old Georgian is optional (Harris 1994:135). Forms such as *romel-igi-ca* (interrogative + demonstrative + *ca*) are also attested (Harris 1994:130), which is reminiscent of the Tocharian A element *ku-s/c-ne*.

In Middle Georgian this particle, reduced to -c, became obligatory, as it still is in the modern descendant of this construction.\(^10\) The element -c must still be analysed as a clitic, however. It has not fused to the relative marker. This conclusion can be drawn both from the fact that case and number inflection on the relative marker precede -c, and from examples such as (14), which show that -c actually attaches to the NP when this consists of more than just the relative clause marker.

(14) I+s saxl-i, ra/*romel saxl-si(i(d)a)-c (a-)cxvr-ob, lamaz-i-a.
that house-NOM which house-in-REL (you-)live-TS beautiful-NOM-is
"The house in which you live is beautiful." (Hewitt 1995:602)

Although the first appearance of the particle -ca as part of a relative element was prior to the earliest records, there seems to be no argument in the literature about its etymology. In both Old and Modern Georgian it is identical to the clitic meaning "also" or "even" (Hewitt 1995:89) and is also found in the discontinuous construction "both... and... " (Manning 1997). Some (modern) examples of the clitic in this discourse function are given in (15).

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\(^9\) The other interrogative pronouns *wìn* and *ra* can appear in place of *romel* and behave exactly the same with regard to inflection and affixation of *e(a)* (Hewitt 1995:600-606).

\(^10\) Modern Georgian also has relative clauses formed with *rom* or *ro*, both of which developed from *romel* and otherwise serve as general complementisers. This complementiser does not take -c, even optionally. Harris (1994) treats these as a different "type" of relative clause from those with -c, because *rom(ro)*, being invariant, does not "represent" NP rel in the RC, but only marks the clause as being a relative clause, and also because the *rom(ro)* RC is found both prenominally and postnominally, while the *romelic* type is restricted to postnominal position.

Georgian also has constructions with deranked verbs that are the functional equivalent of relative clauses, but Harris (1994) does not include these in her study and, as they do not use the element -c(a) (Hewitt 1995:608-613), they are of little interest here.
§3.4 Discourse marking elements

(15) a. Mankana-c ga-v-(o-)t’ex-e.
    car(NOM)-too PREV-I-(it-)smash-AOR
    “I smashed the car too.”

b. U+bral+o m+d+in+are-c k’i ver
    ordinary river-too indeed not(POT)
    a-s-cd-en-i-a a+m sa+q’ovel+ta+o
    PREV-it-elude-TS-PERF-it this universal
c’es-s.
    rule-DAT
    “Not even an ordinary river could apparently avoid this uni-
    versal rule.” (Hewitt 1995:89)

c. P’arask’ev-sa-c tov-d-a da k’vira-sa-c.
    Friday-DAT-too snow-IMPERF-it and Sunday-DAT-too
    “It snowed on both Friday and Sunday.” (Hewitt 1995:89)

In each of these cases, it appears that -c is giving prominence to an
element whose appearance at that point in the discourse is unexpected.
The change in the use of -c(a) from optional to obligatory, its phonol-
ogical reduction, and its semantic bleaching (in the relative clause context)
are all commonly recognised as “grammaticalization” phenomena, and
although as I have previously noted, we are not really dealing with a
clear-cut case of a lexical item becoming grammatical, the presence of
these phenomena show that a similar sort of change has occurred.

Basque

The case of the Basque relative clause marker bai(t)- is a little different
from the other cases discussed here so far. Its etymology is less clear,
although it still seems to fit the category of “discourse marking elements”,
as its functions include marking of contrastive focus.

The element bai(t)- is not required in ordinary relative clauses in
Batua, the standardised Basque language, but it is commonly found in
certain dialects, including Labourdin and some Navarrese varieties
(Lafitte 1962). Several examples are reproduced here.11

11The glosses and translations are my own. In the examples from Lafitte (1962), I
have based my translations on his, which are in French. I have not standardised the
archaic spelling in the examples taken from Leócarraga (1571).
§3.4 Discourse marking elements

(16)  a. Gizon bat ikusi dut, ez man ART see 3SG.ABS have.1SG.ERG, NEG baitzuen ilhe ondorik ere. BAIT.3SG.ERG have.PAST hair stub.PRTV even “I have seen a man who didn’t even have a single hair.”  (Lafitte 1962:§772, p 406)

b. Haur da e ne Seme maitea, ceinetan neure atsegui This is my son beloved.DEF, who.LOC my pleasure ona hartzen baitut. good.DEF take.PRES BAI(T).AUX “This is my beloved son, in whom I take great pleasure.”  (Leiçarraga 1571:Matt. 3:17)

c. Nork ere erranen baitu ez duela who also say.GEN BAI(T).AUX not AUX.SUB zorionaz aholarik, hura zorotzat happiness.INST smile.PRTV, he.ABS imbecile.for emazu, take.2sg.ERG “Whoever says that he does not smile with happiness, consider him an imbecile.”

In (16-a) the example is from the modern language, while the example in (16-b) is from one of the earliest extant Basque texts and shows a different relative clause construction, yet still uses bai(t)-. This construction in (16-b) is thought to be a calque from the Romance languages, as it uses a relative pronoun zein (here: ceinetan) as well as or instead of the more standard Basque relative marking system which consists only of verb affixes (bai(t)- and/or -en). The construction in (16-c) is different again, and appears to be a correlative. This is a common construction to express an “indefinite” or generalising relative clause (Lafitte 1962:§ 777, p 408), and Lafitte claims that, unlike in other relative clauses, bai(t)- is obligatory in this context. This might suggest that the use of bai(t)- in relative clauses originated in this construction and spread more recently to the others.

The etymology of bai(t)- has been the subject of debate in the literature, yet all the proposed origins have in common that they had some sort
of discourse function. Lafitte generally refers to \textit{bai(t)-} as a “causative” prefix (for example pp 102–3). When discussing its etymology, however, he notes that it is “not really” a causative, as it cannot convey the concept of cause on its own. He claims that \textit{bai(t)-} is historically “no doubt” from the “affirmative adverb” \textit{bai} (Lafitte 1962:405) and that the \textit{t} came from the reinforcement of \textit{d} and \textit{z} after diphthongs. It is true that this explains the distribution of the variants \textit{bai} and \textit{bait}.

If \textit{bai(t)-} is related to affirmative \textit{bai}, this does not necessarily mean that its base meaning is simply “yes”. Like many other languages, Basque uses the affirmative as a more general emphatic element in certain idioms. Consider, for example, \textit{bai ote “really?”} (literally “yes maybe”); \textit{bai... eta “both... and”} (literally “yes... and”); \textit{baita “also”} (from \textit{bai “yes” + eta “and”}) and \textit{baitetz “in fact”}.

According to Trask (1996), \textit{bai-} is also related to \textit{ba-} a prefix that was formerly attached to verbs to give them a sort of prominence which he refers to as “contrastive focus” (for example \textit{badator “he/she is coming”}). Modernly the prefix \textit{ba-} is required on any clause-initial or stand-alone verb whether or not particular discourse prominence is intended. Originally \textit{bai} may itself have been a verb form meaning something like “it is so” (Trask 1996:209).

We cannot be sure when \textit{bai(t)-} was conscripted for use in relative clauses, and therefore it is uncertain whether its use here is derived from the affirmative function of \textit{bai} or an earlier, prominence-related, perhaps verbal element. Either way, it appears to have been a discourse marking element that became part of the Basque inventory of relative clause marking strategies.

\textbf{Tok Pisin}

The final case I would like to discuss is Tok Pisin, a language in which discourse markers have not (yet) become relative clause markers, but in which a close connection between the two exists. This may provide clues to how and why discourse marking elements can come to be used as relative clause markers.

Unlike the other languages in this study, little historical data is available for Tok Pisin, so it is more difficult to study the progression of changes. Crowley’s study of Melanesian Pidgin describes many features
of the early language that later became known as Tok Pisin in Papua New Guinea and Bislama in Vanuatu. However, the only discussion of relative clauses and subordination in general in this work is in the chapter on “more recent developments”, focusing on the 1930s onwards (Crowley 1990:Chap. 6). In this chapter Crowley describes relative clauses introduced with the interrogative *we* (lit. “where”), and suggests that these were common to all Melanesian Pidgin varieties. He does not discuss any other relativisation strategies.

The *we* relative clauses are still found in Tok Pisin today, although they are in competition with other constructions, and in at least one of these other constructions there are signs that a change may be underway at present. Along with paratactic relative clauses and those introduced by the interrogatives *we, husat* or *won em* (Sankoff and Brown 1980:218), Tok Pisin has a strategy in which the relative clause is “bracketed” by the marker *ia*. An example of this is given in (17). The first two occurrences of *ia* in this example bracket the relative clause, while the third *ia* demonstrates the element’s other, adverbal function.

(17) OI man ia ol i kat-im saksak ia i sanap long en ia.
   “The men who cut the sago trees stood near him.”
   (Aitchison 1995, 19, p 8)

The element *ia* is often translated as “here”, and indeed this Tok Pisin construction is what is behind Heine and Kuteva’s inclusion of “the word for “here” in their list of relative clause marker sources (Heine and Kuteva 2002:335). However, in combination with *dispela* or *em, ia* is also used as a demonstrative (Sankoff and Brown 1980:221–222), and if this function is the source of its use in relative clauses, then it is simply another example of the pathway *demonstrative* $\rightarrow$ *relative clause marker*, which is nothing out of the ordinary.

Malcolm Ross (personal communication, 6 June 2006) has suggested to me that the origin of the particle *ia* in Tok Pisin might be the German *ja*, which as well as being an affirmative can be used as a discourse marker with a sense of “as you know” – making connections between what is said and inferred shared background knowledge (Kratzer 2004). This use of *ja* is exemplified in (18) below.\(^\text{(12)}\) Despite the spelling, both German *ja*

\(^{12}\) The example is from Kratzer (2004), while the gloss and translation are my own.
and Tok Pisin ʾia are pronounced identically.

(18) Wir verstehen die Bedeutung PRON.1PL understand.PRES.1PL DEF meaning dieses Satzes, da wir ja Deutsch DEM.GEN sentence, since PRON.1PL JA German können.
can.PRES.1PL “We understand the meaning of this sentence, since we of course know German.”

If this is the origin of ʾia, the Tok Pisin case would be another example of a diachronic relationship between affirmative particles, discourse marking elements and relative clause markers, alongside Basque ʾbai and PIE *nai.

Further evidence that ʾia is not simply a demonstrative but rather has more subtle discourse functions (which are, however, not identical to those of German ʾja) comes from a study by Sankoff and Brown, in which they demonstrate that the basic function of ʾia is the foregrounding of one NP among others in the discourse (Sankoff and Brown 1980:231). Sankoff and Brown speak of this as the “focusing” function of ʾia, and show that it is used in cleft sentences and sometimes even to emphasise the verb or the entire clause. Several of their examples are repeated here as (19).

(19) a. Disfela ʾia, ol ikosim em haumas?
   “This one, how much do they charge for it?” (Sankoff and
   Brown 1980:223, ex. 25)

   b. Ya, Susanna, yu no kaikai ʾia!
   “Hey, Susanna, you didn’t eat anything at all!” (Sankoff
   and Brown 1980:fn 13; p 223)

Sankoff and Brown suggest that speakers may have “initially extended deictic ʾia for “bracketing” use in complex sentences as a “logical” out-
growth of its focusing functions” (Sankoff and Brown 1980:255). This hypothesis becomes even more plausible if the origin of Tok Pisin ʾia is taken to be the German ʾja, as the discourse marking functions of the
element would then have been present from the start.

However, Tok Pisin *ia* is not quite (yet) a relative clause marker. For one thing, the initial *ia* appears to still belong to NP-main rather than to the relative clause. Intonationally this is the case, as is indicated by the punctuation in most transcriptions of Tok Pisin sentences with *ia* (see for example (19) above; Aitchison, whose examples are reproduced in (17) is unusual in not indicating the clause boundaries). I am not aware of any examples in which the initial *ia* follows an indefinite NP or similar, so that it could not equally well be interpreted as a demonstrative. Lists of Tok Pisin relative clause markers often do not include the *ia* as a true relative clause marker for these reasons (Aitchison 1992:311, Verhaar 1995:216).

In any case, since the element *ia* has been analysed by some linguists as a relative clause marker, it is clear that the potential for this (re)analysis by speakers exists. Tok Pisin appears therefore to be an example of a development from a discourse marking element to a relative clause marker that is currently potentially available or perhaps even already in progress. This sort of potential may in fact not be at all unusual. Certain Modern English discourse markers, for example, including among others “actually”, “of course”, “really” and “just”, have been shown to occur with unexpected frequency directly following relative clause markers in English relative clauses (Tao and McCarthy 2001:663). They do not provide any examples of this, however. Tao and McCarthy’s study is limited to non-restrictive relative clauses, but it is possible that the phenomenon is more extensive. A cross-linguistic study of synchronic interaction between discourse markers and relative clauses would be necessary to determine whether their frequency in relative clauses is a characteristic of certain languages or a more general phenomenon.

### 3.4.1 Why does this development occur?

In the case studies discussed above, we have seen that the development of discourse markers into relative clause markers has happened more than once in geographically and genetically unrelated languages. This suggests that there is some connection between the two types of element that makes this a likely process. I would argue that this connection is threefold. First the nature of discourse marking elements is such that
they often exhibit features that are necessary and/or preferred in relative clause markers. They naturally occur at phrase boundaries, since they often serve a bracketing function (Maschler 1994:326), sometimes marking whole clauses (as in the case of Quechua -qa). They are not generally pronominal in nature, but they overcome this disadvantage by co-occurring with markers already present, as we have seen in the examples from Tocharian, Quechua, Georgian and Basque. In all cases except for Basque, the marker that co-occurs with the former discourse marking element is or was pronominal (an interrogative or demonstrative pronoun). The function of many discourse markers, too, naturally overlaps with that of relative clause markers. Levinson (1983:87–88) notes that discourse markers “indicate, often in very complex ways, just how the utterance that contains them is a response to, or a continuation of, some portion of the prior discourse”. It could be argued that that is pretty much the same job description that a relative clause marker needs to fill.

Secondly, there are already connections between common relative clause markers such as interrogatives or demonstratives and certain discourse processes, and even between these processes and relative clause constructions as a whole, which may mean that speakers already associate discourse marking and relative clause marking elements with each other to some extent. For one thing, interrogatives and demonstratives already provide a link between the two. As mentioned in 3.2 above, interrogatives and demonstratives are among the most common sources of relative clause markers. It is often claimed as a universal of interrogative pronouns that these are “focused” (Harris and Campbell 1995:219). Demonstratives are generally used to mark a nominal’s status as “given information” in the discourse, including topics, and they can also be used to indicate constrastive focus (“THIS one, not THAT one”). Since such common sources of relative clause markers already have a connection

13 As Blakemore (2002:1) notes, discourse markers are called “markers” because “their meanings must be analysed in terms of what they indicate or mark rather than what they describe.

14 The Basque case is different because the markers (bai(t) and -en) are both attached to the verb and neither marker inflects. If Tok Pisin ia were to become a true relative clause marker in the future, there is no pronominal element already present for it to piggy-back on, so we can assume that it would function as an invariant relative complementiser.
with discourse marking processes, it is possible that the two functions are already associated in speakers minds to some extent, so that the adoption of discourse marking elements as relative clause markers, or their addition to an already existing relative clause marking element is more likely that it might otherwise be.

In many languages a discourse marking strategy for giving prominence to an element in a sentence\(^\text{15}\) is derived from cleft constructions, which are closely related to the relative clause. Cross-linguistically, it is not uncommon for cleft constructions to be reduced until all that is left is a monoclausal construction with a single marker (Drubig and Schaffar 2001). This shows that the pathway of change from discourse marking element to relative clause marker is not unidirectional. In cases where the marker that is left is still transparently related to the relative clause marker, these constructions may contribute to the ease with which speakers associate discourse markers and relative clauses.

The final connection between relative clause markers and discourse markers is that certain diachronic processes naturally lead to the “stranding” of discourse marking elements in relative clauses. In the Quechua example we saw how obligatory topicalisation of the relative clause meant that it was always followed by the topic marker -qa. As the relative clause marker already present at that stage was clause-final, the juxtaposition of this marker and -qa led to the two being reanalysed as one word. The loss of obligatory topicalisation of relative clauses meant that the complex čayqa was no longer transparent. Cross-linguistically, topicalisation is often a matter of moving an element to an initial position in the sentence, and relative clauses often resemble topicalised constructions as they can also commonly be left-extraced (van Riemsdijk 1997). It would therefore not be surprising to find other languages that interpret left-extraposition of relative clauses as topicalisation and come to mark them with the appropriate discourse marker.

Another common process cross-linguistically is the addition of particles with meanings such as “ever”, “also” or “even” to pronouns in order to create indefinite pronouns of the type “whoever” or “anyone” (Haskelmath 1997:138–139). Indefinite pronouns are commonly used to

\(^{15}\) This prominence can have various discourse purposes depending on the language (Miller 1996:114). I refrain from referring to “focus” here because this term is used in many different senses in the literature.
form generalising relative clauses, of the type “Whoever I saw in the
garden, I didn’t know them”. It is not unlikely that such pronouns
might be generalised to other types of relative clause in the language
as well.\footnote{Such an extension of generalising relative markers to non-generalising relative
clauses is thought to be responsible for the Ancient Greek hostis, hētis, hōti se-
ries (Schwyzer and Debrunner 1950:643), as well as for the development of the
interrogative-based relative pronouns (which, who, whom, etc) in Middle English (Ris-
snen 1997:519).} Although the exact path outlined above does not appear to
have been involved in the development of the relative clause markers in
any of the languages discussed in this section, the extension of an in-
definite/generalising relative clause pattern to other relative clauses may
have been a factor in the spread of Basque bai(t)-.

Compulsory topicalisation of relative clauses, extension of generalis-
ing relative clause patterns to other types of relative clause, and formal
changes such as phonological reduction, cliticisation or fusion, are each
examples of how common synchronic and diachronic processes can lead
to the association of former discourse marking elements with relative
clauses, so that they take on a relative clause marking function. These
scenarios, and the case studies discussed above show that although the
cases of discourse marking elements becoming relative clause markers in
different languages may have much in common, there is not one unique
pathway that leads to the end result.

Because the languages discussed here are genetically unrelated and
typologically very different from each other, it is possible to note that the
development of relative clause markers from discourse marking elements
does not seem to be at all limited by type of relative clause marker or
construction. We have seen that it can occur in prototypical correlative
constructions (Tocharian), in “correlative-like” constructions (Quechua),
and in postnominal relative clauses (Basque, Georgian). It does not seem
to matter whether the relative clause marker precedes the rest of the rel-
ative clause (Quechua, Basque), follows it (Georgian, Tocharian), or per-
haps even both (Tok Pisin). The discourse marking element can become
(part of) any of the three main types of relative clause marker: a rela-
tive pronoun (Georgian, Tocharian), a relative complementiser (Quechua,
Tok Pisin), or a relative verb affix (Basque).

Since there seem to be very few restrictions on what type of relative
clause constructions discourse marking elements can become associated with, it would not be surprising to find the same process has occurred in other languages of the world as well.

3.5 Possessive markers

Although the sources of relative clause markers discussed so far in this chapter have generally not developed through analogical extension, this is not to say that analogy never plays a role in the development of relative clause markers. For the two remaining sources to be discussed in this chapter, possessive markers and comparative markers, there is reason to think that if the development occurred at all, then the relevant mechanism of change may have been analogical extension. This is not to say that speakers consciously decided to equate the two constructions, but rather that the marker of one crept into the other construction through bridging constructions and speech error, and was most likely extended by small steps from one subtype of the relative clause to another until in some languages, it was used throughout the set of constructions classed as “relative clauses”. This process is best evidenced by the development of relative clauses from comparative markers, since the evidence for posses-sives as a source of relative clause markers is, as will be seen in this section, rather weak.

Possessive markers and relative elements in many languages have similar or identical forms, which has led some linguists to search for a diachronic relationship between them. Aristar (1991) notes that “[t]he relationship [between possessives and relatives] is rather common, even preponderant in some areas of the world, and occurs in every genetic and areal grouping” (p 9). Aristar presents a table of possessive and relative elements from the following 25 languages, in which there is at least superficial phonological and morphological resemblance between the morphemes used to mark relativisation and possession.

He also shows that there is a close degree of similarity between the relative and possessive elements in four languages not included in his table, namely the Agaw languages Awngi, Kemant and Bilin, and the Nilo-Saharan language Logbara. A number of languages not mentioned by Aristar at all also display this similarity. I list these in Table 3.4, along with the relevant markers.\textsuperscript{17}

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>REL/POSS ELEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient Harari</td>
<td>\textit{zi}-</td>
</tr>
<tr>
<td>Basque</td>
<td>\textit{-en}</td>
</tr>
<tr>
<td>(Literary) Burmese</td>
<td>\textit{i/thii}</td>
</tr>
<tr>
<td>Classical Tibetan</td>
<td>\textit{kyi}</td>
</tr>
<tr>
<td>PIE/Iranian</td>
<td>\textit{(os)io}</td>
</tr>
<tr>
<td>Khmer</td>
<td>\textit{ta}</td>
</tr>
<tr>
<td>Lhasa Tibetan</td>
<td>\textit{gi/'i}</td>
</tr>
<tr>
<td>Malay</td>
<td>\textit{panya}</td>
</tr>
<tr>
<td>Newari</td>
<td>\textit{gu(\textit{i})}</td>
</tr>
<tr>
<td>Quechua</td>
<td>\textit{-q}</td>
</tr>
<tr>
<td>Sth. Arabian langs</td>
<td>\textit{δ/d-', l-' }</td>
</tr>
</tbody>
</table>

\textbf{Tab. 3.4:} Further languages with similar relative and possessive elements

Aristar admits that he has not looked more closely at the history of most of the languages in his table or at possible alternative analyses of the forms. In this section I would like to do just that for some of the languages in his list and some of the additional ones in Table 3.4.

There are four logically possible explanations for similarities between the possessive and relative elements in a language. The first is simple chance resemblance, which cannot be ruled out, especially in the case of one syllable morphemes such as many of those in Aristar's list and in Table 3.4. The second and third possibilities are that the possessive marker is the source of the relative element or vice versa. And the final possibility is that both elements come from some third source, for

\textsuperscript{17}The Basque and Tibetan elements (incl. Newari) in this table co-occur with another morpheme in the relative context: the PIE/Iranian element co-occurs (with \textit{-os}) in the possessive environment. The latter is shown in this table with the extra morpheme, while Basque and Tibetan elements are not. This is simply because the Basque and Tibetan elements are difficult to depict in this table, since the Basque elements are discontinuous and the marker co-occurring with the Tibetan element can be one of several different forms. Where two or more alternative forms of an element are listed (e.g. Burmese \textit{i/thii}) the differences between the two alternatives will be explained later.
example an anaphor, which is the explanation Aristar favours.

Each of these four explanations have been proposed at times for various cases of relative/possessive resemblance and I do not believe that any one of the four can account for all the cases listed above. Cases in which the possessive has developed from the relative element will be discussed in detail in Chapter 4. The primary focus of this section here is the development of relative elements from possessive elements, so it is cases of this that will be described in the most detail.

The evidence indicates that the direction of change was most likely from relativisation to possession in the extension of the elements in PIE/Iranian (-osio), Newari (gu(li)), Chinese (de), Akkadian (ša), Aramaic (di) and Hebrew (še). These will therefore be discussed in Chapter 4, rather than here.

In Akkadian, Tibetan, Lahu, (literary) Burmese, Syriac, Logbara, Anywa, Luo, Old Persian, Ge’ez and the Agaw languages Awngi, Kemant and Bilin, it is possible that the similarity between relative and possessive elements is due to both elements having a common origin in a demonstrative or similar. A series of developments similar to those proposed by Aristar (1991) (and summarised here in Chapter 2) could well be the process that resulted in this situation. There are only two points I would like to make about these cases that go beyond what Aristar says.

The first is that two of the languages mentioned here (Tibetan and Burmese) are not discussed in Aristar (1991), but seem to show the same development. Classical Tibetan *kyi* and Lhasa Tibetan *gi/’i* may have followed a similar pathway to Lahu (development of a genitive/relative element from a generic noun head originally used in appositions), although the evidence for this is not so strong as it is for Lahu (DeLancey 1986). Literary Burmese *i/thii*, as well as being used in relative and possessive constructions, is still found as a demonstrative, which Simpson claims is its source (Simpson 2001).

The second point I would like to make is that, with the possible exception of Tibetan *kyi*, *gi/’i* and Lahu *ve*, the common sources proposed for these items are all demonstratives. Aristar (1991) refers to the source elements in this process only ever as “anaphors”, implying that his “binding-anaphor” relative/possessive construction could develop from any sort of anaphor. I would like to suggest that the possibilities may
be more limited than this, and that certain types of anaphor (personal
pronouns, for example) are unlikely to be a shared source.

These relative and possessive elements that developed from a third
source will not be focused on in the rest of this section, however, as they
are not cases of a possessive element becoming a relative marker. Any
further relevant information will instead be dealt with in the sections
devoted to their sources.

The remaining languages in the lists at the start of this section are
either probable cases of development from a possessive marker to a rela-
tive element (as are Japanese no and Malay punya), or cases where
the evidence is patchy or difficult to unravel. I will discuss the cases for
which there is the most information available first (Japanese and Malay),
followed a discussion of the Semitic languages, which demonstrate both
shared and parallel developments regarding relativisation and possession,
at least some of which are well documented. I will conclude with a brief
overview of the remaining cases, in which it is more difficult to determine
the origin of the relative/possessive similarity.

3.5.1 Japanese

There is a reasonable amount of historical information available on the
relative/possessive similarities in Japanese and Malay, the most extensive
discussion of which is found in Yap et al. (2004). It will be seen, however
that evidence for a development was from possessive marker to relative
element is not especially strong.

Japanese no is a multi-functional element, acting as a possessive
marker, a marker of headless relative clauses, a “stance” marker (i.e.
a marker of the speaker’s attitude to the proposition), and filling cer-
tain complementiser functions. It does not occur as a marker of headed
relative clauses in modern, adult Japanese, but is found in this func-
tion in child language and early modern Japanese (late 19th, early 20th
centuries). According to Yap et al. (2004), no is not found in relative
clauses (headless or headed) until the 16th century, while possessive no is
attested from the 8th century onwards. They also claim that the exten-
sion from the possessive to the relative context was mediated by the use
of no as what they call an N-pronominal, i.e. a “stand-in” for the pos-
sessed noun in a possessive construction. This use of no is attested from
the 8th century as well. The three relevant constructions are exemplified in (20).

(20)  
   a. Taroo no hon  
       Taroo NO book  
       “Taroo’s book” (Possessive function (Yap et al. 2004:(6) p. 141))

   b. Taroo no  
       Taroo NO  
       “Taroo’s” (N-pronominal function (Yap et al. 2004:(7) p. 141))

   c. Taroo-ga kat-ta no takakat-ta  
       Taroo-NOM buy-PAST NO expensive-PAST  
       “the one Taro bought was expensive” (S-pronominal (headless relative) function (Yap et al. 2004:(12), p. 142))

The dates of attestation show at least that the direction of change cannot have been from relative to possessive element. Other possible sources have been suggested for no, however, so that there is at least a possibility that its identity with the possessive marker is coincidental. Martin (1991), for example, suggests that no is a reduced form of mono “thing” and stood as a generic noun in what Yap et al. refer to as N-pronominal and S-pronominal contexts ((20-b) and (20-c) here). The greatest advantage of this account is that it explains why no is found only in headless relative clauses. Its extension to headed relative clauses in child Japanese and in the late 19th century could be accounted for by assuming that, once reduced to no, the element was/is no longer analysable as the noun mono, but is open to reanalysis as a more general marker. As Martin’s claim provides an alternative to the analysis of relative no as originating from the genitive marker, and especially since, as Horie (2001) points out, there is no evidence to show that either source is more likely than the other, Japanese does not provide sufficient evidence for the existence of a pathway of change leading from possessive to relative element.
§3.5 Possessive markers

3.5.2 Malay

The Malay element punya is also discussed by Yap et al. (2004). They claim that this element followed a very similar pathway to Japanese no. The Malay element was originally a noun and verb empunya, meaning something like “owner” and “own” respectively. Clear uses of empunya as a possessive marker are first found in the 18th century, and the reduced form punya was used as a noun meaning “possession” (21-a) and as a possessive marker (21-b) in the 18th and 19th centuries respectively. Use of punya as an “N-pronominal” (21-c) is attested from the 18th century, but is not found as an “S-pronominal” (21-d) until more recently and still only in colloquial speech. It is not used in headed relative clauses at all.

(21) a. ...harta itu punya segala hamba Allah ...inheritance DEF possession all servant(s) God juga.
also
“... the inheritance is the possession of (i.e. belongs to) all of God’s servants, too” (Yap et al. 2004:(55) p. 154: punya as noun)

b. sengaja ia tiada mahu bayar sahaya punya wang purposely 3SG NEG want pay 1SG GEN money “he purposely didn’t want to repay my money” (Yap et al. 2004:(59) p. 156: punya as genitive)

c. Kata seorang "Ini aku punya"; kata say one.person DEM:PROX 1SG PUNYA say seorang, "Aku punya."
one.person 1SG PUNYA “Said one person, “This is mine”; said another “It’s mine” (Yap et al. 2004:(64) p. 157: punya as N-pronominal)

d. (Yang) koyak punya campak saja lah.
NOML torn PUNYA throw.away just PARTICLE “That which is torn, just throw (it) away.” (Yap et al. 2004:(65) p. 157: punya as S-pronominal)
§3.5 Possessive markers

There are two problems with using the Malay data as evidence that relative clause markers can develop from possessive markers. The first is that punya can be argued to not (yet) really be a relative clause marker. The example given by Yap and repeated here as (21-d) is not necessarily even a headless relative clause, although it can be paraphrased as one in English. In Malay, adjectives commonly occur with yang, which is otherwise the relative clause marker (Oey 2004:53). The combination yang + adjective can be seen as a “nominalised adjective” rather than a relative clause, in which case the sentence in (21-d) could be translated as “Just throw the torn one away”. Under this analysis, punya is acting as a dummy noun, just like English one in “the torn one”. Adjectives usually follow their heads in Malay, but it is possible that the existence of the pattern aku punya “my one”, etc (as in (21-c)) makes koyak punya “torn one” acceptable. On the other hand, when punya and yang both co-occur in examples such as (21-d), presumably yang already fulfils the function of a nominalising head, which means it is unexpected that punya is able to appear too. The very ambiguity of example (21-d), however, shows that the argument that punya is a relative clause marker is not water-tight.

The second problem with the Malay data is that, even if punya is an “S-pronominal” element, the dates do not entirely support Yap et al.’s hypothesis that the route taken was from genitive to N-pronominal to S-pronominal. As mentioned above, the use of the reduced form punya as an N-pronominal is attested from the 18th century (Yap et al. 2004:157), while there are no unambiguous examples of it as a genitive marker until the 19th century (Yap et al. 2004:156). As Yap et al. do not give any information about how common these constructions are in texts after the earliest attestations, it is not possible to judge whether the unexpected order of appearance here is significant or not. However, it suggests that it is at least possible that the N-pronominal use of punya is a direct extension of its use as a noun rather than via the possessive function as an intermediate step. If we then accept that punya in S-pronominal contexts is a relative element, the source of this element would be that “dummy noun” rather than a possessive marker.

In summary, then, there are three possible arguments that preclude using Malay punya as evidence for a possessive to relative pathway. The
first is that *punya* in S-pronominals is not unambiguously a relative element. The second is that the extension from *punya* as noun to *punya* as an S-pronominal may have been an entirely separate development from the extension from *punya* as noun to *punya* as possessive marker. And the third is that even if the development did proceed from genitive marker to N-pronominal to S-pronominal, the direct source of the relative element was the N-pronominal element which one might not wish to analyse as a possessive marker any more in that function. Thus the Malay element *empunya* is also, at most, weak evidence for a possessive to relative pathway.

The Semitic languages

Not only are possessive and relative constructions connected in Semitic languages through the use of the “construct” state for the head of both constructions, but also many Semitic languages have shown a similar development in evolving periphrastic relative and possessive constructions that are both marked with the same particle. Because these developments are so similar in the various languages, I will discuss them all together in this subsection, even though some of the languages provide stronger clues to the history of these constructions than others.

The existence of the “construct state” seems to be a very early feature of Semitic. In brief, it is a type of head-marking found in possessive and/or relative constructions. Nouns in Semitic languages can appear in various “states”, the number of which depend on the language. Akkadian, for example, has the “normal” state, the construct state, the absolute state, and the predicative state (Buccellati 1997:76), while Classical Arabic distinguishes between the definite state, indefinite state and construct state (Fischer 1997:195). The state a noun is in determines the number of case, gender and number distinctions that appear, and some languages also have morphological markers specific to that state (Arabic -n for the indefinite state, for example). The difference between the construct state used to express a possessive construction and the normal (non-possessive) state is illustrated with examples from Biblical Hebrew in (22).

(22) a. *bīṣdeḥ* ’ałēh

    field.CONSTRUCT another
"in another’s field" (Exodus 22:4, cited in Steiner (1997:153))

b. **bₚₜₚₜ** ³`a̱`eh
   field.NORMAL another
   "in another field" (Ruth 2:8, cited in Steiner (1997:153))

The Semitic languages that have a construct state have it from the earliest records onwards, which suggests it was probably a feature of Proto-Semitic too. It is also found in some languages that are hypothesised to be members of a larger family that includes Semitic, e.g. in Chadic (e.g. Hausa), Berber (Ouhalla 1996) and Somali (Lecarme 1996). If Afro-Asiatic is indeed a family, it is possible that the origins of the construct state could be located as early as that. Otherwise, the prolonged and intensive contact between the some of relevant languages is conceivably responsible for the widespread nature of this feature.

Many of the Semitic languages also have a periphrastic alternative construction for the relative clause, and often for the genitive as well. This differs from the construct by the presence of a separate possessive marker, and in some languages also in word order. Compare, for example, the two Old Akkadian relative clauses in (23).

\[(23)\]

a. **tuppi**  addin-`u-sum
   tablet.OF I-gave-SUB-to.him
   "The tablet which I gave to him" (SAB: Ki 2:13 cited in Deutscher (2001:410, ex. 13))

b. **še`-um**  **šu**  ana **še.BA**  asīt-`u
   barley-NOM REL.NOM(m.sg) to rations I.left-SUB
   "(concerning) the barley that I had left over for rations’
   (SAB: Ga 3:4 cited in Deutscher (2001:410, ex. 13))

Some representative branches of Semitic are shown in Table 3.5 with information about their constructs and periphrastic constructions. The first column gives the name of the branch, the second states whether the construct is used to express both relatives and possessives or only one of the two, and the final two columns give the forms of the periphrastic markers that exist as alternatives to the construct.


<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>CONSTRUCT</th>
<th>POSS</th>
<th>REL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hebrew</td>
<td>both</td>
<td>she + le &gt; shōl</td>
<td>asher/she</td>
</tr>
<tr>
<td>Arabic</td>
<td>poss. only</td>
<td>various dialect forms</td>
<td>allaōt, 'ilā, etc</td>
</tr>
<tr>
<td>Aramaic</td>
<td>both</td>
<td>zy [ dù ]</td>
<td>zy [ dù ]</td>
</tr>
<tr>
<td>Ge’ez</td>
<td>poss. only</td>
<td>zā etc.</td>
<td>zā etc.</td>
</tr>
<tr>
<td>Sayhadic</td>
<td>both</td>
<td>ʾē- etc</td>
<td>ʾē- etc</td>
</tr>
<tr>
<td>Akkadian</td>
<td>both</td>
<td>ša etc</td>
<td>ša etc</td>
</tr>
</tbody>
</table>

Tab. 3.5: Relatives and possessive constructions in the Semitic languages

A brief note needs to be made here about the Hebrew forms. The element *asher* is the odd one out in this list, as it is not thought to derive from a demonstrative, but rather from the word for “place”. The element *she*, on the other hand, may be a contraction of *asher*, or it may be a borrowing from Akkadian, a possibility that Givón (1991) notes but rejects. The true parallel to the particles of the other Semitic languages, however, lies in an aborted development in Early Biblical Hebrew, where *zu*, the feminine singular form of the demonstrative, was sometimes used to form relative clauses (Rosen 1959:303). There are traces of this element being used for possession as well (Allegro 1955).

The relative/possessive elements in each of these languages also were generally present by the time of the earliest records. This, and their similarity in form, leads Deutscher to reconstruct for Proto-Semitic two relative constructions: the construct, and an “appositive” relative clause that used the ancestor of the relative particles (2001: 411). On the other hand, the cognate forms here are mostly demonstratives, so without further evidence, I believe the most one can be certain of is that Proto-Semitic had a demonstrative that looked something like these. We have seen in Section 3.2.2 how common the development from demonstrative to relative marker is, so it is not implausible that each of these languages might have undergone this development separately, especially considering considerable contact among the languages might have been involved.

There are, however, some indications that the relative/possessive elements might be of more recent origin than the constructs. First of all, in several of the languages periphrastic constructions were an *optional* alternative to the construct at the earliest known stages of the languages, but later became compulsory in certain situations. This was
the case for the Hebrew *she le* genitive construction (Steiner 1997:163); the Neo-Aramaic languages’ genitive constructions (Jastrow 1997); and the Arabic possessive particles (which became compulsory for alienable possession in many dialects, but which are not related to the relative particle) (Kaye and Rosenhouse 1997:299). The Modern South Arabian languages use the construct only in “some frozen constructions and special words” but otherwise use the particle δ- for both relative clauses and possessives (Simeone-Senelle 1997: 412). If we are to reconstruct both relative and possessive functions for the construct in Proto-Semitic, then we have to assume it had already been replaced by the periphrastic construction for relative clauses in Arabic and Ethiopic by the time of the earliest attestations. This sort of spread of a construction – where it is marginal or restricted, then grows in popularity at the expense of another, finally taking over – is commonly associated with the introduction and spread of a new construction causing an older construction to retreat. There is no reason why this must *a priori* be the case, however: why the one that won the contest cannot have been the older construction. The changes in the Semitic periphrastic constructions from optional to obligatory, or to obligatory in certain circumstances is not solid evidence that the periphrastic constructions were newer than the constructs they were replacing. It depends how long the competition between the two alternatives had already been going on for when the history books started taking notice.

There is, however, another possible indication that the relative/possessive elements might be of more recent origin than the constructs, in that, in many of the Semitic languages, the periphrastic relative/possessive “linker” has gone from an agreeing pronominal element to a non-agreeing particle during the attested period. This happened in the Arabic dialects (*allaḥi, allāti* etc. > ḥillī), Akkadian (*šu, ša, etc* > *ša*), Ge’ez (*𝑧َا, ˁontā, ˁollā* for masc., fem., and pl. > invariable *𝑧َا* (Gragg 1997:259)), the South Arabian languages (δ + number/gender agreement > invariable δ in Mehri and number agreement only in the other languages) (Simeone-Senelle 1997: 412). According to Romaine (1984c), development from agreeing “relative pronouns” to invariant markers is a natural, common path of change. Not all of Romaine’s generalisations in this regard are defensible as “universals” or even “universal tendencies” (see Section 2),
but nevertheless it could be argued that this loss of agreement morphology is a sign that the element in question is moving further away from its demonstrative roots and closer to a point where the speakers no longer associate it with any function or meaning besides relativisation/possession/subordination. This is especially clear in cases like the Arabic dialects where, due to phonological and morphological reduction, the form (invariable īlḥ is no longer analysable as article al + deictic la + demonstrative δ/t + agreement, nor even as simply a form related to the demonstrative, as the latter still inflects for number and gender (Kaye and Rosenhouse 1997:287). The fact that these changes (loss of morphology, phonological reduction and/or disassociation with original source) have happened in recent times, while the construct form has been relatively unchanged and unanalysable since the earliest attestations is another indication that the periphrastic constructions might be more recent than the constructs.

Despite these indications, the hypothesis that the periphrastic constructions are more recent is far from proven. It is sometimes assumed in the literature (e.g. (Pardee 1997)), yet I have never seen it defended, and suspect it might have less to do with hard evidence and more to do with the idea that languages tend to lose case morphology and similar and become isolating, rather than the other way around. Deutscher (2001) presents the closest I have seen to an strong argument for the periphrastic construction being more recent than the construct, and that is his explanation of how the ša-based relative/possessive construction in Akkadian could have developed from the construct-based construction via an appositive structure. Yet even this is fairly speculative and Deutscher reconstructs both constructions for Proto-Semitic, so we cannot hope to find any further indication of their origins in even the earliest texts.

The question that is more relevant to this section is whether the genitive or the relative functions of the construct, and later, the particles, came first. Once again, it is not possible to say for certain. In the two languages in which the construct is used for only one of the two functions right from the start, it is used for possession, not relativisation. This fact is not conclusive, but it is interesting that the two languages that do not have the relative function for the construct do not form a
§ 3.5 Possessive markers

subgroup of Semitic. Arabic is a member of the Central Semitic subgroup
of West Semitic (or in the view of some, possibly a sibling of South (east)
Semitic, while Ge'ez belongs to the Western subgroup of South Semitic
(Faber 1997:12). Therefore one must choose between reconstructing only
the possessive function for Proto-Semitic and assuming that the relative
clause marking function developed by extension later on in the languages
that had this, or reconstructing both functions for Proto-Semitic and
assuming that Arabic and Ge'ez replaced the construct with a particle-
marked construction for relative clauses independently of each other. The
latter scenario is the one assumed by Deutscher (2001:410), who, follow-
ing Lipinski (1997:324), states that the “extension” of the construct from
its genitive function to use in relativisation probably happened at the
Proto-Semitic stage.

Even when the construct state is represented by an affix, however,
it is not quite the same sort of creature as the relative elements I am
otherwise focusing on, as it is a feature of the head of the relative clause
rather than a marker in the clause itself.

As for the later particles, all but the Hebrew asher are likely to be
related to demonstratives, which means that Aristar’s (1991) scenario
of both the genitive and relative developing independently from a third
source is quite plausible. On the other hand, at least in Aramaic we know
that the relative use of the particle developed well before the genitive
function (Kaufman 1997:122), which means that it is not impossible for
the latter to have developed as an extension of the former. The relative
element she came before the genitive marker she-l in Hebrew too (as
asher, the form that is most commonly taken to be the ancestor of she,
is found in relative, but not genitive constructions). Deutscher (2001)
argues that the direction was from relative to genitive in Akladian as well.
These three languages will therefore be discussed further in Chapter 4.
For the other languages it is just not clear which direction the extension
took, or even whether there was an extension in the first place. Since the
construct was used for both relative and genitive functions, it is possible
that a new particle was seen as an alternative to the construct, i.e. both
functions, rather than as a relative element or possessive marker.

In summary, none of the Semitic languages provides us with evidence
of a relative element developing from a possessive marker, although there
are at least three cases where it looks as though a possessive marker has developed from a relative. These will be explored in Chapter 4.

3.5.3 Languages with little evidence for the direction of extension

Finally there are a few examples for which very little evidence is available to indicate what the direction of extension was, if any extension occurred at all. These include Khmer *ta*, discussed by Jenner (1981), who suggests it perhaps should not be analysed as a relative clause marker at all, since it occurs in so many environments, including possession, relativisation, as a marker of various oblique cases, general prepositional phrases and more. There is no indication of which of these functions was primary. This is similar to the situation in Tagalog, in which the ligature *(a)ng* is used to link nouns to all sorts of modifiers, including relatives clauses and possessives. Reid (2002) suggests that *(a)ng* might have originally been a demonstrative or a noun, but he does not address the question of when it took on its modern functions and in what order. An equally mysterious case is Cuzco Quechua, in which the suffix *-q* appears on verbs of subject relative clauses, and is also the genitive case marker (Lefebvre 1988). Whether this two functions are connected or whether they are simply homonyms is impossible to say, as the element *-q* has been used for each since the earliest records of Quechua. As far as I am aware, no one has looked into this question.

In the South Arabian Semitic language Sayhadic, the *δ*-series of particles (plurals in *’(h)l* in Minean and Sabean) are used in both relative clauses and periphrastic possessive constructions. These particles look enough like the proximate demonstratives to make one suspect that there might be a connection, but not enough to be certain whether one truly is the source of the other or not (cf. the relevant paradigms in Tables 12.2 and 12.3 of Kogan and Korotayev (1997:225, 231)). It could equally well be the case that the possessive developed from the relative element or vice versa with the similarity to the demonstrative being because of former agreement morphology that appeared on both types of element, or even due to coincidence.

In some languages even the similarity between the relative and posses-
sive markers is debatable. This is the case, for example in Basque where the suffixes are both -en but have different allomorphs after vowels, which throws some doubt on a common origin (see Trask (1996:240–241) for a summary of the debate). Trask rejects both the genitive and the locative as a possible source\(^\text{18}\) and notes that this latter etymology “has few, if any, adherents today” (Trask 1996:240), but does not give any reasons for this, and proposes no alternative source for relative (e)n.

A relationship between the relative and possessive marker is also not immediately apparent in Sumerian. Arista (1991) lists both as a\((k)\), which is by no means a common assumption. I have not been able to find any grammars that analyse the relative marker as a\((k)\), but it is a plausible interpretation, since Sumerian has a phonological or orthographical rule that certain consonants, including k, do not appear word-finally (Hayes 1990:21). This would explain why the (suffixed, clause-final) relative clause marker always appears as a and the possessive marker, which can be followed by other suffixes, is known to underlyingly be ak. Even if underlyingly both the relative and genitive element are the same form, however, there is no evidence for one being derived from the other or either originating from a common third source.

### 3.5.4 Conclusions regarding possession and relativisation

There is clearly a complex relationship between relativisation and possession. There is, however, no solid evidence for relative markers developing from possessive markers. On the other hand, we cannot exclude this possibility, as there are a number of languages with identical markers for relative and possessive functions, the source of which we do not know. For now, however, in cases for which another explanation for the similarity is plausible, and does not rely on assumption of a pathway that has never been attested, I will assume it to be more likely than an explanation that relies on a development from possessive to relative. Therefore when a language with unknown history presents us with identical markers for

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\(^{18}\) A locative origin seems perfectly plausible to me, considering not only that the morphological “match” of this source is better than that of the possessive, but also considering how common the development of “where” or “place” to a relative element is (see Section 3.2.1, also Hebrew asher, Malay tempat, Tibetan sa discussed in Section 3.3.2).
relativisation and possession, it makes most sense to assume they either arose from a common source (as in Aristar’s (1991) proposal), or that the relative marker was extended to possession, as this latter direction is attested at least in some languages (see 4.2.7).

3.6 Comparatives

The two examples of comparatives becoming relative clause markers that I am aware of are both in the Germanic family of Indo-European, but are independent developments. In both cases, however, the wide range of environments the “comparative” element appeared in and the difficulty of untangling the chronology of these mean that it is impossible to be sure that comparatives really are a source of relative clause markers purely on the basis of these examples.

The Norse particle *sem/sun* (modern *som* in mainland Scandinavian) was used in a range of contexts, including comparative and relative clauses. It is attested as a relative marker even in some of the earliest Norwegian rune inscriptions (Lindblad 1943:113). However, Lindblad argues that since in the earliest runes example *sem* occurs together with another relative marker *es*, this suggests that it was relatively new to the language at that stage. The example is given in (24).

(24) sa hit aki *sims* (= *sem es*) uti
    This was called Åke, *SIMS* (= REL REL) abroad
    furs
    traveled.REFL
    This was Åke, who traveled abroad (= died)

The distribution of *sem/sun* over time and across Scandinavia provides further evidence that this element was more recent than the other Scandinavian relative clause markers. In the earliest Swedish inscriptions, the cognate *sum* is only mentioned “a few times” (Lindblad 1943:114). In later manuscripts *sum* comes to dominate and the older *er* retreats. More importantly, in early Danish rune material there is no evidence for *sem/sun* or any cognates of this in relative clause marking at all. Nor is it found in the older Edda poetry. It is thought that *sem* developed relative clause marking functions first in the Norwegian dialects of
Old Norse, spreading to Iceland, Sweden and then Danish (cf. Noreen (1923:319) and Faarlund (2004:259).

It seems therefore reasonable to say that sem was a later development in at least some dialects, and in these cases it competed with the previous relative marker er. The question of its prior function is more complicated. Although the marker sem was a comparative, it could also be used to introduce adverbials of place. These can be viewed as part of the extension to relative clause marking (Dahlerup 1941: 1399). A plausible process of extension of sem/sum from comparative to relative clauses is outlined in the entry on som in Dahlerup’s Ordbog over det danske Sprog (1941:1398–1436). There it is suggested that the extension took place via a reanalysis of the antecedent to which som referred. Sentences such as (25) are comparative (“such as I wish for”), but there is a surface string that looks just like a relative (“a house SOM I wish for”) (1941:1429).

(25) saadan et hus, som jeg ønsker mig (det)
    such a house, as I wish for REFL (it)
    “a house such as I wish for”

Whether or not this reanalysis was the exact path taken by sem/sum/-som, I believe there were some additional features of Old Norse that probably contributed to the extension. For one, the pre-existing relative clause construction with er was used not just for core relatives and obliques, but also for more vaguely linked clauses, such as genitive complements of nouns ((26-a)), instrumentals ((26-b)) and even more loosely linked clauses ((26-c)).

(26) a. spjót þat, er alnar var long þjóðin ok
    that spear.A that which ell.G was long.F.N blade.N-the and
    jarni vafit skaptit
    iron.D clad.NE.U.N shaft.N-the
    “a spear, the blade of which was an ell long and the shaft
    bound with iron” (Laxdœla Saga 170.22 in Faarlund (2004:
    260, ex. 38a).)

b. at samþengja gða menn ok illa þeirri samþengo
    to join good men.A and bad that union.D
er illir menn mætti batna af
which bad men.N might.SUB.3P improve from
samvistu gøðra
togetherness.D good.P.G
“To join good and bad people in a union by which bad people could improve through living with good people” (Gamal norsk homiliebok 79.24 in Faarlund (2004:261, ex. 38c).)

c. hvilik er sjá skim er sá er how.F.N is this baptism.N which that.M.N is skirnarbrunni hréinni er skírðr er?
baptismal-font.D cleaner.M.N who baptized.M.N is “What is this baptism like, which makes the one who is baptized cleaner than the baptismal font?” (Gamal norsk homiliebok 58.30 in Faarlund (2004:261, ex. 39).)

This means that sem/sum need not have been extended directly into prototypical relative clauses of the modern sort, but rather it could have been used in any of the above sorts of constructions and then spread into the core relatives.

More importantly, the relative clause marker er was used in some comparison clauses as well, as Faarlund (2004) illustrates with the example reproduced here in (27) (in this case in combination with the demonstrative þá).

(27) þá fundu menn hans í gamma einum konu þá then found.3P men.N his in hut.D one.M.D woman.A that er þeir höfðu enga eðt jamvæna who they.M had.3P non.F.A seen even-beautiful.F.A
“Then his men found in a hut a woman so beautiful that they had never seen anyone like her” (Faarlund 2004:261)

I have been unable to discover whether er had this function before sem/sum was extended into relative clauses, but if this is the case, then the distribution of er presumably “primed” that of sem. The element sem may even have had a forerunner in its extension from comparative to relative clause, as en (“than”) is also found as a relative clause marker “especially in Norwegian texts” (2004:264), which is also the regional va-
riety that sem first developed in. Whether en or sem/sum was extended first, it seems likely that the other simply followed down the pre-trodden path: hardly surprising since en and sem were interchangeable in some contexts and co-occurred in others.

The development of alswa/alse (later as) into a relative clause marker in English bears certain resemblances to the Scandinavian development. The development is thought to have begun in sentences in which the main clause contained the word swy̯l “such” or the word “same” (OED 1989), as in the example in (28-a). The antecedent “such” or “same” came to be regularly elided, resulting in a relative clause of a sort which has been lost in the standard language, but is still found in certain modern dialects today. The resulting construction is exemplified in (28-b). The pattern in (28-a) is first attested c. 1175, while the variant with the elided “so-word” ((28-b)) does not appear until 1305.

(28) a. Ho nimeð al swuch hou [i.e. hue] alse ho þer on ūnt.
   “She takes on whatever hue she finds thereon”. (Lamb. Hom. 83, cited in the OED)

   b. & of drauðtes as me drawep in poudre.
   “and of lines which one draws in (the) dust”. (St. Edmund 225 in E.E.P (1862), cited in the OED)

Just like Scandinavian som, English alswa/alse/as is found introducing clauses with various different adverbial functions, including those marking time, place or manner, and even concessive clauses, all of which are attested as early as the two other patterns just mentioned (OED 1989). The element alswa/alse/as is not attested any earlier as introducing any sort of subordinating clause, although it was found in the main clause prior to this (e.g. in contexts such as alswá cald swá þæt fýr (Ælfred. Hom. in Thorpe Anal. 61, cited in OED)) and swa without the strengthening al- was found in the subordinate clause already in these constructions.

Again, as in the Scandinavian case, alswa/as is not the only marker

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19 We still have a remnant of this in paucal relatives introduced by such: Such men as came to the party were unattractive. I am grateful to Cynthia Allen for pointing this out and providing the example.
that appears in both these adverbial/comparative contexts and in relative clauses. The relative clause marker/general complementiser *that* is an alternative option in many of the contexts that *as* is found in, and sometimes the two even occur together: *(so as, so that, so as that; fool as/that I am; to say as, to say that, to say as that; inasmuch as, inasmuch that; when as/that; while as/that; being as/that etc)* (cf. Kortmann (1997:312)). Unlike Scandinavian, however, this does not seem likely to have had a priming effect, since *that* (without accompanying *as*) in such constructions is first attested later than *as* is (OED 1989).

Why should there be a diachronic connection between comparatives and relative clauses? The similarities between relative clauses and comparative constructions have often been remarked on in the literature (Andrews 1985, Haspelmath 1998, Buzarovska 2005). Both relative clauses and comparative constructions consist of two clauses, one main and one subordinate. As Buzarovska (2005:95) points out, both relative and comparative clauses have similar pragmatic functions, in that both “anchor a referent in discourse by giving additional information about the referent.” Comparatives provide this information “via comparison with a referent in another similar event”. Syntactically, similar analyses have been proposed for both relatives and comparatives (see Andrews (1985), and more recently, head-raising analyses for both relative clauses (Kayne 1994, Bianchi 2003) and comparatives (Lechner 1999).) The main syntactic difference between comparatives and relatives is that the head of the comparative clause can be an adjective or quantifier rather than a noun.\footnote{Buzarovska’s analysis has the “deictic adverbial” “as” as the head of the “relative equivalent” clause in equatives, but this does not seem to me to be defensible (Buzarovska 2005:95).} The OED and Dahlérup’s *Onløg* even sometimes refer to what I have been calling “comparatives” (*as... as...* constructions) as “relative clauses” or “comparative relative clauses”.

Another general, cross-linguistic connection between relative clauses and correlative clauses is that both are expressed in some languages as a correlative construction. The English construction *as...as*... could perhaps also be characterised as a correlative, but in other languages the similarity between the comparative correlative and a prototypical correlative relative clause is even more striking. This is sometimes thought to be the result of speakers modeling the correlative construction on a
correlative relative clause (Haselma 1998:288), so will be discussed in that context in Section 4.2.3 of the following chapter.

3.7 Conclusions on sources of RC markers

While most summaries of the sources of relative clause markers in the literature have included only demonstratives, interrogatives, and sometimes definite articles, possessive markers, nominalisers, indefinite pronouns, I have shown in this chapter that a wider variety of elements are involved. There is strong evidence for some of these, such as demonstratives, interrogatives, and discourse markers, with multiple attested cases that cannot be explained in any other way. Others, such as generic nouns, and personal pronouns certainly seem to be sources in some languages, but the processes by which they develop into relative clause markers are as clear. Classifiers, indefinite pronouns, possessive markers, comparatives, and definite articles, on the other hand, while indisputably having some sort of diachronic relationship with relative clause markers, have no incontrovertible evidence of a direct source-outcome relationship.

The sorts of elements that become relative clause markers do so partly because they are well suited to the role, in the sense that they already perform one or more of the characteristic operations involved in relativisation: subordination, attribution or pronominalisation (Lehmann’s “empty-place formation”). In some cases, their conscription is made almost inevitable due to frequent occurrence in or near the relative clause construction, as is the case for e.g. discourse markers, generic nouns, classifiers and perhaps demonstratives. In such cases the mechanism of analogy is not involved in their extension into relative clause marking, but only reanalysis. In this sense, Shi and Li’s generalisation that the structural features of a source construction shape the path of change taken by the marker (Shi and Li 2002) is a valid claim.

Some of the other generalisations from the literature that were discussed in Chapter 2 are also at least partially supported by the findings in this chapter. For example, Romaine’s prediction that relative clause markers begin in more “marked” contexts and spread to unmarked environments, and Maxwell’s similar claim that pronominal markers begin in the lower positions of the Accessibility Hierarchy and spread to core
relative clauses seem to apply (depending on how one defines “markedness”) to the development of interrogative-based relative clause markers, at least.

It will be seen in the next chapter that some of the developments into relative clause markers discussed here cannot be characterised as unidirectional pathways. This is unsurprising since the developments discussed here are not generally “grammaticalization” in the strict sense of the term, but rather are the extension of a grammatical marker from one grammatical function to another.
Changes affecting relative markers

4.1 Introduction

Although much attention has been paid to the sources of relative clause markers in the literature on typology and language change, much less has been said about the changes that can affect them. The most detailed cross-linguistic discussion of the matter is in Lehmann (1984:386–398), but as mentioned in chapter 2, this is not as thorough or as systematic as his treatment of relative clause marker origins. In his discussion of “the possibilities of change” Lehmann is primarily concerned with change from one type of relative clause construction to another (e.g. adjoined to embedded) and he only turns to the question of the extension, narrowing and loss of markers in the final four pages, where he suggests four outcomes of extension: “universal conjunctions”, markers of embedded questions or conditional clauses, definiteness markers on adjectives, and general linking particles. We will see in this chapter that there is reason to think that the possible changes that can occur go far beyond those discussed by Lehmann.

First I will look at the extension of relative markers to different functions, including markers of adverbial clauses, markers appearing in comparative constructions, complement clause markers, general markers of subordinate clauses, adjective markers, possessive markers, and general linking particles.

Then I discuss the narrowing of relative clause marker function in some languages. This often takes place when competition between several relative clause markers is resolved by the development of a new distinction between the two (for example, one comes to be used for subject
relative clauses and the other for object relatives, or one for animates and the other for inanimates). In multilingual communities, these new distinctions are sometimes created on analogy with the system of another language. In such cases there may not have been multiple competing relative clause markers that are later redistributed, but rather the native relative clause marker may be restricted and a new marker might be imported along with the pattern of distribution.

In other cases new restrictions on relative clause markers may reflect developments in other areas of the one language. For example, if a language changes so that nouns are marked for animacy or class, speakers may redistribute existing relative clause markers so that they too reflect this distinction.

The next scenario I will explore is when relative clause markers are lost entirely. It could be argued that the extension of a marker to a new function is equivalent to its loss, as it is no longer exclusively a marker of a relative clause status but rather something more general. What I mean by “loss” here, however, is when a language goes from having a relative marker to having none (a relative marker strategy being replaced by gapping), or the obsolescence of a specific marker due to total replacement by a new candidate.

So far I have mentioned only functional changes that can affect relative clause markers. Perhaps even more commonly than functional change, however, markers can undergo formal changes such as lexicalisation or affixation, or changes in the inflection. Such changes will be discussed in Section 4.5.

4.2 Extension

The constructions which relative clause markers can be extended to tend to have in common with the relative clause at least one of the functions of subordination, modification and pronominalisation (the three operations that Lehmann (1984) defines as constitutive for the relative clause). In other words, it is the ability of the relative clause marker to indicate subordination and/or modification, and in some cases its pronominal character, that make it available for the particular extensions it undergoes. This was, in fact, what we saw in Chapter 3 for extensions to relative
clause marking, and it will be seen to be the case in all of the extensions from relative clause markers discussed here.

As for the mechanisms of change, there are several different processes by which the set of constructions marked by a particular element can be extended. The first is through analogy: speakers perceive two constructions as similar and transfer syntactic patterns or marker words from one to the other. Presumably this is not usually a conscious process, but rather the result of confusion, speech error and ambiguous “bridging constructions”. Analogical extension can occur with or without external pressure. In some cases multilingual speakers may transfer patterns of syntactic polysemy from one language to another; in others there is no other language that is an obvious source for the pattern and it seems to have arisen spontaneously.

Less directly, markers can be extended from one construction to another through “accidental” collocation and fossilisation. This is what we saw in Chapter 3 in the case of some discourse markers: if a relative clause is commonly topicalised and therefore co-occurs with a topic marker, and the marker is then reanalysed as a relative clause marker, this is not the direct result of analogy between topicalisation and relativisation, but it is facilitated by the fact that the two constructions commonly co-occur.

These possible pathways to extension will be familiar from the previous chapter, as each of them is also found in the extension of other markers to the relative clause marker function in the first place. They are also not specific to relative clauses and related constructions, of course, but are representative of the processes involved in the extension of constructional patterns in general.

In the discussion of different results of extension that follows, it will be seen that the process of extension often demonstrates aspects of both analogy and “coincidental” collocation. Often a specific type or subtype of a non-relative clause construction is functionally similar enough to relative clause environments that speakers can use a relative clause for the same function (as is, for example, the case with adjectives). Processes of change can eventually affect this context, but not relative clauses in general (in the case of relative clauses standing in for adjectives, this might be the loss of the copula verb), leaving a construction that looks and behaves differently from the relative clause, but contains a relative
clause marker.

Similarly, functional or formal similarity between relative clauses and types or subtypes of non-relative-clause constructions can lead speakers to create (perhaps as speech error (Givón 1974:18)) a “blend” of a relative clause and the other construction. In this case, too, the result is a construction that is not identical to the relative clause, but contains a relative clause marker. If these are produced often enough, they may become the basis for more general extension of the pattern across the set of similar constructions. The initial extension of a relative clause marker to a new construction in such cases is “accidental”, but just as can happen in morphology, analogy later steps in to level out the paradigm. In this case the “paradigm” might be the set of all subordinated clauses, or the set of all modifying constructions.

I would now like to look at some specific examples of this sort of change. To begin with I will discuss extension of relative clause markers to other types of subordinate clause: adverbial clauses, complement clauses and comparative constructions. Then I will turn to extension to (non-clausal) modifying constructions such as adjective phrases, possession and general linking particles. The relevance of the third function of relative clause markers, pronominalisation, will be discussed as it arises.

### 4.2.1 Adverbial clauses

An extension with some complex implications is that of relative clause marker to a marker of time/purpose/place adverbials. The first complication is that we know for certain that the other direction of extension can and does occur. In fact it is at least one of the reasons why words to do with time and place are common as relative clause markers in the languages of the world. In particular, the interrogative “where” is an alternative to or has replaced other relative clause markers in many dialects of standard languages and can be shown in many cases to have originally been restricted to “locacl relative clauses” and place adverbials (i.e. headless locative relative clauses), and to have migrated “up the accessibility hierarchy” to refer eventually even to subject and object NPs (Fleischer 2004:234).

A second complication is that it has been suggested that the extension of relative clause markers to adverbial clauses may be a way-stage on a
path that ultimately leads to use of the element as a general complementiser (Givón 1974). Givón certainly shows this is the case for Hebrew, and suggests it might be a more general phenomenon.

Constructions which have an element that is also found in adverbial clauses can be found in the languages detailed in Table 4.1.

<table>
<thead>
<tr>
<th>Language</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luwian</td>
<td>(argument from related languages)</td>
</tr>
<tr>
<td>Old Norse</td>
<td>(argument based on ambiguous constructions)</td>
</tr>
<tr>
<td>Greek</td>
<td>(ho)pou (extension during attested period)</td>
</tr>
<tr>
<td>Georgian</td>
<td>(ro)m (extension during attested period)</td>
</tr>
<tr>
<td>Hebrew</td>
<td>(a)she(r) (extension during attested period)</td>
</tr>
<tr>
<td>Japanese</td>
<td>(ga, o, no) (extension during attested period)</td>
</tr>
<tr>
<td>Thai</td>
<td>(thi) (no information: present from earliest records)</td>
</tr>
<tr>
<td>Sumerian</td>
<td>(-a) (no information: present from earliest records)</td>
</tr>
</tbody>
</table>

Table 4.1: Languages with the same element used for relative and adverbial clauses

It is not surprising that this polysemy is common. After all, adverbial clauses have more in common with relative clauses than any of the other constructions I will discuss in this section do. Both are clausal constructions, both are subordinate, both are modifiers. Only a few of the cases of polysemy, however, can be shown to be the result of extension of a relative clause marker to adverbial clauses. The cases in which this development is attested and relatively straightforward are Hebrew and Japanese. In Greek an early stage and a later stage of the development are attested, but the details have to be reconstructed. The developments in Old Norse are reconstructed and rather speculative. In Luwian (an Anatolian language), a good case can be made for the extension having occurred by comparing what is found in Luwian with the other Anatolian and early Indo-European languages.

In the following discussion I will focus on Luwian, Old Norse, Greek, Hebrew and Japanese as representative of this sort of development. It will be seen that there is no one pathway by which the extension takes place, and that different factors seem to have triggered it in different languages.
§4.2 Extension

Luwian

Oshiro (1988) argues that relative clause markers in Hieroglyphic Luwian became “subordinate conjunctions”, which is the term he uses to refer to adverbial conjunctions of purpose, result and reason as well as temporal and comparative clauses. The forms he gives are transcriptions in which the symbol used for the relative clause marker is transcribed rel and any phonetic complement of this follows, separated by a dash. The phonetic complement of the relative marker varies depending on the number and gender of the referent and the case role of Nrel. In adverbial clauses these variables are no longer relevant, yet Oshiro notes that we still find various forms of the marker. There are too few examples of each function to be sure what determines the form used.

The attested uses of the relative clause marker in these adverbial contexts include rel- (ā)-t[i], the dative singular relative marker, meaning “if” (two examples) and “so that” (one example); rel- t[i], which may be a rhotacised form of rel- t[i], meaning “if”, “as” (comparative), “since” (result); rel- (ā)-za (nom/acc singular neuter) “as” or “when” and rel- ā “because”, “since”.

Oshiro points out that comparison with other Anatolian languages shows that Luwian is alone in most of these developments, and therefore we should assume that they were independent innovations. Hittite and Cuneiform Luwian use the relative clause marker ku- in some adverbial functions, but not as freely as seems to be the case in Hieroglyphic Luwian. Even the shared Anatolian uses of the relative clause marker in adverbial contexts must have been an Anatolian innovation, since cognates are not found with the same functions in other Indo-European languages. This implies that the directionality was from relative clause marker to general subordination marker, since ku- cognate forms in other earliest Indo-European languages function only as interrogative pronouns, indefinite pronouns and relative clause markers.

The only caveats to this theory are that, firstly, we cannot be certain that the symbol for the relative clause marker in Hieroglyphic Luwian corresponds to Cuneiform Luwian and Hittite ku-, and secondly, even if it does, it is possible that ku in adverbial clauses may have developed directly from the interrogative pronoun rather than via its relative clause marking function.
Old Norse

In Old Norse the typical way to introduce a temporal clause was with þá er, in which þá is the adverb “then” and er a relative clause marker (Faarlund 2004:265–266). Often, however, the element þá can be omitted, so that the clause was able to be interpreted as a temporal adverbiacl clause without any overt marking of this other than the (otherwise relative) marker er. Other adverbs and similar items such as þar “there” and svá “such” can also function as antecedents of the relative clause in order to form adverbial constructions corresponding to English adverbials of place and manner respectively. However, unlike þá it seems that these other adverbs cannot be left out (Faarlund 2004:266). This is why I say that er in adverbiacl clauses of time is an example of its use in a particular type of adverbiacl clause, rather than use as a marker of subordination in general.

The direction and process of extension in Norse is not certain, as these constructions are all found in the early attestations of the language. In some cases, such as the example in (1-a), there is a shared referent in the main and adverbiacl clause, which means that the pattern of the sentence overall resembles a relative clause construction more closely than does, for example, the sentence in (1-b), where there is no shared referent. It is conceivable that sentences of the first type provided a “bridging context” for an extension of er to these adverbiacl clauses.

(1) a. þorsteinn, son Egils, þá er hann óx upp, var Thorstein.N son.N Egil.G then when he grew up was allra manna friðastra sýnum all men.G most-handsome.M.N looks.D

“When he grew up, Thorstein, Egil’s son, was the most handsome of all men” (Eg 293.1 cited in Faarlund (2004:265, ex 49a)

b. Óláfr konungr för, er váraði, út til sævar Olaf.N king went when became-spring out to sea.G

“When spring came King Olaf left for the sea” (Faarlund 2004:266, ex 52b)

In examples such as this, if þá were omitted, er might simply be inter-
§4.2 Extension

interpreted as a marker relativising on the antecedent Thorstein ("Thorstein, Egil's son, who grew up, was the most handsome of all men"). The relative clause would be functioning slightly differently from a prototypical relative clause in such a case, pushing the narrative onwards rather than giving background information or further specifying the referent, but this use of relative clauses is not unknown. At the very least, this construction has a lot in common with relative clauses, since it still has an antecedent in the main clause, and a corresponding gap in the subordinate clause (or possibly a replacement er, depending on whether we classify er as a complementiser or a pronoun). vámdí. Where we would say "it became spring", Old Norse simply has "became spring". For this reason there would naturally be a gap in the subordinate clause, and the fact that it did not have an antecedent in the main clause would not strike speakers as odd, since there is no possible antecedent.

I suspect that clauses like this would have been a later development made available by reanalysis of er in examples with omitted pé. Instead of the earlier rule that temporal clauses could be expressed through relativisation either on the argument corresponding to NPrel or on a time adverb head, the relative clause marker itself seems to have become the bearer of the temporal meaning. Examples such as (1-b) may have served as bridging contexts, since Old Norse, unlike English or the modern mainland Scandinavian languages, did not use existential pronouns with verbs of weather, or, for example verbs like

Alternatively, er may have been originally a general marker of subordination used for both adverbial and relative functions, and the insertion of adverbs before it could have been a later development which became compulsory in some adverbial clauses and remained optional in temporal adverbials. This scenario is a little reminiscent of the English development of det as a general subordinator, which is described in more detail in 4.2.4 below.

Greek

In Greek the element hopou, later reduced to pou, has a complex history in which its adverbial, complementiser and relativiser functions are difficult to untangle from each other (Nicholas 1998). I shall postpone the discussion of the extension of pou to complement clauses to Section
4.2.2 below, and here concentrate on the the relationship between *pou* as relative clause marker and its use in adverbial clauses.

Greek *(ho)pou* is unique among the examples I have discussed in this section, in that it appears to have originated as a marker that was used both in some adverbial clauses, and also in oblique relative clauses. It was created on analogy with *hostis* (Nicholas 1998:179) and therefore inherited the multiple functions of this element. The marker *hostis* was, at that stage, used for indirect questions as well as generalising indefinite relative clauses ("whoever"). According to Monteil (Monteil 1963: p. 387, cited in (1998)), it was also just starting to appear in some examples that could be interpreted as specific (restrictive) relative clauses. The new form *hapou*, formed from *ho-* (article/demonstrative) and -(ho)pou (locative interrogative), just as *hostis* was formed from *ho-* and -(ho) (nom- 

ative interrogative), took on the same functions with a locative (and hence adverbial) flavour: marking of indirect questions about location, generalising locative adverb ("wherever"), and marker of oblique relative clauses (Nicholas 1998:178).

Nicholas, and before him, Tzartzanos (1991) reconstructed a subsequent pathway of development that led to *pou* being used in more abstract spatial relative clauses/adverbials, adverbials of cause and then temporal adverbials. The arguments used by both Nicholas and Tzartzanos are not based on attestation dates, since these developments are thought to have occurred during the "dark ages" where not much is attested. Rather, both argue from the evidence of ambiguous cases, so that if an example sentence is found in later Greek that is ambiguous between locative relatives and causal adverbials, and examples are found that are ambiguous between causal and temporal meanings, then the pathway of extension is said to be locative > causal > temporal. This sort of argument is obviously not watertight, but it may be a reasonable indication of the direction and pathway of change that is most plausible.

One stage of the development is indisputable, however: the extension of *pou* to core relatives (subject and direct object NPs/verb) did not occur until Late Middle Greek or Early Modern Greek. There are three clear examples from the fifth, sixth and seventh centuries (Nicholas 1998:207), and then none at all until 980 AD.

Although it may seem that this example can more easily be framed
as evidence for the development of relative clause markers from adverbial markers, I have chosen to include it here for two reasons. First, the Greek data provides a demonstration of how constructional polysemy can arise without gradual extension: *pou* was polysemous from the start, because it was created on analogy with another element which *had* undergone extension, and *pou* inherited the polysemy of its source. Secondly, the example of (*ho*)*pou* shows that an element can still undergo extension to what we might think of as another construction, even if it has not (yet) been extended to every subtype of the original construction.

**Georgian**

As has been discussed in Chapter 3, the element *romel(i)* existed in Old Georgian as a relative clause marker (Harris 1994) and an interrogative pronoun (Hewitt 1995:80), which was presumably the source of the relative marker form. In Middle Georgian, the relative clause marking element was reduced to the particle *rom* or *ro* (Harris 1994:132), which was then extended to complement clauses and adverbial clauses. The extension to complement clauses will be discussed in the next section; here I will concentrate on the extension to adverbial marking functions.

There are a few different types of adverbial clauses in Modern Georgian in which the element *ro(m)* appears. Of these only temporal clauses can be introduced by *ro(m)* alone (Hewitt 1995:590)), while the others (conditionals (585–587), clauses of purpose, result and reason (575, 578, 581) and privatives (579)) are introduced by a combination of *ro(m)* and additional clitics, particles or markers of subjunctive mood on the verb. It is interesting that adverbial clauses introduced by the relative clause marker/subordinator alone can only have a temporal interpretation, as this was also the case in Old Norse.

Some examples of the different adverbial functions of *ro(m)* are reproduced below:

(2) a. sen **rom** mo-x-val, sen-i
    you(NOM) when PREV-you-come(FUT) your-AGR
da-c
sister(NOM)-too
mo-(0-0)-i-q’van-e
PREV-(you-her-)SV-bring-AOR.INDIC(=IMPER)
"When you come, bring your sister too" (Hewitt 1995:590)

b. exla [rom] c'vim-d-e-s, k'arg-i
   now if rain-IMPERF-PRES.SUBJ-it good-NOM
   i-kn-eb-od-a
   PASS-be-TS-IMPERF.pit (=CONDIT)
   "If it were raining now, it would be good" (Hewitt 1995:586)

c. pul-i
   money-NOM
   da-(Ø-Ø)m-i-t'ov-e [rom]
   PREV-(you-it)me-OV-leave-AOR.INDIC(=IMPER) that
   (i+gi) se-(Ø-)g-i-nax-o
   it(NOM) PREV-(it-)you-OV-keep-AOR.SUBJ (1st.PER)
   "Leave me the money (in order) that I may keep it for you." (Hewitt 1995:576)

d. axal+ga+zrd+oba-si garda-i-ecval-a. a+s+e
   youth-in PREV-PASS-die-he(AOR) thus
   rom imed-i ver
   that hope-NOM not(POT)
   gan-(Ø-)gv-i-xoc+iel-a
   PREV-(it-)us-OV-realise-he(AOR)
   "He died in youth. And so he could not realise our hopes". (Hewitt 1995:579)

e. i+s mukta+xora m+gza+vr-ob-s xolme i+s+e, [rom]
   that parasite(NOM) travel-TS-he usually so that
   bileb-s ar (Ø-)q'id+ul-ob-s
   ticket-DAT not (it-)buy-TS-he
   "That parasite usually travels without buying a ticket" (Hewitt 1995:579)

f. ra+t'om (Ø-)t'ir-i? (ra+t'om da)
   why (you-)cry-PRES.INDIC why? if
   i+m+it'om rom mama
   for the reason that father(NOM)
   gara-m-ecval-a
   PREV-me-IOV-die-he(AOR)
   "Why are you crying? (If the question is 'why',) Because my
   father has died." (1995:582)
In contrast to these functions filled by Modern Georgian *rom*, in Old Georgian this element did not exist as an adverbial marker at all (Hewitt 1987:78, 209). In the early medieval period, *romél* (later reduced to *rom* and then *ro*) was extended to causal, consecutive and purposive clauses (Ertelisvili 1963:152–153, cited in Hewitt (1987:265)). Using argumentation similar to that employed by Nicholas (1998) for Greek and Givón for Hebrew, Hewitt sees the existence of clauses that are ambiguous between relative clauses and purpose adverbials as evidence that the marker was extended from relative clauses to these (“Seek a doctor who will heal you” = “Seek a doctor so that he will heal you”). It should also be noted that there are some types of complex sentence in which Modern Georgian *rom* is *not* found and some in which it is only one of several possible constructions. It is not used in clauses expressing cause that are not in answer to a “why” question. For example, “Do this, because...” would not use *rom* but rather a conjunction such as *ru (+)k'i*. It is not found as a marker of concession (“even if”), nor in adverbials of manner “as”, “how” (Hewitt 1995:588–589). Nor is it generally found in real conditional clauses, e.g. “if it thunders, it will also lighten”, which will use the conjunction *tu* instead (though *rom* is used in unreal conditionals, and the combination of the two *tu rom* is “not unknown” in either type) (Hewitt 1995:583, 587). The construction equivalent to English “as soon as” does not use *rom* at all, neither does the equivalent of English clauses introduced by “after”, “while”, “until” or “before” (Hewitt 1995:591–593). Nor is it used in comparatives or equatives (Hewitt 1995:634).

There are two alternatives to *rom* in purpose clauses: finite clauses with *ru-ta* “through/by means of what”, and participial clauses with no complementiser (Hewitt 1995:575). In temporal adverbials the conjunctions *(+o+de+sac+c* and *(+c)o+ca* are often found rather than *rom* and Hewitt gives the impression that they are preferred in formal contexts (e.g. writing) (Hewitt 1995:590).

As *rom* is not required in all subordinate clauses, nor even in all adverbials, and as it cannot occur in some of these, we cannot say that its extension to adverbials was the result of a generalisation of *ro(m)*’s function as marking subordination in general. Rather it seems to have been the case that it has spread from one construction to another on a gradual
and individual basis. Hewitt does not give enough historical information to make it clear what order the above extensions took place in, but they appear to have occurred around the same time. This is similar to what Nicholas (1998) describes for Greek (ho)pou: the element gradually extends independently (and via different pathways) into multiple different types of adverbial and complement clauses. In Greek, Nicholas argues that the “gaps” in the complement and adverbial “paradigms” were then filled in through later analogical leveling which simplified the domain of pou from an arbitrary list of adverbial and complement clause environments to the general environment of “subordination”. In Georgian this next stage has not (yet) occurred.

Hebrew

In Early Biblical Hebrew, adverbial clauses were often constructed with what Givón (1974) calls the “genitival strategy”, a nominalised verb with any subject NP expressed as a possessive. Several examples of this are given in (3).

(3) a. b-hibar’am
   in-being-created-of-them
   “when they were created” (Givón 1974:7)

   b. l-ma’an  hahrim-am
      for-reason-of destroying-their
      “in order that they destroy” (Givón 1974:8)

The alternative strategy for adverbial constructions was to use finite clauses introduced by asher: the same pattern as that used for relative clauses.

In order to determine the history of these two constructions, Givón analyses a corpus of texts representing different stages of Hebrew. In the first text (the first 20 chapters of Genesis, representing Early Biblical Hebrew), he finds that adverbial clauses of time are overwhelmingly created with the “genitive-nominal” construction (41 tokens, versus 2 tokens with asher) (Givón 1974:8); manner clauses are generally introduced by asher (9 tokens for asher; 1 for the genitive construction), as are place adverbials/locative relative clauses (11 tokens with asher; 3 with the
genitive); and purpose clauses can also use either, although there are too few tokens to determine which is more common (1 token with asher; 2 with genitive constructions).

Givón’s counts of relative and adverbial clauses in the dialect of Mishnaic Hebrew (based on the first 17 chapter of Zra‘im) show fewer genitive-nominal constructions and more cases of the asher strategy (actually with the reduced form še in Mishnaic) (Givón 1974:9). The counts for the Early Biblical Hebrew data and the Mishnaic text are not directly comparable, however, since Givón does not mention manner adverbials in the later, and does not apply any statistical analysis to his data to assess the significance of the differences found.

Since in Modern Hebrew the asher strategy (again using the reduced form, še)) is the only way to express adverbials, it does seem clear that the overall direction of change has been for this strategy to take over from the genitive-nominal construction.

Givón concludes from his data that “the genitive-nominal pattern of relativization is clearly the oldest, For the most part it has receded into the lexicon already in Early Biblical Hebrew, with the most conspicuous survival found in time and purpose clauses” (1974:8): a conclusion which I do not think is entirely warranted by the data. All that we can see from the figures is that in most of these examples the genitive construction is less common than the asher strategy. This alone does not mean that asher is the newcomer. Furthermore, the origin of asher is usually considered to be a nominal meaning something like “place” (Berman 1997), so that it is thought to have arisen in what Givón calls “locative relative clauses” (e.g. “I live in a house where…”), which are not at all far removed from place adverbials (“I live where…”). It is therefore not inconceivable that asher spread directly from these locative relative clauses to place adverbials and then other adverbial constructions at the same time as (or even before) it spread to “true” relative clauses. The only evidence that may count against this is that in Early Biblical Hebrew, asher had penetrated the relative clause paradigm even further than it had the adverbial paradigm. In Givón’s Genesis data only subject relative clauses show a higher number of tokens for non-asher constructions than for the pattern with asher. All other relative clauses are clearly much more common with asher than not (Givón 1974:8).
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If the relative clause was the source pattern for *asher*’s spread into adverbial clauses, there are some “syntactic blends” which indicate how the extension might have come about. The genitive-nominal construction that Givón argues existed before the *asher*-marked adverbials sometimes had a head-noun, also in the genitive case, which indicated what sort of adverbial was to follow. See, for example, (4).

(4) a. b-yom ‘aSot YHWH
in-day-of doing-of God
“on the day when God made...” (Givón 1974:7)

b. l-ma’an haḥrim-am
for-reason-of destroying their
“in order that they destroy...” (Givón 1974:8)

Givón suggests that speakers created the new *asher* constructions by relativising on that head noun: since nominalisations and *asher* constructions had already become interchangeable in true relative clauses, this would seem like just another such context. Then since the head of these adverbials was optional in the nominalised construction, it also came to be left off in the *asher* construction (Givón 1974:14). Evidence for this path of development comes from the existence of *asher* adverbial constructions with genitive heads, which Givón analyses as a blend between the two constructions. A few examples of these are given in (5).¹

(5) a. ‘al mnat še-ylaqet bna ’aharav
on reason-of *ASHER*-will-gather son-his after-him
“in order that his son will gather after him” (Givón 1974:13)

b. mi-pney še-lefsar
from-face-of *ASHER*-possible
“because it is possible” (Givón 1974:14)

¹Note that since these examples are from Mishnaic Hebrew, *asher* had been reduced to *še*. 
Japanese

Japanese has several types of relative clause. In this section I will be discussing the internally headed relative clause (IHRC), which, unlike the externally headed relative clause, is marked by a (clause-final) overt nominalising particle no and the whole clause is then case-marked with the subject (ga) or object (o) marker, depending on the role of the head NP in the main clause. An example of this construction is given in (6).

(6) Keikan ga doroboo-o oikakete-ita no-ga hutaritomo policeman NOM thief ACC chase-be NMLZR kawa ni otita.
NOM NMLZR river to fell.
‘The policeman was chasing the thief, both of whom fell into the river.’ (Kikuta 2002:206)

Kikuta (2002) outlines the process by which an adverbial clause construction in Japanese was modelled on the pattern of this internally headed relative clause. She shows that, although the constructions have diverged a little in modern times, recent changes in the IHRC have continued to “feed into” the analogous adverbial construction (Kikuta 2002:213). Her discussion centres on the subject (ga-marked) relative clauses, as will mine here. Although object RCs have been shown to have undergone similar developments (Kondo 2000), they are more complicated and, since the relevant changes in the object RCs predated those of the subject relative clauses, their process of change is not as well-attested.

The two constructions are exemplified in (7), both from Classical Japanese. At this earliest stage of its development into an adverbial, the adverbial function of -ga was concession or contradiction.

(7) a. Sukosi tooku-ni tateri-keru sakura-o tikaku a-little distant stand-ASP cherry-ACC near hori-ue-keru-ga, karezama mie-kereba dig-plant-ASP-NOM/REL withering appear-ASP ‘He re-planted the cherry tree nearer, which used to be farther away, and since the cherry tree looked withering’ (Yamato Monogatari c. 950)
b. Otsi-ri-keru toki mi-nō-toki-bakari nari-keru ga
fell-ASP time snake-time-about be-ASP NOM/ADV
hi-mō youyaku kuren
sun top finally set-in
‘It was around ten a.m., when he went in (to the water), but
now the sun finally sets.’ (Konjaku Monogatari 1077)

Kikuta analyses the difference between these two constructions as the
location of the main clause subject. In the case of the IHRC, the subject of
the main clause is found inside the ga-marked clause. What has occurred
in the extension of ga to adverbial clauses is that ga has become able to
mark clauses which are more loosely connected to the main clause: i.e.
do not contain its subject. She suggests that sentences such as (8) pro-
vided bridging contexts for this development, presumably because they
could be interpreted as concessive/contradiction clauses, yet still have
the main clause subject in the IHRC.

(8) Onna no mada yo he-zu to oboetaru-ga
woman GEN yet world experience-NEG COMP seem-NOM
hito -no onmoto -ni sinobi-te
man GEN place-LOC steal-into
‘The girl appeared not to have experienced anything yet, who (but
she) silently started seeing a man’ Ise Monogatari

The directionality of this extension is not in question, as ga is attested
in IHRCs over 100 years before it is first found in adverbial clauses.

Later, when the subordinate verb forms found in Classical Japanese
were lost, the particle no was introduced into IHRCs. This occurred be-
tween the 15th and 17th century (Kikuta 2002:212–213). The no marker
is now obligatory in the IHRC construction, appearing directly before ga.

Relatively recently, the pattern of no ga has been extended to ad-
verbials for some speakers. It is not accepted by prescriptive Japanese
grammars, and is not as common in writing as the plain ga adverbial
(Kikuta 2002:207, 213), but it is common in colloquial speech. This
adverbial construction is exemplified in (9).

play to go-intended CONJ rain NOM fall-ASP
‘Though I had intended to go out for fun, it rained after all.’
(Kikuta 2002:207)

Comparison with the IHRC in (6) above shows the similarity between the two constructions.

It can be seen from these developments that the pattern of the IHRC has been extended to an adverbial at least twice in the history of Japanese. In the first extension, in Classical Japanese, it is not so much that a marker was extended, since the overt marking of the IHRC consisted of both the use of a subordinative verb form and case markers on the clause, but rather that the entire construction was extended in terms of its function. The second, more recent, extension was simply one marker, however, namely no.

The most surprising point that the Japanese example highlights is that the extension of one construction pattern to another function does not necessarily mean that speakers stop perceiving the two functions as distinct constructions. Even after many generations of the adverbial clause and the IHRC being expressed with the same construction, the development of the no marker applied at first to the IHRC only and not to the adverbials. Yet generations again after that, speakers extended this marker to the adverbials as well. This demonstrates that not only can speakers perceive two constructions that are coded differently as underlyingly “the same” (as is the case in analogical change), but they can also view two constructions as “different” even if they are coded the same way.

4.2.2 Complement clauses

The extension of a relative clause marker to clausal complements of nouns and verbs is similar to the extension to adverbial clauses just discussed. In both cases, marking the boundary of a subordinate clause is the key function that defines the pre-extension and post-extension uses of the element. It is therefore significant that although relative clause markers in general can have the dual functions of marking the boundary of the clause and functioning as a pronominal ’stand-in’ for NPrel, none of the elements discussed above that were extended to adverbial clauses had
this pronominal function. All of them were non-inflecting and stood at
the edge of the clause. I suspect that this is what allowed speakers to
(re)analyse them as they did: as more generalised markers of subordinate
clause boundaries. In the discussion that follows we will see that the same
holds true for the extension of relative clause markers to complement
clauses.

Relative clauses and complement clauses have much in common. Often
cross-linguistic typologies of complement clauses read almost like a
typology of relative clause types. For example, Noonan (1985:29–65)
presents one that has indicative, subjunctive, paratactic, infinitive, par-
ticiple and nominalised complement clauses. Like relative clauses, the
markers of complement clauses can be derived from, among other sources,

In many languages relative clauses and complement clauses use the
same marker. This is rarely if ever the result of general complementisers
becoming relative clause markers, so this leaves only two further pos-
sible explanations for the polysemy. One is that both are derived from
the same source, which, as already noted, is quite possible in the case of
demonstratives and nouns, and the other possible explanation is that
relative clause markers are sometimes extended to become general com-
plementisers. I will now discuss some examples in which this seems to
have been the case, specifically Greek (ho)pou (Nicholas 1998), Geor-
gian rom (Hewitt 1995), Hebrew she (Givón 1974), Hungarian hogy and
(Haader 2002), and Akkadian ša (Deutscher 2000a).

Other markers in my sample which are used in both relative clauses
and complement clauses and which are not likely to have been both
independently derived from the same source, are Thai thii, sing and
an (Bisang 1998a, Sornhiran 1978), Malay yang (Cumming 1991, Safiah
In these the directionality of the extension is uncertain, however, so they
will not be discussed in detail here.

In the cases of Greek, Georgian, Hebrew and Akkadian, however,
the directionality of the extension is not in doubt, since the element in
question is attested as a relative clause marker well before it is found as
a complementiser. In Hungarian, too, the directionality of the change
is not contested, since although it took place prehistorically, evidence
from related languages shows that the element was originally pronominal, which suggests it was originally a relative clause marker rather than a complementiser.

**Greek**

The development of Greek \((ho)\)\textit{pou} from an element with limited adverbal and relative clause functions, to a true relative clause marker and then a more general marker of adverbial clauses has already been described above (Nicholas 1998). This element was also extended to use in complement clauses, however, introducing clausal complements of both nouns and verbs.

Although the extension to complement clauses took place during Middle Greek, an attested period, \textit{pu} already had multiple adverbal and relative functions by that stage, so it is not immediately obvious which provided the source of the extension to complement clauses. Nicholas (1998) therefore uses the existence of syntactic “blends” or “bridging contexts” as evidence for the pathway of change. He finds that the use of \textit{pu} to mark clausal complements of verbs of emotion was most likely an extension of the causal function of \textit{pu}, and that the complements of certain other verbs, such as “remember” were marked with \textit{pu} because of its use in temporal adverbials. The use of \textit{pu} with complements of verbs of perception, however, was based on relative clauses. His evidence for this is the existence of clauses such as (10), which are ambiguous between a relative clause and a complement interpretation.

(10) \textit{i\~{d}a to} \textit{yiani pu} \textit{erxotan}

\textit{I saw John} \textbf{PU} \textit{come}

“I saw John who was coming” or “I saw John coming” (Nicholas 1998:460)

Once \textit{pu} got these “footholds” in the realm of complementation, Nicholas claims that it spread by analogy from these to all other types of clausal complements of verbs and nouns, infringing on the domain of the pre-existing complementiser \((h)\textit{oti}. In different dialects these came to be distributed differently, but in general \textit{pu} was eventually distinguished from \((h)\textit{oti} by being more likely to occur in non-assertions (Nicholas 1998:464).
Nicholas argues that this distribution was “cobbled together” later, and that the earlier extension of *pu* into the complementiser paradigm overlapped more closely with *(h)oti*, so that it is possible that some sort of “priming” effect took place: that speakers identified *pu* as synonymous with *(h)oti* and that *pu* for this reason took on even more aspects of *(h)oti’s* distribution, for example occurrence in certain collocations (Nicholas 1998:246). It may even be that the change in complementation from predominantly non-finite in Classical Greek to finite and introduced by a conjunction in Middle Greek (Nicholas 1998:241) was what opened this domain to *pu* in the first place.

**Georgian**

According to Hewitt (1995), the extension of Georgian *ro(m)* from relative clause marker to marker of complement clauses took place in the early medieval period, around the same time as it was extended to adverbial clauses. Some examples of *ro(m)* in complement clauses in Modern Georgian are given in (11).

(11) a. *(i+s) uk’ve (that(NOM)) already*  
\[
\text{se-v-(O-)a-mn-i-e,}\quad \text{rom e+s PREV-I-(it-)NV-notice-TS-AOR.INDIC that this xalx-i sando ar a+r-i-s people-NOM trustworthy(NOM) not be-PRES-it} \\
\text{“I have already noticed that this people is not trustworthy” (Hewitt 1995:613)}
\]

b. *(i+s gare+mo+eba,)* rom e+s xalx-i a+s+e that circumstance(NOM) that this people-NOM so advil-ad t’q’u-i-s, m-a-cvpr-eb-d-a easy-ADV lie-PRES-it me-NV-amaze-TS-IMPERF-it “(The fact) that this people so easily resorts to lying used to amaze me” (Hewitt 1995:613)

c. iza-m *(O-)gy-i-txr-a,\quad \text{rom me+or+e}  
Iza-ERG (it-)us-OV-tell-she(AOR) that second dge-s mo-vid-od-a, da xom day-DAT PREV-come-IMPERF-she(CONDIT) and surely
mo-vid-a?
PREV-come-she(AOR)
“Isa told us she would come the next day, and she came, didn’t she?” (Hewitt 1995:614)

From these it can be seen that ro(m) can introduce clausal complements of verbs of perception, of nouns, and of verbs of speech. The only sort of clausal complement that ro(m) is not frequently used with, in fact, is direct quotation. Other particles are generally used to introduce direct quotation instead and although they are sometimes replaced by ro(m), this is condemned by prescriptive grammars (Hewitt 1995:616–617).

Hebrew

The marker asher was used primarily to introduce relative clauses in Early Biblical Hebrew, as well as very occasionally for some adverbal clauses as described in the section above (Givón 1974:8). Clausal complements of verbs of cognition were introduced by ki or ve-hineh, and clausal complements of verbs of saying had either no conjunction at all, or one of several forms derived from the verb “to say” (Givón 1974:11).

In the later dialect of Mishnaic Hebrew, the phonologically reduced form of asher, she, has taken over from ki and ve-hineh in all contexts. It has also begun to spread to clausal complements of verbs of saying and is frequently found in these when no indirect object is present (i.e. when they most clearly resemble clausal complements of other verbs) (Givón 1974:12).

It has been suggested that the process by which the relative clause marker was extended to marking complement clauses was the elimination of the head in sentences like, “I know this, that he will plead in defence, that he was this man’s friend” (Cristofaro 2003:97). The idea is that in sentences such as these, the subordinated clauses are actually both still relative clauses. Givón (1974) gives examples of such ambiguous clauses and shows that they were present in the language during the time when Hebrew asher was extended from relative clauses to complement clauses. Such an example is reproduced in (12) below.

(12) ?I tir?u-ni she-?ni shaxoret
NEG see: IMPERF:3SG:M-me that-I dark:SG:F

“Don’t see me, who is dark-skinned” = “Don’t see (me) that I am dark-skinned”

In such a case the clause is eventually analysed as the accusative complement of the verb, instead of as modification of a pronominal complement. Further evidence for this can be seen in some early examples which Givón also characterises as “blends” between nominal and clausal accusative complements, and in which the clausal complement appears to be marked with accusative case. An example is given in (13-a) and should be compared with the usual pattern of a nominal complement of a verb, represented in (13-b).

(13) a. lugad 1-fawd-ya ʔet ʔašer siwah YHWH
    was-told to-slave-your ACC that ordered Yhwh
  ʔelohe-ya
  God-your

    “It was told to your servant that Yhwh your God ordered...

    (Givón 1974:18, ex 99)

b. va-yar? ʔelohim ʔet ha-ʔor
    and-saw God ACC the-light

    “And God saw the light...” (Givón 1974:18, ex 93)

Interestingly, even the early examples of “blends” such as (12) or (13-a) are found predominantly with the marker ʔasher, even when ʔi or the marker derived from “say” would normally be expected (Givón 1974:17). This means that ʔasher had moved into these sorts of “blends” before it moved into the complement paradigm more generally, and that these then really are likely to have served as a bridging mechanism between relativisation and complementation.

I would expect that the fact that Hebrew has resumptive pronouns in the relative clause is a factor in this development, since a gap would mean speakers would be less likely to reanalyse the clause as a complement clause (unless the language allowed pro-drop). I also expect that this pathway of change would imply that extension to clausal complements of nouns would be even easier than extension to verb complements. Al-
though Hebrew *asher/she* is also used to introduce clausal complements of nouns, it is difficult to find information on when and how this extension took place, as Givón treats clausal complements of nouns as relative clauses (cf “his knowledge that she was right” (1974:19).

Givón also notes that the extension of *she/asher* into the complement clause paradigm takes place soon after it is also extended into purpose adverbials. He suggests that the purpose adverbials might also have contributed to the extension to complement clauses. He notes that with many verbs of “manipulation” (“order”, “request”, etc) and speaking, interpretations of a following clause as “that” or “so that” are semantically equivalent, as for example in (14).

(14) va-yvaqeš mi-sar ha-sarisim *asher* lo?
and-he-asked from-chief-of the-eunuchs that no yiga’veš
he-defile-himself
“and he asked of the chief of eunuchs that he not be defiled” =
“and he asked the chief of eunuchs so that he not be defiled.”
(Givón 1974:15, ex 69)

The pathway from relative clause to purpose adverbial and then to complement clauses may seem to require shorter “leaps” of analogy than that required to derive complement clauses directly from relative clauses, but Givón emphasises that it is not necessary to assume that only one of the two sources was responsible for the development. Rather than being the result of a “general analogy” from relative clauses to subordinative clauses, he suggests that *asher* crept into the adverbial and complement paradigm from several directions at once through “a number of specific semantic-syntactic extensions” (Givón 1974:3) (his emphasis). This is reminiscent of what we have seen for Greek and Georgian as well.

**Other Semitic languages**

The example of Akkadian demonstrates that even though the extension of relative clause markers to complement clauses may be found in many different languages, it did not follow the same path of change in each. Like Hebrew, Akkadian complement clauses were introduced by *ki* in the earliest records, which was later replaced by the relative clause marker
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ša in at least some contexts.²

The source and directionality of the extension in Akkadian is clearly attested. In Old Babylonian complement clauses were introduced by kî and indirect speech was introduced by umma (Deutscher 2000b:85). Even in Early Neo-Babylonian (755–725 BC), ša was unattested in complement clauses (Deutscher 2000b:110). During the next century ša started to compete with kî in complement clauses of non-speech verbs, while kî started competing with umma in speech verb contexts (Deutscher 2000b:110). Eventually, in the second half of the sixth century BC, ša out-competed kî in the environments where they had been alternating. The final pattern that the three elements settled into was that umma had spread to the complements of all verbs of speaking, kî was restricted to oath formulas and ša was used in all other complement clause contexts (Deutscher 2000b:85, 110).

Despite the similarity between the extensions in Akkadian and Hebrew, Deutscher explicitly rejects the possibility that the extension in Akkadian might have taken place via the sorts of “syntactic blends” that Givón argues for in Hebrew (discussed above) (Deutscher 2000b:60).

Instead Deutscher ascribes this development to influence from Hebrew and Aramaic, both of which had developed patterns whereby complement clauses and relative clauses were introduced by the same element (Deutscher 2000b:64) (and in both of which ki had been ousted from this role).

In Old Aramaic, the demonstrative-based marker dî, spelled zy, was used for relative clauses right from the earliest texts (Kaufman 1997:122). It is not until the Classical (late) dialects that it was extended to a general complementiser (or “conjunctivizer” in Kaufman’s terminology) (Kaufman 1997:129).

Hungarian

The general subordinating conjunction hogy in Hungarian is thought to have developed from a relative clause marker, but this happened prior to the earliest records (Haader 2002:3). In the earliest extant Hungarian text (the Halotti beszéd from 1195) this element already occurs with both

² Hebrew ki and Akkadian kî are cognate, and opinions differ as to the relationship between Hebrew še and Akkadian ša (Deutscher 2000b:64).
functions.

Nevertheless there are several reasons to think that the direction of extension was from relative clause marker to subordination marker, and not the other way around. The most convincing of these is that the stem element *ho-* has cognates which function as pronominal items in almost all the other Finno-Ugric languages but in none of them except Hungarian has the element developed into a subordinating conjunction (Lea Haader, personal communication).³

Haader (2002) shows with three almost synonymous examples how subtle changes could have led from a relative clause to a complement clause. These examples are reproduced in (15).

(15)  
  a. *lata o napat fékette hideg leletté*  
  ‘he saw his mother-in-law lying and suffering from fever’  
  (MunchK 14rb)) (1466)

  b. *lata az ew napat hogy* fekeneek ees hideg lelné  
  ‘He saw his mother-in-law *that* she lay and suffered from fever’  
  (Pesti UT. 14b) (1536)

  c. *láta (azt a tényt), hogy az ű napa fekszik, és a hideg leli*  
  ‘He saw (the fact) *that* his mother-in-law lay and suffered from fever’  
  (Pesti UT. 14b) (1536)

These three ‘stages’ existed concurrently in the early attested texts, but Haader concludes that bridging examples such as these were the source of the development. These are similar to those that Givón describes for Hebrew and may conceivably mean that Hungarian followed the same path. This would mean that examples such as (15-b) were originally analysed as a relative clause on the noun “mother-in-law”, but that this head noun later became able to be replaced by nouns that were not coreferent with anything in the subordinate clause (as in (15-c)) or were able to be eliminated altogether (“he saw that...”). The lack of earlier records do not allow us to be certain of this, however.

³ The origin of the ending -*gy* in the element *hogy* is uncertain: it has been thought that it may reflect an ablative suffix.
Khmer

Although the history of the relevant complementisers in Khmer is not attested, it is still an interesting case because it shows ongoing competition between a marker that was originally probably a marker of relative clauses and one that was most likely a marker of clausal complements of verbs of saying.

Clausal complements of verbs are introduced with *thaa*, derived from the verb *say*, and relative clauses are introduced with *dael* (Gorgoniyev 1966). Clausal complements of nouns ("fact-that" constructions) can be marked with either *dael* or *thaa* and with some nouns one marker is preferred to the other.

We cannot be sure whether *dael* has been extended from relative clauses to noun clauses or vice versa. Because of the etymology of *thaa*, the verb complement marker, however, it seems likely that *thaa* was originally restricted to complements of verbs of saying, and that something else was used for other verb complements. It is possible that this "something else" was *dael* and therefore conceivable that the relative clause marker was extended to the marking of clausal complements of verbs and nouns, and has since been replaced by *thaa* in the environment of verb complements and now is competing with it in complement clauses of nouns as well. Unfortunately, this scenario must remain in the realm of speculation.

### 4.2.3 Comparatives

As discussed already in 3.6, there are various pragmatic and syntactic similarities between relative clauses and comparative constructions. Evidence for the extension of a relative clause marker into comparative constructions only seems to exist for the subtype of comparatives known as equatives. The relationship between equatives and relative clauses is discussed by Haspelmath and Buchholz (1998), although their primary focus is synchronic.

The equative construction in many languages, including English, has an element in the main clause that points to the existence of the subordinate clause; i.e. there are two correlating elements (in English, both "as"). This is not the case for all languages; some only have the sec-
ond marker (the "standard marker") and no "parameter marker" in the main clause. In these languages, the equative would resemble the relative clause more closely than is the case in e.g. English. There is another circumstance under which equatives would resemble relative clauses quite closely, and this is in the case of a language that has an equative with both a standard and parameter marker, and relative clauses of the correlative type. Both of these have a marker in both the main clause and the relative/comparative clause.

Haspelmath and Buchholz (1998:290) classify equative constructions in Europe into three overlapping types: relative-clause-based constructions, those primarily characterised by the parameter (first) marker, and those exclusively characterised by the standard (second) marker. They then present a table listing the parameter and standard markers found in relative-clause-based equative constructions in European languages (Haspelmath 1998:292). I have reproduced this table in 4.2.

Geographically these languages form a continuous area across Central and Southern Europe (Haspelmath 1998:297), which, combined with the fact that relative-based equatives are supposedly rare outside Europe, leads Haspelmath and Buchholz to posit this type of construction as a defining feature of Standard Average European.

Haspelmath and Buchholz focus exclusively on equative constructions in their investigation, but many of the markers listed in this table are found in comparatives as well. For example, French *que* is the same in both equatives and comparatives; German uses *als* in comparatives and *wie* in equatives, but *als* is cognate with English *as* and Dutch *als*, which are both used in equatives.

The relationship between the equative/comparative markers and relative clause markers in each language is not always immediately obvious. For one thing, the particular relative clause marker found in equatives is generally the one otherwise used in oblique relative clauses and manner adverbials (i.e. corresponding to English "how") (Haspelmath 1998:288). For another, in some languages the two markers have diverged enough that the link between the two is no longer transparent. This is the case in Greek, for example. The standard marker used in equatives is *san*, which is a construction of *hos an*, i.e. the relative clause marker plus a modal particle (Haspelmath 1998:293). The Romance languages have essen-
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<td></td>
<td>cussi</td>
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<td>German</td>
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<td>Polish</td>
<td>tak samo</td>
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<td>Sorbian</td>
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<tr>
<td>Russian</td>
<td>tak(o)j</td>
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<td>Slovene</td>
<td>tako</td>
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<tr>
<td>Lithuanian</td>
<td>toks/taip</td>
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<tr>
<td>Romani</td>
<td>kade</td>
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<tr>
<td>Mod. Greek</td>
<td>tóso</td>
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<tr>
<td>Armenian</td>
<td>aynpjes</td>
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<tr>
<td>Georgian</td>
<td>ise(ti)ve</td>
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<tr>
<td>Hungarian</td>
<td>olyan/annyira</td>
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<td>Finnish</td>
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<tr>
<td>Albanian</td>
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<td>Mod. Greek</td>
<td>san</td>
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<tr>
<td>Serbian/Croatian</td>
<td>kao</td>
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<tr>
<td>Italian</td>
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</tbody>
</table>

**Tab. 4.2:** Parameter and standard markers in relative equatives, reproduced from Haspelmath and Buchholz (1998: p. 292)

Initially split into two groups: Latin *quam* (oblique relative clause marker) was replaced by *quo modo* (“in what way”), which became the *com-* forms of the standard marker. In French, however, it was replaced once more, this time by the relative clause marker and general subordinator *que* (Haspelmath 1998:293).

According to Haspelmath and Buchholz, however, the diachronic connection between the two constructions is not in any doubt: “Such correlative equative constructions are clearly based on correlative free rela-
tive clauses” (Haspmath 1998:288). They suggest that the equative is derived diachronically through elision of redundant material in such correlative constructions, i.e. elision of everything from the relative clause except for the standard marker.

The problem with this scenario is the clause ordering. In the typical correlative RC, the relative clause precedes the main clause, as in Haspmath and Buchholz’s own example reproduced here as (16-a). A correlative of manner formed in the same way is illustrated in (16-b). If an equative were created on this pattern, such as that in (16-c) (which is incidentally ungrammatical in German), and were to undergo elision of redundant material, this would produce an construction with the ordering illustrated in (16-d), not one with the actual ordering found, as shown in (16-e).

(16)  

a. Wer das weiss, der bekommt einen Preis.  
Who that knows, he gets a prize.  
Whoever knows that will get a prize.

b. Wie er es macht, so mache ich es auch.  
As he it does, so do I it also.  
“I do it (the same way) as he does”.

c. *Wie alt du bist, so alt bin ich.  
How old you are, so old am I  
“I am as old as you are”

d. *Wie alt du bist, so bin ich  
How old you are, so am I  
“I am as old as you are”

e. Ich bin so alt wie du  
I am as old as you  
“I am as old as you”

This is not just a quirk of German, but rather a consistent difference between the ordering patterns of correlative relative clauses and equative constructions in the languages of Europe. It seems to me that if the equative construction really does derive from a relative clause diachronically,
it is not from the prototypical correlative construction as Haspelmath and Buchholz suggest.

Yet neither is the similarity between the relative clause marker and the standard marker in equatives explicable as a result of deriving both from interrogative markers or another third source. That the marker in these “relative-based equatives” truly does come from the relative clause marker can be seen from the cases of languages like Greek or Bulgarian, which have a special form reserved specifically for relative clause marking: Greek *hopos* “how” (relative) vs *pos* “how” (interrogative); Bulgarian *kato* (relative) vs *kak* (interrogative) (Haspelmath 1998:Fn 9, p. 331).

One remaining possibility is that a relative clause marker is extended to mark adverbial clauses of manner, as discussed in Section 4.2.1, and that it is these adverbial clauses that then form the basis of the equative construction. For the German example above, that would mean the source of the equative was not some manner equivalent of the correlative construction, but rather a simple adverbial clause of manner such as *Ich mach' es (so), wie du (es machst)* “I do it (the same way) as you (do it)”. It is true that these very often contain a “correlating” element (*so*) in the main clause: this is very common in German. Yet the construction still has very little to do, either diachronically or synchronically, with the prototypical correlative construction such as can be used in German used to form generalising subject and object relatives as in (16-a).

As well as the cases that may be better explained by assuming an adverbial clause marker was the direct source of the equative marker, there are some in which the comparative or equative marker might be the source of the relative clause marker rather than the other way around. This is probably the case in Scandinavian languages, as argued in Section 3.6 of Chapter 3. Haspelmath and Buchholz do not include Scandinavian languages in their table of languages with relative-based equatives, nor in their map of the geographical distribution of these, but they do discuss them (pp. 293–294) and analyse *som/sum* there as having relative clause marker origin.

In summary, then, although there seems to be very strong reasons to connect comparative and equative markers with relative clause markers, the diachronic processes responsible may not (or at least not in all cases) be a direct extension from relative clause marker to equative/comparative
marker, such as Haspelmath and Buchholz (1998) suggest, but rather an extension of a marker of adverbial clauses, or even the reverse direction: from comparative marker to relative clause marker. Even in cases in which the extension from relative clause marker to equative/comparative marker is a reasonable analysis, I think it is unlikely that the equative/comparative construction is modelled on a correlative relative clause construction, since the ordering patterns of the two are so different.

4.2.4 General markers of subordination

There is a good deal of overlap between the list of languages that extended relative clause markers to adverbial clauses (Luwian, Norse, Greek, Georgian, Hebrew and Japanese) and those that extended them to complement clauses (Greek, Georgian, Hebrew, Akkadian, Hungarian and maybe Khmer). In the three languages from these lists that underwent both changes—Greek, Georgian and Hebrew—speakers presumably reanalysed the relative clause marker as marking subordinate clauses more generally. The detailed discussion of the changes and their relative chronology in each of these languages makes it clear that it was not a matter of what Givón (1974:2) calls the “facile explanation” of speakers using their “syntactic intuition” to realise that these constructions have something in common and then making a blanket generalisation, but rather that the relative clause pattern crept into the subordinate clause paradigm through individual ambiguous constructions, possibly from several points at once, and then the whole set of clausal subordination constructions was eventually regularised. In some cases, notably Greek and Hebrew, the presence of a pre-existing formal similarity between relative clauses and other subordinate clauses may have been a factor in the eventual polysemy of the new marker.

A further similar case could be mentioned here, and that is Old English *æt*. The reason this was not included in the discussions of extension of relative clause markers to adverbial clauses and complement clauses is that relative clause marking was never this element’s primary function, although it was used occasionally in this function, particularly with temporal heads or neuter noun heads (Allen 1980:102). In early texts *æt* already occurred in these environments, and also as a marker of sentential complements of verbs and clauses of purpose and, in combination

Most other types of adverbial clause were introduced with ḍe (with a preposition and demonstrative pronoun in the main clause), as shown in (17) below.

(17) Swa swa se engel cwaed be him aer ḍan ḍe he
As (as) the angel said about him before that-inst. that he
born was
“As the angel said about him before he was born” (Alcc.P. II.96
in Allen (1980:130, ex. 170))

The complementiser ḍet eventually came to replace ḍe in these functions. It was then extended even further to some adverbial clauses that neither it nor ḍe had been present in originally, for example conditionals (gif ḍet) (Allen 1980:250–251). Presumably the overlap in the functions of ḍet and ḍe led to them being equated in contexts that had formerly been the domain of only one of the two, and then the common occurrence of ḍet in so many different types of subordinate clause (relatives, complement clauses, and some adverbials) caused speakers to generalise and use it as a marker of general subordination.

Allen (1980) interprets this therefore as a case of a marker whose use (due to extension to individual constructions) becomes lexically governed and rather idiosyncratic, and then (after extension to indirect questions and headed relative clauses) is eventually in the 14th century associated instead with a particular type of syntactic structure: i.e. subordination (Allen 1980:258). This same sort of reanalysis (from an unpredictable, lexically-governed distribution to generalised association with subordination) may well be what took place in Greek, Hebrew and Georgian too.

4.2.5 Adjective markers

The next extension I would like to mention is not especially widespread nor historically well-attested. Nevertheless for the sake of completeness, and because adjectives are perhaps the prototypical modifying construction, I would like to discuss the evolution of relative clause markers into
adjective morphology before I go on to explore the extension of relative clause markers to other noun-modifying constructions.

In a few languages, the relative clause marker is identical to an adjectival ending. There are several plausible scenarios for how this might come about. Reduction of relative clauses might leave one-word modifiers that look like adjectives but contain a relative clause marker, which might then be generalised to adjectives that did not originate as relative clauses. Or the opposite of this could occur: adjectival markers might be extended to adjective-like participles, then to participial relative clauses, then into the finite RC construction as well.

In some cases, such as Malay yang, it is not possible to know which function historically was primary.

In other cases, such as Chinese (de), Somali (ah) or the well-known case of linking morphemes in Austronesian, the use of the same marker for both adjectives and relative clauses is only a small part of the picture, and the marker in question is used for other modification relationships as well. In such cases it can be difficult to untangle the history of what was extended to what. I will nevertheless discuss Chinese, Somali and Austronesian briefly here, since they provide an interesting picture of what a language can end up looking like if a relative clause marker is extended into multiple different constructions.

Chinese

In Classical Chinese, there was a form zhì, derived from a demonstrative, that was used to mark relative clauses, possessive constructions, and what Shi & Li (2002) call “associate phrases”, which they view as distinct from adjective phrases.4 The zhì marker was not used for adjective phrases under their analysis. This form survived with these functions until the 11th century AD (Shi and Li 2002:6). Therefore it overlaps with the newer modification marker de, which arose in the ninth century (Shi and Li 2002:13).

This new marker, de was originally a demonstrative and was initially extended only to relative clauses (Shi and Li 2002:13). Extension to

4 Under their examples of associate phrases they include “hotel of in San Francisco” (Shi and Li 2002:3) and “firm ambition” (p 6). It is difficult to tell why they do not analyse the latter as adjectival.
adjective, adverbial and associate phrases occurred around a century later, and extension to possessive constructions two centuries after this (pp 13–14). I will discuss the extension to possession in more detail in 4.2.7 below.

When the extension of *de* from relative clauses to adjective and associate phrases took place, the older element *zhi* was still in use with its multiple functions of relativisation, associate phrase marking and possessive marking. Although it may have provided a model for the extension of *de*, at least to associate phrases, it is interesting that the distribution of *de* at no point exactly matched that of *zhi*.

### 4.2.6 Somali

Kraska (1992) describes a scenario for the development of the copula *-ah*—into what she calls the relative marker, which also functions as a marker of “periphrastic adjectival constructions” (p. 95) as illustrated in (18).

\[(18)\]

\[a.\] nin Somali ah
man Somali AH
“a Somali man” (Bell 1953:78 in Kraska (1992:95, ex. 12))

\[b.\] daar bir ah
house iron AH
“a house made of iron” (Bell 1953:78 in Kraska (1992:95, ex. 12))

\[c.\] nin hodon ah ayuu noqday
man richman is FOC-he became
“he became a rich man” (Saeed 1985:169 in Kraska (1992:95, ex. 11))

Although examples such as (18-c) make it clear that the element in question is no longer functioning purely as a copula, the evidence Kraska outlines is not sufficient for us to conclude that the pathway followed by *-ah* was from copula to relative clause marker to adjective marker, rather

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\[5\] Kraska does not gloss the first two examples, but the third gloss is her own, or possibly that of her source. It is unclear why she glosses *ah* as “be” when she is claiming it has already diverged from the copula.
than, for example, from copula to general nominaliser, or from copula to a marker of adjectival or general modification and then to relative clause marker as an extension of this.

**Austronesian**

The Austronesian languages often use the same linking particle to connect nouns to adjectives that they use in relative clauses. Although we do not have any evidence from the historical record to allow us to determine which of these functions is primary, there are clues from the distribution of these markers in different Austronesian languages, many of which also use this same marker to connect nouns to demonstratives, quantifiers, and adjectival interrogatives (Foley 1980:172).

Foley (1980) shows that the distribution of these linker morphemes in Austronesian follows a hierarchy, which is reproduced as the list below:

- articles
- deictics
- interrogatives
- quantifiers/indefinites
- adjectives
- participles
- relative clauses

If a language uses linkers to connect nouns to one of the elements in this list, then it also uses the same linker to connect nouns to all elements below this point on the list (Foley 1980:174–175).

If this generalisation is not the result of chance distribution but rather represents an underlying principle, we must conclude that only two diachronic interpretations are possible: that these linkers in Austronesian languages appeared simultaneously in multiple functions, or that they began as relative clause markers and spread up the hierarchy. Anything else would require the language to have passed through a stage in which Foley’s generalisation was not valid.
§4.2 Extension

Addressing the question of a possible mechanism by which the linker spread into these other functions, Reid (2002) presents a plausible reconstruction of the particle in Bontok (nan), which he then suggests may be valid for other Philippine languages as well.

Reid’s scenario for Bontok and other Philippine linker morphemes is that they began as relative clause markers attached to a demonstrative head, as shown in the reconstructed phrase in (19-a). In an earlier paper (Reid 2000), he suggested that these sequences of demonstrative + relative marker developed into definiteness markers, but in Reid (2002) he rejects this earlier analysis and argues instead that the demonstrative is still nominal, while the linker alone has become the definite marker (Reid 2002:304).

(19) a. *ná-n dak dakól
DEM-REL big
“that one which (is) big”

b. nán dak dakól
NMLZR big
“that big one”

Although the evidence for this process of change is sketchy, Reid’s scenario is not implausible, and Foley’s hierarchy is some indication that relative clauses were probably the ultimate source of the other uses of the linker morphemes in Austronesian.

Dravidian languages

In several Dravidian languages the extension from relative clause marker to adjective marker occurred during the attested period, so the direction and process of change is much better known.

In Classical Tamil, many adjectives were bare forms (Krishnamurti 2003:395 –396). In Modern Tamil these are so few that the question of whether Tamil’s adjectives should be analysed as a separate word class is debated (Asher 1982:186–187). Rather, most modern “adjectives” are derived forms that are transparently still verbal or nominal in origin. The modern forms that are based on verbs are created by taking the relative participle form of the verb, and those that are derived from nouns are
created by the addition of the relative participle $\tilde{\nu}a$ or $\tilde{\nu}la$, from verbs meaning “to be/become” (Krishnamurti 2003:396).

This in itself is not an extension of the relative clause morphology, but it presumably set the stage for the extension which then took place. In Tamil, the ending -(att)i$\tilde{\nu}$a, commonly found as a relative participle suffix (Andronov 2003:179), now appears on some adjectives that have no verbal (or nominal) origin at all (Krishnamurti 2003:396). The final syllable of -(att)i$\tilde{\nu}$a adjectives can also sometimes be dropped, which means that they are no longer transparently related to relative participles (e.g. $kizakkatt$ < $kizakkatt$i$\tilde{\nu}$a “eastern” (Andronov 2003:179)).

In the related language, Kui, the suffix -$i$ appears on adjectives regardless of whether they were originally derived from the relative participle (which also ends in -$i$).

These cases are evidence that in Dravidian, at least, relative clause morphology was extended to adjectives via reduced relative clauses. This does not mean that this was the process of change in every other case where we find this sort of multi-functionality in the relative clause marker/adjective ending, but to my knowledge, this is the only direction of change that is attested.

### 4.2.7 Possession

As discussed in Chapter 3, there are plenty of cases in the literature in which it has been suggested that a relative marker originated as a possessive marker. However, there are also cases where it seems that the direction of change has been the opposite: relative clause markers have been extended to mark possessive constructions as well. As noted in the previous chapter, people have suggested that the direction of extension was more likely to have been from relative to possessive in the following cases: Early Indo-European (-$\tilde{\nu}$sio), Newari ($gu(li$)), Chinese ($de$), Akkadian ($\tilde{s}a$) and Hebrew ($\tilde{sc}(l)$). It will be seen in the following discussion that there is no hard evidence for the direction of change for most of these examples, but rather that the arguments are based on evidence from related languages, the degree to which the marker has penetrated each paradigm (relative and possessive) and in some cases, a good dose of speculation. I have chosen to discuss these cases despite this, since I think it is worth noting the similarities between the pathways that are
reconstructed for the various languages.

I will begin by discussing Hebrew, the one case I am aware of in which the evidence for the direction of extension is indisputable.

**Hebrew**

The relative clause marker (and later general complementiser) *še* is not used in Early Biblical Hebrew for genitive constructions, but later (and modernly) it is used for these (in Modern Hebrew ṣel) (Gesenius 1910:§ 129h). Early Biblical Hebrew uses the construct state (for the head noun) to express possessive relationships.

As the relative clause marker was also extended to use as a general marker of verb complement clauses, we need to determine whether the extension to possession was really an extension of the relative clause marker or the general complementiser. On semantic grounds, the former seems more plausible, as both relative clauses and possession are modification of a nominal, while clausal verb complements are not. Therefore speakers could be thought to be more likely to see an analogy and extend a relative clause pattern to possession than they would be to extend a verb complement pattern.

Stronger evidence comes from the form of the particle. The final -l on *šel* is an affixed preposition meaning “to” (Fernández 1999:30). In Early Biblical Hebrew, a common analytic formula to express possession was *asher l-* “which is to...” (Fernández 1999:31). The copula in Biblical Hebrew was often unexpressed, so this is a normal relative clause. It eventually contracted to *šel* and in the earliest manuscripts it is almost always found written as a prefix to the possessor. Its separation into an independent word appears to have been a Medieval innovation, although Fernández does not rule out that there may have been dialects that treated it as a separate word all along. In Modern Hebrew *šel* is used as a prefix to pronouns to create possessive pronouns and adjectives such as “my” and “mine”, “your” and “yours”, and so on (Fernández 1999:32).

The development of the Hebrew possessive particle is therefore clearly a case in which a full relative clause has been reduced to a non-clausal modifier.
§4.2 Extension

Akkadian

Another Semitic language in which it is suggested that the possessive marker ṣa originated as the identical relative clause marker is Akkadian (Deutscher 2001). However, unlike Hebrew, the development was already well underway by the time of the earliest records, so that we cannot be entirely sure of the directionality of the extension. Furthermore, the source of the Akkadian relative clause marker was probably a demonstrative, this could have independently been extended to possessive marking.

An example of Akkadian ṣa in a possessive construction is given in (20).

(20) ṣarr-um ṣa māt-im imūt
      king-NOM ṣA land-GEN he.died
      the king of the land died (Deutscher 2001:31, ex. 7)

As can be seen from this example, ṣa is not an alternative to the genitive ending (here: im), but rather co-occurs with it as an extra marker. The alternative to this ṣa possessive is the construct, which in Akkadian was still commonly used for possessives (Deutscher 2001), but, unlike in many Semitic languages, not for relative clauses. It is generally accepted that the construct was the earliest known strategy for both relative clauses and possessive constructions in Semitic and that periphrastic constructions came in as later alternatives. In Akkadian, the periphrastic alternative had entirely replaced the construct relative clause, but not the use of the construct in possessives. One possible explanation for this could be that the use of ṣa in possessive constructions were newer than its use in relative clauses.

The scenario outlined by Deutscher for the development of ṣa into a relative clause marker could equally well have been the way the possessive construction developed. He suggests that ṣa functioned as a head noun with the modifying clause as a dependent, and that this whole NP (ṣa + relative clause) stood in apposition to the “real” head. Eventually ṣa was no longer perceived as a nominal and became a true relative clause marker i.e. was reanalysed as part of the relative clause and no longer inflected with the case of the head noun (in fact, ṣa became an invariant particle) (Deutscher 2001:411).
It is at least possible that the possessive function of ša, rather than being an extension of this relative development, also developed from an appositive construction in the same way. Of course, this just pushes back the puzzle by an extra step, since one might still wonder why relativisation and possession were both expressed by the same appositive construction, with the same semantically empty head. Unfortunately there is no way of knowing whether both of these developed at the same time, or one from the other. The only indication that the possessive structure might be newer is, as mentioned above, that the ša construction in Early Akkadian was still competing with the older construct strategy for possessive constructions, but not for relative clauses.

Amharic

Yet another Semitic language in which the same element (in this case yā’ī) functions as both possessive and relative marker is Amharic. As was already discussed above, this marker is also a complementiser used with some clausal complements of verbs.

(21) a. Johannes yā-ayy-ā-w si?
   John yā-see-3ms-3ms picture
   “the picture that John saw” (Demeke 2001)

b. yā-sāw bet
   yā-man house
   “a man’s house” (Henderson 2003)

c. Saba worq-u-n yā-sāT-ācc-iw yi-māsl-all
   Saba gold-def-acc yā-sell-3fs-3ms 3ms-seem-aux
   “It seems that Saba sold the gold” (Henderson 2003)

The only indication of the diachronic progression of this polysemy, however, is the gradual elimination of the “construct”, which is generally used in early Semitic languages to express both relative clauses and possession (see Section 4.2.7 for discussion of this). In Ge’ez, the ancestor of Amharic, the construct was already limited to possessives only, and relative clauses were always marked with the new particle (ziī) (Gragg 1997:259)). However, the option already existed in possessives to use
this particle instead of the construct. In Modern Amharic the equivalent particle is used for possessives, relatives and complement clauses, and the construct state no longer exists (Ullendorff 1978:9). This means that the language appears to have passed through the following three stages:

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>RCS</th>
<th>POSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Semitic</td>
<td>construct</td>
<td>construct</td>
</tr>
<tr>
<td>Ge’ez:</td>
<td>particle</td>
<td>particle/construct</td>
</tr>
<tr>
<td>Amharic:</td>
<td>particle</td>
<td>particle</td>
</tr>
</tbody>
</table>

This is not strong evidence, but it is an indication that the particle may have begun in the relative clause environment and spread to the possessive context later. On the other hand, the prior use of the construct for both functions may have “primed” the new particle to have the same polysemy from the beginning.

Newari

The Tibeto-Burman languages have been cited as examples of languages in which nominalising morphemes, used in relative clauses, have later been extended to possessive constructions (DeLancey 1986). It will be seen in the discussion that follows that although the evidence from these languages is consistent with this hypothesis it is not the only possible interpretation of the data. I will summarise here the information found in DeLancey (1986), concentrating primarily on Newari rather than his discussion of Lhasa Tibetan and Lahu, since it is Newari that provides the basis for DeLancey’s diachronic conclusions. The path of development that DeLancey reconstructs is reminiscent of that which we have just discussed for Akkadian.

A marker that appears in relative clause contexts in Newari, gu(li) also occurs in some possessive constructions, which, like the Akkadian examples in 4.2.7, retain genitive inflection as well (DeLancey 1986). Possessive phrases in Newari can therefore be doubly-marked. Note that gu(li) is attached after the co-occurring genitive marking. This is illustrated in (22).

(22) ram-ya-gu tasbir
    Ram-GEN-NOM picture
“Ram’s picture”

When the gu(li) marker is absent from the possessive construction, as in (23), DeLancey concurs with Kölver (1977) that this indicates greater “conceptual dependence” between the two NPs.

(23) ram-ya kala
   Ram-GEN wife
   ‘Ram’s wife’

In relative clauses, gu(li) (or its equivalent)\(^6\) must always be present.

(24) ji-i khun-a-gu la
     I-ERG cook-PART-NOM meat
     ‘the meat which I cooked’

DeLancey shows that in both the relative clause and the possessive construction, Newari is using an appositive structure with gu(li) behaving synchronically like a noun in apposition to the head noun. This analysis is supported by the etymology of gu(li), which is reconstructed as originally a noun itself meaning something like “an inanimate thing” (DeLancey 1986). The two constructions are therefore analysed as shown in (25).

(25) a. \([NP [NP [Ram-GEN \] gu(lī)] \; NP_{possessed}]\]
    b. \([NP [NP \; RC \; gu(lī)] \; [NP_{main}]\]

The element gu(lī) has therefore come to have a nominalising function. It is unclear why DeLancey assumes the extension was from nominaliser to relative clause marker to possessive marker, rather than nominaliser > possessive > relative clause marker, or even independent development in each case from the semantically bleached noun. The element gu(lī) functions as a classifier as well, so this could also have been a potential source for both constructions (DeLancey 1986:fn 13). It is clear, however, that this is the direction that he assumes for the development:

\(^6\)There are other markers, mha and pi, that are substituted for gu(li) depending on the number and animacy of the referent (DeLancey 1986).
The example sets above [comparison of possessive and relative constructions] suggest that Newari, unlike Tibetan but like Lahu, shows the further extension of the nominalizing function into genitivisation which I have noted as the most problematic aspect of the complex.

(DeLancey 1986)

Possibly the reason for his claim is that Tibetan has markers that function as both nominalisers and relativisers, but not possessives, so he assumes that this was a later innovation by Newari and Lahu. But the morphemes used for these functions in each language are not cognate with each other, so this is not a very strong argument.

We can only conclude from this data that there is a clear relationship between possession and relativisation in the Tibeto-Burman languages, but that we cannot be sure whether it is due to extension of patterns from one to the other, or because markers of both developed from a single (nominal or classifying) source.

Chinese

In Chinese, the pathway of relative marker to possessive marker seems to have been travelled multiple times. Classical Chinese zhì, Modern Chinese de, and Wu dialect ge all functioned as relative clause markers before they were extended to possessive functions (Shi and Li 2002). Originally, however, it appears that these were all demonstratives. The problem is therefore the same as for Akkadian: in most cases we cannot be sure that the demonstrative function was not extended independently to both relative clause marking and possessive constructions, without any interaction between the RC and possessive functions themselves.

Shi and Li (2002) show that in the case of de, at least, its first appearance as a relative clause marker was three centuries prior to its earliest use in possessives (Jiang (1981) cited in Shi & Li (2002)) and that the demonstrative function of de (earlier: dī) ceased when it was reanalysed as a relative clause marker. Therefore the extension in this case could not have been either from possession to relativisation or from demonstrative to each of these functions independently.
§4.2 Extension

For the other markers Shi & Li mention, the order of progression is not clear from the dates they give. The element zhī was a demonstrative pronoun only in the earliest texts (e.g. the Shang Dynasty, 16th–11th century BC), but developed relative clause, possessive and ‘associate phrase’ (similar to adjectival) use by 500 BC. It is not clear from their data whether it is possible to tell whether the relative or possessive use came first. The same is true for the marker ge in the Wu dialect and Southern Mandarin (Shi and Li 2002:7).

In the case of zhī and ge, the demonstrative and modifier functions co-existed for quite some time, so that we cannot be certain that both the relative and possessive marker did not develop independently from the demonstrative.

Complicating matters still further, the element ge was originally a classifier before becoming a demonstrative, so this classifier function may also have influenced its development as a relative clause marker.

Therefore although Shi and Li claim that in the matter of extension from demonstrative to modification marker, “[t]he relative clause is always the first type of modifier to marked” (Shi and Li 2002:14), they have not shown this to be necessarily the case for the markers other than de. In the case of de, however, it does seem that this was probably the way that the change progressed.

**Early Indo-European -osio**

In Sanskrit, Ancient Greek and Old Armenian, the genitive suffix for o-stemmed singular nouns is a form that reconstructs to PIE *-osyo* (Lehmann 1981). Lehmann argues that the relative clause marker *-yo* (*-io*) was attached in order to differentiate these forms from the otherwise homophonous nominative ending. He suggests that the development was facilitated by the analogous syntactic environment: both possessive constructions and relative clauses are patterns that allow modification of nominals, so it is natural that one marker could be extended to the other (Lehmann 1981:186).

It seems to me that the scenario outlined for Akkadian by Deutscher (2001) and for Tibeto-Burman by DeLancey (1986) might provide a plausible alternative explanation for why we find both the genitive and -yo marking on these Indo-European nouns. If Proto-Indo-European *io* was
actually a demonstrative (as is most commonly reconstructed), there
could have been a period when this demonstrative stood as a “dummy
head” of the relative clause/possessor noun and allowed the NP to stand
in apposition to the true head of the construction. Beyond the double-
marking of the possessive construction, however, there is no indication
that such a construction did exist.

Not everyone agrees with Lehmann’s analysis of -syo as derived from
relative *io, in any case. Shields (1990) claims instead that the sources
of the *i and *o elements in this form are locative elements (the locative
suffix reconstructed for PIE *i and the -o as attested in a few scattered
locative forms).

Alternatively, since *io is usually reconstructed as a demonstrative
for PIE, there is no reason to think that this demonstrative could not
have been the source of the genitive ending (as was also a possibility for
Chinese and Akkadian above). As these alternative explanations for the
similarity between PIE relative and possessive forms exists, PIE does not
provide us with a convincing case of relative > possessive extension.

Lehmann’s analysis, however, does fit with the fact that it is exactly
the same three Indo-European languages which have this *-syo genitive
form and that use *io as a marker of relative clauses.

4.2.8 General linkers

Just as in some languages the relative clause marker is extended to so
many different types of subordinate clause that it becomes a general
marker of subordination, in others it is extended to become a general
marker of modification. As mentioned earlier, this was the case for Chi-
nese de. We have seen how this element extended from a relative clause
marker to a marker of adjectives, adverbs, and “associate” phrases, and
then later still, to be used in possessive constructions as well.

Unlike Chinese de, the Austronesian linking particles (discussed al-
ready under extensions to adjective marking) are not generally used
to connect two nouns in possessive constructions. I nonetheless count
them as “general modification markers” because they are commonly
used to connect nouns not only to relative clauses and adjectives, but
also to demonstratives, quantifiers, and adjectival interrogatives (Foley
1980:172). In some Philippine languages, the linker is used to connect
nouns with articles and topic markers as well (p 179). Thus it is clear that any extension has gone beyond a simple extension from relative clauses to adjectives.

Comparing the languages in which the relative clause marker has been extended to non-relative modifying constructions with those in which it has been extended to other types of subordination, we find a few languages that participated in both types of extension. This is the case in Amharic, Hebrew and Akkadian. (I am disregarding Greek, since the evidence Lehmann presents for the genitive suffix on certain Greek nouns being derived from a PIE relative clause marker is very speculative).

This may, therefore be a general Semitic pattern and we cannot rule out that the changes in the distribution of the relative clause markers in the various Semitic languages were influenced by each other.

As has been noted earlier, there is another overlap between modifying constructions and subordinate clauses besides relative clauses, namely adverbial clauses, which instead of modifying a noun modify a clause. In the Semitic examples mentioned here, however, the particle in question really has been generalised to non-modifying subordinate constructions as well, since it is found introducing not just adverbial clauses but complement clauses too.

## 4.2.9 Less well-documented extensions

Although many functions that relative clause markers are extended into can be categorised as marking of other types of subordination and other types of modification, there are some extensions that do not fall into either of these two classes. Most of these cases are not well-documented and the circumstances surrounding the extensions not attested, so there is a limit to how much we can say about them. For the sake of completeness, however, I will briefly discuss them here.

What all of the following developments have in common is that the original construction, involving a main clause and relative clause, is reduced to a monoclausal structure. In the case of the development of agentive nouns and indefinite pronouns, this reduction can take place via fusion of the relative marker (of a headless RC) to the verb, which can then be treated as nominal rather than clausal; in the development of definite markers and some focus markers the reduction is possible because
the loss or optional absence of a copula allows the two-clause structure
to be reanalysed.

Agentive nouns

In some languages there is similarity between the relative clause marking
morpheme and one used to form agentive nouns. It is not difficult to see
how this might have come about. A phrase such as “The person who
farms” is synonymous with “farmer” and the relative clause construction
could become a conventionalised means of forming such words.

One example of this process is found in Quechua. In Cuzco Quechua,
the suffix -q, otherwise a marker suffixed to the verb of subject relative
clauses, is used to form agentive nouns, called “derived nominals” in
Lefebvre and Muysken (1982:66). They note that these appear originally
to have been headless relative clauses. That these derived nominals are no
longer analysable as relative clauses is indisputable, since they differ from
relative clauses both in the type of plural marking used (nominal instead
of verbal) and their ability to appear with a determiner. Compare, for
example the derived nominal in (26-a) and the equivalent expressed with
a headless relative clause in (26-b).

(26)  a. cay ñank’a-q-kuna
       DEM work-AG-PL
       “those workers” (Lefebvre and Muysken 1982)

       b. (*cay) ñank’a-q-ku
          (*DEM) work-REL-PL
          “those who work” (Lefebvre and Muysken 1982)

A similar polysemy is found in some of the Tibeto-Burman languages.
In Lhasa Tibetan, for example, the element used to mark agent relative
clauses is mkhan (DeLancey 1986). An example of this is given in (27).

(27)  stag good-mkhan mi pha=gi red
tiger kill-NOM man that be
     “that is the man who killed/kills/will kill the tiger” (DeLancey
1986)
This element was also used in early Classical Tibetan texts as a derivational suffix to produce agentive nouns such as *shing-mkhan* (“wood-mkhan” = “carpenter”) (Jaschke 1949). A more detailed summary of what is known about the history of these Tibeto-Burman relative clause markers has already been given in Chapter 3. While it is not impossible that the Tibetan case parallels the process found in Quechua: headless relative clauses being used as agentive nouns, it seems more likely that the development was different. For one thing, examples such as *shing-mkhan* cannot be analysed as having an underlying relative clause, since *shing* is not a verb. Rather, Delancey’s analysis seems more plausible: namely that the relative clause markers began as classifiers, nominals, derivational suffixes, etc, then became more general nominalisers, just as we have seen can occur in other languages (Chinese, Japanese, Malay *de, no, (em)punya*, respectively), and spread into relative clauses through this nominalising function. Therefore the use of the Tibetan nominalisers on agentive nouns and their use in relative clauses could be two independent developments.

One final example of a language in which it appears agentive nouns may historically be derived from relative clauses is Somali. Kraska (1992) outlines a series of changes by which a relative clause marker *-*yah/*-tah* (related to, but not identical with the marker *ah* discussed in 4.2.6 above) became further reduced and underwent regular processes of phonological change and assimilation to become the modern agentive noun suffix *-e/-to*.

This agentive noun suffix, *-e/-to*, occurs in a masculine and feminine form because, like the related marker discussed in Section 4.2.6, it supposedly has its origin in the copula verb *-ah*- (Kraska 1992:95). A form related to both the copula and the agentive noun suffix, *-*yah/*-tah*, also exists in some archaic constructions, and Kraska sees this as a relic of an intermediate form between the copula and the agentive noun suffix, and reconstructs this as the clitic *-*yah/*-tah*. From the modern distribution of this (now-fossilised) element, Kraska infers that it must have been able to follow nouns, adjectives and verbs. Kraska therefore reconstructs a relative clause construction that could produce strings such as (28-a), (28-b) and (28-c).

(28) a. man [rich REL]
§4.2 Extension

“rich man”

b. house [wood REL]
   “house made of wood”

c. man [writes REL]
   “writer”

The origin of the clitic/suffix as a copula can be seen in the fact that these constructions do not contain a separate copula. That the marker is no longer a copula can be seen in the fact that (28-c) does contain a verb. It should be emphasised, however, that these are only reconstructions. Examples such as (28-a) are still attested but archaic (*ninka bukah/naag baktah “the sick man/a sick woman”), but the other two examples are reconstructed based on the presence of a related suffix on the underlying verb of agentive nouns and as agreement markers on certain other nouns.

In summary, then, Kraska reconstructs a development from a copula into a clitic that attaches to adjectives, nouns and verbs. In the latter case, modernly this has become a suffix which attaches to these verbs in order to create an agentive noun. However, since related suffixes exist on adjectives and on certain nouns, this looks more as though the copula may have become a general marker of modification rather than specifically a marker of relative clauses. It is certainly not clear evidence of a path: copula > relative marker > agentive noun suffix, both because of how much of the development is reconstructed, and because of the other associated functions.

Neither is the evidence from either Quechua or the Tibetan languages entirely conclusive. In each case there are possible alternative explanations. In both Quechua and Tibetan, the agentive noun suffix might have developed from a more general nominalising construction (or in Tibetan even from a noun or classifier), rather than directly from the relative clause marker. In Somali Kraska does not have compelling evidence for the stage at which the suffix in question was supposedly a relative clause marker, and it seems to me that although her scenario is plausible, we cannot exclude an alternative explanation, for example that maybe the suffix developed from a copula to a marker of adjectives and was then
extended via analogy to agentive nouns without ever being used in true relative clauses.

Indefinite pronouns

Another possible but not especially well attested extension of relative clause markers is found in the development of certain indefinite pronouns. Haspelmath, in his extremely detailed study of the typology of indefinite pronouns (Haspelmath 1997), shows that there is reason to believe that some of these are derived from relative clause markers via generalising relative clause constructions.

In the section on the sources of indefinite pronouns, he notes that many languages have “grammaticalised” some sort of headless relative clause containing an equivalent of the verb want. For example, a sentence meaning “You may take what [you] want [to take]” can fuse together and become “You may take what-want”, so that an indefinite pronoun develops that consists of an interrogative plus a morpheme etymologically related to a verb of desire. This is the etymology of the Latin indefinite pronouns quīvis and quālibet (both meaning “anybody”), the Russian κτόλιβο “anybody”, Romanian cineva “somebody”, and certain other Indo-European indefinite pronouns (Haspelmath 1997:133–134).

Haspelmath notes, however, that there is little information in historical grammars on the constructions that he hypothesizes to be the source of these indefinites, and so his conclusions are based on comparison of related languages, the implications of grammaticalization theory, and the sometimes quite transparent morphology of the pronouns themselves (Haspelmath 1997:130). He makes it clear that the source constructions he assumes for these pronouns cannot be connected to the resulting pronouns through the historical record, but are rather hypotheses only (Haspelmath 1997:134). While his reconstructions seem extremely plausible, especially in the cases of pronouns with the most transparent morphology, the development of indefinite pronouns from relative clause markers can still not be deemed to be as well attested as the better documented outcomes of change discussed earlier in this chapter.
Definiteness markers

The extension of relative clause markers to definite markers is a slightly problematic development because we know that a different diachronic connection between the two is commonly attested, namely that relative clause markers often evolve from demonstratives, which then sometimes become definite articles later on. I have discussed this already in Chapter 3. Since that direction of change is so common, when a resemblance between relative clause markers and definite markers exists, we might expect that this is because both derived from demonstratives. A few examples, however, show that this may not always be the case.

In Indo-European, relative clause markers have sometimes been reanalysed as markers of definiteness attached to adjectives. This has occurred in at least one branch of Indo-European: Iranian; arguably also in two others, Baltic and Anatolian.

The Old Persian relative clause marker haya has developed through phonological change into the Modern Persian element known as the ezafe, which has multiple functions, including marking definiteness and possession (Fortson 2004:148). In this way a full relative clause was reduced to an adjective and ezafe marker, and reanalysed as part of the main clause instead. An Old Persian example of a relative clause (with omitted copula), and an example of a modern ezafe construction are given in (29).

(29)  a. karā haya manā
army REL mine
“army which is mine” (Old Persian, Fortson (2004:148))

b. ketāb-e naw
book-DEF new
“the new book” (Modern Persian, Fortson (2004:148))

Fortson also mentions a precursor of the Iranian development, namely the case attraction phenomenon in Avestan, which produced sentences such as the one in (30). Fortson’s inclusion of this example in his discussion suggests that he thinks the agreement of the relative clause marker in case with the head noun made the reanalysis of the sequence relative
marker + adjective as non-clausal more likely.

(30) tāis šīaotōnāiś
     DEM.INSTR.PL with.the.works.INSTR.PL
yāiś valištāiś
     which.INSTR.PL best
“with the best works” (Avestan, from Yasna 35.4 cited in Fortson (2004:148))

Fortson claims that a similar development occurred in the Baltic languages. Adjectives in definite noun phrases are marked with a -j- element, which is originally from PIE *io. For example, in Lithuanian, naują-įją vařdą (lit. “new-pronoun name”) means “the new name” (Fortson 2004:148). Obviously in this case the word order is the opposite of the Iranian examples, which fits the hypothesis that these derived from relative clauses, as the relative clause marker in Iranian followed the head nominal, while Old Lithuanian allowed participial relative clauses followed by a relative pronoun (Fortson 2004:148). Fortson also suggests that a similar development is found in the Anatolian language Carian, but does not discuss the situation in any depth, nor is Carian well-documented enough in general to allow us to evaluate this claim.

Even though the evidence for the extension from relative clause marker to definiteness marker is sparse, there is a relatively simple mechanism by which such an extension could take place. In many languages, there is a constraint that only definite nominals can be relativised. This may sometimes be a lingering side-effect of the relative clause marker’s origin as a definite marker, in languages where this is the case. Even so, however, if this restriction exists in a language, it is easy to see how relative clause markers could come to be reanalysed as definite markers.

The first stage would be that speakers have two possible ways of expressing a concept such as “tall man”. One is with the combination noun adjective, in which the noun may be marked for definiteness or indefiniteness. Another is with a relative clause “The man who is tall”, in which, as is typologically common, the copula may not be expressed. In this case you would have a definite noun accompanied by the relative clause marker and an adjective.

The next stage in the process is that speakers then generalise about


the distribution of these two strategies. They see that the strategy with
the relative clause marker only occurs when the noun is definite, and
therefore this must be the function of the relative clause marker in this
context. If the relative clause marker in true relative clauses then un-
derwent morphological change, or even replacement, speakers might not
carry these changes over to the same element in the adjective context, af-
after which the connection between the two would no longer be transparent
to later speakers.

4.2.10 Clefts, markers of emphasis, stance markers

It has frequently been noted that relative clauses can be used to create
cleft constructions, often used for the purposes of emphasis, and that
these, when reduced, can become focus markers. Harris and Campbell
(1995) describe this development in detail. The cleft construction itself
usually consists of a main clause containing a copula, and then relativi-
sation of the noun phrase that is intended to be emphasised. In some
languages the main clause part of this cleft is gradually reduced, for ex-
ample any dummy subject such as “it” or “that” is lost, as is sometimes
the copula. This leaves the head NP followed by a relative clause marker,
followed in turn by the rest of the relative clause. This structure is then
open to reanalysis as a single clause. The prominence marking function
is carried fully by the relative clause marker, which is then reinterpreted
as a marker of prominence and extended to other contexts.

The use of the relative clause marker in clefts in the first place is
in itself an extension, since although cleft constructions can often be
analysed syntactically as containing a complex NP with a relative clause,
they differ from other relative clauses in their pragmatic function and in
the idiomatic main clause (i.e. dummy pronoun + copular + complex
NP).

Relative clause markers are used in clefts in many languages, includ-
ing Korean (Simpson and Wu 2001), Malayalam (Comrie 1995), Chi-
inese (Simpson and Wu 2001), Japanese (Yap et al. 2004), and Amharic
(Kapeliuk 1980), to name just a few. In others, such as Breton (Har-
riss and Campbell 1995:155) or Somali (Heine and Reh 1984), such cleft
constructions may have existed formerly, but have since been reduced to
single-clause structures.
As mentioned, when clefts are reduced, the element that becomes the focus marker is sometimes the copula (as is arguably the case in Somali (Heine and Reh 1984:175)), and sometimes the relative clause marker (as in Breton (Harris and Campbell 1995:155). In cases when the relative clause marker forms this focus marker or part of it, this is a dramatic extension, since it is now appearing in a syntactic context that it was formerly unable to occur in: a monoclusal environment.

In most languages in which this seems to have been the case, the full diachronic process is not attested. The reconstruction is usually possible only because of the similarity in form between the focus marker and either a copula or a relative clause marker, and because supposedly main clauses containing this focus marker behave in some ways like subordinate clauses, for example in terms of what sort of negation they require (as is the case in various African languages discussed by Heine and Reh (1984:167–180)).

In cases where a focus marker seems to have developed from a reduced cleft, Heine and Reh caution against assuming that a relative clause marker was ever necessarily involved, since cleft constructions do not always use a relative clause as the subordinate clause (Heine and Reh 1984:180–181). Rather, the subordinate part of the cleft construction can be marked by a different subordinator, by no subordinator at all, or the verb of this clause might be a subordinate form that differs from the form used in relative clauses.

Yap et al. (2004) note a similar polysemy in Japanese and Chinese, in which a marker of (among other things) relative clauses also appears in cleft and focus constructions. Their explanation for this, however, does not involve this cleft and focus-marking function developing directly from the relative clause marker. Rather they argue that both the relative clause marker and the cleft or focus marker derive independently from what they call an “NP pronominal” (e.g. “one” in “The child’s one”) (Yap et al. 2004:160) or from an “S-pronominal” (marker of a sort of headless relative clause: “the one the child bought”). The hypothesised

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7 Kraska (1992-98) argues that the copula in Proto-Sam (the ancestor of Somali and related languages discussed by Heine and Reh (1984)) underwent grammaticalization, becoming a relative clause marker. On the evidence presented by Kraska, this seems plausible, but not necessarily more so than Heine and Reh’s competing analysis in which the cleft marker develops directly from the copula (Heine and Reh 1984).
origin of the relative clause marker was already handled in Chapter 3, so
I will not repeat the details of that discussion here. The main point of
relevance to the current discussion is that they have a certain amount of
evidence that the cleft/focus marker is not directly derived from the rela-
tive clause marker. Their evidence for this is threefold. Firstly, Japanese
does not use no in headed relative clauses, and its use in headless relative
clauses appeared around the same time as its use as a stance marker (the
16th century), while the use of no as an NP-pronominal already existed
for many centuries prior to this (Yap et al. 2004:146–148). Secondly,
Chinese displays plausible bridging contexts that are ambiguous between
cLEFTs and “S-pronominals” (see (31)).

(31) hai gaa ze maa i ge
     is sister buy GE
     “It is a sister-bought one” i.e. “it is one that Sister bought”
or “It is Sister who bought it” (Yap et al. 2004:151, ex. 41)

And finally, Malay does not use (em)punya for relative clause marking at
all, and never has done, yet this element has otherwise followed a similar
pathway of extension as the Chinese and Japanese markers (including
N-pronominal, S-pronominal, and cleft constructions.)

In all three of these languages: Chinese, Japanese and Malay, the
element in question has been further extended to use as a marker of
“stance”, as exemplified in (32). This, too, is only indirectly connected
to the relative clause marker, however.

(32) Ta bu hui lai de
     3SG not will come STANCE
     “S/he won’t come” (evidential) (Yap et al. 2004:150, ex. 36)

Interestingly, Singapore English one, a marker mentioned only briefly
in Yap et al. (2004:158) as a stance marker, has the same distribution
across all of these various functions, including relative clause marking.
Presumably it has copied the polysemy of Chinese de and ge and Malay
empunya without undergoing the same slow series of extensions. The
relative clause and stance marking functions of Singapore English one
are illustrated in (33).
§4.3 Redistribution of multiple markers

(33) a. That boy pinch my mother one very naughty

“The boy who pinched my mother is very naughty” (Al-sagoff and Lick 1998:129, ex. 3b)

b. It will go in one

“It will surely go in.” (Yap et al. 2004:158)

4.3 Redistribution of multiple markers

In this section my focus will be on the extension and narrowing of markers within the set of relative clauses in a language. This sort of redistribution takes place when speakers reorganise two or more markers that have been competing in various relative contexts into some sort of paradigm, e.g. one marker for animate referents only and one for inanimates; or one for subject relative clauses and one for non-subjects.

Distribution of markers according to the case role of NPrel is only one of many possible organising principles for multiple relative clause markers, but it is the one that has received the most attention in the literature, since it is the one that is synchronically treated by Keenan and Comrie's well-known Accessibility Hierarchy (Keenan and Comrie 1977) (discussed in detail in Chapter 2).

As shown by Maxwell (1982), the Accessibility Hierarchy also makes implicit predictions about the direction and progress of change in the distribution of relative clause markers. Maxwell’s paper focuses on the distribution of relativisation “strategies” rather than markers, but because of the way he defines these strategies, we can equate the two.

Maxwell distinguishes between four relative clause strategies, which he calls GAP-S, PRO-S, REL-S and NR-S. GAP-S is any strategy in which NPrel is not represented “in the surface structure” (Maxwell 1982: 137), so includes relative clauses introduced by complementisers, as well as those with no marker or only affixal marking on the verb (as in Basque, which Maxwell himself uses as an example of the GAP-S strategy (Maxwell 1982:139). PRO-S is a strategy in which “the NPrel is reflected by an anaphoric pronoun in surface structure”, while REL-S is when “the NP rel is reflected by a casecoding relative pronoun in surface
structure”. From his discussion it appears that the “anaphoric pronoun” in the PRO-S strategy should be equated with what is usually known as a “resumptive pronoun” and the “case-coding relative pronoun” with any fronted, case-marked relative clause marker. NR-S is a strategy whereby “the NP rel is reflected by a full NP in surface structure”. This is the one strategy which is not defined by the presence or absence of a particular marker type, and will therefore not be relevant to this present discussion.

Because Maxwell’s definitions of the other three “relative clause strategies” are defined on the basis of relative clause marker type, his hypotheses about change in these strategies can be viewed as hypotheses about changes in distribution of relative complementisers/verb affixes/lack of marking, resumptive pronouns, and case-marked relative clause markers respectively. Maxwell makes eleven specific claims about diachronic change that follow as a logical consequence of Keenan and Comrie’s (1977) Accessibility Hierarchy.

Not all of these are relevant to the present discussion. For a start, as I am not treating resumptive pronouns as relative clause markers, those hypotheses relating to the strategy Maxwell calls PRO-S (Ib and IVb) will not be discussed. Likewise, the strategy Maxwell calls NR-S does not translate to the presence or absence of a relative clause marker, therefore the part of the claim in DG VII that relates to this strategy will not be discussed here either. The removal of these hypotheses from Maxwell’s list leave us with the following.

DG Ia The GAP-S must be introduced at the highest position(s) on the AH.

DG IIa No strategy may skip any position(s) when spreading across the AH.

DG IIb GAP-S spreads downward on the AH.

DG IIIa No strategy may skip any position(s) while receding along the AH.

DG IIIb Any GAP-S must recede upward along the AH.

DG IVa The last stronghold of a GAP-S must be (or include) the highest position on the AH (i.e. SU)
DG V Two strategies in a given language tend to complement each other; as one advances, the other recedes.

DG VI The form of a new RC strategy in a given language is severely restricted by the nature of the strategies already present. The new strategy must to a certain extent share syntactic features with those already present, since the former is diachronically derived from the latter.

DG VII REL-S tends to recede and be replaced by postnom GAP-S.

The claims in DG Ia, IIa, IIb and VI are not directly relevant to the narrowing of relative clause markers, but rather to their introduction into the language and their extension from restricted environments to less restricted ones. Those relating to the introduction of new markers have already been discussed in Chapter 3. Indirectly, however, those predictions relating to the extension of relative clause markers from one position on the AH to another are relevant here because of the claim made in DG V: as one strategy recedes, another tends to advance. Evidence relating to this claim, and therefore indirectly to the hypotheses in IIa and IIb will therefore be discussed below in Section 4.3.

I would like to summarise here in terms of relative clause markers the predictions made in these hypotheses. Case-marked, fronted relative markers will recede and be replaced by relative complementisers, relative verb affixes or no marker at all. New relative complementisers and relative verb affixes will begin in subject relative clauses and gradually spread to obliques, or will be introduced for subject, object and oblique relativisation simultaneously. If such markers die out or become more narrowly restricted, they will be restricted to subject/object relativisation, not to obliques. New relative clause markers that develop in a language will do so at the expense of other markers: i.e. competition will lead to redistribution. Finally, markers that are extended from limited contexts to less restricted ones will only spread to adjacent positions on the AH, and will not skip any position.

Romaine (1984c) makes a simpler prediction which is not entirely compatible with Maxwell's:

[N]ew strategies of relativization will enter a language in ‘reverse’ order on the Keenan/Comrie accessibility hierarchy. In
other words, the change ‘sneaks in the back door’ via the least
frequently relativized positions, and spread out from there.

(Romaine 1984c:463)

Romaine bases this on a diachronic study of Germanic relative clause
markers, as well as data from Konkani and Tok Pisin. She is only referring
to new strategies\textsuperscript{8}, however, so this claim is not predicted necessarily to
hold for every individual relative clause marker, but only those that are
a different type from markers previously existing in the language.

As stated above, Keenan and Comrie’s Accessibility Hierarchy and
therefore Maxwell’s and Romaine’s diachronic predictions only deal with
distributions of strategies (or relative clause markers) which are based on
the case of NPrel. The distribution of some relative clause markers has
nothing to do with this and is determined by, for instance, animacy, noun
class, definiteness, relative clause “subtype” (e.g. infinitival, headless,
non-restrictive) or external, social factors. We can see this in English,
for example, as people are more likely to use “that” for inanimate refer-
ents and “who” for animates; we don’t find “that” in headless relative
clauses or, generally, in non-restrictive relative clauses; a “who”/“whom”
distinction is only likely to be found in formal registers, and “as”, “what”
or a subject gap tend to be used in informal contexts.

When I discuss changes in distribution of relative clause markers in
the rest of this chapter, I am not only referring to the increase or decrease
of the expanse of the accessibility hierarchy that these markers can be
used on, but also to whether, for example, they have been narrowed to
only apply to animate referents, or expanded from use only in headless
relative clauses to headed RCs as well. I will have little to say about re-
striction to or expansion from formal/informal registers or social groups,
since most of the languages I have examined do not have information on
different registers or dialects available for long enough periods of time to
make such generalisations possible.

\textsuperscript{8} Romaine (1984c) distinguishes three such strategies: 1) invariant marker or no
marker at all, (2) case-coding relative pronoun (or relative pronoun plus preposition),
and (3) resumptive pronoun.
4.3.1 Clues from synchronic distribution of markers

In some languages the changes in the distribution of markers are attested, as is the case in English with *who*, *which* and *that*. In other languages or language families we know or suspect that change has occurred because we find several dialects or related languages whose cognate relative clause markers are distributed according to different principles. This is the case in Quechua, where the distribution of three markers *shka*, *j* and *na* differs from dialect to dialect, and in Turkish where the exact domain of each relative clause marker differs from speaker to speaker within an otherwise unified dialect. In other language families, such as Celtic, it looks as though there has probably been change in the distribution of markers in each branch of the language, but the markers themselves are not cognate, so it is difficult to be sure what happened.

As mentioned in the previous chapter, Quechua has many different types of construction that function as relative clauses. One type that is common to all Quechuan languages is a nominalised construction with a marker suffixed to the verb of the relative clause. This construction is exemplified in (34).

(34)  

(a) Marya riku-*shka* runa  
Maria see-NMLZR man  
“The man whom Maria saw”

(b) Marya riku-*j* runa  
Maria see-NMLZR man  
“The man whom Maria sees”

(c) Marya riku-*na* runa  
Maria see-NMLZR man  
“The man whom Maria will see” (Cole 1985:47, ex 155a–c)

These examples are from Ecuadorian Quechua, and as can be seen, the various affixes *shka*, *j* and *na* correspond to the different tenses.

In other varieties of Quechua, however, the distribution of these affixes is determined by the syntactic role of NPrel, or by a mixture of this and tense considerations. In Ancash Quechua, for example, the relative clause suffix that occurs with subject NPrel, -*q* (cognate to -*j*), occurs
regardless of tense, while -na is used for all non-subject future tense relative clauses and shqa for non-subject, non-future RCs (Cole 1985:47–48). It is impossible to tell, however, which of these distribution patterns was the ‘original’ and which developed later.

Turkish is a similar case, where several different distributions of relative clause markers are attested, yet it is impossible to know which came first. In this case both patterns are based on the role of NPrel, but speakers differ as to whether they treat the markers (-An and -DIk) as being in true complementary distribution or not (Barker et al. 1990). For all speakers -An is used for clauses in which NPrel is the subject and -DIk for all others. For a minority of speakers, however, relative clauses in which NPrel is the possessor of the subject (“the man whose daughter...”), and those in which NPrel is the subject, but the relative clause itself is embedded in a subordinate clause (“the man that it is doubtful will trust us”) can be marked by either -An or -DIk (Barker et al. 1990:28).

The interesting thing is that this variation is not regional, but varies from speaker to speaker within a community. The grammatical judgement of each individual speaker for these sorts of sentences are apparently very clear (Barker et al. 1990:28). Barker et al do not discuss any possible historical implications of this split, but it seems to me that the relative clauses in which the two “dialects” disagree are types of RC that speakers may only very rarely, if at all, be exposed to as children, and speakers have therefore later perhaps had to make arbitrary “decisions” about which relative clause marker covers such cases. This is a sort of split that might conceivably be recreated in every generation. Ultimately, however, there is no way of knowing for certain how the two distributions originated.

Although the earliest attested Celtic languages appear to have developed an invariant particle io that was used for all relative clauses regardless of the case of NPrel, each later branch of the family has come to distinguish between oblique and non-oblique relative clauses, using different relative clause markers for each. The distribution of these two markers is complementary in Breton, with e(z) or e(c’h) used for relative clauses with an oblique NPrel and a plus lenition used when NPrel
is the subject or direct object (Ziegler 1993)). The distribution is not complementary in Welsh: the marker \( y \) is restricted to RCs with an oblique NPrel, but the alternative, \( a \) plus lenition, can be used in all contexts, including obliques (Ziegler 1993). In Irish the distribution of lenition and nasalisation in relative clauses is complementary (nasalisation for obliques, lenition for non-obliques), but an additional marker, \( a \), has been introduced that co-occurs with lenition/nasalisation in all contexts (Ziegler 1993). While the \( a \) and lenition that appears in each language is clearly cognate, the other particles are not.

Tantalising as such data are, there is simply not enough information on the development and changes affecting the individual markers in any of these cases for us to identify the factors involved in their redistribution or to be certain of the steps involved in the process. Even in Celtic, a relatively well-attested language, there are not enough relative clauses attested from the earliest stages of Welsh and Breton for us to be able to compare the development of these to the known development of Irish, nor is there the sort of continuous attestation or corpus depth in any of these that would be necessary for the study of such gradual change and perhaps mutual influence of the languages on each other as appears to have occurred.

I will now move on to looking at cases in which we do have more information, which may shed some light on the sorts of things may have happened in languages such as Quechua, Turkish and the Celtic languages as well.

### 4.3.2 Russian

Russian has a few different relative clause markers which have changed their distribution. The element \( jizhe \), originally inflecting for gender, number and case, but later used invariantly, was restricted to postnominal, embedded relative clauses, but was later extended to relatives as well (Leckey 1992:16–17, 21). The element \( kotoryi \), which inflects for number, gender and case, underwent the opposite expansion: it was originally used only in relatives, but then extended to postnominal embedded relative clauses (Leckey 1992:253, 259–260). Leckey believes that these

\(^9\) Breton \( e(z)/e(e'z) \) also competes with interrogative-based marking strategies which are restricted to the oblique.
two changes were correlated. She suggests that the expansion of kotoryi was due to its ability to function adjectivally ("which women..."), which gave it an advantage over izhe in the legal texts in which the change first seems to have taken place, as it was less ambiguous (Lecky 1992:254–255). She then suggests that the invasion by kotoryi of territory formerly belonging to izhe licensed izhe to make a retaliatory incursion into kotoryi’s territory:

The increasing frequency of the preposed RC with izhe (from the time period attested by Ickler to that attested here) was an analogical development. As kotoryi began functioning in environments typical for izhe, izhe became eligible for environments typical of kotoryi.

(Lecky 1992:259–260) (Note: I have romanised Lecky’s cyrillics for the Russian words).

This is not impossible, although at first glance it attributes a very high-level abstraction to speakers. The only analogical thinking that must take place, however, is for the speakers to equate the correlative and the postnominal embedded relative clauses as performing the same function. Once this equation has taken place, the incursion of either marker into the other environment is not unlikely. Lecky’s explanation that kotoryi was preferred in legal texts because it could be used adjectively would explain why this marker was extended before the other. That leaves the language with a lopsided system: in one construction kotoryi and izhe alternate freely, but in another they do not. The application of some principle of symmetry by speakers, leading to a situation in which both elements alternate freely in both contexts, requires no further shift in their perception of constructional relationships.

The only surprise is that this redistribution (from complementary distribution to free variation) is the opposite of that which, as we saw above, Maxwell (1982:DG, V) suggests is a general (re)organising principle for relative clause markers: “Two strategies in a given language tend to complement each other; as one advances, the other recedes”. The Russian case is not a true counterexample to Maxwell’s prediction, however, since izhe and kotoryi could be argued not to be entirely different strategies. By the period under investigation in Lecky’s study, izhe was sometimes
used as an non-agreeing particle, but still frequently agreed with its antecedent instead. Both elements could therefore be argued to represent the same “strategy” of agreeing relative pronoun. Furthermore, as we will see in 4.4.1 below, the two elements were not in competition for very long, as *izhe* was then lost altogether. In the long term, then, one did advance at the expense of the other.

### 4.3.3 English

As mentioned in Chapter 3, when the *who* series of relative clause markers first entered the language, they appear to have started off in possessive and oblique relative clauses and not spread to core relatives until centuries later (Jespersen 1927, Ryden 1983). But the changes in distribution of the *who, whom, whose* series of markers are not only a matter of which cases of NPrel they could represent. Rather even after *who* had become available for subject NPrel, the series remained primarily confined to non-restrictive clauses, where they competed with *that*. By 1700 there existed a restrictive/non-restrictive split, with *that* used more often than interrogative-based markers in restrictive clauses and *who, whose, whom* far more often than *that* in non-restrictive clauses (Grijzenhout 1992:45–46). Grijzenhout also shows that during the 18th century, the *who, whom, whose*, while no longer restricted to oblique NPrels, was more common than *that* in these contexts.

English is therefore an example of speakers’ (multiple) attempts to organise their set of available relative clause markers into paradigms where they will be in complementary distribution with each other. Initially, when the *who(m)* series entered the language, it did so in oblique positions, so it seems that speakers began to avoid using *that* in these contexts.\(^{10}\) They were thereby setting up a system where the invariable complementiser was used for RCs with subject NPrels and the interrogative-based markers in RCs with others. This negotiation of distinct “territories” by the interrogative and invariant relative clause markers is in accordance with Maxwell’s principle that “Two strategies in a given language tend to complement each other; as one advances, the other recedes” (Maxwell 1982:DG V).

\(^{10}\) Of course, we cannot be certain whether these earlier changes were only in written English or whether they were reflected in speech as well.
§4.3 Redistribution of multiple markers

The next distinction appearing between contexts requiring *who* and those requiring *that* was the restrictive/non-restrictive distinction. This shows that the principle of preserving complementarity suggested by Maxwell (1982), if it holds, does not only apply to complementarity based on case roles. If the *who*-based series started out by being confined to non-restrictive relative clauses, as Rydén (1983:132) observes, speakers must have generalised further from that that *that* was a marker of restrictive relative clauses. This is a trend that still shows through in Modern English, as *that* is rarely used in non-restrictive relative clauses (Quirk 1957:102). The *who*-based interrogatives, on the other hand, can modernly be found in both.

The third principle that speakers of Middle English used to organise these relative clause markers into some sort of complementary distribution was an animacy distinction. The relative clause marker *that* was originally used indiscriminately with both human and non-human antecedents. When *which* became common, it too was used for both. By the beginning of the 18th century, *who* tended to be used for animate antecedents and *which* for inanimates. The marker *that* was still used for both (Grijzenhout 1992:34). It is not until the 19th and 20th centuries that *that* becomes noticeably rarer with human antecedents (Saito 1961 cited in Grijzenhout (1992)), as it modernly still is (Quirk 1957:105). The long process of changes over these centuries can be summarised as the development of an opposition between non-human *which* and human *who*, followed by the gradual inclusion of *that* on the non-human side of the distinction. If we include the constraint on *that* that it is not used in non-restrictive relative clauses, we can see that there is a three-way distinction among the three types of markers: *which* = [-animate], *who* = [+animate], and *that* = [-animate, +restrictive]. Although these are strong tendencies rather than absolute constraints, it might be an indication that speakers do tend towards minimising redundancy when faced with a set of variant elements and the possibility of reinterpreting their distribution.

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11 Although use of *that* with human antecedents was frowned on in principle by some 18th century writers (e.g. Dryden), Grijzenhout shows that they continue to use it frequently in this context in their own work.
4.3.4 The Romance languages: *que* and *qui*

In the Romance languages, the distribution of relative clause markers has shifted in several different ways. Hirschbühler and Rivero (1982) make a convincing case that the changes in each branch are unrelated, so I will discuss several of them here.

French has undergone the most complex changes in its distribution of *qui, que* and other relative clause markers. From a purely descriptive point of view, the elements *que* and *qui* went from free variation in the 12th and 13th century to a distribution governed by the syntactic role of NPrel and the animacy of the referent in the 15th century (Hirschbühler and Rivero 1982:127). In 15th century relative clauses with subject NPrels, *qui* and *que* still alternated freely, but in relative clauses with an object NPrel, *qui* was not found, and in RCs with an oblique NPrel *qui* only appeared if the referent was animate (Hirschbühler and Rivero 1982:128). The distribution restrictions became more extreme still in the 17th century, as *que* was then no longer used in relative clauses with subject NPrels. This meant that by the 17th century, the two elements really were in complementary distribution (Hirschbühler and Rivero 1982:128).

Spanish also redistributed *que* and *quién* according to the role of NPrel and animacy constraints, but unlike French it eventually lost *qui* entirely (Hirschbühler and Rivero 1982:126). Before the 13th century *que* was common for subject and direct object, while *qui* was used primarily when NPrel was a prepositional object (Hirschbühler and Rivero 1982:125). During the 13th century, both of these expanded into each other’s domains: *qui* becoming possible in subject and direct object roles, and *que* becoming able to be used in obliques (Hirschbühler and Rivero 1982:124–125).

By the end of the 14th century, the form *quién* was lost, and *que* was replaced entirely by *quien* (from Latin *quem*, i.e. the object form of *qui*,

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12 I say this is the situation “from a purely descriptive viewpoint”, because there is reason to analyse some instances of *qui* as underlyingly instances of the complementiser *que*. This is because, in a generalisation that goes beyond relative clauses, the complementiser in any French clause from which the subject has been extracted is *qui* rather than the expected *que* (Hirschbühler and Rivero 1982:129). This, along with an analysis whereby that relative clause markers are deleted when the complementiser is overt, can account for the modern occurrence of *qui* in relative clauses with subject NPrel (Hirschbühler and Rivero 1982:120–130).
which in Spanish had been an alternative form to qui with the same distribution) in animate obliques (Hirschbühl and Rivero 1982:126). In inanimate obliques, que and quien were both possible (Hirschbühl and Rivero 1982:126). Modernly, quien and que are in free variation in relative clauses with animate referents with subject or direct object NPrels, but following prepositions only quien can appear if the referent is animate. In relative clauses with inanimate referents, no matter what the case role of NPrel, only que can appear. Unlike French, therefore, Spanish has never quite organised its relative clause markers into complementary distribution.

In summary, the distribution of qui and que in these two Romance languages has changed from almost free alternation in the direction of complementary distribution. In both French and Spanish the narrowing has been defined by a mixture of animacy and case-role-based constraints. In French each element underwent a unidirectional process of narrowing, while in Spanish there was first expansion, followed by loss of one marker entirely, and slight narrowing of the other. As these two markers were not different “strategies” in Keenan and Comrie’s or Maxwell’s sense, Maxwell’s generalisations are not necessarily expected to apply. Nevertheless, it does seem that there has been a trend towards complementary distribution here as well.

4.3.5 General summary and discussion of redistribution

In this section I have shown that synchronic differences between related language varieties in restrictions on the contexts relative clause markers appear in (such as those in Quechua, Turkish and the Celtic languages), may sometimes be only one stage in a series of diachronic shifts in the relative distribution of multiple markers.

The example of the Romance languages shows that one starting point (the distribution of relative clause markers in Latin) and a similar trend (towards complementary distribution governed by a mixture of case and animacy considerations) can nevertheless lead to different paths and different outcomes, even in languages that are still as similar to each other as Spanish and French. Whether these differences are random chance
or knock-on results of other differences in the history of the Romance languages is a question that might be of interest for further research, but is beyond the scope of a broader cross-linguistic study such as this one.

Although the literature on the distribution of relative clause markers has concentrated on the role played by the case of NRel and the tendency of relative clause marking strategies to tend towards complementary distribution, we have seen that other factors such as animacy and whether the RC is restrictive/non-restrictive can govern distributions instead (as was seen for English), and that even multiple relative clause markers of the same "type", (in Keenan and Comrie's (1977) or Maxwell's (1982) sense) do not necessarily share their distribution restrictions, but can be in complementary or slightly overlapping distributions, as was the case at various times in Russian.

The example of Russian also shows that relative clause markers that are in complementary distribution are not necessarily "stable" but can move into competition with each other. Although the Russian markers are not strictly of different "types", this may be a sign that even if there is, as has been suggested, a general trend towards complementary distribution of relative clause markers, this is not a one-way process.

Since the changes in the relative distribution of relative clause markers therefore goes beyond that relating to how different "strategies" shift along the Accessibility Hierarchy, it might be worth considering that changes in the latter might be a subset of a more general observation: that, since speakers will exploit the resources they have available to maximise the effectiveness of communication, multiple markers will tend towards differences in distribution that makes each more informative than it would have been if their distributions had been identical. We would expect categories that individual markers become associated with to be those that are otherwise "important" in the language, such as number, word class, case role, and also those that are perhaps not overtly marked elsewhere in the language, but that make for easier identification of the referent of a relative clause, e.g. animacy.
4.4 Loss

It is undeniably the case that relative clause markers can be lost to a language entirely. This is generally by replacement, i.e. several markers compete in the same context, and one gradually becomes the only possibility.

One study that has suggested some “rules” that may govern the loss of relative clause markers, at least in creoles, is by Aitchison (1992). Her exploration of the various patterns of relative clause marking that found in Tok Pisin and their distribution leads her to posit the following principles (Aitchison (1992:312) abridged and paraphrased):

1. Initial competition between multiple markers gives way to some that dominate and others that are lost

2. Loss can happen via gradual narrowing (“specialization”) to “particular minor usages” or by extension to other (non-relative) functions

3. The “winning” constructions are likely to be those which reflect convergence between the “base” and “substrate”

The third generalisation implies that the constructions, and therefore markers, which are lost will tend to be those that have the least in common with the structures found in the base and substrate languages.

Aitchison suggests that these principles might hold in very general terms for “mature” languages as well. The equivalent non-creole generalisation for (3) is that internal and external factors both play a role in deciding which of competing relative clause markers will win out (Aitchison 1992:313).

In the following I will look at particular cases in which relative clause markers have been lost and in which we know something about the circumstances of that loss. It will be seen that Aitchison’s generalisations appear to hold in languages beyond those included in her study. Other factors that she does not discuss, however, such as the effects of morphological and phonological change, and the tension between what is simpler for speakers (one marker for many contexts) and what is presumably simpler for hearers (specific markers for specific functions) will also be seen to have a role to play in loss.
4.4.1 Loss and general typological change

In some cases an internal motivation for the loss of a marker may exist in that the language is changing towards a different general “type” and markers that match this type may be be selected over those that do not. This may have had something to do with the loss of relative verb forms and their replacement by relative particles in Celtic and Egyptian and with the loss of the “se relative” and the related loss of the “se de construction” in Old English.

Morphological and morpho-syntactic developments in Celtic can be characterised as a move from synthetic to analytic (Hickey 2003:258) and “a general loss of inflectional endings” (Hickey 1997:135). The loss of *io-based affixal relative markers is in line with this. Originally these markers were no doubt independent lexemes, but by Old Irish they were already fused to the verb (Ziegler 1993:256–257). The lenition and nasalisation that occurred at the start of an Old Irish verb and distinguished between subject and non-subject relative clauses was the descendent of these *io forms, or possibly of one *io form and another verb form innovated on analogy with adverbial clauses (Ziegler 1993:260). Although lenition still remains in relative clauses in several modern Celtic languages, and the lenition/nasalisation distinction in Modern Irish, each of the Celtic languages has also innovated non-inflecting, non-bound relative clause markers (Ziegler 1993). Unlike in Aitchison’s model, however, the verb mutations and the free-standing relative clauses markers in Celtic do not seem to have competed so much as co-existed: in Welsh and Breton, for instance, the marker a appears in relative clauses in which the verb is lenited, and in Irish a appears in all relative clauses, with lenition or nasalisation depending on the case-role of NPrel.

The reason I have included the relative verb forms of Celtic in this section on loss is that the nasalised forms, at least, have been lost in e.g. Breton and Welsh. The newer stand-alone markers seem to have become the more salient marker of the relative clause. However, this was not through direct competition between the two types of marker.

Another case in which the loss of a relative clause marking strategy may have been just one small part of a general typological change is Egyptian, which is often given as a prime example of the shift from a synthetic to analytic type (Loprieno 1995:91). It is thought that the
loss of relative verb suffixes and their replacement by the clause-initial relative pronoun (later to become an invariant particle *nti*), was just one facet of this general “drift” the language underwent (Shisha-Halevy 2001:1757). The Egyptian case was one in which Aitchison’s model of gradual specialisation of a form and its eventual loss fits well, since the contexts in which the relative verb forms could be used became gradually more restricted until they died out all together.

In Old English, relative clauses marked by *se* and *se ðe* declined in frequency in texts of the 12th century, and were gone by not long afterwards (Allen 1980:202–204). The “*se* relative” was one in which the relative clause was introduced by an demonstrative pronoun which inflected for number, gender and case. The “*se ðe* relative” had this inflected demonstrative followed by the invariant marker *ðe*.

Although interrogatives had begun to be used as relative clause markers by that period, Allen argues that the *se* relative was not lost because of these, since the interrogatives did not become widespread for some time afterwards, and relatives introduced by invariant *ðe* or *ðæt* were more common (Allen 1980:202). Rather, Allen links the loss of the *se* and *se ðe* strategies to a general trend towards loss of inflection that affected, among other elements, the demonstrative pronouns (1980:203). The nominative case was the last and least affected by the decline in the use of *se*, as examples with nominative *se* are still found in texts of the twelfth century (Allen 1980:203).

Another typological change in English—the loss of grammatical gender—may have been a factor in the replacement of *ðe* by the competing marker *ðæt*. Both of these were indeclinable particles. In the oldest texts, *ðe* is the most common (Allen 1980:75) and there was only limited use of relative *ðæt* (p 102), but by the middle of the 13th century, *ðæt* had completely replaced *ðe* (Allen 1980:241). Allen (1980:240) suggests that this development was related to the loss of grammatical gender in late Old English, since *ðæt* was originally a neuter demonstrative pronoun, and the adoption of natural rather than grammatical gender allowed it to be extended beyond this.
4.4.2 External factors

Similarly to a language’s general drift towards a particular typological alignment, change in a language that brings it closer to the “type” of languages it is in contact with may also be a factor in loss of relative clause markers, or in speakers’ preference for one marker type over another. This is the case in the varieties of Turkish that have been heavily influenced by Persian, for example, which have lost the typical Turkish relative clause marking verb suffixes (e.g. -dik) in favour of an invariable clause-initial relative clause marker ki (Johanson 1998). It is not a forgone conclusion, however, that a language which adopts and generalises a new type of relative clause marker from a neighbour will consequently lose its former marker. The case of Basque, which has developed a clause initial interrogative-based relative clause marker on the model of the Romance languages (Larizgoitia and de los Salmores 1998), shows that it is possible instead for both markers to co-exist and the relative clause to therefore be doubly-marked. This is also similar to the solution described above that some of the Celtic languages have reached, even though their newer markers were not the result of contact.

I would also like to mention the loss of Hebrew interrogative-based relative clauses markers here under “external factors” even though the relevant factors could be said to be “internal” to the language family. In Biblical Hebrew, alongside the more common asher and she relative clause markers, one can find uses of interrogatives to introduce relative clauses (Waltke and O’Connor 1990:340–343). These were only a minority variant, however, and never seriously competed with asher/she.

One of the striking similarities across all the Semitic languages is the relative clause marking system. And unlike Indo-European, interrogative-based relative clause markers were never really a part of this system. Semitic languages overwhelmingly use demonstrative-based and definite-article-based relative clause markers (Arabic,13 Aramaic, the Ethiopian languages (Aristar 1991), probably Akkadian (Deutscher 2000a)). Hebrew also had demonstrative-based relative clause markers (zu, etc), and participial relative clauses marked with the definite article (ha-) (Waltke

13 Some Arabic dialects have begun to use interrogative-based relative clause markers more recently, but this is too recent a development to have affected the course of Biblical Hebrew.
and O’Connor 1990). Its main relative clause marker *she* did not quite fit this pattern, but *she* did match the other distribution patterns of the other Semitic languages, being used in possessive constructions and more general subordinative contexts, a pattern that the interrogatives even in Hebrew did not fit. This may have had something to do with why the demonstrative, definite and *she* relative clause markers survived while the interrogative-based ones did not. The degree of contact that existed between Hebrew and the other Semitic languages may have reinforced the others markers at the expense of the interrogative innovation.

An even more extreme case in which the patterns of a language family as a whole may have influenced the direction of change in individual languages is found in Slavic. This is more extreme than Hebrew because it was not just a case of one branch becoming more like the others, but all of the branches undergoing convergent change. In most Slavic languages, the demonstrative-based relative clause markers based on the PIE *io* demonstratives have been lost. This loss has occurred within attested history, and can be viewed as replacement by the competing interrogative series of relative clause markers (based on PIE *kwi/kwo*) (Komarek 1994). Literary Czech is one of the few Slavic languages that retains the demonstrative-based relative clause markers, so that we find relative markers such as *jenž*. In the other North Slavonic languages (e.g. Polish, Slovak, and colloquial Czech), these relative clause markers died out around the 15th century (Komarek 1994:360).

In Medieval Russian, the demonstrative-based *izhe*, discussed above, was also eventually replaced by the interrogative series of relative clause markers instead (Leckey 1992:17). Although the two types of marker had formerly been in complementary distribution, they came to be competing against each other in both correlatives and postnominal relative clauses (Leckey 1992:259–260). The element *kotoryi* was eventually successful and *izhe* vanished entirely (Leckey 1992:24). Modernly, *kotoryi* has been restricted to postnominal embedded relative clauses again and the interrogative-based *kto* and *chto* have taken over the role of correlative relative clause markers (Leckey 1992:21, 271).

In each branch the loss of the demonstrative-based item and its replacement by the interrogative pronouns was an independent development insofar as it occurred in a period in which there is no doubt that
the branches of Slavic are independent languages. However, it is not
inconceivable that the contact between them created some sort of “feed-
back loop” that reinforced one direction of change and not the other,
eventually leading to convergence in this feature.

4.4.3 Survival of the fittest?

Cambodian also lost a relative clause marker, namely the Old Khmer
element ta, which was discussed in 4.2.8 above (see also Jenner (1981)).
In Modern Cambodian, the relative clause marker dael is used instead
(Gorgoniye 1966). As ta functioned as a general linking particle, rather
than purely as a relative clause marker, this development is not quite
the same as the others discussed here, but it is nevertheless interesting.
Although we cannot be certain which of the many connecting functions
of ta was primary, this may be a case of what Aitchison (1992) means
when she suggests that sometimes loss may occur through extension.

We can only speculate on the reason for the replacement of ta with
dael, but since a very general linking particle has been replaced with
more specific elements, each limited to a subset of the constructions that
ta could be used in (Huffman 1973:507), it is possible that dael was
able to out-compete ta because its use gave the hearer an advantage in
immediately identifying the type of clause and therefore assigning the
correct meaning to it. A general element such as ta might be easier for
the speaker, especially at the language acquisition stage, but perhaps in
this individual case this advantage might have been outweighed by the
advantage dael had for comprehension.

On the other hand, a wide distribution has also been suggested to be
an advantage. Allen argues that the Old English subordination marker
det, mentioned above, had a natural “edge” over de, since its distribution
was wider in the first place (as det was found in adverbial and comple-
ment clauses as well as relatives). This makes sense, since it would mean
that children would be exposed to det more frequently than they would
to de, and also since it made det more likely to be adopted as a gen-
eral purpose complementiser, which is in fact what occurred. Obviously
frequency alone cannot be taken as a predictor that an element will win
over its competitors, otherwise anyone examining the situation in Old
English would have predicted that de would win out over det, but in a
language that comes to have one general-purpose subordination marker, it makes sense that this is likely to be the one that occurs in the widest range of subordination contexts.

The difference between the English and Cambodian situations, however, is that in the English case, neither of the two markers *det* or *de* was limited *only* to the relative clause, but rather each had multiple functions: one was merely more widely distributed than the other. This means that speakers did not have a choice between the simplicity of a general marker of subordination and the informativeness of specific markers for specific constructions. Rather their choice was between one not-very-informative marker and another less informative one with a more predictable distribution.

### 4.4.4 Loss as a consequence of other changes

The loss of a relative clause marker may also be a gradual and “accidental” side-effect of morphological and phonological change, as was the case in Japanese. Classical Japanese verbs of relative clauses, originally with various allomorphs of the suffix *-uru*, as illustrated in (35), became identical first to the clause final verb forms (through generalisation of the thematic vowel from the conjunctival form to the final, attributive and conditional forms) (Takeuchi 1999:117) then identical to main clause verb forms between the 14th and 17th centuries AD (Kikuta 2002:212–213), as phonological and morphological change eroded the differences between them (Bossong 1979:45f).

(35)  
\[
\text{tadataka zo suturu}\\
\text{Tadataka FOC throw-attributive}\\
\text{“It is Tadataka who is throwing away” (Takeuchi 1999:117, ex. 53)}
\]

The particle *no* stepped in to mark relative clauses instead, but this appears to have been a case of a new marker being pulled in to fill an apparent “gap” rather than it pushing aside an old one.

A similar convergence of forms might also have been a factor in the previously-discussed loss of the *se* marker in Old English. Masculine nominative *se* and feminine nominative *seo* became *de* and *deo* respec-
tively, presumably on analogy with the other forms of the demonstrative, which already began with ḍ-. (Allen 1980:203). This then led in the case of the former to potential confusion with the indeclinable particle ḍe. Therefore it is possible that speakers may have sometimes avoided this form in favour of an unambiguous alternative.

4.4.5 Conclusions regarding loss

The evidence from languages outside the scope of those investigated by Aitchison (1992) seems to support her generalisations about relative clause marker loss. Both language-internal factors such as general typological change in the language (Egyptian, Celtic, English) and external factors such as the characteristics of and changes in surrounding languages appear to be relevant (as seen, for example, in the cases of Hebrew, Turkish and perhaps Slavic). Both narrowing ("specialisation"), as in the Celtic example, and extension, as seen in Slavic and Cambodian, can be part of the process of loss. All of this was suggested by Aitchison (1992).

Going beyond Aitchison’s generalisations, two further points can be made. First, as language always involves tension between ease of acquisition and use for the speaker and ease of understanding for the hearer, it is not surprising if this tension is a motivation behind at least some language change. In the case of relative clause markers it is a choice between the simplicity of a one-to-one correspondence between form and function (i.e. one marker marking nothing but the clause’s relative clause status, or even simply subordination), and the informativeness of having a marker that is highly specialised and carries not only information about the status of the clause, but also information about the referent, and the role of NPrel within the clause. Where two markers sit on this continuum between simplicity and informativeness, as well as how they fit into the system of the rest of the language, may lead to one of the markers being preferred by speakers, which in turn can lead to the loss of the “less fit” marker.

Secondly and finally, the loss of a marker can take place not through competition at all but through phonological and/or morphological change that can even cause markers to “vanish”, as was the case in Japanese (and to some extent in Celtic, although in Celtic phonological mutations on the
verb remained as reflexes of the markers that had been there originally).

4.5 Formal changes

It is well known that the development of affixes from free lexemes is a common, almost entirely unidirectional process (Givón 1971:413) (for more recent discussion of this, see Hopper & Traugott (1993:135)). For this reason we should expect that relative verb affixes derive from free relative clause markers and not the other way around. This is supported by the fact that affixal relative clause markers in verb final languages tend to be suffixes (e.g. Basque, Classical Japanese, etc), while we find prefixed relative clause markers in verb-initial languages (e.g. Celtic).

But what about the diachronic relationship between other types of relative clause marker? Here I would like to explore some examples we have of languages in which one type of relative clause marker has not been replaced by a different type, but rather has become that other type. For the purposes of this section I will use a typology of relative clause markers similar to that proposed by De Vries (2002a) and discussed in Chapter 1, i.e. classifying relative clause markers as invariant complementisers, inflecting clause-initial “relative pronouns”,\(^\text{14}\) and relative verb affixes.

I do not include resumptive pronouns in this discussion as I am not aware of any cases in which these are known to have diachronically become any type of “true” relative clause marker. Since resumptive pronouns in relative clauses are generally personal pronouns, if they frequently became relative complementisers or relative pronouns, we would expect to find that personal pronouns appear to be a source (at least indirectly) of these markers. As shown in 3, this is rarely the case. In cases where a relative clause marker appears to be similar or identical to a personal pronoun, it is usually found that the “personal pronoun” in question is a third-person pronoun that is itself derived from a demonstrative.

Considering now the three types of relative clause marker, there are

\(^{14}\)In theory a non-inflecting clause initial marker could be a pronoun too, rather than a complementiser, if it were accompanied by a preposition or postposition, i.e. if we had to assume “ pied-piping” had taken place. In fact, none of the languages I have investigated here have pied-piping with an invariant marker, so the question does not arise.


six logically possible diachronic relationships between them:

1. Complementiser > relative pronoun
2. Relative pronoun > complementiser
3. Complementiser > verb affix
4. Verb affix > complementiser
5. Relative pronoun > verb affix
6. Verb affix > relative pronoun

As I have already mentioned, principles of morphological change make it unlikely that affixes would develop into either of the types of free marker, which means we are unlikely to find examples of (4) or (6). Of the remaining types, there is one (ongoing) example of (1), plenty of examples of (2), and at least one probable (reconstructed) example each of (3) and (5).

### 4.5.1 From invariant complementiser to inflecting pronoun and vice versa

Seppänen and Kjellmer (1995) and Seppänen (1997) suggest that the relative element *that*, while not originally a “relative pronoun” is becoming more pronominal in current English. A genitive form *that’s* has come into usage in some varieties, which one would not expect from an invariant relative complementiser. This is the only case of this directionality that I am aware of.

On the other hand, there are many examples of relative clause markers that have lost their ability to inflect. Here I will mention four that are well-attested.

The Old Akkadian relative clause marker *ša* had a complex paradigm with distinct forms for feminine, masculine singular, masculine plural and three different cases (Deutscher 2001:406). Unlike most relative clause markers that inflect for case, the Akkadian marker took its case by agreement with the head noun, rather than from the case role of NPrel within the relative clause. By 2000 BC only the former accusative masculine singular form, *ša*, remained for all genders, numbers and cases (Deutscher
2001:409). Deutscher attributes this change to the redundancy and processing difficulties inherent in the “maladaptive” system, arguing that the case-marking on the relative clause marker was not of practical use to the hearer, since it was only a repeat of that which was already present on the head NP, and in fact complicated matters for the hearer since the morphology and syntax gave conflicting signals about the position of the clause boundary (p 408). Whether or not this was this case in Akkadian, it clearly cannot be appealed to as a more general explanation for change from an inflecting relative pronoun to an invariant complementiser, since most languages that undergo this change do not have this “maladaptive” case-marking arrangement. Even in the case of Akkadian, Deutscher’s scenario is not an explanation for the loss of gender and number agreement on the marker, but only for the loss of case.

Another explanation for a change from inflecting to invariant relative clause marker that has been appealed to is a sort of fossilisation process that might affect dying markers. The relative clause marker *izhe* that is found in Medieval Russian and Old Church Slavic originally inflected for the number and gender of its referent, and for its case-role in the relative clause, but later became able to be used as invariant *izhe* no matter what the referent or case role was (Lecky 1992:17). Lecky notes that this loss of morphology is explained “as a transitional stage in the loss of the pronoun (ossification before elimination)”, citing Sumkina (1954: 155) (Lecky 1992:17). In this particular case, the impending loss of the marker may indeed have played a role, since the last stronghold of *izhe* was in the formulaic writings of Old Church Slavic. The language was being written by people who did not speak it in everyday life and it is possible that the loss of inflection of *izhe* was a sort of simplification influenced by this. In the other cases of loss of inflection discussed here, however, (Akkadian and Egyptian), the newly invariant markers were not subsequently lost. Even in the Slavic case, there is a period of multiple generations between the loss of inflection and the loss of the entire marker, therefore we cannot be sure there is a causal link even here, and we certainly cannot generalise any relationship between loss of inflection and total loss of a marker beyond this particular case.

The Egyptian relative clause marker, *ntj*, originally inflected for gender and number (if masculine) (Allen 2000:131). Unlike the Akkadian
and Slavic examples, however, it did not have different case forms, as Egyptian in general did not mark case morphologically. It has already been mentioned above that Egyptian gradually tended towards a more analytic typology over its lifetime. During the Middle Egyptian period, gender and number inflection was lost not only on the relative pronoun, but also on adjectives (Allen 2000:60). Allen associates the two developments with each other (p 131). The special negative forms of the relative clause marker (jw.tj, jw.tt, jw.tj.w) were also replaced by the analytic equivalent (ntj plus negation) (Allen 2000:134).

Another factor which may have contributed to the loss of inflection on the Egyptian relative clause marker is the specialisation of the feminine form ntt as an conjunction introducing complement clauses and, in combination with prepositions, adverbial clauses (Allen 2000:137–138). This extension preceded the change from inflected to invariant relative clause marker, and possibly, especially in combination with the loss of agreement in e.g. adjectives, led speakers to make the generalisation that not only was ntt the only one of the relative forms that could be used in other subordinate clauses, but that subordinate clauses were the only environment ntt could be used in. In other words, ntj and ntt were put into complementary distribution. This does not, of course, explain why the plural form ntjw was lost, but factors that may have been relevant to this are that the plural ending was often omitted in writing (not just in this marker, but in Egyptian nouns and adjectives in general) (Allen 2000:36–37), and that this form would have been less frequently used in any case, since even in Old Egyptian, only masculine referents had this distinct form for the plural.

Like Egyptian, Middle English shows how general changes in the inflection patterns of language affect relative clause markers. In Old English, the connection is much more direct than it is in Egyptian. Demonstratives in the 12th century lost their case inflections, and this affected the demonstrative-based relative pronouns as well (Allen 1980:197, 203). This was part of a general trend away from case inflection in English at that time (Allen 1980:203).

It can be seen from these four example languages that as far as any "explanation" can ever be invoked for language change, each case has its own motivations and contributing factors, and must therefore be exam-
ined in its own context.

4.5.2 From free-standing marker to verb affix

Some Bantu languages provide a probable example of the development of a relative verb affix from a free-standing, inflecting, relative pronoun. The change is not attested, but is convincingly reconstructed by Zeller (2004) on the basis of evidence from a group of related languages. Zeller argues that at the earliest stage, the clause-initial relative pronoun was a demonstrative-based element that agreed in word class with the head of the relative clause. The languages in question also have a proclitic subject-marker on the verb, and the preceding relative clause marker eventually fused to this. Thus it appears in modern languages representing this later stage (e.g. Nguni) as though there is a prefixed relative marker on the verb that agrees with the subject of the relative clause, no matter whether NPrel is the subject or another argument. This situation is illustrated in (36).\(^{15}\)

\[(36)\]
\[\text{a. indoda e-hleka kakhulu} \]
\[\text{man.9 REL.9-laugh a.lot} \]
\[\text{the man who laughs a lot} \]
\[\text{b. incwadi isitshudeni esi-yi-funda-yo} \]
\[\text{letter.9 student.7 REL.7-Obj.9-read-REL} \]
\[\text{the letter that the student is reading} \]

It should be reiterated that the development in Nguni is a reconstruction only, and I have not been able to find any attested examples of inflecting relative pronouns becoming relative verb affixes without first losing their inflectional property.

Continental Celtic may provide an example of an indirect development from one to the other, however. In other words, the relative marker in Celtic may have developed from an inflecting relative pronoun to an invariant complementiser to a verb affix (Ziegler 1993:251). Unfortunately we do not have continuous attestation of each stage, but the early inscriptions we do have suggest that this may be the correct reconstruc-

\(^{15}\) These languages also have a verb-final relative clause marker in some circumstances, but this is irrelevant to the present discussion.
tion. It is not, however, out of the question that the inflecting marker fused to the verb (as it did in the Bantu example) and that the inflection was subsequently lost.

Gaulish and Celtiberian are the two main branches of Continental Celtic. In the Celtiberian inscriptions the relative clause marker *iōs* is attested, with forms inflected for number and case. An example is given in (37) below.

(37)  

iomui lištaś TiTaś sisonti... somui [...] šaum TeCameTinaś TaTus

"wem sie lištaś TiTaś besäen, dem [...] soll man davon die zehntteiligen (Anteile) geben". (Ziegler 1993:252)

"To whom(ever) they lištaś TiTaś sow, to him one should give a tenth of it."

The precise meaning of this inscription, like that of most Celtiberian inscriptions, is unclear because of unknown vocabulary. What is clear, however, is that the construction is correlative, with the corresponding markers *iomui* and *somui*. All of the Celtiberian examples given in Ziegler (1993) are of this type, and all of them are generalising in meaning ("whoever").

In Gaulish this same construction is not attested. Rather we find an affix on the verb of the relative clause with the (invariable) form *-io* (Ziegler 1993:254). An example of this is shown in (38).

(38)  

etic gobedbi dugontiō ucuetin in alisīa

“und den Schmieden, welche verehren den Ucuetis in Alisia.”

(Ziegler 1993:254)

“and the smiths who worship Ucuetis in Alisia”

Ziegler suggests that the construction in (38) developed from one like that in (37). Such a change would have taken several steps. From a comparison of the structure of the two constructions, such as in (39) below, it can be seen that the two differ in basic word order and relative clause position as well as in the position and type of relative clause marker. Nevertheless it seems indisputable that the marker *iō-* and the verb affix *-io* are related.
(39) a. \([_{RC} \text{iomui} \ldots \text{VERB}]\ [_{MAIN} \text{somui} \ldots]\ \text{(SOV)}

b. \([_{MAIN} \ldots]\ [_{RC} \text{VERB-io} \ldots]\ \text{(VSO)}

Ziegler does not really address the question of which steps occurred in which order to lead from the first of these constructions to the next. She states simply that the \(io\)-relative clause marker first lost its ability to inflect, then became affixed to the verb. Presumably the change from SOV to VSO word order is likely to have happened first, which may have led to the preference for a postposed relative clause (assuming that, at some point the correlative and a postposed relative clause were in competition, as they are in some other languages with correlatives (e.g. the Indic languages). The elements would then all be in the “right” places for the \(io\) marker to fuse to the end of the verb, but I cannot see any reason, based on the data presented by Ziegler, to infer that the loss of inflection happened before this fusion. Rather I think that both possible orders of change are equally possible.

Both of the examples discussed here are rather speculative, but they provide some indication that cases of relative clause markers becoming verb affixes do exist. Together with the examples of inflecting relative pronouns becoming invariant markers, this shows that there is a certain diachronic fluidity among the various “types” of markers, and that models such as those proposed by Maxwell (1982), Romaine (1984b) and Aitchison (1992), which assume relative clause marking strategies change by replacement, may not be sufficient.

### 4.6 Conclusions

In the introduction to this chapter I mentioned four possible ways in which relative clause markers can change during a given period of time: by extending the contexts in which they are found, by reducing these contexts, by disappearing completely, and by undergoing formal changes (change in “type”). I have now shown that there are many attested examples of each of these types of change.

In Section 4.2 I classified the cases of extension to other, non-relative contexts into two main types: extension into other subordinative clauses
(adverbial clauses, complement clauses and comparative constructions),
and extension into other types of (non-clausal) modification (adjective
phrases and possessive constructions). It is also possible for a relative
clause marker to become a general marker of subordination or modifica-
tion, or even a general linker that is used to connect all sorts of phrases.
Just as Lehmann (1984) showed to be the case for the sources of rela-
tive clause markers, the operations of subordination and modification, as
well as the pronominal nature of some relative clause markers, are what
determines which constructions they are extended into.

The processes by which these extensions occur were also explored,
and it was seen that there is support for Givón’s model of analogical
change taking place through blended constructions and speech error in
multiple individual constructions before it is generalised across the whole
“paradigm” or set of similar constructions.

I then discussed redistribution of relative clause markers within the
set of relative clauses. While in the literature the focus has mainly been
on redistribution of markers along the Accessibility Hierarchy, i.e. with
respect to the case of NPrel, I have shown that other factors, especially
the animacy of the referent, are at least as influential. There is a certain
amount of support for the hypothesis that multiple relative clause mark-
ers in a language tend towards complementary distribution, but there
are also cases such as Russian which display the opposite direction of
change. It is difficult to evaluate the predictions of e.g. Maxwell (1982)
and Romaine (1984b) with respect to relative clause marker change, since
they focus on change in distribution of strategies along the AH, and in
many of the cases of change in relative clause marker distribution, the
multiple markers involved in the change have been of the same strategy
in Maxwell’s and Romaine’s sense, or they have changed strategy during
the period in question (e.g. by losing their ability to inflect). It should
be noted, however, that I have found nothing in this data that directly
contradicts any of Maxwell’s or Romaine’s hypotheses.\textsuperscript{16}

In Section 4.4.1, the loss of relative clause markers was discussed. The
model proposed by Aitchison (1992) on the basis of her study of Tok Pisin
was shown to be relevant in non-creole languages as well, although it is

\textsuperscript{16} As was seen in the previous chapter (Chapter 3), there is some evidence that
contradicts Maxwell’s predictions about the appearance of new relative clause markers
in a language, but this is not the focus of this current chapter.
insufficient to account for all processes of loss. Both the extension of relative clause markers into new contexts, and their narrowing within the set of relative clauses are processes that take place on the way to complete loss of a marker. External (language contact) and internal (typological) factors can be seen to influence which marker or markers become generalised and which are lost, when multiple markers compete. Competition of multiple items is not the only way in which a relative clause marker can be lost, however. The example of Japanese shows that morphological and/or phonological change can also cause a marker to be eroded and eventually to vanish completely.

Finally I described the formal changes that relative clause markers can undergo. It was seen that there is strong evidence for development from inflecting relative clause markers to invariant relative complementisers, and there also exists at least one, possibly two weaker, reconstructed examples of inflecting relative clause markers becoming verb affixes. One of these could possibly instead be interpreted as an invariant relative clause marker becoming a verb affix. There is at least one case in progress that could be interpreted as the development of an inflecting pronoun from an invariant marker. There is no evidence that I am aware of for an affix becoming a free-standing marker, but this is not surprising since the freeing of bound morphemes is rare to non-existent in any circumstances.
Changes in the relationship between the main and relative clause

5.1 Introduction and review of the literature

As has been shown in many synchronic studies of relative clauses, languages vary typologically with regard to certain features of the relationship between the main clause and the relative clause (Comrie 1981, Lehmann 1984, De Vries 2002a). Relative clauses can be adjoined to the main clause, or they can be embedded in the NP they refer to. This relationship can be marked formally in various ways: the subordinate status of an embedded RC might be marked by subordinating conjunctions, and/or by a special (deranked) form of the verb, by its position vis-à-vis the head noun, etc. A closer look at the development and loss of these formal features should therefore shed some light on whether variation between adjunction and embedding of relative clauses takes place along a historical continuum as well.

In Chapter 2 I discussed the problem of differing understandings of terminology in the literature such as “adjoining”, “embedding”, “subordination”, “parataxis” and “hypotaxis”, and outlined the way in which I will use these concepts here. To summarise briefly, I will broadly follow the framework laid out in Cristofaro (2003). While adjoined and embedded relative clauses involve two distinct underlying syntactic structures, the surface signs of embedding/subordination differ from language to language. They can include any, all or none of the following:
• subordination markers (hypotaxis)
• deranking of verb form
• material from the main clause surrounding the embedded clause (sometimes called “centre-embedding”)
• special marking or absence of constituents such as agent/patient
• special word order

The “deranking” of a verb form can mean the absence of otherwise obligatory agreement, tense, aspect or mood markers, or special subordinate forms of any of these. Or it can mean an unusual pattern of agreement, for example object agreement when verbs otherwise would agree with their subjects. A complex sentence in which neither of the verbs is deranked can be said to be “balanced”.

Sometimes, especially if none of these signs is present in the available examples from the language, it is impossible to determine whether the relative clause is embedded or adjoined. In a dead language it is impossible to question speakers about grammaticality judgments or to use invented examples to test their intuitions about scope. For this reason, I will not primarily focus in this chapter on changes in whether or not a relative clause is truly, underlyingly, subordinated to the head NP, but rather on the external signs that often accompany such changes: the development or loss of subordination markers, changes in verb types, and the loss and development of the ability to surround the RC with material from the main clause (this last in the context of a discussion about the development and loss of correlative constructions). Finally I will examine some possible implications for the synchronic syntactic analysis of relative clauses that can be drawn from the types of changes found.

I will not discuss changes in the marking of constituents such as agent and patient in the RC, since information on this is often not included in descriptive studies of relative clauses in individual languages, and therefore is not available to me for many of the constructions in my sample. Nor will I discuss special word order patterns, as I am not aware of any attested cases in which a word order pattern specific to the relative clause has developed or been lost.
§5.2 Changes from parataxis to hypotaxis and vice versa

As can be seen from Lehmann’s discussion of changes in the relationship between relative clauses and their heads (Lehmann 1984), if one restricts oneself to a study of continuous evolution, there is not much to say, since there are almost no attested examples of relative clauses changing “type” from adjoined to embedded or vice versa. Fortunately, it has been suggested that the ways in which constructions such as relative clauses are replaced or renewed are indicative of the ways in which they evolved in the first place (Harris and Campbell 1995:283). This means that change is interesting not just for its own sake, but also because it hints at how particular types of relative clauses might have arisen prehistorically. Even transmission of relative clause types from one language to another may shed light on this question, as it has been argued that replication of sentence patterns through language contact involves the same processes as when a language develops a construction without outside influence (Heine & Kuteva (2005, 2006)). For these reasons I have included in this chapter discussion of renewal, replication and replacement of the various relative clause types as well as what little is known or hypothesised about their origins.

5.2 Changes from parataxis to hypotaxis and vice versa

One of the signs of embedding in many languages is simply the use of an explicit subordination marker at one or both of the boundaries of the subordinate clause. In Chapter 3 I examined the various sources of such markers as found in relative clauses, and in Chapter 4 I showed how markers specific to the relative clause have become more general markers of subordination in many languages. Here I would like to address the question of whether change from juxtaposed (paratactic) relative clauses to those introduced by an explicit marker of subordination is, as has been claimed, a strong tendency, or even a unidirectional pathway.

Approaches to subordination and linguistic change have been influenced sometimes in the past by an ideological investment in the idea that “primitive languages” use “loosely linked” clauses, while mature, sophis-

\[\text{1} \] These few examples that do exist are covered here in Section 5.4.
ticated languages (like Latin, Greek and Hebrew) are syntactically more complex and therefore use more subordination and embedding, and will therefore use explicit markers of subordination (cf. Harris and Campbell (1995:282) or Sampson (1997:74ff) for a more detailed discussion of the history of these ideas).

This version of the claim has mostly been laid to rest, but more recently it has become a common assumption that complex constructions in modern languages have their roots in juxtapositions of independent main clauses in an earlier stage of the language. For example, Haader states in a discussion of Hungarian:

Bekanntlich sind die Satzgefüge als syntaktische Strukturen aus freien Textsätzen (Diskursstrukturen) entstanden. [It is well known that (the) complex sentences originated as syntactic structures from free discourse structures.]

(Haader 2002:§2.1)

Hopper and Traugott (1993:168ff) claim that clause combining is a “unidirectional cline from relatively free juxtaposition to syntactic and morphological bondedness.” Similar ideas have also been put forward by e.g. Bruter (1990), Hewitt (1987:141–142), and Ramat (2000:133). Although in these cases the argument is not that this freer juxtaposition is indicative of “primitiveness”, the idea that natural processes of change cause languages to repeatedly tread this directional pathway is a strong claim which requires further inspection. In some, though not all of the above cases, the argument is more or less data-driven and the authors may not have been influenced by the earlier “received view” of adjunction and parataxis as primitive and embedding and hypotaxis as sophisticated, modern devices. It is nevertheless worth keeping in mind that this context may perhaps make readers more receptive to claims of change from parataxis to hypotaxis than they would be to a claim that went against the “traditional” view (e.g. a case of juxtaposed or adjoined relative clause constructions in a modern language developing from earlier hypotactic or subordinated clauses).

If we examine the literature for examples of languages in which relative clauses are said to have changed from being linked paratactically to being introduced with a subordinating conjunction, there are very few
cases in which this claim is explicitly made. I have been able to find five languages/language families which have been used as examples of subordination coming from paratactically-linked clauses, and these are Hebrew and Greek (Givón 1991), Georgian (Hewitt 1987), Hungarian (Haader 2002), some Ngumpin-Yapa languages (McConvell 2006). Furthermore, it is generally believed that pidgins only have paratactically linked relative clauses, which develop into hypotactic constructions as the languages evolve into creoles (Romaine 1992). I will briefly examine each of these cases.

When Givón (1991) argues that Hebrew and Greek have become more hypotactic, he is referring not to change in an individual construction, but rather in the languages as a whole: that each has moved from greater use of parataxis to greater use of hypotaxis. Whether this is the case or not, it is a matter for corpus-based statistical examination rather than for the present study. Even if it is true, it does not necessarily follow that the type of structure preferred in the earlier language (parataxis) is older than the hypotactic structures preferred more modernly, nor that one developed from the other. I mention this example therefore only because this it demonstrates how the question of whether hypotaxis comes from parataxis can be confused by differing interpretations of what is actually being claimed.

In both Georgian and Hungarian the claim is that specific hypotactic relative clause constructions are derived from looser discourse juxtapositions. In neither case, however, is the paratactic stage attested, but rather it is reconstructed at least partly on the basis of the “fact” that complex constructions come from loosely connected simple clauses (see e.g. the quotation from Haader (2002) reproduced above.)

Due to the lack of historical data on the Ngumpin-Yapa languages described by McConvell (2006), the process of change is not attested in these languages either. McConvell’s reconstruction of a paratactic stage is based on the fact that most related languages have loosely conjoined relative clauses and that the transition to explicit subordination marking is found in various stages of completeness in various languages. Therefore his reconstruction is perhaps more grounded in (albeit synchronic) evidence than the reconstruction of hypotaxis from parataxis in Georgian and Hungarian is.
§5.2 Changes from parataxis to hypotaxis and vice versa

The observation that pidgins have only paratactic relative clause constructions (Romaine 1992), if true, is perhaps stronger evidence for the idea that hypotactic relative clauses develop out of parataxis. Unfortunately I have not been able to find convincing evidence for this claim. Ideally we would need a cross-linguistic study of pidgins in which the functional equivalents of relative clauses were documented and shown to be paratactic juxtapositions or discourse structures. However, I am not aware of any such study. In recent books on pidgins and creoles in which the idea that pidgins have only paratactic RCs is mentioned, the evidence given seems rather suspect. For example, Holm (2000) supports this idea by first reproducing a Tok Pisin text from Hall (1966) in which there are only simple sentences (Holm 2000:6), then comparing this with Guinea-Bissau Creole Portuguese, in which embedded, hypotactic relative clauses are found (2000:9). There are several problems with this, not least of which is that he is comparing two different languages, both of which are creoles rather than pidgins. It is certainly not evidence of a process of development of parataxis into hypotaxis. Due to the lack of long historical records for most creoles, documentation of such a process is unavailable for the vast majority of cases.

For this reason, the only way to prove that parataxis in pidgins is replaced by hypotaxis in creoles is to prove that pidgins never have hypotaxis, and that creoles always do. In at least two studies of pidgins, however, there are examples of speakers using relative clauses with explicit relative clause markers. The first of these is a study of Liberian Pidgin English (Singler 1988). The aim of the study was actually to test the effect of speakers’ native language patterns on their use of resumptive pronouns in relative clause constructions, but some information on the use of relative clause markers is also given. The relative clauses were not elicited but taken from recorded conversations. In the appendix (Singler 1988:48) a breakdown is given of hypotactic and paratactic patterns in the 43 relative clauses produced by speakers who speak Klao as their native language, acquired Liberian Pidgin English as adults, and have had no Western schooling. Of these, there are 26 clauses that contained a relative clause marker, and only 10 that were paratactic (the remaining tokens were discarded as unclassifiable).

The RC pattern in these speakers’ native Klao may have had an
effect on this, since it is very clearly marked for subordination: a relative marker introduces the RC, the verb has a subordinating suffix, and the relative clause is concluded by a marker that is identical to the definite article (Singler 1988:34). The crucial point, however, is that Liberian Pidgin English is quite clearly a pidgin in which relative clauses can be formed hypotactically, and therefore falsifies the claim that there is no hypotaxis in pidgins. It is, of course, possible that parataxis is more common in pidgins and hypotaxis more common in creoles, and perhaps even true that hypotactic constructions in pidgin and creole languages tend to develop from earlier, paratactic constructions, but I have yet to find clear evidence of this.

Whether the supposed development from parataxis to hypotaxis is meant to be a characteristic of language development (as in the Hebrew, Greek and pidgin/creole cases) or of individual constructions (as in Georgian, Hungarian and the Ngumpin-Yapa languages), I have yet to see clear evidence that this is really a widespread, let alone universal or unidirectional pathway. In fact, the evidence in Chapter 3 and in the rest of this chapter suggests to me that in the case of relative clauses, an origin in paratactic structures may be the exception rather than the rule. In general, relative clauses seem to be far more commonly modeled on pre-existing complex sentences, either non-relative patterns in the same language, or relative clause patterns borrowed from other languages.

5.3 Deranking of verb forms in diachronic perspective

Like the use of a relative clause marker (hypotaxis), the form of the verb is in some languages an indication of subordination. There are various types of non-main-clause verb forms found in relative clauses, encompassing a range of deranking properties as defined in Cristofaro (2003) and discussed here in Chapter 1. In this section I will examine how languages develop relative clause strategies with deranked verbs and show that, as with many of the other markings of subordination discussed in this chapter, these can be lost as well as gained.

This section is organised principally by directionality, and the investigation of each direction is in turn divided into a discussion of organic,
continuous change, and an examination of cases of replacement. I will begin by discussing the (lack of) evidence for continuous change from a balanced to deranked relative clause construction, followed by the equally poorly attested replacement of balanced constructions by deranked relatives. I will then turn to the opposite direction of change and examine the evidence for a balanced relative clause construction arising organically out of a deranked construction, followed by an summary of cases in which balanced RCs have replaced deranking strategies.

It will be seen that language contact appears to be an important factor in these changes, and also that the evidence for both change and replacement is slightly stronger for the direction of deranked to balanced construction than it is for the opposite pathway. I will conclude by outlining some reasons which might explain this finding.

### 5.3.1 From balanced constructions to deranked relatives

There is very little evidence that deranked relative clauses develop gradually out of balanced constructions, even though we might expect that this could occur through fusion of a nominalisation marker or relative clause marker to a verb. Such a process of fusion would explain why deranked verbs tend to be more common in prenominal relative clauses than postnominally: prenominal RCs often have OV word order and clause final relative clause markers (Downing 1978:396), which means that the verb is more likely to be directly followed by the relative clause marker than it would in a postnominal relative clause. Generally speaking, relative clause markers in prenominal RCs are non-pronominal (1978:396), which means that their fusion to the verb would result in a verb with internal inflection, or with none at all. Many deranked verb forms do lack typical verbal inflection, but many more have special forms of agreement and/or TAM marking, unrelated to main clause inflectional patterns, or mark some, but not all of the same categories as main clause verbs (Cristofaro 2003:chap. 7). These sorts of patterns cannot be explained as the result of suffixation of a nominaliser or relative clause marker.

A phenomenon found in Tamil and some other Dravidian languages shows how such special agreement markers could develop on the verb of
a relative clause. This phenomenon is also a type of fusion, though not of a balanced verb and a relative clause marker, but rather the fusion of an already deranked verb form and the juxtaposed pronominal head of the relative clause. In Tamil there is no independent relative clause marker or nominaliser intervening between the clause-final verb of a pronominal relative clause and the relative clause head. When the head is a pronoun, this can be suffixed to the verb so that the resulting construction looks like a headless relative clause with unusual verb agreement markings (Krishnamurti 2003:446). This is exemplified in (1).\(^2\)

(1) a. நான் நீரு பரு-டிம் பையன்
   I yesterday see-PAST-ADJ boy
   “The boy whom I saw yesterday”

b. நான் நீரு பரு-டிம்-வான்
   I yesterday see-PAST-ADJ.he
   “He whom I saw yesterday” (Krishnamurti 2003:445, ex. 29a)

This appears to be a synchronic process at the moment, since it is optional, and no further (i.e. nominal) head co-occurs with the pronoun suffixes. It does, however, demonstrate one way in which agreement could arise on the relative verb. It would result in the verb agreeing with the RC head, but in many languages, deranked relative clauses are restricted to subject relativisation in any case (Keenan and Comrie 1977, Downing 1978), so agreement with the head is equivalent to subject agreement. It should also be noted that this is not an example of a relative clause with deranked verbs developing from a balanced RC, since the verb form in question was deranked (by use of the “adjectival” suffix) even before the suffixation of the pronoun/agreement morphology. There are, to my knowledge, no corresponding examples involving fusion of pronominal heads or even of relative clause markers to balanced RC verbs.

The natural next question is, if deranked relative verb forms do not (all) derive from balanced forms through this sort of gradual change, where do they come from? It seems to me that what scant evidence there

\(^2\) Note in (1-b) the adjectival and personal suffixes cannot be isolated from each other. The adjectival suffix is -a and the personal pronoun is awaň, so these fuse together into awaň. This is one indication that the pronominal head is actually fused to the verb and that it is not simply a written convention.
is points to them being modelled on other, non-relative constructions, and/or spread through language contact (i.e. as grammatical calques). The first indication that relative clauses with deranked verb forms may be modelled on non-relative constructions is that in the great majority of cases known to me, the verb form is not specific to the relative clause, but is found in other subordinate constructions as well (e.g. complement clauses and/or various adverbial clauses). The information in the appendix to Cristofaro’s recent study of subordination (Cristofaro 2003) shows this quite clearly for almost all of the 40 RC-deranking languages in her sample. Even in those few languages which do have distinct deranked forms for relative clauses that are not found in other constructions, these are often reconstructed to have been based on forms not specific to relative clauses, historically. Ancient Egyptian, for instance, has special relative verb forms, but these are believed to have developed from participles (Gardiner 1966:386), which also had other, non-relative functions; Egyptian participles could be used as agentive nouns and predicative adjectives as well (Allen 2000:319–341).³

Commonly the deranked form found in relative clauses is the same verb form that is used as a participle, i.e. a verb form that frequently can also serve an adjectival function. In some languages, this verb even contains an adjective marker: this is the case in many of the Dravidian languages (-a), and in Germanic (Harbert 2006:345), to name just two examples. It is therefore possible that at least some deranked relative clauses originated as deverbal adjectives whose verbal nature allowed the addition of arguments and adjuncts, expanding them into full (though deranked) clauses. This is a scenario proposed by Harris and Campbell (1995).

A similar scenario has been suggested by Hewitt (1978:100–113) to explain the development of deranked relative clauses in Armenian. In Classical Armenian, relative clauses were expressed with postnominal or correlative constructions (Hewitt 1978:100–113). In Modern Armenian it is also possible to use prenominal relative constructions with deranked verb forms (participles: otherwise used as gerunds (Hewitt 1978:128–129, fn. 20)). These three types of relative clause are illustrated in (2).

³Note that the participles continued to exist as an alternative way to express relativisation.
(2) a. օնտրաց էր կառաս, զ-օր-ս էվ առաեալս անուանաէաչ
he-chose twelve whom indeed apostles he-named

b. օր օղի նոնանե վալ այս հասի, զնա
who ever from them quickly to me reaches-SUBJ, him
king I-shall-make-SUBJ.FUT
“Whichever of them reaches me the sooner, him shall I make
king”.
Classical Armenian (Eznik, in Hewitt (1978:105)).

c. կուրտեն տանձ-ու-ոլ այս երեք մարտո
by-the-cold-ABL being-tormented this poor man-the
“this poor man who is being tormented by the cold...”
Modern Western Armenian (Feydit 1948:127 in Hewitt (1978:
124)).

It is usually suggested that the deranked prenominal construction is a
calque on the Turkish relative clause (Feydit 1948, Stilo 2004), but He-
witt argues that the Armenian construction could have developed sponta-
neously. The scenario he outlines is that the auxiliary verb in a sentence
like “the church which was built by Gregory the Great” was lost, and then
the relative clause marker was also eliminated, since the clause began to
be reinterpreted as phrasal. Finally the participle, now analogically seen
as an adjective, was moved to the same position in which adjectives in
Armenian are most common: prenominally (Hewitt 1978:128).

This hypothesised series of events is supported by the fact that sen-
tences without the auxiliary, but still with the relative clause marker,
are attested in Classical Armenian: i.e. an intermediate stage between
the proto-typical Classical Armenian postnominal relative clause and the
Modern Armenian prenominal RC (see e.g. (3)).

(3) էս էմ հած կենդանի օր ջերկիչ պդզ-էալ
I am bread-the living which from-heaven descend-PART
“I am the living bread which has descended from heaven.”
More independent evidence than this is needed before it can be accepted that each of the various steps Hewitt outlines occurred as and in the order he suggests. The specific part of his scenario dealing with the change of *position* of the RC, on the other hand, is not implausible: it simply relies on an analogy with adjectives having taken place, since we know that the position of adjectives shifted between Classical and Modern Armenian.

Moreover, we do not need to choose between an analysis such as Hewitt's that has the construction grow organically out of a pre-existing construction, and the more common assumption that it was created on analogy with Turkish. Since we know that Armenian has been influenced by Turkish, the simplest analysis is one that involves both proposals: that Armenian recreated the Turkish relative clause strategy using resources already available to it. The question of whether it was a language-internal development hastened and encouraged by outside influence, or a language contact phenomenon supported by internal typological developments is simply a matter of the perspective from which the situation is viewed. Unfortunately the historical record for languages with deranked RCs is not long enough to find any clearly attested cases of this in other languages for comparison's sake.

Likewise, there are no clear attested cases of the adoption of deranked relative clause constructions under contact circumstances, if we assume that the Armenian case can equally well be explained by Hewitt's theory. Synchronic evidence from the geographical distribution of deranking in relative clauses suggests that the development of deranked constructions might frequently be an areal phenomenon, however. Surprisingly, the geographic distribution of deranked relative clauses does not seem to have been much discussed in the literature, at least not in large-scale cross-linguistic studies. A brief, statistically non-robust count of the languages in Cristofaro’s (2003) sample suggests that a proper study of this nature might be fruitful. Her 80-language sample contains 26 languages that use deranked verbs as their only relative clause strategy.\(^4\)

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\(^4\) Some of these may have minor relative clause constructions involving balanced clauses, perhaps restricted to some dialects only: Turkish, for example, is listed by Cristofaro as having only deranked relative clauses, but the postnominal balanced construction introduced by *bi*, discussed already in Chapter 3, is widely used in some varieties (Johanson 1998), and is even found occasionally in the oldest Turkish texts.
Languages of the Indian subcontinent and of South America both seem to be heavily represented (in each case, five languages from four different families). Apart from (Canadian) Squamish, the only North American languages in Cristofaro’s sample that have primarily deranked RCs are two languages from California and two from Mexico. All four Australian languages among these 26 deranking languages are from Queensland.

Other evidence that contact may be involved in the development of deranked relative clauses comes from Stilo (2004), who claims that what he calls “prepositional, participial relative clauses” are an isogloss that connects many of the languages in and around the Iranian area. They are found in Caucasian languages, Azerbaijani, Turkish, Armenian, Russian, and even Ossetic, an Iranian language spoken in Georgia and Southern Russia. In many of these cases (Russian, Armenian, Azerbaijani) such RCs are literary and formal only, which Stilo suggests is an indication that the deranked construction was non-native, but rather a calque, probably from German via Russian. Finally, I would like to mention that while deranked relative clauses are the main relative clause strategy in Dravidian languages, generally they are a minor construction in Indo-Aryan, and it is particularly those Indo-Aryan languages that are in closest contact with the Dravidian languages that have adopted the deranked RCs as the main relative construction: Sinhalese, some dialects of Konkani, Saurashtri (Masica 1991:408), and Oriya (Patnaik 2004:2), for example. These findings suggest that contact should be investigated further as a possible factor in the spread of deranked relative clauses.

### 5.3.2 From deranked RCs to balanced constructions

There is slightly more evidence for gradual development from deranked relative clauses to balanced constructions than there was for the opposite direction. In this case we have at least one well-attested example: that of Japanese. As discussed already in Chapter 4, the verb of the relative clause in Old Japanese took a special form (traditionally known as a *rentaikei* form, but glossed here as ATT(ributive), following Bentley’s convention (Bentley 2001)). This is illustrated in (4).

(4) ima pa mi y mo ap-ezu aru-ramu mono wo
now TOP body PT endure-NEG-INF be-ATT thing ACC
“Now my body [has become] a thing that will not endure” (Bent-
These verbs became identical to the ordinary main clause verb forms between the 14th and 17th centuries AD (Kikuta 2002:212–213), as phonological and morphological change eroded the differences between the two (Bossong 1979:45f). The nominalisation of the relative clause in the modern language is marked instead by the particle no, but in Cristofaro’s sense, this is no longer deranking since no is a clearly segmentable nominaliser (not even attached to the verb) (Cristofaro 2003:58, 215). The Japanese example shows therefore that a deranked verb in the relative clause construction can become balanced through a gradual process of phonological or morphological change.

This is the only attested case I am aware of in which it is certain that chance morphological similarity and thus confusion between the main verb and relative verb paradigms was the cause of the change, but there is another case in which such confusion may have played a part. As has been mentioned before, Turkish, besides its standard deranked relative clause construction, has a minor secondary strategy involving the marker ki and a balanced postnominal relative clause. In some dialects this has become the main relative clause construction (Johanson 1998). Although contact with Iranian and/or Slavic languages is thought to be the main factor in the development of this newer balanced construction, it has also been suggested that the development was facilitated by the fact that some verbs in the deranked paradigm happen to be identical to the corresponding main clause forms (Antinucci et al. 1979).

In many more languages it is not that deranked relative clauses developed into balanced constructions, but rather it is thought that balanced relative clauses were created on the model of other languages that the speakers were in contact with. This is thought to have happened in Hungarian and Finnish, due to contact with various Indo-European languages (Haader 2002). The Mongolian languages that have developed finite relative clauses are thought to have done so under the influence of Russian too (Janhunen 2003). In each of these cases, however, the shift occurred before the historically attested period, and so it is impossible to be certain of the circumstances involved.
For many languages with both balanced and deranked constructions we simply do not know how each developed or which came first. Egyptian is a case like this, as both deranked relative clauses and balanced constructions were in competition from the first attested period of the language. Eventually the deranked relative clauses were replaced by balanced constructions in all situations (Loprieno 1995:98–99, 233). It seems likely that this is connected to the general typological change Egyptian went through during its history, moving away from synthetic morphology towards analytic constructions.

Another case in which we can see a clear trend away from relative clauses with deranked verbs despite both being present from the earliest records is Indo-European. Most early stages of the Indo-European languages had relative clauses with deranked verbs at least as an alternative to balanced constructions. Tracing the existence of participial RCs in the major Indo-European language groups for which there is a long enough period of attestation, it can be seen that in most branches of the family there was a progressive trend away from the deranked relative clauses and towards use of the balanced alternatives (Hock 1991:620). In most branches, however, the trend is statistical more than absolute; deranked constructions still exist, but their distribution compared to balanced constructions has decreased over the centuries and is often limited to formal, written texts or deliberately archaic style (Bauer 1995:169, 211).

Bauer (1995:159) shows that this was the case in Italian: deranked relative constructions were fairly common in the earliest Latin texts, but they became rarer during the classical period (cf. Lehmann (1984:388)), and in the modern Romance languages the usual construction for relative clauses is a balanced construction with the relative clause following the noun. In Ancient Greek, too, participles functioning attributively provided a deranked relative clause strategy, but in Modern Greek, the participial system is so far reduced that there is debate over whether the remaining forms (in -menos and -tos) should even be considered participles, or whether they have become lexical adjectives (Hesse 2003:10, Anagnostopoulou 2003).

In Armenian, German and the Modern Slavic languages, deranked relative clauses are only a formal, literary alternative to balanced RCs (Stilo 2004:46). In English the deranked strategy is less formal than in
German, but it is still very restricted compared to the balanced construction, since deranked relatives are limited to constructions in which NPreI is the subject. In the oldest Indo-Iranian languages, Avestan and Vedic Sanskrit, deranked relative clause constructions were extremely common. In Modern Persian they are rare (Windfuhr 1979:60–61, Haig 2001:212).

In some Modern Indo-Aryan languages, on the other hand, deranked relative clauses have remained common—in Sinhalese, in fact, they are the only possible way to form RCs (Masica 1991:408)—but this could be at least partly due to the extensive contact of Indo-Aryan languages with Dravidian, in which deranked relative clauses are the norm. Apart from Indo-Aryan, the only other modern branch of Indo-European that makes extensive use of deranked relative clauses as a main strategy is Baltic (Schmalstieg 1988). Like the Indo-Aryan languages, the Lithuanian and Latvian have had contact over a long period with a language family that typically does use deranked relative clauses as a main strategy: in this case, Uralic.

The overall trend in Indo-European is therefore clear: deranked relative clause constructions have become less common and more restricted over the attested historical period. In the two branches for which this trend does not appear to hold, there was competing areal pressure to retain the participial strategy.

Finally, I should note that there are at least two ways to develop a balanced relative clause construction from a deranked one: the deranked verb can be replaced by the form found in main clauses, as discussed here; or the main clause verb can be replaced by a deranked form as found in the relative clause. It is not unknown for a language to extend subordinate clause patterns to main clauses. Givón (1991) notes that examples of this are found in Early Biblical Hebrew, Japanese, and perhaps early Indo-European (cf. Kuryłowicz (1964)). I have not discussed this phenomenon here because although it has the effect of moving the relevant relative clause construction out of the category of deranked constructions into the class of “balanced” sentences; in practical terms, nothing changes in the relative clause, but rather it is a change affecting main clause morphology and syntax.
5.3.3 The diachronic relationship between deranked and balanced relative clauses: some conclusions

In summary, there is only a little evidence for relative clauses with deranked verbs developing into balanced constructions and no attested examples at all of the reverse process. There is also more evidence for the replacement of deranked relative clauses by balanced clauses than for the reverse replacement. For the development of both deranked and balanced constructions, contact seems likely to be an important factor, but more synchronic studies of the geographical distribution of each type are needed in order to be certain that this is the case.

The paucity of attested cases of the new development of deranked relative clauses might reflect one of three things. Firstly, much of the literature focuses on Indo-European languages and languages that are in contact with Indo-European and therefore influenced by them. And as I have shown above, Indo-European languages have on the whole been moving away from deranked relative clause strategies towards balanced clauses. Secondly, most of the literature on the diachrony of relative clauses focuses on the origin of relative clause markers, and these are far more frequently present in balanced relative clauses than they are in constructions with deranked verbs. Therefore it is natural that if this area of the literature touches on deranked relative clauses at all, it is in the context of how balanced relative clauses with relative markers develop from or replace deranked relatives, rather than the other way around. Finally, while deranked relative clauses are most often found prenominally, it is postnominal relative clauses that are likely to be more common in general across the world’s languages, since OV languages can have either postnominal or prenominal relative clauses, while VO languages tend only to have postnominals (with the well-known exception of Chinese, also Finnish and Palauan) (De Vries 2002a, De Vries 2005).

If the development of balanced relative clauses is, however, more common than the development of deranked constructions, and if it is more common for languages to replace deranked RCs with balanced constructions than vice versa, the explanation for this might be found in processing considerations. Cristofaro (2003:298–303) explains variation between
deranking and balancing constructions as the result of tension between the principles she calls “economy” and “iconicity”. It is more economic for a language to fully specify TAM and person agreement, since that ensures recovery of information for the hearer. Iconicity, on the other hand, is maximised if the degree of semantic integration between two clauses is reflected by the degree of syntactic integration. In other words, a relative clause is more likely to be deranked (and therefore more closely integrated into the main clause) than an adverbial clause is, since a relative clause necessarily shares a participant with the main clause, while a adverbial clause is more loosely related. Maintaining such iconicity is argued to make constructions easier to process.

It seems to me that, given this model, more explicit specification of TAM and person agreement (i.e. a change from deranked to balanced) will always increase economy and thus processing ease, but whether tighter integration of the RC (i.e. a shift from balanced to deranked) will increase iconicity/processing ease depends on whether other complex sentences in the language have deranked or balanced verbs. In other words, if iconicity is not a factor, e.g. if a language has deranked constructions for other types of subordinate clauses, then balanced constructions, with their more explicit marking, would have the processing advantage. This might result in balanced relative clauses out-competing deranked constructions more often than deranked constructions would win such a competition. It would also suggest that an extensive typological reorganisation of the language, of the sort that occurred in Egyptian, and which also frequently occurs in situations of intense language contact, might affect which of two competing relative clauses is easier to process, given the iconicity of each within the newly reorganised system.

5.4 Correlatives and their diachronic interaction with embedded RCs

A type of relative clause that has a very different relationship with the main clause than those I have discussed so far is the correlative construction, as defined in Chapter 1, which is generally analysed as being adjoined to IP rather than embedded under a head noun. If a correlative construction were to develop into an embedded relative clause or vice
versa, this would involve a major change in the relationship between the main and relative clauses. The same could be said for a language that only has correlatives developing a non-correlative strategy, or a language without correlatives/adjointed relative clauses developing them for the first time, no matter what the source.

Unfortunately the initial development of correlative clauses in a language is hardly attested at all. Those languages that have correlative clauses generally developed them early enough that the circumstances of their origin can no longer be verified. There is a certain amount of controversy over the question of whether the Dravidian languages always had correlatives or whether these were copied from Indo-Aryan (see Hock (1996:46–47) for a detailed summary of the debate), but since the earliest sources had the construction already, this case is not of much use to us here. This has not stopped people from speculating about possible origins of correlative constructions. Lehmann (1974:68) suggests that they represent a transitional stage between relative clauses that precede and those that follow their head noun. Klaiman (1976) argues instead that they develop from postnominal relative clauses via a preposing rule that becomes obligatory if a language becomes strictly OV. Lack of historical evidence makes it difficult to judge the merits of these proposals, but as I will argue later in 5.5, neither suggestion is especially plausible, given the syntactic structures usually assumed for the various relative clause types.

Unlike the development of correlative constructions, the loss of correlatives is not unattested, although all of the examples are from Indo-European languages. The languages and language families that are said to have lost correlatives are Italic, Celtic, and some Indo-Aryan languages.

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5 In the context of Indo-European a language is sometimes said to have correlatives if it has correlated sets of relative and demonstrative pronouns (i.e. with similar forms), even though the correlative relative clause strategy, as defined in Chapter 1 does not exist. This is the case, for example, in Greek. In this chapter and elsewhere, when I refer to “correlatives”, I mean the relative clause construction, not simply the presence of correlated sets of relative, interrogative and/or demonstrative pronouns.

6 Germanic is sometimes also cited as an example of a group that had and lost correlatives, but the construction sometimes analysed as a correlative in Old English does not fit the definition of these that I am using here, and moreover, Modern German still has constructions that can reasonably be analysed as correlatives. These are just restricted to certain contexts, such as the examples in (i).
Correlatives were common in earliest Latin, but they were not the only available relative clause construction. Lehmann gives an example of a correlative clause from Cato, reproduced here as (5-a), but in the same work we also find constructions such as (5-b), which could be right-joined constructions or extrapolated clauses. Right through Early and Classical Latin, there are almost no examples of centre-embedded relative clauses, since Latin seems to prefer to shift heavy NPs to the end of the sentence. It is therefore hard to tell where the relative clause has been extrapolated from (MacMahon 1994:158).

(5) a. ab arbore abs terra pulli qui nascentur,  
From tree from earth scions which grow.FUT,  
eos in terram deprimito  
these.ACC into earth press  
“Press into the earth the scions which spring from the ground around the trees” (Cato De Agricultura 51, in Lehmann (1984:371, ex. 5), translation from Hooper and Ash in Teubner (1934). The English gloss is mine.)

b. Ager oleto conserundo, qui in ventum  
land olive-oil plant.GERUND, which in wind  
favonium spectabit et soli ostent us erit  
west-wind faces and sun exposed will-be  
“Land is suitable for olive planting which faces the west and is exposed to the sun” (Cato De Agricultura 6.2 in Teubner (1934))

The development in Romance, therefore, was that the alternative relative clause constructions out-competed the correlative. At the same time,

(i) a. Welchen Studenten ich gestern geohreigt habe, den konnte  
which student I yesterday cuffel have, that-one could  
seinen Stoff nicht hersagen.  
his lesson not recite.  
“The student I cuffel yesterday could not recite his lesson”

b. Wer das weiss, der bekommt einen Preis  
Who that knows, that-one gets a prize  
“Anyone who knows that will get a prize” (Hasephmath and Buchholz 1998:288, ex. 32)
the language was changing from SOV to SVO, which we might expect to have had something to do with the loss of the correlative construction, given that correlatives are almost unheard of in SVO languages (Downing 1973). It is possible, as Lehmann (1974:68) suggests, that constructions such as (5-b) developed out of correlative constructions via postposing of the relative clause, but there is no evidence for this.

In the Celtiberian inscriptions from the 1st century BC, the earliest Celtic attestations that are extensive enough to provide information on syntactic structure, a correlative construction is clearly attested. An example, already discussed in Chapter 4, is reproduced in (6) below.

(6) *iomui lištaš TiTaš sisoni... somui [...] šaum TeCameTinaš TaTus*

“*wem sie lištaš TiTaš besäen, dem [...] soll man davon die zehnteiligen (Anteile) geben*”.

“To whom(ever) they lištaš TiTaš sow, to him one should give a tenth of it.” (Ziegler 1993:252)

This inscription is not entirely translatable, because of unknown vocabulary. It is clear that it is correlative, however, with the corresponding markers *iomui* and *somui*. All of the Celtiberian examples given in Ziegler (1993) are of this type, and all of them are generalising in meaning (“whoever”).

In Gaulish, the other major branch of Continental Celtic, this same construction is not attested. Rather, as noted in Chapter 4, there is a postnominal relative clause with a special relative verb form ending in -io (Ziegler 1993:254). Old Irish, too, displays postnominal relative clauses with a special relative verb form and/or lenition or nasalisation marking (Adger and Ramchand 2006). Ziegler (1993) suggests that the Continental Celtic facts can be accounted for by assuming that the correlative construction developed into the postnominal one. She does not discuss the non-continental situation, but presumably she would apply the same hypothesis to the origin of the Old Irish construction(s). If the postnominal construction did develop from the correlative, it must have been slightly more complicated than in the Latin situation, since not only does the RC need to be postposed and the correlative marker lost, but
also the word order within the relative clause must have changed so that
the relative marker could end up suffixed to the verb. Celtic word order
did, however, become VSO (MacMahon 1994:148), so this scenario is not
improbable. Like Latin, however, the Celtic situation is ambiguous: the
non-correlative construction may have arisen out of the correlative, or
each may have had a different source. The only certainty in both cases is
that the postnominal relative clause eventually replaced the correlative
completely.

In each of these cases, it is thought that the earliest attested stage
of the language was undergoing change away from the OV word order
reconstructed for PIE towards a VO pattern. This word order shift may
be causally connected to the loss of correlatives here.

The third branch of Indo-European in which some languages have
lost correlative constructions is Indo-Aryan. In some languages the cor-
relative has turned into a prenominal relative clause, and in others it
has been replaced by a competing postnominal construction. The de-
velopment from a correlative to a prenominal relative clause took place
in the Southern Hindi-Urdu variety, Dakhani (Masica 1991:413). The
first clause in the correlative construction lost its initial relative clause
marker, and the correlative marker in the second clause was then re-
analysed as a clause-final marker belonging to the first clause. (This
process is inferred from a comparison of the Dakhani relative clause with
those found in other Hindi-Urdu varieties.) This is incidentally a sce-
nario suggested by Lehmann (1984) as a hypothetical possibility for how
prenominal relative clauses could derive from correlatives, but Lehmann
does not seem to have been aware of Dakhani or any other languages in
which the development actually took place.

Other nearby Hindi-Urdu varieties also display relative clause con-
structions in which the relative clause marker or the correlative marker
have been lost, resulting in a relative clause that precedes its head (Ma-
sica 1991:414). At the same time, in other Indo-Aryan languages, the
postposed alternative to the correlative construction has become more
common (Masica 1991:414). This means that some Indo-Aryan languages
have come to prefer prenominal RCs, others are increasingly relying on
postnominal RCs, and others continue to use the correlative construction
as their main relative clause strategy.
§5.5 Implications for the syntactic analysis of relative clauses

Unlike the cases of Latin and Celtic, the Indo-Aryan languages which have lost the construction have not undergone change in basic word order. Contact relationships may be a factor in these latter cases, however, as the languages that have given up correlatives for prenominals are in close contact with Dravidian languages, which tend to prefer prenominal relative clauses over correlative constructions, as was already mentioned earlier in this chapter in the discussion of deranked verbs. While contact can be a factor in the loss of correlatives, it should also be mentioned that speakers are known to transfer correlative patterns from their native language into a second language in which they are not usually an available construction. This can be observed in South African Indian English, in which correlative constructions from Indian languages are replicated using English resources (Mesthrie and Dunne 1990). An example of this is given in (7).

(7) Which-one I put in the jar, that-one is good. (Mesthrie and Dunne 1990:37, ex. 13)

Although we may not wish to describe this (yet) as a case in which the correlative construction has been “borrowed” into an entire new language (since it has not spread beyond the variety of South African Indian English), it shows that the potential for this sort of spread through contact exists. This means, in languages in which the origins of correlative constructions predate the historical record, we should not automatically assume that they developed organically from a pre-existing RC, but also consider the possibility of spread from contact languages.

5.5 Implications for the syntactic analysis of relative clauses

In generative grammar there is some debate about the best analysis of the relative clause. This debate includes discussion of whether the head is generated inside the main clause (Sag 1997) or raises to it out of the RC (Kayne 1994, Bianchi 1999); the question of where the rest of the relative clause is located (generated in the specifier position of the DP or
in that of some lower position (Borsley 2001)); and whether the relative clause itself is itself a CP or a DP (Siloni 1997, Ouhalla 2004). There is also the question of whether correlatives are generated adjoined to IP or whether they raise to this out of a lower embedded position (Bhatt 2003:495).

The changes discussed in this chapter, such as the development of embedded relative clauses from adjoined correlatives, and relative clauses with deranked verb forms shifting to balanced constructions or vice versa, can shed further light on the question of what syntactic structures and/or movement operations should be assumed to apply to relative clauses, yet this sort of diachronic evidence is usually overlooked when discussing the merits and shortcomings of competing proposals. I would therefore like to briefly examine the implications of the changes discussed in this chapter, and will show that, given certain syntactic analyses, minimal change in the structure and movement operations is required in order to produce the actual changes observed. Other proposals, however, would need to assume that multiple or more extensive changes had taken place, and are therefore less plausible.

5.5.1 Adjunction and embedding

The development of embedded relative clauses from correlatives, as discussed in 5.4 above, is difficult to account for with small changes in the syntactic derivation. Lehmann’s suggestion, that correlatives originated in Indo-European as a transitional stage between prenominal and postnominal relative clauses (Lehmann 1974:68), cannot be supported with evidence from the syntactic analyses of these constructions, no matter which of the competing derivations is assumed. The difference between prenominal and postnominal relative clauses\(^\text{7}\) is usually considered to be a relatively minor matter of movement or branching direction parameterisation, in which any movement and/or adjunction takes place within the DP that contains the relative clause and its head (De Vries 2002a:131–147). Correlatives, on the other hand, are assumed either to be base-generated adjoined to IP, or moved there out of a lower position (leaving a “copy” in the form of the correlative marker and/or NPmain)

\(^{7}\)I am setting aside for the moment the deranked/balanced consideration, even though prenominal relative clauses are very often deranked.
§5.5  *Implications for the syntactic analysis of relative clauses* 229

(Bhatt 2003:495). The correlative construction is therefore in no sense a “way stage” between prenominal and postnominal relative clauses, but rather a construction that is more different from either of these than they are from each other.

An alternative explanation of the Indo-European changes, one by Klaiman (1976), does, if true, have some bearing on the debate about the best syntactic analysis of relative clauses. Klaiman suggests that rather than developing from prenominal RCs, Indo-European correlatives were the result of a rule that preposed postnominal relative clauses. She suggests this rule was initially optional but later in strict OV languages it became compulsory. My interpretation of this is roughly schematised for the example sentence “The boy ate the fish that he caught” in (8).

\[(8) \quad a. \quad [_{MAIN} \text{the boy} \; [_{DP} \text{the fish} \; [_{CP \; \text{rel} \; \text{he caught}} ] \; \text{ate}]]
\]
\[(8) \quad b. \quad [_{CP \; \text{rel} \; \text{he caught}} \; i \; [_{MAIN} \text{the boy} \; [_{DP} \text{the fish} \; t_i] \; \text{ate}]]
\]

The difference between (8-b) and a typical correlative is that a correlative construction has a demonstrative pronoun or nominal containing a demonstrative in the second (“main”) clause. Also, the first clause can contain not only a relative clause marker, but a full copy of the nominal. I believe this is most easily accounted for if we assume a raising analysis for embedded relative clauses. In other words, a postnominal relative clause such as (8-a) is derived by raising the noun *fish* out of the relative clause. The position that the noun is raised into is not relevant here: suggestions have included the head of an NP intervening between DP and CP (Citko 2004), Spec CP (Kayne 1994) or to the specifier position of some undefined projection between CP and IP (Bianchi 1999). The point is that a raising analysis means that the “head noun” is generated inside the relative clause and becomes external only through movement. In Klaiman’s theory for PIE correlatives, these began as postnominal relative clauses, in which this raising out of the RC would have occurred. To get from this to a correlative construction, we would only need to assume that the language stopped raising the noun out of the relative clause when it implemented the preposing movement rule. The demonstrative and/or full copy of the nominal in the main clause can be explained by the fact that an article alone cannot licence an empty NP (or the movement trace) (Llombart-Huesca 2002:68–69). Under a non-raising approach to rela-
tive clauses, a correlative cannot be derived from a postnominal relative clause so simply, but rather one has to explain how the full NP ends up internally in the first clause.

Even if Klaiman's hypothesis about the origin of Indo-European correlatives is correct, it does not mean that a synchronic analysis of correlatives involving movement is superior to one involving base-generation in an adjoined position. Optional movement becoming compulsory and subsequent reanalysis of the movement-derived structure as base-generated is a widely-accepted mechanism of syntactic change (Pintzuk et al. 2000:20–21) also (Roberts and Roussou 2003:205).

Moving on from the hypothesised origins of correlatives, the actual attested changes involving these constructions as discussed in Section 5.4 do not shed any further light on questions of synchronic syntactic analysis. The loss of the correlative marker in some Indo-Aryan languages, resulting in the structure [REL RC] [MAIN] is presumably a simple lexical loss in which the main clause DP corresponding to the adjoined relative clause is no longer required to be overt. It could be argued that such a development suggests that both analyses of correlatives (one in which they involve movement to IP and one in which they are base-generated there) are correct, and that languages vary (cross-linguistically and diachronically) as to which derivation applies. An analysis in which the correlative is base-generated as an adjunct to IP would seem more natural in cases where there is an overt DP corresponding to it in the main clause, while a movement-based analysis accounts neatly for languages in which the corresponding DP is missing. However, if this were the case, loss of the correlative marker/DP would mean speakers had reanalysed base-generated structure as the result of movement, which is the opposite direction of change from the norm (Pintzuk et al. (2000:20–21) also Roberts (2003:205)). In any case, the elision of an argument is not necessarily diagnostic of movement. For this reason, the fact that a correlative marker can be lost does not have any clear implication for the synchronic analysis of correlatives.

The development in Dakhani described by Masica (1991:413) has no bearing on the question of the best analysis of correlatives and prenominal relative clauses, even though it involves a change from one to the other. This is because Indo-Aryan languages, including Dakhani, already had
a prenominal (deranked) construction. When the initial relative marker was lost, resulting in the string relative clause marker main clause, we can assume that this was simply assimilated to the pre-existing syntactic structure for prenominal RCs (with the correlative marker reinterpreted as a clause-final RC marker), rather than that the correlative syntax gradually morphed into a new, prenominal construction. The only change that the syntactic structure for correlatives has to be able to handle, then, is the loss of the initial RC marker.

Similarly, the increasing preference for postnominal relative clauses at the expense of correlatives in some Indo-Aryan languages is simply a shift in frequency for the two constructions and has no relevance for synchronic analyses of these structures.

### 5.5.2 Deranked and balanced relative clauses

A recent approach to reflecting the difference between deranked and balanced relative clauses in the syntactic structure is that proposed by Siloni (1994, 1995, 1997), in which “participial” relative clauses are analysed as DPs and finite (i.e., balanced) RCs as CPs. This is intended to account for the nominal features and reduced TAM marking found on the deranked verbs of relative clauses in many languages, and also for the appearance of any overt nominalising morphology. The distinction between CP relatives and DP relatives is also proposed by Ouhalla (2004), but he argues that the choice between the two analyses depends not on the form of the verb, but rather the presence or absence of “external nominalization” (Ouhalla 2004:298), i.e. a complementiser derived from the definite article or similar. Under his analysis, there are at least three distinct configurations for the internal syntax of the relative clause. These are demonstrated in (9).

(9)  

a. \([_{CP} C \ [TP] \ ]\)  
who read the book (English)

b. \([_{DP} D \ [TP] \ ]\) 
illi ?akalnäa-ha  
DEF we.ate-it  
“which we ate” (Arabic, Ouhalla (2004:288, ex. 1))
c. \[DP \ D [\text{NumP}] \]
ha-lom \ 'ivrit
the-studying Hebrew
“who is studying Hebrew” (Hebrew, Siloni (1997:119, ex. 20a))

In Ouhalla’s analysis, the NumP projection in the DP is the location of case-checking features, and for non-finite verbs, it contains the feature \[GEN\], ensuring a deranked form of the verb. Since theoretically “external” (nominaliser-marked) and “internal” (verbal) nominalisation are independent from each other, this would mean a relative clause with no overt nominaliser but a deranked verb form would have to have a structure \[CP \ C [\text{NumP}] \], but Ouhalla does not discuss this possibility and it is unclear whether he believes such a phrase structure is possible.

To summarise, there are three synchronic analyses for distinguishing deranked and balanced relative clause constructions that I would like to compare here for their ability to account for the diachronic data. The first is the default assumption that relative clauses with deranked verbs and those with balanced verbs are both CPs. The second is Siloni’s (1997:chap. 4) proposal that relative clauses with deranked verbs are DPs and those with balanced verbs are CPs. The third is Ouhalla’s (2004) proposal that RCs with non-verbal nominalising morphology are DPs and those without CPs, while the type of verb (balanced or deranked) determines whether the DP contains a TP or NumP projection.

The diachronic changes that occur between deranked and balanced constructions are not incompatible with any of these three proposals, but they do offer more support for a DP/CP distinction between deranked and balanced RCs than for the more traditional analysis in which both are CPs. I believe the diachronic evidence is also very slightly more supportive of Ouhalla’s proposal than of Siloni’s. For one thing, the fact that there are so few cases of gradual change from one type of RC to the other makes sense under an analysis in which the two types have very different syntactic structures. If one type is a DP and the other a CP, gradual change is not possible, since these are distinct categories. Rather a complete reanalysis would be necessary.
In the Japanese example which is the only attested case of a deranked relative clause becoming a balanced construction, the special verb form was lost, but some indications that the clause was still nominalised remained. The nominaliser にo became a clause-final marker in the internally headed RC, and the entire clause was then case-marked. In the externally headed RC, which does not have the overt nominaliser にo, the subject can appear in the genitive case instead of the nominative (Tsujimura 1996:264–266). In both cases, then, the relative clause still appears to have nominal characteristics. Ouhalla’s proposal accounts for this better than Siloni’s does. Under Ouhalla’s analysis, the loss of the special relative verb form in Old Japanese would have involved replacement of the NumP inside the DP with TP. This means the clause would then contain a finite verb, while still retaining some nominal characteristics (for instance the nominaliser にo would be located in D). Under Siloni’s analysis, deranking and nominalisation are inseparable, so that we either have to assume the Japanese relative clause continued to be a DP without any syntactic change corresponding to the change of verb form, or that it became a CP without any explanation for the remaining nominal characteristics.

The diachronic evidence therefore provides some support for an analysis of deranked relative clauses as DPs, and is suggestive of an account such as Ouhalla’s, in which nominalisation of the relative clause and deranking of the verb have some degree of independence.

5.6 Conclusions

This chapter has examined changes affecting three different aspects of the relationship between the main clause and the relative clause. First, in Section 5.2, I looked at the development of hypotactic relative clauses from paratactic juxtapositions and showed that there is no strong evidence for this being a unidirectional pathway either in languages or individual constructions. In Section 5.3.1 I put forward three hypotheses for the source of relative clauses with deranked verbs: development from balanced RCs via fusion of a verb and relative clause marker; development via expansion of a deverbal adjective; replication of a model found in nearby languages. Only the latter explanation was found to have any
support from attested historical developments, although the other two possibilities are not implausible. Gradual change is attested, however, for the opposite direction: from deranked to balanced relative clauses, as this occurred in Medieval Japanese. In this case, influence from other languages does not seem to have occurred, but rather phonological and morphological change led to a restructuring of the verb system in general. Section 5.4 then examined changes involving a very specific type of relative clause, the correlative, since this is an easily identifiable type of adjoined construction. Although the development of correlative clauses is not attested historically, their loss has occurred during the historical period of various branches of Indo-European and once more showed that both typological change and contact influence are relevant factors.

In fact, influence from other languages with a different pattern and/or general typological change in the language (e.g. change in word order, clause order, change from synthetic to analytic type, etc), have been recurring themes throughout this chapter. One or both of these factors have been implicated in each of the changes in the relationship between the main clause and relative clause that I have discussed. This, along with the fact that attested examples of change among these types are not easy to come by, suggests that the relationship between the two clauses and the ways in which this relationship is signalled are among the more stable features of relative clauses which do not change without strong external or internal motivation. As for what such motivations could be, I would suggest that Cristofaro’s competing pressures of “economy” (unambiguity/recoverability of information) and “iconicity” (tendency to reflect semantic bondedness of two clauses by syntactic bondedness) may play a part here. Ultimately, if you encode the relationship between relative and main clauses in a way already used for other constructions in your language and/or in other languages you speak, this should make the construction easier to process, easier to acquire, and therefore likely eventually to replace any competing constructions that exist.

Finally, I showed how diachronic typology and synchronic syntactic theory can build on each other: a comparison of Lehmann’s (1974) and Klaiman’s (1976) competing proposals for the origin of correlative clauses in Indo-European in light of the syntactic derivation(s) that have been suggested for correlative constructions shows that Klaiman’s hypothesis
is more plausible than Lehmann’s. Conversely, the diachronic evidence of changes (and lack of changes) involving deranked relative clause constructions provides a way to choose between competing synchronic proposals for the structure of deranked relative clauses, supporting an analysis in which they are DPs\(^8\) while relative clauses with balanced verbs are CPs.

\(^8\)The specific instantiation of the DP/CP hypothesis best supported is Ouhalla’s (Ouhalla 2004), but neither of Ouhalla’s and Siloni’s (Siloni 1997) proposals are incompatible with the evidence, so a decision between them should instead be made on the basis of their ability to account for synchronic data, which is beyond this scope of this study.
Changes in the position of relative clauses in the sentence

6.1 Introduction

The position of relative clauses with regard to their heads has long been an object of interest in the synchronic typological literature, since it has been said to correlate with at least five other variables:

- the “basic word order” of a language (Kuno 1974, Klaiman 1976, Downing 1978, Antinucci et al. 1979)

- the order of other phrases in the language (Downing 1978)

- the type and position of the relative clause marker used, see e.g. Downing (1978:396), Kitagawa (1982) and more recently Deutscher (2000a) but see De Vries (2005:13) for counter-arguments to many of these claims

- the number of finite verbs allowed per complex sentence (Hock 1992)

- whether the relative clause is embedded/adjointed (Downing 1978).

Then there is also an external factor that we might expect to be relevant: whether any of the surrounding languages with which speakers interact have a different ordering for RCs (i.e. contact influences). The main focus of investigation besides establishing whether or not these correlations hold universally has been to find explanations for why they might exist,
and these explanations have been both processing-based (Hawkins 1990, Antinucci et al. 1979) and diachronic (Harris 2000).

Whether these correlations are the result of historical processes or not, it is logical to assume that any factor that correlates synchronically with the position of the relative clause might also have an effect on any change in this position. Change in one might be a contributing factor to change in the other. In this chapter I will therefore examine the diachronic relationships between the factors mentioned above and changes in the position of the relative clause, especially those cases in which the RC position and the correlating factor both have changed. I am interested in whether there appear to be any directions or paths of change that are found more commonly than others, and whether there is any diachronic evidence to support and/or explain the synchronic correlations that have been found.

When discussing the position and changes in position of relative clauses with regard to their heads, the basic variants that one might wish to take into account are RCs that precede their heads, RCs that follow their heads and RCs that contain their heads. Each of these main positional variants has two types, in traditional terms often labelled embedded and adjoined (or extraposed). I will follow the terminology used commonly in the literature (see e.g. Andrews (In press)), in which extraposed RCs that precede their head are referred to as preposed, embedded RCs that precede their head as prenominal, extraposed RCs that follow their head as postposed, embedded RCs that follow their head as postnominal, left-adjointed relative clauses which contain their head as correlatives, and others that contain their head as internally headed relative clauses (IHRCs). However, I have no attested examples of positional change or even replacement involving IHRCs, and the only attested cases of change in correlatives are their loss, which has moreover already been discussed in detail in Chapter 5, as has the diachronic relationship between adjoined and embedded relative clauses. For this reason I will concentrate in this chapter primarily on change and replacement involving prenominal/preposed types into postnominal/postposed types and vice versa.

Since the sample I am using is not statistically robust enough to use to explore the relative frequency of changes from each of these types to
the other, I have instead looked for examples of each, to see whether each theoretically possible change can be shown to exist and whether the changes that do exist are consistent with hypotheses about correlated typological features that have been proposed in the literature.

This chapter is structured so that I will begin with an overview of what is known about the development and loss or replacement of postnominal, then prenominal relative clauses and their extraposed variants. I will then discuss individually each of the main factors that are hypothesized to be relevant to such changes: constituent order, other phrase orderings, relative clause marker type and position, “type” of relative clause, genetic affiliation of the languages concerned, and their contact relationships. Of particular interest will be the languages that have changed to combinations of relative clause position and “correlating factors” that are supposedly dispreferred. It will be seen that in all cases change in clause position is affected by a web of interrelated syntactic, typological, and language-external factors, which is why it cannot be tied down to a simple unidirectional path.

6.2 Changes involving relative clauses that follow their head

There is only one language I have found that has developed a new postnominal relative clause construction during its attested history. As a “new construction” I count the development of any relative clause that differs from the pre-existing RCs in the language by position (if the language has only previously had prenominal RCs and it gains a postnominal construction). I am not including the development of a new “type” of postnominal in a language that already has postnominals: e.g. the creation of a de-ranked postnominal in a language with balanced postnominals (since such examples have already been discussed as case of “new de-ranked constructions” in Chapter 5), nor the creation of an interrogative-marked postnominal in a language that has only had paratactic postnominal RCs (since these would have been mentioned already in chapters 3 and 5 under the discussions of relative clause marker sources and hypotaxis from parataxis respectively).

Given these constraints, we have one attested case of the development
of a new postnominal relative clause (Quechua) and one semi-attested case (Basque). Conveniently, the postnominal relative clause is thought to have come into Basque around the same time as the earliest surviving texts. The postnominal RC is found in one of these 16th century texts, but not in anything else from the same period. I have discussed these constructions already in Chapter 3, so for now will simply restate that they are thought to have arisen under the influence of the Romance languages and persist in the modern language (to different degrees in different dialects) as a stylistically marked alternative to the inherited prenominal construction.

In Quechua postnominal relative clauses such as that illustrated in (1) are assumed to be modeled on Spanish, and are clearly a recent development, as according to Lefebvre (1982) they are not described in the otherwise detailed early grammars such as that by Holguín (1609), or that by an anonymous author in 1586; nor are they found in the “conservative” modern dialects of the language, but only in Cuzco Quechua (Lefebvre and Muysken 1982).

(1) warmi-wan puklla-ra-ni pi-wan-mi Joseca
woman-with play-PAST-1 who-with-AF Jose
rima-sqa-n
talk-PAST-3
“I played with the woman that Jose talked with” (Lefebvre and Muysken 1982)

This example contrasts with the relative clause constructions that are more widely accepted among the various Quechua dialects, i.e. internally headed relative clauses, prenominal and correlative RCs with nominalised verbs (Lefebvre and Muysken 1982, Cole 1985, Grosu and Landman 1998). A correlative construction with an interrogative-based relative marker that looks a little like some sort of intermediate stage between the older and more recent relative clause types also exists and is illustrated in (2).

(2) pi-ta-n khuya-nki chay-ta-n ñoqa-pas khuya-ni
who-ACC-AF love-2 that-ACC-AF I-too love-1
“who you love, I love too”. (Anonymous, 1586)
This construction was attested as early as 1586, so the interrogative-based relative clause markers already existed in the language before the postnominal relative clause with balanced verb forms was first attested. Peruvian and Bolivian Quechua have prenominal relative clauses with balanced verb forms and interrogative-based relative clause markers, so it appears that each parameter (relative clause marker type, verb form, relative clause position) is independent of the others (Lefebvre and Muysken 1982).

Besides these attested and semi-attested examples, there are a few cases in which the development of a new postnominal relative clause is reconstructed to have occurred in languages that have previously only had prenominal RCs or correlative constructions: namely in Turkish, Telugu and almost all branches of Indo-European.

Turkish, like Basque and Quechua, provides a non-Indo-European example of a language that is thought to have developed new relative clauses that follow their heads. Interestingly, in all three cases it is thought that the new construction was modeled on the pattern of influential neighbouring (Indo-European) languages. As described in Chapter 5, relative clauses that follow their heads have existed since the earliest attested stage of Turkish (von Gabain 1950:188–189), but these became more common over time, and in the dialects of Gagauz, Karaim and Irano-Turkic dialects they have become the primary relative clause construction (Johanson and Csató 1998:333, 334–335). In the case of Gagauz and Karaim this is thought to be due to Slavic influence, and for the Irano-Turkic dialects due to influence from Persian.

Old Telugu is another example of a language in which a postnominal relative clause arose due to contact, in this case with Sanskrit. Like Turkish, though, these postnominal relative clauses are found in the earliest texts. Since Dravidian languages generally do not have postnominal relative clauses, but rather rely on prenominal RCs with deranked verbs, and correlative constructions, and since the postnominal construction was never the primary Telugu strategy, it is assumed that this was a calque from Sanskrit (Mahadeva Sastri 1961:264). It is unclear, however, whether the postnominal construction was ever used in the spoken language, or was just a Sanskritism used in literary texts. In all three cases: Telugu, the above-mentioned Turkish dialects and Basque, the pri-
primary strategy before the development of the new postnominal/postposed strategy was a prenominal relative clause with a deranked verb. All three have retained SOV word order.

Besides these three examples, in at least nine branches of Indo-European\(^1\) postnominal relative clause constructions exist, and are thought to have been to be a post-PIE development. There are a few reasons why postnominal RCs are not reconstructed back to Proto Indo-European, despite being so prevalent in the modern languages. The most compelling of these is that it is not possible to reconstruct a single relative clause marker for all IE languages. Rather, the marker used for postnominals in some languages is based on the interrogative stem \(^*k^w\) \(i/k^w\) \(o\), and in others it is based on a demonstrative \(^*i_o/-so/lo\) (Fortson 2004:130). As can be seen from the list in the appendix, even within each group the various languages base their markers on different forms of the interrogative or demonstrative (i.e. some use the \(^*so/-lo\)- demonstrative while some use \(^*i_o\); some \(^*k^w\) languages use \(k^w\) \(i\), some use \(k^w\) \(o\) and others use an extended form like \(k^w\) \(o\) \(ter\o\), originally “which of two”).

Then there is the fact that postnominal relative clauses are generally rare in the early IE languages and where they do occur, they look to be a postposed variant of correlative constructions (i.e. the early languages that use postnominal RCs also have correlative constructions and both use the same markers) (Lühr 2000). In the branches in which the postnominal RC became the primary way of forming relative clauses, it did not overtake the correlative and/or deranked prenominal constructions until later (Kiparsky 1995, Gamkrelidze and Ivanov 1995).

Finally, a reason that is often given for reconstructing correlatives (and sometimes prenominal RCs) but not postnominals is that Proto Indo-European is reconstructed to have had OV word order, and OV languages supposedly tend to have prenominal or correlative RCs rather than postnominals (Gamkrelidze and Ivanov 1995). This can no longer be used as a reason to argue for which type of RC to reconstruct, however, since it has more recently been shown that although the existence of prenominal relative clauses in a language implies OV word order, the reverse implication does not hold (Dryer 1992, De Vries 2005). I will

\(^1\)Hittite, Albanian, Armenian, Celtic, Greek, Romance, Slavic, Germanic, and Indo-Aryan
§6.2 RCs that follow their head

discuss the correlation between relative clause position and word order further in Section 6.5 below.

Although the word order of PIE cannot be used to reconstruct its relative clause position, the other two arguments for not reconstructing postnominal RCs are much more solid and we can be fairly sure that the postnominal relative clauses found in Indo-European languages are more recent than correlatives and prenominals. Since the development of these postnominal relative clauses is, however, a reconstruction and it is therefore not possible to investigate the further details of the developments, and because we cannot be sure whether all of the branches developed these postnominal constructions independently or if some were influenced by others, I will not spend much more time on these cases in this chapter, but will only mention them again briefly in the context of the relationship between word order change and the development of new relative clause positions.

Languages that formerly had postnominal relative clauses but have since lost them include most of the (Semitic) Ethiopian languages and one of the Dravidian languages, Telugu.

The Modern North Ethiopian languages all have SOV word order and prenominal relative clauses. Ge’ez, the predecessor of these languages, had VSO as the basic word order, and allowed both prenominal and postnominal relative clauses. In fact, according to Weninger (2001:1765), the postnominal variant was the most common. The prenominal strategy subsequently “out-competed” the postnominal one and eventually the postnominal variant was lost entirely.

Amharic is the other (this time South) Ethiopian language for which we have sufficient information about earlier stages of the language. Amharic had SOV word order even in the earliest attestations, but we can reconstruct VSO for some earlier stage, because the early Semitic languages are otherwise overwhelmingly VSO, and because of other indications that the word order of Old Amharic had recently changed (Ramat 1987:178), or is even “underlyingly” still VSO (see Bach (1970), although this has also been disputed (Weninger 2001:1764)). The older stages of Amharic also allowed postnominal relative clauses, but Modern Amharic no longer does (Hudson 1997).

Telugu, already mentioned above as an (unattested) case of the de-
development of postnominal relative clauses, is also an example of the loss of these. This postnominal relative clause introduced by the interrogative pronoun ḍēni was found in Old Telugu and assumed to be a calque from Sanskrit. In Middle Telugu, the postnominal construction became less common (Mahadeva Sastri 1961:266), and in Modern Spoken Telugu it no longer exists at all (Mahadeva Sastri 1961:268–270). Throughout this period, the basic word order of the language remained SOV. It is, of course, possible that this construction was never more than a literary device that never fully penetrated the language to become part of most speakers’ grammar.

As for the Ethiopic languages, it seems reasonable to wonder whether the word order change may have triggered the loss of the postnominal relative clause strategy, especially given that other head/modifier constructions were reordered around the same time, a fact that I will discuss further in Section 6.6 below.

6.3 Changes in relative clauses that precede their head

The development of a relative clause that precedes its head in a language which formerly did not have these is, as far as I know, attested only in Armenian. It is sometimes suggested that (non-correlative) relative clauses that precede the head noun developed in various early Indo-European branches such as Slavic, Iranian, Greek, Germanic, Baltic and Indo-Aryan, since these all have prenominal (deranked) relative clauses as at least one strategy while their predecessor, Proto Indo-European, is often reconstructed as having only had correlatives. However, some people reconstruct prenominal relative clauses to PIE, since so many of the daughter languages do have them (see e.g. Lehmann (1974:61–68), Haudry (1979)). Whichever of these views is correct, there is no information available on the circumstances of the prenominal relative clause’s origin, so the only case about which more is known is Armenian.² I

² If the reconstruction of deranked prenominal relative clauses for PIE is correct, this means that they were lost in Proto-Armenian, and then arose again in medieval times. The two developments are not likely to have been connected, except for the fact that the existence in Armenian (and other Indo-European languages) of participles suitable for use in relative clauses may be due to its Proto-Indo-European heritage.
have laid out the competing theories about the origin of the Armenian
prenominal, deranked relative clauses in the previous chapter (see 5.3.1)
so will not repeat them here.

Like the development of new prenominal relative clauses, the loss of
these is scarcely documented. The only attested examples I am aware
of are some of the aforementioned Turkic varieties in which the newer
postnominal construction has become so prevalent that the prenominal
alternative is now viewed as strange or archaic. This is the case, for
element, in the urban Turkish of Tebriz (Kiral 1991:37), and perhaps
also in Afghan Uzbek, which is said to have “all but lost” prepositive
relative clauses (Reichl 1983:492). These are attested in the sense that
we have the comparative evidence of other varieties of Turkish and Uzbek,
which have not lost the prenominal construction and we have long enough
records of these that we can be certain the postnominal construction
was a more recent development that has gradually out-competed the
prenominal relative clause, but the dialects that have lost the prenominal
construction do not themselves have long continuous records predating
the current usage patterns.

In some Indo-European languages the prenominal strategy is restricted
to the formal, written register and is therefore not as frequent or as
‘neutral’ as other available relative clause constructions, but this is not
necessarily evidence of its decline, and certainly not of impending loss.
Rather it has sometimes been taken as an indication that the construc-
tion was not native to the languages in which it is stylistically restricted,
but instead is a calque on a Latin construction (Stillo 2004) and has
therefore always been restricted in this way. Whether or not this is
the case, I am not aware of any language, besides the Turkish varieties
mentioned above, in which a prenominal relative clause construction has
disappeared completely, or in which studies have even shown it to have
become measurably more restricted during the attested period.

Now that I have given this overview of the (rather limited) number
of instances of change available to an investigation of shifts in relative
clause position, I will move on to discussing whether any of them provide
support or explanations for the hypotheses discussed in the introduction.

Not all languages have such a wealth of participial forms as the Indo-European lan-
guages.
to this chapter.

6.4 Embedding as a relevant factor in position change

The reader will recall from the discussion in Chapter 5 that, following the framework laid out in Cristofaro (2003), rather than labeling relative clause constructions as subordinate/embedded or not, I have focused on the presence or absence of various signs of subordination such as subordination markers, deranking of verb forms, and/or material from the main clause surrounding the embedded clause. Although it has been suggested in the literature that the position of the relative clause with regard to its head is affected by whether it is subordinate or not (Downing 1978), I believe it is actually the characteristics that commonly accompany subordination that are relevant here. For instance, center-embedding (surrounding the relative clause with main clause material) has been shown to make subordinate clauses more difficult to process (Kuno 1974), and it makes sense if a language with word and phrase order rules that would lead to a lot of centre-embedding tend to use extraposition to avoid this (i.e. have a postposed relative clause as either an optional alternative or as the main construction). The presence of subordination markers or deranked verb forms clearly delimits the boundaries of the relative clause (especially since deranked verb forms are commonly used in OV languages with prenominal RCs, and therefore come at the end of the relative clause). We might expect that this would make RCs easier to process and perhaps alleviate any difficulties caused by centre-embedding.

It has also been suggested that prenominal relative clauses are inherently more difficult to process and for children to acquire than postnominal relative clauses are (Slobin 1986, Menz 1991, cited in Johanson (2002)\(^3\)). If this is the case, it would make sense that speakers of languages with prenominal relative clauses might be more likely than speakers with postnominals to develop ways of making these unambiguously identifiable (i.e. through subordination markers and deranked verb forms) and thus presumably ease the processing load. If prenominal RCs

\(^3\) Johanson (2002:120) argues against this view. His perspective is discussed further in 6.9 below.
were inherently more difficult to process it would also make sense that speakers would avoid adding the increased burden of centre-embedding where possible.

There is not enough information from the attested cases of change in relative clause position to be able to make any pronouncements about the diachronic implications of any correlations between centre-embedding and relative clause position. Nor is there enough to say how the correlation between deranked verb forms and prenominal relative clauses, as remarked upon by Downing (1978), is reflected diachronically. We have only one example of the attested development of prenominal relative clauses—the case of Armenian—and here it appears that Armenian copied not only the position of the new construction from Turkish, but also the deranked nature of the verb form (although it used native Armenian participles which do not correspond exactly to the nominalised forms used in Turkish). This case, at least, does not show any sort of variation between deranked and non-deranked verb forms in the prenominal construction, so it does not appear that there was any sort of “survival of the least ambiguous” competition of the sort we might imagine would favour deranked forms in prenominal constructions. Rather, if the deranking strategy was developed as a processing aid, this must have occurred long before in Turkish.

The relationship between relative clause marker and relative clause position is the third aspect of subordination that I have suggested might be relevant. I will go on to discuss this in Section 6.7.

6.5 Word order as a relevant factor in position change

6.5.1 Hypotheses from the literature

It has been widely accepted in the literature of the last few decades that the position of relative clauses in a language correlates with the language’s “basic” constituent order. Before I summarise the studies that have shown this, I would like to briefly discuss this concept of a basic constituent order, since it is not unproblematic.

The concept of the basic or underlying word order of a language is
commonly used in typological studies to refer to the word order obtained by any of several methods of data reduction: in other words an artificial construct used to facilitate categorisation of languages and/or to allow the testing of hypothesised correlations with other factors. The claim sometimes found in the theoretical syntactic literature that the “basic word order” of a language is present in a “deep structure” or that it is related by way of movement operations to other word orders found in the language (see e.g. Grewendorf (2002:52)) is not essential to this use of the concept of basic word order. Rather “basic word order” in typology can be seen as either a statistical statement about which order is most commonly found in a language, or a statement about markedness: which word order has the fewest stylistic or syntactic restrictions. Which of these interpretations it has depends on the method used to reduce the data to a single word order for each language. For different studies, different ways of deciding on the “basic word order” for each language might be appropriate. Since statistical studies of word order patterns are labour-intensive and require a large corpus, the word order information available for most languages is not statistical in nature, but rather relies on some kind of notion of “unmarked” word order. In a study of relative clauses, main clause word order (if the orders of main and subordinate clauses differ) is likely to be most relevant for both potential processing difficulties and for any reanalysis of the construction, since it is the main clause word order that determines whether and how frequently a relative clause will be surrounded by material from the clause it is embedded in: a circumstance that has been shown to be a major factor affecting the hearer’s ability to parse a sentence (Weckerly and Elman 1992).

Subordinate clause word order can, however, also be relevant. Depending on the position of the verb in the subordinate clause and the possible word orders existing in the language, some RC/main clause configurations might be “garden path” sentences. For example, in a language that allows SVO and VSO orders, a sentence with a relativised subject might be found that is [S [VSO] VO]. This would produce the string [N V N N] V N], of which the first three constituents could be taken to be an SVO main clause. If in this hypothetical language, VSO were the common word order for subordinate clauses and SVO the common word order for main clauses, we might have categorised it simply as SVO and
not known about the processing problems that might exist and which might well be relevant as pressure for any change that the language's relative clauses underwent. Therefore when there is a commonly used second word order in a language that I am aware of (one that is used commonly in subordinate clauses, or one that is a common second option for main clauses), I have noted it in the discussion that language. For those languages that display interesting changes in RC position and that I look at in more detail, I have made every effort to find out the commonly occurring word order variations.

A further problem to consider, however, is the terms in which a "basic word order" is described. Given that many languages seem to organise themselves on the level of information structure rather than syntactic roles, typological comparison should not blindly assume that S, V, and O are basic phenomena. It is unfortunately the case, however, that the information available for a large scale typological study is usually of the sort where one basic word order for a language is given, generally in terms of syntactic roles. Without the typologist carrying out his or her own extensive study of a language, it is difficult to describe it in what might be a more appropriate fashion. Consequently, in this section I will continue to describe languages as SVO or SOV, with the caveat that some languages have multiple possible orderings, which might mean the linear organisation of phrases is not based on syntactic roles but on other principles, such as information structure, instead. For many languages, fortunately, there is widespread consensus in the literature as to which default word order category they fall into.

As well as debate about the methods and usefulness of typologising languages based on word order, there is also controversy over how robust the suggested correlations between these basic word orders and relative clause position actually are. Downing, while not the first to suggest the relationship, had the most detailed collection of "universals" and tendencies relating to word order and relative clauses, and was the first to test many of these on a large sample. He concluded that (3-a) and (3-b) are strong tendencies, while (3-c) and (3-d) hold universally:

\[
\text{(3) a. Postnominal relative clauses imply VO word order, and vice versa (Downing 1978:383)}
\]
b. Prenominal relative clauses imply OV order (Downing 1978: 392)

c. Correlative relative clauses are only found in verb-final languages (Downing 1978:400)

d. Circumnominal relative clauses [IHRCs] are only found in verb-final languages (Downing 1978:399)

A later study by Dryer (1992) on a larger sample that, unlike Downing’s, controlled for genetic and areal effects showed that the correlation between word order and RC/head order is more complicated than Downing believed. Implication (3-a) is problematic and while it seems to be statistically true that VO word order implies postnominal relative clauses, the reverse certainly does not hold. Dryer concludes that prenominal relative clauses are more common in OV languages than in VO languages, while postnominal relative clauses are more common in VO languages than in OV languages. The reverse implications of these claims do not hold, nor is it the case that prenominal RCs are the most common type found in OV languages. Even in OV languages, postnominal RCs are the dominant pattern. Downing’s generalisation (3-b) holds because prenominal RCs are very rare in VO languages.

It is difficult to tell from Dryer’s description of his sampling methods how he has treated languages that have more than one relative clause type. He states in one place that one reason why the database might not contain information for a given parameter is if both orders are “common” (Dryer 1992:fn 1, p 83–84), but this could mean either that he left these blank only if each order was so common that he was unable to determine which was the basic order, or that he did not include any languages that had both orders. In the actual sample, each datapoint is a genus¹ rather than a language, and it appears that he reduced the data by measuring whether or not a genus contains each ordering pattern (Dryer 1992:fn 5, p. 86).

¹Dryer’s concept of “genus” is a group of languages whose genetic relationship is undisputed and whose common ancestor is thought to have existed no more than 4000 years ago (Dryer 1992:fn 2, p. 84).
Dryer’s entire sample (including information from a database of 543 languages) contains only one genus that has both VO word order and prenominal relative clauses and and he states only that this combination is found in the area of South East Asia and Oceania\(^5\), so presumably this must be Chinese. Given that this combination also exists in Russian, and possibly Hungarian and Georgian (depending on which of their word orders one takes as basic), to name just a few examples from the languages included in Dryer’s own database (Dryer 1992:133–134), but that it is only one of several alternatives in these languages, we can infer from this that Dryer probably either disregarded the less common variants when determining word/phrase orderings, or he did not include data from any languages that had more than one alternative. The reason he does not include Russian and Hungarian as examples of this combination might also be that he is disregarded non-finite/reduced/deranked relative clauses, but this is not clear from his discussion. Georgian, in any case, has finite prenominal relative clauses and can be regarded as having SVO word order (Vogt 1971:220–224), yet he has not counted it, perhaps because of these orderings being only one of several alternatives.

These other cases that could possibly be considered as examples of VO combined with prenominal RCs suggest that the claim Dryer is making is not simply that prenominal relative clauses are very rare in VO languages, but rather that they are very rarely the main strategy in VO languages. Likewise, it may not be true that the existence of a prenominal relative clause implies OV ordering, or that the existence of a postnominal RC implies VO order, but rather that the existence of a prenominal RC as the only strategy in a language implies OV word order.

In an even more recent examination of the correlations observed by Downing, De Vries (2005) also challenges the validity of the prenominal \(RC = OV\) and postnominal \(RC = VO\) correlations. He gives a long list of counterexamples to the claim that postnominal relative clauses implies VO word order, and suggests there is “not enough data” to support any claim that the existence of prenominal relatives implies OV order. However his list of counterexamples to the claims of prenominal RCs implying OV order and VO word order implying postnominal RCs is too short to be compelling in the absence of more information. He gives

\(^5\) Note that Dryer’s areal groupings are not meant to equate to linguistic areas.
three counterexamples for each and does not imply that any others are known to exist beyond these. As these two claims are the ones supported by Dryer’s study as well, I think it is reasonable to take as a working hypothesis that VO word order implies the existence of postnominal relative clauses and that the existence of prenominal RCs implies OV word order.

De Vries also challenges the validity of (3-c) and (3-d) above. He claims that (3-c) (the statement that correlative RCs are only found in verb-final languages) is disproved by the counterexamples of Ancient Greek and Medieval Russian. It is not clear what basis De Vries uses to classify Ancient Greek as a VO language, but he does explicitly do this (De Vries 2005:12). More commonly, Ancient Greek is referred to as having “free word order”, or even SOV ordering (Taylor 1994). Furthermore, the term “correlative” in traditional Greek grammars is often used to mean pairs of pronouns that correlate in form, rather than referring to a relative clause construction of the sort referred to as correlative here (and in De Vries (2005)). Ancient Greek does not, in fact, appear to have a relative clause construction that resembles a correlative as defined in Chapter 1. De Vries’ counterexample of Medieval Russian is enough to show that claim (3-c) cannot be an exceptionless universal, however.

De Vries then notes that Moore, Dagbani and ASL provide counterexamples to (3-d) (the claim that IHRCs are only found in verb-final languages). These two cannot therefore be claimed as universals, although De Vries still allows that they may be statistical tendencies.

The formulation of correlations between “basic word order” and relative clause position that is consistent with the most recent evidence is therefore the following four statistical tendencies:⁶

1. VO word order implies the existence of postnominal relative clauses
2. The existence of prenominal RCs imply OV word order
3. The existence of correlative RCs implies OV word order
4. The existence of IHRCs implies OV word order

⁶Note that this formulation (allowing only a one-way implication for the VO/postnominal correlation) means that the first and second implications stated by Downing (as represented in (3) above) no longer have the potential to conflict, as they previously would have in a language that had both prenominal and postnominal relative clauses.
As noted in the introduction to this chapter, I have no attested examples of the development or loss of IHRCs, and correlatives were discussed already in the previous chapter. The relevant correlations are therefore that VO word order implies the existence of postnominal relative clauses and that the existence of prenominal relative clauses implies OV word order.

There are two main types of explanation that are usually proffered for correlations between word and phrase order. The first is processing-based: i.e. the argument that certain combinations of orderings make parsing sentences easier or harder, and/or place more or less burden on the speaker and hearer’s memory. This means that certain orders are likely to be preferred over others. The second type of explanation is diachronic: the order in one type of phrase is likely to reflect the order in another type because both have their origin in the same construction. The main argument for this sort of explanation for relative clause ordering correlations is Arisar (1991), but this is intended to explain correlations between relative clauses and possessive constructions, not relative clauses and basic word order. I am unaware of any attempt to explain the correlations between basic word order and relative clause position by a scenario in which the position of a relative clause developed as a direct historical by-product of the position of the verb. The closest to such an explanation that I could imagine is that, if relative clauses in a language were modeled on complement clauses, they would most likely stand in same position relative to the verb as nominal and clausal objects do in that language. But this is more of an analogous pattern than a direct causal explanation.

Whether or not “universals” or “tendencies” regarding correlation between basic constituent order and relative clause position can be explained diachronically, they may still be important to a historical study, as they may affect the diachronic processes that we observe: If the correlations between certain word orders and RC positions are real and reflective of ongoing pressures affecting languages, then we should be able to see this in the diachronic behaviour of the languages. For one thing, we might expect that change in one variable would affect the other: that when the basic word order of a language changed, the relative clause/head order patterns would change too and vice versa. For another, change to
a “dispreferred” combination would be likely either to be short-lived, or the language might show evidence of trying to compensate for the increased processing difficulties. In 6.5.2 I will examine whether we do, in fact, find such correlated changes and attempts to compensate for dispreferred combinations.

6.5.2 The relevance of basic word order to the attested cases of RC position change

The attested and semi-attested cases of the development of postnominal relative clauses, Quechua and Basque, both retained their OV word order patterns (Cole 1985, Weber 1989, Trask 1996), and therefore do not conflict with the claims about word order correlations. Some of the branches of Indo-European that are thought to have developed postnominal RCs pre-historically are reconstructed to have begun or completed a shift from OV to VO pre-historically (Albanian, Germanic), some did so later (Celtic, Romance, Slavic, Greek) and some not at all (Hittite, Indo-Aryan) (Fortson 2004). Some of the contact-influenced dialects of Turkish that developed a postnominal relative clause shifted from OV to VO order (Johanson 2002:xi), while Telugu did not change its word order at all (Krishnamurti and Gwynn 1985). It would therefore appear that the development of postnominal relative clauses is not necessarily associated with word order change, which is exactly what we would expect from the synchronic correlations.

Even in the cases where it appears word order change has taken place, the approximate dating of the changes, where information on this is available, is such that we cannot assume the changes are directly related. In the Turkish case, for example, while it is true that the Russian-influenced dialects (e.g. Gagauz, Karaim, Uzbek) that have come to rely primarily on the postnominal relative clause have also changed their word order from OV to VO (Johanson 2002:xi), the postnominal construction must have pre-dated this word order change significantly, since it is attested in the oldest Turkish records, as well as in Modern Standard Turkish (von Gabain 1950). If the word order change is connected at all, it would seem more likely that it is related to the later decline of the prenominal RC than the development of the postnominal construction. More likely still
is that none of these developments is related to any of the others by any type of direct causation but rather that each is an independent feature that has been transferred from Russian into the relevant Turkish dialects through their long contact history. The possibility that the word order and RC position changes are independent in this case is supported by an examination of the Irano-Turkic dialects. The influence of Persian, like that of Russian, appears to have led nearby Turkic varieties to replace prenominal RCs with the postnominal alternative (Johanson 1998:333), but unlike Russian, Persian has OV word order. The Turkic dialects influenced by Persian have therefore not changed their word order even though they have almost entirely lost the prenominal relative clause construction. This suggests that the two types of ordering patterns (clausal constituents and relative clause position) are independent of each other.

As for the loss of postnominal relative clauses, the claim that VO order implies the existence of postnominal RCs predicts that the basic constituent order in a formerly VO language would have to change before postnominal RCs would be lost. And this is, in fact, what we find with the Ethiopic languages: Ge’ez had VO as the most frequent word order, and postnominal relative clauses (Gragg 1997). Later Ethiopic languages developed prenominal relative clauses, lost the postnominal variants and became OV (Weninger 2001).

So it can be seen that the small amount of diachronic information available about the development and loss of postnominal relative clauses is in accordance with the predictions implied by the synchronic correlation between postnominal relative clauses and VO word order.

Unfortunately there are too few examples of attested change for us to see whether the corresponding predictions for prenominal relative clauses are borne out. The synchronic generalisation that prenominal relative clauses imply OV word order predicts that any language that develops both prenominal RCs and OV word order must change its word order before it changes the position of the relative clause (Antinucci et al. 1979). As noted above, the only language that is known to have developed prenominal relative clauses during its attested history is Armenian. Classical Armenian already had OV word order, so this does not conflict with the prediction from the synchronic generalisations. A VO order has developed as a common alternative in Modern Armenian (Donabédian
2000), but since OV is still available, we would not necessarily expect this to interfere with the development of prenominal relative clauses. The development of freer word order (i.e. the VO alternative pattern) and the development of prenominal relative clauses are not likely to be related if the relative clauses are based on the Turkish model, since Turkish has OV, not VO word order. Even if Hewitt’s alternative theory, as outlined in 5.3.1, is correct, the basic word order change is not likely to have been a factor, since the change in position of the relative clause is then based on the adjective position.

The loss of prenominal relative clauses is not predicted by any of the word order generalisations to result in change in the basic word order, but presumably a shift from OV to VO word order in a language that still retains prenominal relative clauses is fairly uncommon. The Turkic dialects in which the basic word order has shifted from OV to VO (e.g. Gagauz, Karaim) bear this out to some extent, as they are all also varieties in which prenominal relative clauses have been completely lost (Johanson 2002). Unfortunately the lack of continuous attestation in these individual dialects makes it impossible to know which order these changes occurred in, but the fact that both changes did occur means these examples are at least not inconsistent with the generalisations above.

All in all, change in the basic constituent order of the language occurred in some of the cases of attested change in the position of the relative clause (i.e. in Armenian, the Ethiopic languages, and some Turkic dialects though not others, and not in Telugu or Quechua). It did not occur in the semi-attested case of Basque. It does not seem likely that in any of these cases there was a direct link between the word order change and the change in RC position: either the changes took place during different periods (e.g. the Turkish development of a postnominal construction and later OV to VO shifts in some dialects), or were in the ‘wrong’ direction (Armenian). Contact does seem likely to have been a contributing factor in all cases where change in both word order and clause position occurred, but it is not always the case that languages in intense contact situations will adopt both the word order and relative clause position of the donor language. In Basque and Quechua, for example, the relative clause position but not the word order of the Romance languages was adopted. The effects of language contact situations on
relative clause position will be discussed further in Section 6.9.

There are no languages I am aware of in which change to the dispreferred combination (VO with prenominal relative clauses) occurred during an attested period, although it is not inconceivable that this might have occurred as an intermediate stage in some of the Turkic varieties. Because this combination is synchronically so uncommon, it is hard even to find languages for which change in this direction is reconstructed. Chinese is the only exception to this. Modernly it has VO word order and prenominal relative clauses, and it is often suggested that the proto language had OV word order (as is still the case in a few modern dialects of the language (Zhu et al. 1997:440)). This would imply that it may have changed from the ‘harmonious’ combination of OV and prenominal RCs to the modern unharmonious situation. Some have tried to find an explanation for this unexpected change in Chinese’s status as a ‘buffer zone’ between linguistic areas with conflicting patterns (Stilo 1987, Stilo 2004), but ultimately, without more details about the state of the language during the period of change, we cannot be sure of how or why such an unexpected development occurred.

### 6.6 Other phrase orderings as a relevant factor in position change

Like the basic constituent order, it has been suggested that the orderings of other phrases in the language also correlate with relative clause position (see e.g. Downing (1978). We might expect the order of other phrases to be particularly relevant if the relative clause construction is transparently analogous to another head/modifier construction: for example if it uses the possessive particle as a relative clause marker, it might be likely to follow the order of possessor/possessed and change in the order of one could lead to analogical shift.

Here I would therefore like to take another look at the aforementioned languages that have undergone attested change in the position of their relative clauses, and see whether the order of other phrases has changed at all during the same period. The constructions I will look at here are adjective and noun, possessor and possesum, definite article and noun, demonstrative and noun, and adposition and noun.
In the following table, each of the languages which have undergone attested change in the position of the relative clause is listed, and the columns labeled DET, POSS, ADJ, and ADPOS are marked with a Y if change also occurred in the ordering of this phrase, and a N if it did not.\footnote{Sources of word order information for this table were as follows: Armenian: Dryer (1992), Donabedian (2000), Campbell (2000), Hewitt (1978); Ethiopian languages: Gragg (1997), Kogan (1997), Raz (1997), Hudson (1997); Telugu: Mahadeva Sastri (1961); Basque: Trask (1996); Turkish: von Gabain (1950), Johanson (1988), Underhill (1976). The information on Quechua is less solid. I have been unable to find any mention in the literature of changes in the position of any of the elements besides relative clauses, and have therefore assumed it did not occur. It seems unlikely, but admittedly not impossible, that grammars and works discussing the change in relative clause position would have failed to mention other changes if they had indeed occurred.}

<table>
<thead>
<tr>
<th>LANGUAGE (GROUP)</th>
<th>RC CHANGES</th>
<th>DET</th>
<th>POSS</th>
<th>ADJ</th>
<th>ADPOS</th>
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</thead>
<tbody>
<tr>
<td>Armenian</td>
<td>Gained</td>
<td>Y</td>
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<td>Y</td>
<td>Y</td>
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<td>Lost</td>
<td>N</td>
<td>some</td>
<td>Y</td>
<td>some</td>
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<tr>
<td>Telugu</td>
<td>Lost</td>
<td>N</td>
<td>N</td>
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<td>N</td>
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<tr>
<td>Some Turkic varieties</td>
<td>Lost</td>
<td>N</td>
<td>some</td>
<td>some</td>
<td>some</td>
</tr>
<tr>
<td>Basque</td>
<td>Gained</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Telugu</td>
<td>Gained</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Standard Turkish</td>
<td>Gained</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

\textbf{Tab. 6.1: OTHER PHRASE ORDERS}

It is clear from this table that while Armenian and the Ethiopian languages have undergone thorough shifts in word and phrase orderings, the other languages generally have not. In Telugu and Basque, and perhaps also Quechua, relative clause position is the only sign of word or phrase order influence from the surrounding languages: all other phrase orderings have remained the same. The same can be said for standard
Turkish. The oldest Turkish records in which the postnominal relative clause alternative is found do not show change in other word and phrase order patterns. In the modern dialects that make the most use of the postnominal construction, however, other changes are found. For example Gagaz has developed a noun adjective order as an alternative to the traditional adjective noun pattern and possessed possessor as an alternative to possessor possessed (Siewierska 1998:792). Karain is another Turkic variety that makes extensive use of postnominal relative clauses and has completely shifted its possession pattern to an order where the possessor follows the possessed noun (Siewierska 1998:793). Yet even these changes are not as thorough-going as those found in the Ethiopic languages or Armenian.

In Classical Armenian, the word order was much freer than it is in the modern language. The demonstrative could precede or follow the noun, but modernly it is only ever prenominal (Siewierska 1998:798). The same can be said for the order of possessor and possessed: in Classical Armenian this was fairly free, but in the modern language the order is possessor possessed (Hewitt 1978:111). Adjectives too could formerly follow or precede the noun, but modernly always precede (Donabédian 2000). Only the position of adpositions still varies in Modern Armenian, and even so they were generally prepositional in Classical Armenian and generally postpositions in the modern language (Siewierska 1998:798). In the Ethiopic languages the position of demonstrative and definite article with regard to the noun has not changed, but most other phrases have changed their order in most languages. The order of possessive phrases has changed from the construct possessed possessor, to the analytic construction with the opposite order: possessor marker possessed. This latter order is the only possibility in Amharic, and exists alongside the older alternative in Tigré and Tigrinya. Adjectives have changed from postnominal to prenominal position in all Ethiopic Semitic languages. Amharic has undergone change from having prepositions only to a combination of prepositions and postpositions (Croft 2000:365).

Interestingly, the languages with the most extensive phrase order changes, Armenian and the Ethiopian languages, are the two cases in which a new prenominal relative clause was adopted; in the other languages it was a postnominal construction that was gained (or in the case
of Telugu gained and lost again). This is in accord with a generalisation made by Lehmann (1984:394): that languages shift from postnominal to prenominal relative clauses only “during considerable changes in the language system” [unter erheblichen Veränderungen im Sprachsystem] but that a shift from prenominal to postnominal RCs can occur “easily and unobtrusively” [leicht und unauffällig]. Lehmann makes this suggestion on the basis of a comparison between the change observed in the Ethiopic languages and the development of postnominal relative clauses in Quechua. Lehmann does not take Armenian, Basque, or Telugu into account in his discussion here, since he is concerned with a full-scale shift from one RC position to the other, and these latter three languages merely adopted the new position as an alternative to their pre-existing construction. Logically, however, if Lehmann’s generalisation holds for the replacement of one construction by the other, it must apply to either or both of the two steps in this process: the adoption of the new construction, and the loss of the old one. A comparison of the languages in Table 6.1 suggests that it might be the adoption of a new RC position that is relevant. Certainly unless contradictory evidence becomes available, Lehmann’s generalisation can be rephrased as the hypothesis in (4).

(4) Languages only adopt prenominal relative clause constructions when undergoing considerable changes to their word/phrase order patterns, but can adopt postnominal relative clauses relatively easily and unobtrusively.

It is unclear whether this association between the other phrase order changes and the adoption of a prenominal relative clause construction reflects a causal link of some sort, or whether there is a less direct relationship. For example, it may be the prenominal relative clauses are only developed in very intense contact relationships, which would also be likely to affect other phrase orderings. Certainly a SVO language is unlikely to develop prenominal relative clauses (for whatever reason is responsible for the extreme rareness of this combination cross-linguistically). Therefore a SVO language in contact with a SOV language is only likely to adopt the relative clause position of the latter if it has already assimilated
to the same basic word order pattern. And a language that has changed
its basic word order on the model of a neighbouring language is likely to
have copied other structural patterns from this neighbour as well.

Alternatively, it is possible that there is a more direct link between the
adoption of a prenominal relative clause construction and other phrase
order changes. We have seen in Chapter 3 that some prenominal relative
clauses are modeled on possessive constructions, using the same marker as
these, and that others (particularly those that use participial verb forms
or nominalisations) are modeled on adjectives. It would seem natural in
such cases, if the analogy is still transparent, that the language would
place such relative clauses in the same position as these other modifiers.
This is certainly thought to have been the case in Armenian (Hewitt
1978:128). It is possible that the loss of flexibility in the position of
the adjective (from nearly free to rigidly prenominal) was influenced by
Turkish, and that the new participial relative clause was seen as similar
enough that it too became rigidly prenominal. Alternatively, the position
of this new construction may be due to a combination of analogy with
adjective position and direct influence from the position of the Turkish
deranked relative clause. As for the Ethiopian languages, we saw in
chapters 3 and 4 that the relative clause in these cases is transparently
analogous to the possessive construction, and the marker is probably
derived from the demonstrative or definite article. Change in the ordering
patterns in the possessive construction therefore could have triggered
change in the analogous RC construction, even without the additional
influence in the form of prenominal relative clauses in the neighbouring
languages.

6.7 Relative marker existence and type as
relevant factors in position change

There are several reasons why we might expect a correlation between rel-
ative clause marker existence/type and the position of the relative clause.
Since one of the primary functions of relative clause markers is to mark
clause boundaries, we would expect to find them most commonly at the
boundary (or boundaries) between the relative clause and main clause.
This would mean they would commonly be clause-final in prenominal
RCs, clause-initial in postnominal RCs, and in either or both position if the relative clause can be surrounded by matrix clause material. Furthermore if certain combinations of word order and relative clause position are harder for hearers to process, then we might expect that these constructions would be more likely to contain relative clause markers that make the clause boundaries unambiguous.

As mentioned in the review of the literature in Chapter 2, there have been various generalisations made about the synchronic correspondences that hold between relative clause position and the position of the relative clause marker. Kuno (1974) claims that it is a universal or “near-universal” that “conjunctions appear in clause-final position in SOV languages and in clause-initial position in VSO languages” (p. 118) and also that relative clauses are “predominantly” pronominal in SOV languages and postnominal in VSO languages (p. 126). As shown by Dryer (1992) and De Vries (2002a) and discussed above, the latter claim is not quite correct: the existence of pronominal relative clauses implies OV word order, but the reverse does not hold. Nevertheless, the correlation between word order and position of conjunctions, and that between word order and position of relative clauses, suggests that the position of conjunctions and the position of relative clauses should correlate with each other.

Kuno does not include pronominal relative clause markers in this generalisation, but goes on to state that “most SOV languages lack relative pronouns” (p. 118). This suggests that one would expect to find that pronominal relative clauses usually have invariable conjunctions or verb affixes in clause-final position, while postnominal relative clauses have clause-initial conjunctions and/or pronominal relative clause markers. Kuno goes on to explain this tendency as a maximisation of ease of perception and processing (pp. 126–35).

Similar claims have been made by Downing (1978:390, 396), Deutscher (2000a), and most recently, De Vries (2005). The generalisations stated by De Vries are stronger and less ambiguous than some of the earlier statements, so bear repeating here.8

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8 The reader may recall from my discussion in 2 that De Vries defines “relative pronouns” as pronominal elements that appear clause-initially in the relative clause (De Vries 2005:21) and “relative complementisers” as non-pronominal, non-affixed particles which can be specialised for relative clauses, or identical to another complementiser in the language (De Vries 2005:24).
(5) a. "Relative pronouns cannot be used in prenominal relative clauses" (39, p. 23).

b. "Relative complementizer particles are clause-final in prenominal relatives, and clause-initial elsewhere" (41, p. 24).

Such correlations, if they truly do hold universally or near-universally, obviously have diachronic implications. The correspondence of certain relative clause marker types and positions with particular relative clause positions suggests either that a change in RC position entails the creation of a new marker entirely, or that it somehow triggers a change in the existing relative clause marker. I will shortly show that the (admittedly few) attested cases of RC position change that we have support the former conclusion rather than the latter. The implications of the latter are, however, interesting to think about. The generalisation in (5-a), for instance, suggests that when a language with postnominal relative clauses and pronominal relative clause markers changes to have prenominal relative clauses instead, there would be two changes involved, and that these would take place in the following order: first relative clause markers would lose their ability to inflect, and then the shift(s) in position will take place (since any other order of change would mean the language went through a brief stage of having relative pronouns in prenominal clauses. Moreover, the correlation in (5-b) allows us to infer that both the position of relative clauses and that of their markers must change simultaneously in a language or not at all.

In reality, it appears that instead of these multi-stepped processes of change, languages tend to develop new relative clauses constructions wholesale, without adapting pre-existing relative clause markers to the new "variant". Most of the cases for which historical data are available can be traced to influence from other languages, and the language in which the new positional variant arises calque a new relative clause marker on the analogy of the donor language.

All of the languages/language families I found that underwent attested or near-attested change in the position of the relative clause (Ethiopic languages, Telugu, Armenian, Turkish, Basque and Quechua) also developed a corresponding new position for the relative clause marker.
The Ethiopian languages are the only ones to have adapted the pre-existing relative clause marker to the new construction. In these languages, the older relative clause position and relative clause marker were typical of the Semitic family: a postnominal relative clause and a clause-initial marker (inflecting for gender and number). The clause-initial marker became a prefix to the verb: an unsurprising development, as the language was VSO. The modern prenominal relative clause has retained the marker as a (now invariable) verb prefix, but the verb is now clause-final, as SOV is now the basic word order.

In Telugu, the inherited relative clause is a deranked, prenominal construction without a marker other than the participial suffix on the (clause-final) verb. The Sanskrit-influenced postnominal relative clause that appeared in Old and Middle Telugu, but was later lost, was introduced by an interrogative-based clause-initial marker.

In Armenian, the inherited postnominal construction was introduced by a clause-initial interrogative-based relative clause marker, while the newer, Turkish-influenced prenominal construction was marked only by the participial suffix on the clause-final verb, which is similar to the marking pattern in Turkish itself.

The cases of Turkic languages and Basque, although the development of the new relative clause position occurred before the attested period, provide further examples of languages that have modeled both the position and the marker of the newer construction on that of the donor language. In both cases a new relative clause marker type and position has also arisen on the model of the contact language that influenced the new position of the relative clause itself, and in each case the marker position and RC position were almost certainly calqued together, since the marker position has continued to be restricted to the newer construction.

In Quechua, the situation is slightly different. Although the newer postnominal construction always uses the interrogative-based markers that were presumably also calqued from Spanish, this is not the only place these markers are found. As mentioned above, interrogative-based relative clause markers are also attested in a correlative construction found in one of the earliest records of Quechua (the anonymous grammar from 1586). It is therefore not entirely certain that these markers were copied from Spanish along with the postnominal RCs rather than being
independent, earlier developments. In some dialects the older and newer markers can even co-occur (as is the case in Basque as well): oblique headless postnominal RCs can be marked both with the inherited verb suffixes and the new clause-initial markers (Lefebvre 1988).

In the Ethiopic languages the new position for the relative clause marker, like the relative clause position itself, completely replaced the former option. In Telugu, the newer postnominal relative clause did not remain in the language. In all the other cases, both the older and newer relative clause position continue to both exist as options. In all of these cases except for Quechua, the new relative clause marker remains tied to the new relative clause construction. These examples therefore provide evidence for a model in which typological change—in these cases, contact-influenced change—is driven by the copying of individual constructions. The observations from the literature about marker and clause order correlations might lead one to make logical inferences about the relative chronology of changes in the relative clause marker position and the position of the relative clause itself. But what we actually see is that both “changes” are introduced into the language simultaneously through the new construction. Any actual typological shift in the language then also simultaneously involves both features, and corresponds to the replacement of one construction type by the other.

We may wonder why the Ethiopic languages shifted a pre-existing relative clause marker from clause-initial to clause-final position, while Telugu, Turkic languages, Basque and probably Quechua created new clause-initial markers from interrogatives on the analogy of those found in the languages that influenced the development of their postnominal RCs. This difference seems likely to be related to the fact that the Ethiopic languages changed their basic word order while Telugu, Turkic, Quechua and Basque did not. This meant that the Ethiopic relative clause marker was automatically moved into a typologically appropriate position as the verb shifted to clause-final position. It should be noted that in all these languages, the inherited marker was affixed to the verb rather than standing alone, which would have meant it was not free to

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\[\text{⁹} \text{Armenian is not so relevant here, since its new RC position was prenominal, with no relative clause marker aside from the participial verb ending, although this verb form could itself be seen as a type of marker chosen on analogy with the Turkish model.} \]
change position unless the position of the verb also changed.\textsuperscript{10} This is presumably at least part of the reason that Telugu, Basque, Quechua and Turkic brought in a new marker to stand clause-initially in their new postnominal constructions.

6.8 Language family as a relevant factor in position change

The most striking observation that can be made about relative clause position change and the relevance of language families is that in some cases, such changes have affected entire families or many different languages in a family. This is hardly surprising, if the change took place early on, before the branches of the family diverged. However, in most of these examples, this does not seem to be the case. The replacement of correlative constructions by postnominal relative clauses in various Indo-European languages, for example, took place at different times for different languages, some during attested periods (e.g. Latin, Celtic), some presumably earlier (e.g. Germanic). In the Ethiopic branch of Semitic, we must assume the shift from postnominal to prenominal relative clauses occurred after the branch split into different languages, since at the time of the earliest attestations, when languages like Ge’ez still had postnominal RCs, there were already multiple Semitic languages in the region, all of whose descendents developed the prenominal construction.

In Quechua the postnominal construction exists in all of the modern varieties, yet these differ as to their distribution of the various markers, i.e. whether the verb affixes coexist with the new interrogative-based markers or not, and if so, in which circumstances (Lefebvre and Muysken 1982, Lefebvre 1988). In the Turkic languages, almost all varieties have the option of using the postnominal relative clause construction, but attitudes to the construction vary from language to language: in some varieties it is uncommon or even stigmatised and in others it is now the main option available (Johanson and Csató 1998, Johanson 2002). Also

\textsuperscript{10} Quechua does have free-standing inherited relative clause markers as well as verb affixes (čay and čayqa). These are more restricted than the verb affixes, though, as they only occur in correlative-like constructions (Lefebvre 1988). This may have something to do with why they were not adapted to use as a clause-initial marker in the new postnominals.
in Basque, although most of the dialects remaining today have adopted
the Romance-inspired postnominal relative clause as an alternative op-
tion, there are indications that this construction was originally restricted
to certain dialects only (Lafitte 1962). All of these cases indicate that
the reason the new RC positions are widespread throughout the different
related varieties is not because of their shared inheritance, but rather due
to later continued contact or coincidental parallel developments condi-
tioned perhaps by the influence of the same outside influences on already
very similar typology.

Only Telugu and Armenian represent cases in which a new relative
clause position has remained restricted to one language in a family. In
Telugu, as mentioned above, the existence of the construction was tran-
sitory, and perhaps only literary, and therefore would not be expected to
have penetrated the rest of the language. The prenominal relative clause
in Armenian is also more literary than colloquial (Stilo 2004:40), and
its development in Armenian is counter to the more general direction of
development in Indo-European, which has been moving from OV to VO and
towards postnominal relative clauses.

In all the cases in which a new relative clause position has affected
multiple dialects and/or languages in a family, I believe this can be ex-
plained in the same ways as contact-induced change in genetically unre-
lated languages. It is the areal connection between these languages that
is important rather than their genetic relationship. This can be seen,
for example, in the fact that the spread of prenominal relative clauses
in Semitic stopped with the Ethiopic branch and did not affect other
Semitic languages. The Armenian development has not spread across
Indo-European in general because most other Indo-European languages
are not in close contact with either the Turkic languages or Armenian.
The Basque and Turkic use of the newer postnominal relative clause con-
struction is more ingrained in the dialects that have the most interaction
with the "donor" language. That they have spread beyond these vari-
eties at all is most likely due to the fact that there has been continuous
contact among the various dialects over a long period of time.

The loss of the correlative clause in Indo-European languages is the
one change in relative clause position that I believe may have occurred
independently in some of the various branches and be due to other struc-
tural changes already in motion in the language itself (i.e. a type of “drift”), rather than a change spread through continued intra-family contact.

If, as is commonly claimed, Proto-Indo-European had only the correlative type of relative clause, then every branch of Indo-European has since developed other types, although this was obviously not necessarily an independent innovation in each case. Some of these languages retained the correlative as an alternative strategy (Persian, Slavic, Greek), while others (Romance, Armenian, some Germanic, Celtic, Albanian) lost it altogether.\(^\text{11}\) Only one branch retained correlatives as the main strategy, and this was the Indic branch.

The most striking generalisation about the Indo-European languages that follows from the examples discussed in this chapter and the previous chapter is that these are the only languages that demonstrate attested changes involving the loss of correlative RCs. However, the Indo-European languages have at least one other typological change in common: namely the tendency to lose SOV basic word order in favour of SVO (a development which incidentally did not take place in the Indic languages). It can be and has been argued that these two trends are related to each other (Keenan 1985, Hock 1986). This also fits with the hypothesis discussed in the review of the literature above: that the existence of correlative RCs implies SOV word order. This may mean that the beginning of the loss of strict SOV word order somehow triggered the loss of correlative constructions.

It has been suggested by Lühr (2005) that an early change in the Indo-European languages was an increase in flexibility of correlative clause position. It is generally agreed that if Proto-Indo-European had any specialised relative clause construction at all, it was a left-adjointed correlative construction. Lühr, however, shows that several of the early

\(^{11}\)Some languages retain a correlative construction in comparatives or adverbial clauses, as exemplified in (i-a) and (i-b), but it is not clear whether this construction is historically related to the correlative relative clause, so it will not be discussed here.

(i)  

a. The more he eats, the faster he grows

b. No sooner was the shop his own than he had converted it into a betting shop (Häcker 1999:93, ex. 196)
Indo-European languages had only left-adjointed correlative clauses, but later have both left-adjointed and right-adjointed variants. It is possible that a more flexible word order made it possible to be more flexible in the ordering of phrases as well, then once the correlative RC was commonly right-adjointed, the loss of the correlative marker itself became more likely.

6.9 Contact situation as a relevant factor in position change

As discussed in Section 6.8, when a change in relative clause position affects multiple languages in a family, this is often due to the related languages influencing each other. We have seen in Chapter 3 that language contact, between both related and unrelated languages, is a major factor in the development of new relative clause markers, so it should not be surprising if it influences changes in other aspects of the relative clause as well. Furthermore, most of the other relevant factors discussed in this chapter—basic word order, order of other phrases, and relative clause marker type and position—are known to be affected by language contact themselves. For all of these reasons, language contact seems likely to be one of the biggest factors, perhaps the greatest influence on changes in the position of the relative clause.

This surmise is supported by the limited data that we have. Every language I am aware of that has developed a new position for relative clauses appears to have done so under the influence of another language in which it was in a close contact relationship. The three attested cases: the development of prenominals in Ethiopic Semitic languages and in Armenian and the development of postnominals in Quechua, are widely acknowledged to have been influenced by the Cushitic languages, Turkish, and Spanish, respectively. The three unattested but reliably reconstructed developments of postnominal relative clauses in my sample were also strongly linked to the influence of neighbouring languages. Basque was influenced by the Romance languages, Telugu by Sanskrit, and Turkic by various surrounding languages including Persian and Russian. There is some doubt as to whether the latter contact languages actually provided the Turkic postnominal RC, or whether they just made


a pre-existing construction more common (von Gabain 1950, Johanson 1998). The construction certainly did exist in Old Turkish (von Gabain 1950), but this does not mean that it had not been created under the influence of nearby languages at an earlier date. In any case, the continued influence of languages such as Persian and Russian has undoubtedly been responsible for the spread and increase in usage of the postnominal variant (Johanson 2002).

That relative clauses can change position under contact influence is unsurprising, more interesting are observations or predictions about the details of how and when such change occurs, and such predictions are sometimes made in the literature. For example, a study of the influences of Chinese and Malay on Singapore English relative clauses (Alsagoff and Lick 1998) suggests that word order patterns within the relative clause (including the position of the relative clause marker) and the order of the relative clause with regard to its head are two different “levels” of ordering, each of which can be based on a different language. This predicts that, even if a cross-linguistic statistical correlation between relative clause marker position and relative clause position exists, this correlation will not necessarily hold in contact varieties in cases when the languages influencing them differ in their ordering patterns.

The Singapore English relative clause type described in Alsagoff and Lick’s study is illustrated in (6).

(6) a. That boy pinch my mother one very naughty
   “That boy who pinched my mother is very naughty” (Alsagoff and Lick 1998:129, ex. 3)

   b. The fruit they grow one very sweet
   “The fruit that they grow is very sweet” (Alsagoff and Lick 1998:134, ex. 31)

The main languages influencing the evolution of Singapore English are English, Malay, and the three Chinese varieties: Mandarin, Hokkien, and Cantonese (Alsagoff and Lick 1998:128–129). Alsagoff and Lick’s analysis is that one is used at the end of the relative clause on analogy with
Chinese *de*,\(^{12}\) which as we have seen in chapters 3 and 4 has relative, genitive and other modifier-marking functions, all of which are also shared by Singapore English *one* (Alsagoff and Lick 1998:134–136). So the clause-final position of this marker is based on the Chinese model. The position of the relative clause, however, is not. Chinese has a prenominal relative clause, yet in Singapore English we find a postnominal construction, i.e. the same position as in Malay and English (Alsagoff and Lick 1998). Singapore English has based its relative clause marker and its relative clause position on two different languages, and consequently has ended up with a typologically unusual construction: a postnominal relative clause with free-standing clause-final marker.

A similar disconnect between relative clause position and word order, also brought about through contact, is found in South African Indian English. Although, as stated in Section 6.5 above, there is a fairly robust correlation between the existence of prenominal relative clauses or of correlative constructions and OV word order, South African Indian English has the typical SVO word order of Standard English, but prenominal and correlative constructions as illustrated in (7) are both common (Mesthrie and Dunne 1990).

(7)  

a. working-here-for-them sons  
    “sons who are working here for them” (Mesthrie and Dunne 1990:37, ex. 15)

b. Which-one I put in the jar, that-one is good  
    “The ones [i.e., pickles] I put in the jar are the best” (Mesthrie and Dunne 1990:37, ex. 13)

A concept of “buffer zones” as outlined by Stilo (1987, 2004) could, I believe, be extended to cover such examples as these. Stilo suggests that exceptions to near-universal typological trends are generally found in “buffer zones” between two conflicting patterns, and in such cases can be quite stable. He accounts in this way for examples such as Chinese, which with prenominal relative clauses and SVO word order, is a clear

\(^{12}\)Mandarin *de*, Cantonese *ge* and Hokkien *ge* or *e* all function the same way (Alsagoff and Lick 1998:134), but I will use *de* as shorthand to encompass any of these here.
exception to the near-universal generalisation that prenominal relative clauses imply OV word order. Stilo applies his idea of a “buffer zone” only to large, well-established languages, yet the mechanism responsible for these zones is competing contact influence from languages with conflicting patterns, so they are therefore no different from the development of unusual word and phrase order combinations in newer contact varieties such as Singapore English or South African Indian English.

A large-scale study of contact varieties influenced by standard languages with different ordering patterns might be able to answer the question of whether the adoption of conflicting word and phrase orders is a common phenomenon in these circumstances or if it is possible but rare, but such a study is beyond the scope of this thesis.

Another generalisation from the literature about language contact that affects relative clauses is that prenominal relative clauses and other types of “regressive” subordinative constructions are rarely copied (cf. Johanson (2002:120)), supposedly because postnominal relative clauses are easier to acquire and to process (Slobin 1986, Menz 1991), so are at an advantage in any “evolutionary” competition that might take place. Johanson (2002:120) rejects the claim that prenominal relative clauses are innately more difficult to process and cites a study by Frazier and Razner (1988) that shows this is not always the case. He goes on to suggest that the real problem with left-branching structures is that speakers of languages in which relative clauses and similar constructions are postnominal find it difficult to learn to process prenominal constructions (Johanson 2002:120). Therefore in cases where a substrate with postnominal relative clauses is spoken, Johanson suggests that this might influence new languages which move into the area, since the adult speakers of the substrate language will have difficulty adapting to prenominal constructions (2002:134). I would argue it then follows that anywhere adult speakers of languages with postnominal RCs are acquiring a new language (e.g. immigrant varieties, New Englishes, pidgins), they might choose to use the resources of that new language to reproduce the postnominal constructions from their L1. Conversely, adult speakers whose language is otherwise heavily influenced by a neighbouring language are not likely to adopt a (to them) more difficult prenominal relative clause construction.
It is, however, difficult to see why speakers used to only postnominal RCs would have more difficulty learning to process prenominals than speakers used to prenominal RCs would have with postnominals. It is true that processing “shortcuts” available to identify clause boundaries differ depending on the position of the relative clause: speakers used to postnominals are likely to look for a clause-initial marker or a string of two NPs as an indication that a relative clause has begun, while speakers used to prenominal constructions probably rely more on cues from case-marking and verb morphology, and use the final position of the verb as an indication of the right-hand RC boundary. But it is a mystery why speakers unused to prenominals should find the absence of clear marking for the left-hand boundary more confusing than speakers unused to postnominals find the absence of clear marking for the right-hand boundary. If the presence of a clause-initial marker in postnominal relative clauses is a processing aid that learners find easier to learn to use than they do the processing aids available in prenominal RCs (e.g. final position of verb, case-marking, special verb morphology, clause-final markers), then this is no different from saying that postnominal RCs and their correlated characteristics are intrinsically “simpler”, which is the view Johanson is arguing against.

Furthermore, the argument that prenominal relative clauses are rarely brought into a language through language contact is not uncontestable; nor is Johanson’s modified version of this claim. I have discussed several clear examples of the development of prenominal relative clauses under influence from other languages: Armenian, the Ethiopic branch of Semitic, and South African Indian English. Although these are only three examples, we have seen in the earlier sections of this chapter that clearly attested examples of the development of postnominal relative clauses are equally scarce. If we extend the scope of our investigation to the less well-attested and documented but in many cases clearly reconstructable cases of mixed languages such as creoles, then it is true that postnominal relative clauses much more commonly result from this sort of language mixture than prenominal relative clauses do: even in cases where the substrate has prenominal relative clauses that we might expect to be reflected in the creole. I will discuss possible reasons for this in more detail below, but I believe it has more to do with the (unrelated) predominance
of SVO word order found in creoles than with any intrinsic or subjective difficulty in processing prenominal constructions.

I should also note that any supposedly stronger evidence for the transmission of postnominal than prenominal relative clauses may merely be an artifact of the fact that more information is available in the literature on Indo-European languages than on other languages, and the spread of Indo-European around the globe means that contact situations described in the literature more often than not involve at least one Indo-European language. Since European languages most commonly use postnominal relative clauses either solely or as their main RC strategy, it is hardly surprising if more reported results of contact involve the adoption of postnominal relative clauses than of prenominal constructions.

Whether or not Johanson is correct about prenominal relative clauses only being difficult to process for adult speakers who are used to postnominal constructions, his argument suggests that development of and change involving relative clause constructions is likely to differ depending not only on whether language contact is a factor, but also depending on the sort of language contact involved: whether speakers are generally multilingual from childhood or only learning the second language as adults, and whether the input they get when learning the language is from native speakers or of a more limited nature. We would also expect differences depending on whether it is a situation in which speakers adopt a new language entirely, or one where influences from one language are simply incorporated into another.

These sorts of differences have often been addressed in the literature in the context of how pidgins and creoles differ from other languages. Bickerton (1977:49, 54–55) writes that pidgins are the result of “second language learning with restricted input”, while creoles result from first language learning with restricted input.

If that is a valid model, we might expect that the changes occurring between the pidgin and creole stage would be a matter of regularising irregularity (i.e. smoothing out variation that is due to the pidgin being an L2 variety) and in the process of extending the language into new functions, adding layers of complexity, which would counteract the effect of restricted input. Applying these assumptions to the relative clause, one might infer that the early stages of a creole might have several competing
variants for relative clause constructions—possibly with different head orders, modelled on the different L1s of the pidgin speakers. The new L1 learners of the creole might then regularise these in favour of one variant, or redistribute the different variants across different functions or different registers.

While various competing relative clause constructions do frequently seem to exist in creoles (see for example the summary of Tok Pisin RC strategies in Verhaar (Verhaar 1995)), it is difficult to find examples of languages in which such variation involves the relative clause position. The mixed languages where we might most expect to find competing relative clauses with different ordering patterns are creoles in Africa and the Americas, since the substrate languages in these cases often include some with prenominal relative clause constructions, while the lexifier languages, typically European, have the postnominal pattern. A comparative study of these would have to be synchronic in focus, since long historical records are not available for most creole languages, and as such is outside the scope of this thesis, but would presumably provide interesting data for comparison.

If creoles take all their word and phrase ordering patterns from the same language, this would maintain “word order harmonies”, at least to the same extent that they are upheld in the source language. And if word and phrase orders were all taken from one language, we would perhaps expect these to come from the substrate rather than the lexifier in cases where the two differ, but this does not seem to hold as a general rule. For example, Korlai Portuguese, a creole that developed through contact between Middle Portuguese (SVO with postnominal RCs) and Marathi (SOV with correlative, prenominal and postnominal relatives), has SVO order and postnominal relative clauses, even though apart from this Portuguese provides the lexicon and Marathi the morpho-syntax (Clements 1996). This is possibly related to an observation made by Johanson (2002), that items like relative clause markers, when borrowed from one language into another, can bring along with them their grammatical properties, such as where they occur in the clause. Presumably this extends to creoles, so that the reason why Korlai Portuguese has postnominal relative clauses with initial relative clause markers is that this is how these markers work in Portuguese. Since relative clause mark-
ers, as individual words, are often taken from the lexifier language, yet can, as in this case, influence the shape of the whole construction, relative clauses are therefore a part of the grammar of a creole which may sometimes be determined by the lexifier language rather than by the language on which the creole's grammar is otherwise based.

The SVO pattern of Kordai Portuguese is, however, unexplained, since it is hardly likely that the relative clause marker determines the word order of the whole language. However, as mentioned above, it has been observed that most creoles have SVO as their basic word order (Muysken 1988:290). Even Chinook Jargon, a pre-European creole used in North America, has had SVO word order since the earliest attestations, even though none of its source languages appears to have had this order (Thomason 1983:823). The prevalence of SVO in creoles has not been convincingly explained (but see Muysken (1988) for some tentative hypotheses), but the reason for this tendency is not central to this discussion. The important thing to note is that an SVO basic word order, which is presumably adopted for reasons unconnected with anything to do with relative clauses, means that we would not expect these languages to have prenominal relative clauses, since whatever disfavours this combination in non-mixed languages is presumably active in the formation of creoles as well.

Romaine (1984a) sets out a completely different scenario in which rather than creoles taking their relative clause position from any of their source languages, they create relative clauses only through "the grammaticalization of an anaphoric relationship between two independent sentences" (Romaine 1984a:260). She opposes this to the possibilities available for non-mixed languages, which she says can develop relative clauses by this method, or through renewal of existing relative clause constructions, or by the expansion of other constructions into the function of the relative clause. Admittedly none of these options quite cover the wholesale calquing of a construction from another language, but we must assume she meant to count this under the "renewal of existing relative clause constructions". Since she specifically excludes this method of RC creation for mixed languages, we must assume she also does not believe that these languages "import" fully developed relative clauses from their source languages. Romaine's scenario would explain the prevalence
of postnominal relative clauses in creoles, since, as shown by Lehmann (1984), the development of loosely connected sentences into a subordinate RC construction in SVO languages can only really result in postnominal relative clauses. Nevertheless, I find it unlikely that creoles would independently (re)develop relative clause constructions from scratch when models are freely available in the languages from which the relative clause markers are taken. At the very least, I think we can assume that even if development of a new subordinate construction takes place, other relative clauses used by the speakers in other languages they speak may have some influence on the process and result.

6.9.1 Some conclusions regarding contact as a factor affecting relative clause position

From the discussion here it can be seen that the influence of language contact on the development of and changes in the position of relative clauses is complex, but there undoubtedly is an influence. Not only can all the documented cases in which languages have shifted the position of their relative clauses be attributed to the influence of languages with which they were in contact, but also it looks as though mixed languages behave differently with regard to the position of their relative clauses from how we might expect them to: either modeling them on the language that otherwise acts as lexifier, or perhaps developing relative clauses from scratch from anaphorically linked sentences.

There is relatively solid evidence for the copying of both postnominal relative clauses (Turkish, Telugu, Basque, Quechua, many creoles) and prenominal constructions (Armenian, the Ethiopic languages, South African Indian English); but perhaps not so much evidence for the transfer of correlative constructions (only South African Indian English, and the heavily contested case of Indo-Aryan to Dravidian discussed in 5.4). Postnominal relative clauses seem to be by far the most widespread type in creoles, with only a few creoles displaying prenominals (Holm 1989) and none to my knowledge that employ correlatives. This may simply be an artifact of the historical spread of languages, since many of the most widespread and influential languages that have been involved in creolisation have been Indo-European, and therefore generally had postnomi-
inal relative clauses. Alternatively, as Johanson (2002) suggests, it may be that certain types of contact, namely those involving adult learners, favour right-branching over left-branching constructions, since speakers of the former tend to have trouble processing the latter.

Leaving creoles and other mixed languages aside, however, postnominal relative clauses are not as over-represented in the examples of contact-influenced languages discussed in the literature as has sometimes been claimed.

One of the most interesting things about language contact and relative clause position is that even situations resulting from contact do not often provide counter-examples to the word order “harmonies” described earlier in this chapter. Languages with SVO basic word order tend to have postnominal relative clauses; prenominal relative clauses are marked by particles or verb affixes, not relative pronouns; postnominal RCs generally have clause initial markers. This suggests that multiple characteristics of a relative clause are borrowed at once—the entire construction—including the relative clause marker, its position, and the position of the relative clause itself. What we know about the attested development of new relative clause positions under contact influences (from e.g. Basque, Ethiopic languages, Telugu, Armenian, etc) generally supports this assumption, with only Quechua as a possible exception. The calquing of entire constructions can perhaps explain why the correlations between relative clause position and relative clause marker position/type hold even under contact circumstances, but not why the correlation between basic word order and relative clause position continues to hold. The word order/RC position correlation would be accounted for if we assumed that prenominal relative clauses are not readily borrowed by speakers of languages that only have postnominals (perhaps for reasons such as Johanson (2002) suggests). If they were therefore only borrowed under conditions of intense and prolonged contact, at that point the basic word order of the language is already likely to have been copied.
6.10 Conclusions

Although only a few language varieties of those I have looked at have undergone shifts in the position of their relative clauses, those that have done so represent a variety of changes and directions of change. We have seen attested cases of the development of relative clauses that precede their head nouns (Ethiopic languages, Armenian), as well as cases in which we can be certain that this is what happened (South African Indian English); attested and semi-attested cases of the development of relative clauses that follow their heads (Basque, Quechua, Turkish), and fairly certain reconstructions of these (Indo-European). The introduction of a new correlative construction is not widely attested, but the case of South African Indian English shows clearly that correlates can be transferred from one language to another. We have also seen attested cases of the loss of prenominal relative clauses (some Turkic varieties); the loss of postnominal relative clauses (Telugu), and some of the loss of correlative constructions (various Indo-European languages).

Although the three examples of the development of relative clauses that follow their heads are in languages that are not well documented prior to the adoption of the new construction, there is no reason to doubt that in these cases the prenominal relative clause was the inherited construction and the postnominal alternative a newcomer. The only matter in any sort of doubt in these cases is when exactly the new construction came into the language, and the degree to which it was influenced by other languages, i.e. whether it would have developed naturally without this influence.

The least well-attested changes are the loss of each type of construction: it seems to be more common for languages to retain multiple alternatives over a long period of time, and even to put them into a stable register-determined distribution, e.g. prenominals in formal, written registers and postnominals in the colloquial language (as is the case in Armenian, some Turkic varieties, German, and some dialects of Basque). Interestingly, I am not aware of any cases in which the opposite distribution exists: with prenominals confined to the colloquial language and postnominals primarily for formal writing. This is particularly surprising given that we have examples of languages in which the prenominal construction was inherited and the postnominal a more recent borrowing
(Turkic, Basque, Quechua) and others in which the opposite is the case (e.g. Armenian). One might expect the distribution to differ accordingly, but it does not. This suggests that perhaps the register restrictions and distribution patterns may be something that is copied along with the construction itself.

Despite the fact that much of the literature on relative clauses suggests that prenominal relative clauses are harder to process, take longer to acquire, less likely to be transferred from one language to another, and more restricted than postnominal relative clauses, this (if true) is not reflected in the attested cases of change discussed here.\textsuperscript{13} If anything, the adoption of new prenominal relative clauses is more solidly attested than the development of postnominal constructions in a language that did not previously have these. We have seen in Section 6.6, however, that there is tentative support for the hypothesis that prenominal relative clauses are only adopted when languages undergo extensive reorganisation in their word and phrase order patterns, while postnominals can develop without any other changes taking place. This is in line with what we might expect, given the robust synchronic generalisation that prenominal relative clauses tend only to occur in OV languages, while postnominals occur in languages with all sorts of word order patterns. The biggest difference between the diachronic behaviour of prenominal relative clauses and that of postnominal constructions is that only the latter seem commonly to develop in creoles. In Section 6.9 I discussed various reasons why this might be the case.

Since such a variety of changes and directions of change are attested or semi-attested, I was able to examine these cases to see which (if any) of the various factors proposed to correlate with relative clause position change seem to be most relevant. These factors—embedding, basic word order, order of other phrases, relative clause marker type and position, language family, and contact—were discussed in Sections 6.4 through 6.9.

There was not enough evidence to determine the relevance of embedding, although it seems likely that languages might try to avoid

\textsuperscript{13}The only support for this view from the diachronic evidence is the aforementioned distribution patterns where in some languages prenominal relative clauses are used in writing and postnominals in speech. We might expect to find constructions that are harder to process might be used more in writing than in speech, since processing does not need to take place so quickly in these circumstances.
centre-embedding through extraposition, which could create a postposed alternative to the other relative clause positions available in the language. Similarly other features commonly associated with embedding, such as subordination markers and deranked verb forms, might develop as a means of making explicit the clause boundaries in languages where the combination of word order and relative clause position might lead to centre-embedding or potentially ambiguous strings.

Change in the basic word order of a language does not seem to be a factor with direct bearing on change in relative clause position. While the synchronic generalisation that prenominal relative clauses tend only to occur in OV languages presumably holds diachronically as well (i.e. prenominal relative clauses will not develop/be borrowed into VO languages), change in the relative clause position can occur both in the context of basic word order change (e.g. Ethiopic languages, Indo-European, Armenian, several Turkic varieties), and without this (Basque, Quechua, Telugu, most Turkic languages).

Change in the order of other phrases may in some cases have contributed to change in the relative clause construction, especially when the relative clause is transparently analogous to another modifier construction, such as the possessive construction in Ethiopic Semitic languages and adjectives in Armenian. It may equally well be the case that prenominal relative clause constructions are only copied under intensive contact conditions and that, in such cases, the order of other modifying constructions are likely to be copied as well, so that the link between the order change in these constructions is indirect rather than causal.

All of the cases of change in relative clause position discussed in this chapter have also involved change in the relative clause marker: usually in both position and type (Basque, Quechua, Telugu, the Turkic varieties, the Ethiopian languages). In the case of Armenian, the new relative clause position has no marker at all beyond the deranking of the verb. We know from the literature that relative clause marker type and position tends to correlate synchronically with the position of the relative clause. The cases discussed here show that diachronically this is not because change in the position of one triggers changes in the other, but rather because the languages involved have calqued entire constructions, relative clause marker type and all.
Even in the discussions of each of these factors (embedding, word order, other phrase order, relative marker type and position), the theme of language contact has repeatedly made an appearance; and it is this final factor that I believe has shown itself to be the most important in determining the paths of change taken by the languages under discussion. Most strikingly, all the languages that have undergone attested change in relative clause position have been in close contact relationships with a language that has modeled the construction they adopted. The way in which contact affects relative clauses differs depending not only on the typology of the languages involved but also on the type of contact, as can be seen from the differences observed between creoles and non-creole languages with regard to predominant relative clause type and position. The generalisations from the literature supported by the cases I have examined here include Alsagoff’s hypothesis that a language’s relative clause position and its other ordering patterns may represent two different “levels” so that each can be copied from a different language; Stilo’s similar suggestion that languages sandwiched between two competing patterns (buffer zones) may end up with a stable “mixed” pattern that goes against statistical norms; and perhaps even Johanson’s suggestion that prenominal relative clauses may be difficult for adult speakers of right-branching languages to acquire, and therefore tend not to win out in contact situations involving adult learners. A modified form of Lehmann’s hypothesis about shift between prenominal and postnominal relative clauses is also supported: namely that languages only adopt prenominal relative clause constructions when undergoing considerable changes to their word/phrase order patterns, but can adopt postnominal relative clauses relatively easily and unobtrusively. This possibly suggests that prenominal relative clauses require longer and/or more intense contact in order to be copied than postnominal relative clauses do.

Finally I should note that many languages have had a completely stable relative clause position over a long period of time. This sort of stability is not limited to any one word order pattern or relative clause position. We find long-term stability in languages that have a basic VO pattern and postnominal RCs (Egyptian, Celtic, Hebrew, Khmer), languages with OV and prenominal RCs (Korean, Mongolian); languages with OV word order and postnominal RCs (Akkadian); with OV and
correlatives (most of the Dravidian languages, most of the Indo-Aryan languages), OV and head internal relative clauses (Japanese). Even the rare combination of VO word order and prenominal relative clauses has been a stable feature of many Chinese varieties throughout their attested history. Nor is this stability restricted to any particular language family or geographical area, as can be seen from the languages given as examples of stable RC/marker position combinations.
Conclusions

7.1 Changes observed to occur

As explained in chapter 1, the primary purpose of a diachronic typology of a construction is to identify what sort of changes can affect it, how the different synchronically defined “types” of the construction are diachronically related, and how the construction in question is connected historically (if at all) to other constructions with different functions. Although an exhaustive answer to these questions would require more knowledge about the history of the world’s languages than is available to us, this thesis has shown that a great number of changes in relative clause constructions are attested. In chapters 3 and 4 I explored the various sources and outcomes of change for relative clause markers, and it was seen that these are more numerous than has been reflected in previous summaries, such as those in Lehmann (1984) or Heine and Kuteva (2002). For example, discourse markers, generic nouns, classifiers and comparatives are not generally included in lists of sources of relative clause markers, but I have shown that there is reason to consider them as part of this set. The “characteristic operations” involved in relativisation as proposed by Lehmann (1984, 1986), subordination, attribution and “empty-place formation” or pronominalisation, were seen to be of relevance in determining what sort of elements are conscripted as relative clause markers. I also showed that this framework of Lehmann’s can be extended to help explain the changes that relative clause markers undergo.

In Chapter 5 I investigated what is known about changes in such features as adjunction and embedding, and in the formal features associated with this, such as the deranking of the relative clause verb, and the development of hypotaxis. These changes in the relationship between the main and relative clause proved to be the least well attested of any
discussed in this thesis.

In Chapter 6 we saw that it is not unusual for a language to develop relative clauses that are positioned differently with regard to their heads from the position relative clauses have previously had. Although the literature has often suggested that prenominal relative clauses are harder to process, take longer to acquire, are less likely to be transferred from one language to another, and are more restricted than postnominal relative clauses, I found that the development of prenominal relative clauses was at least as well-attested as the development of postnominals, with the exception perhaps of creole languages. There was, however, tentative support for the hypothesis proposed by Lehmann (1984:394) that prenominal relative clauses are only adopted when languages undergo extensive reorganisation in their word and phrase order patterns, while postnominals can develop without any other changes taking place.

Although a great variety of types and directions of change are attested, some are more widely or more solidly attested than others, and a few types of change that we might expect to find are not attested at all. This may be an accident of the historical record, or it may reflect some deeper constraints on what can change and how easily. In Tables 7.1, 7.2, 7.3, and 7.4, I compare the changes discussed in the previous chapters and roughly rank these from best to least well attested. Sections of the table are separated by a line between the rows such that the blocks within each section contain changes that have approximately the same degree of attestation as each other. Those changes in the top section of each table are therefore those that appear to be very well documented and difficult to explain away: the development of relative clause markers from interrogatives, demonstratives and discourse markers, the extension of relative clause markers to adverbial clauses and complement clauses, the loss and redistribution of relative clause markers, loss of inflection on relative clause markers, the development of a balanced RC from a deranked construction, the development of prenominal and postnominal relative clauses in languages which formerly did not have these, and the loss of postnominal and correlative constructions. These changes took place during the attested period of at least some languages, so that there is not only evidence that the changes occurred, but also for the processes and stages involved. These have therefore been the changes that I have
\begin{table}[h]
\begin{tabular}{|l|l|}
\hline
INTERROGATIVE & multiple attested cases without alternative explanations \\
\hline
DEMONSTRATIVE & multiple attested cases without alternative explanations \\
\hline
DISCOURSE MKR & at least one attested case, multiple reconstructed cases, some without alternative explanations, several possible cases in progress \\
\hline
GENERIC NOUN & very widespread, but process not attested; reconstructions solid in many cases, and no alternative explanations \\
\hline
PERS. PRONOUN & only one case without alternative explanation (Gothic), and this is fused to a pre-existing marker; also the process is not attested, although the reconstruction is solid \\
\hline
CLASSIFIER & multiple possible cases, but only one in which the process is attested, and which cannot be explained alternatively as a demonstrative or generic noun (Thai), and it is debatable whether this one has really become a relative marker (yet) \\
\hline
INDEF. PRONOUN & multiple possible cases, but none that cannot alternatively be explained as interrogatives \\
\hline
POSSESSIVE & multiple possible cases, but none that cannot alternatively be explained as the reverse process, or as demonstratives or generic nouns \\
\hline
COMPARATIVE & two possible cases, but the process is not well documented and both have possible alternative explanations as extensions of general complementisers or adverbial markers \\
\hline
\end{tabular}
\end{table}

Tab. 7.1: Possible sources of relative clause markers, as examined in Chapter 3, from best to least well attested

focused on the most in the preceding chapters.

The changes in the lowest section of each table, on the other hand, are those that have either been mentioned in the literature, or that we might logically expect to find, but which have turned out to not to be attested at all: i.e. the data that could be interpreted as suggesting these changes have occurred has possible alternative explanations. Such changes include the development of relative clause markers from indefinite pronouns, comparatives and possessives, the extension of relative clause markers to comparatives, agentive nouns, focus markers, and definiteness markers, the development of a relative clause marking affix into
<table>
<thead>
<tr>
<th>ADV. CLAUSES</th>
<th>multiple attested cases, some without other possible explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPL. CLAUSES</td>
<td>multiple attested cases, some without other possible explanations</td>
</tr>
<tr>
<td>ADJ. MKRS</td>
<td>a few (related) attested cases with no alternative explanation (Dravidian); many other possible (unattested) cases which might be the result of indirect extensions</td>
</tr>
<tr>
<td>POSS.</td>
<td>at least one attested case with no alternative explanation (Hebrew); multiple other possible (unattested) cases with possible alternative explanations as e.g. extensions from demonstratives</td>
</tr>
<tr>
<td>INDEF.</td>
<td>multiple possible cases, none in which the process is attested, but all solid reconstructions, most without an alternative possible explanation</td>
</tr>
<tr>
<td>COMPAR.</td>
<td>multiple possible cases, but none in which the process is attested, and none which cannot be alternatively explained as an extension from adverbials or as comparatives being the source of relative markers</td>
</tr>
<tr>
<td>AGENTIVE NOUNS</td>
<td>multiple reconstructed cases, but none in which the process was attested and none without possible alternative explanations</td>
</tr>
<tr>
<td>FOCUS MKRS</td>
<td>multiple reconstructed cases, but none in which the process was attested, and other possible explanations exist</td>
</tr>
<tr>
<td>DEF. MKRS</td>
<td>a few (related) cases, but none in which the process was attested and none without possible alternative explanations</td>
</tr>
</tbody>
</table>

Tab. 7.2: Possible outcomes of change in relative clause markers, as examined in Chapter 4, from best to least well attested

a free-standing marker, the development of hypotaxis from parataxis, and the development of correlative clauses in a language that formerly did not have these. For the changes that lie between these two extremes, there are often convincing reconstructions but we cannot be sure exactly what the path of change was, and/or whether there are not other possible explanations for the development that we are unaware of due to lack of data.
7.2 Processes and mechanisms of change

Because many of the changes above are attested in multiple languages, this makes it possible to generalise about the processes involved in the changes. As mentioned in chapters 1 and 2, claims about the processes and mechanisms of relative clause changes have previously often been based on limited diachronic evidence, or in some cases, such as Maxwell (1982), have been logical deductions drawn from synchronic “universals” but have not been assessed in the light of actual changes at all.

In the discussion of relative clause marker changes in chapters 3 and 4 we saw that there is some support for the idea that an extension of a marker from one function to another takes place first in the most restricted contexts and then spreads to the more core instances of the construction later. Maxwell predicted that this would be the case for pronominal markers such as interrogatives spreading into the relative clause, and that they would gradually move “up” the Accessibility Hierarchy proposed by Keenan and Comrie (1977). Romaine (1984c) phrased her generalisation more vaguely, namely that the new relative markers would start out in the most “marked” positions. In the discussions of the evidence in chapters 3 and 4 we saw that not only do markers sometimes begin in adverbial relative clauses and spread to more core relativisation

<table>
<thead>
<tr>
<th>REDISTRIBUTION OF MARKERS</th>
<th>multiple attested cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOSS OF MARKERS</td>
<td>multiple attested cases</td>
</tr>
<tr>
<td>FROM PRON. TO INVAR. MRKR</td>
<td>multiple attested cases</td>
</tr>
<tr>
<td>FROM INVAR. MRKR TO AFFIX</td>
<td>at least one possible case (Celtic) in which various stages of the process are attested</td>
</tr>
<tr>
<td>FROM INVAR. MRKR TO PRONOUN</td>
<td>one possible ongoing case (English)</td>
</tr>
<tr>
<td>FROM PRONOUN TO AFFIX</td>
<td>a few (related) cases (various Bantu languages), but the process is not attested. The reconstruction is solid, however, and there are no alternative explanations</td>
</tr>
<tr>
<td>FROM AFFIX TO INVAR. MRKR</td>
<td>entirely unattested</td>
</tr>
<tr>
<td>FROM AFFIX TO PRONOUN</td>
<td>entirely unattested</td>
</tr>
</tbody>
</table>

Tab. 7.3: Other changes in relative clause markers examined in Chapter 4, from best to least well attested
### §7.2 Processes and mechanisms of change

<table>
<thead>
<tr>
<th>DERANKED &gt; BALANCED VERB</th>
<th>at least one well-attested case of gradual change (Japanese); multiple cases in which a balanced construction is thought to have been copied, but the process is not attested</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEVELOPMENT OF PRENOM.</td>
<td>at least two unrelated attested cases (one gradual, one copied), further reconstructed cases</td>
</tr>
<tr>
<td>LOSS OF POSTNOM.</td>
<td>a few attested cases, but all except one related to each other</td>
</tr>
<tr>
<td>DEVELOPMENT OF POSTNOMS</td>
<td>multiple semi-attested cases (no strong evidence for gradual development)</td>
</tr>
<tr>
<td>LOSS OF CORREL.</td>
<td>a few (related) attested cases (Indo-European)</td>
</tr>
<tr>
<td>LOSS OF PRENOM.</td>
<td>a few (related) semi-attested cases (Turkic) in which the degree to which they have been lost is debatable</td>
</tr>
<tr>
<td>BALANCED &gt; DERANKED VERB</td>
<td>no clearly attested cases of gradual change; multiple cases where it is thought that RCs with deranked verbs were copied or based on non-RC constructions, but again, none in which the process is attested</td>
</tr>
<tr>
<td>PARATAxis &gt; HYPOTAXIS</td>
<td>no clearly attested cases</td>
</tr>
<tr>
<td>DEVELOPMENT OF CORREL</td>
<td>no clearly attested cases</td>
</tr>
</tbody>
</table>

**Tab. 7.4:** Possible changes in other features of the relative clause, as examined in Chapter 5 and Chapter 6, from best to least well attested

types such as subject and object later, but they sometimes start out in indefinite, generalising relative clauses, sometimes in non-restrictive relative clauses, and sometimes perhaps even in headless constructions and spread to headed relative clauses later. This is perhaps tentative evidence for viewing the set of relative clause constructions as variations on a “prototype”, the core construction that is the last to be affected by a change.

Alternatively, the set of relative clause constructions could be seen as a paradigm in which a new marker or feature infiltrates various individual cells until its ubiquity leads to leveling of the whole paradigm, or sys-
tematic redistribution of the old and the new features.\footnote{It should be noted that such redistribution does not only play out along the Keenan-Conrie Accessibility Hierarchy (i.e. some markers being used for core relatives, and some for obliques, or some for subjects and some for non-subjects), as might be assumed, given that this is the major synchronic study of the distribution of multiple relative clause strategies in individual languages, but that multiple markers can also come to distribute themselves according to other considerations, particularly animacy (see Chapter 4 for examples).} This is a process which has been observed previously in the cases of individual languages, such as Hebrew (Givón 1991) or Old English (Allen 1980:258), but as I have shown, particularly in Chapter 4, this sequence of extension and reanalysis may be a general way in which analogy takes place.

Extension does not only occur through analogy, of course. Sometimes it may simply be a chance collocation that becomes reinterpreted as a marker of the construction in which it frequently appears. This appears to be how discourse markers and perhaps also classifiers and generic nouns end up as relative clause markers. And just as, on the level of relative clause markers, we can distinguish between analogical extension from one construction to another and gradual change due to collocation, on the level of whole relative clause constructions we can distinguish between the replacement of one relative clause construction by a new one, and gradual change of a construction that exists all along. As discussed in Chapter 2, in previous literature on relative clause change there has been emphasis on gradual change between types, and the replacement of one by another (or discontinuous change such as the copying of a construction from another language) has been viewed as the exception. Throughout this thesis, but particularly in chapters 5 and 6, it can be seen that discontinuous change is in fact quite common.

I hesitate to make generalisations about frequencies of changes given the small size of the sample available, but it is not inconceivable that the copying of new constructions from other languages, or the development of new alternative relative clauses on the model of non-relative constructions might even be more common than the comparatively simple shift in a parameter such as head position in an existing relative clause. For example, even though we can envisage ways in which a relative clause with deranked verbs could develop naturally and gradually from a balanced construction, only the copying of such constructions from other languages is attested. If discontinuous change is more common than
gradual change, it would explain why so many languages have multiple different ways to express the function of a relative clause.

Both analogy and language contact are therefore important sources of change. In fact, contact-induced grammatical change can usually be viewed as a type of analogy, since it is generally a matter of multilingual speakers creating a new strategy in one language on analogy with a construction in the other. Language contact was shown to be of particular relevance in cases where the relative position of the head and relative clause have changed (see Chapter 6 for details). Although the order of other constructions in the language may also be relevant in some cases, influence from other languages was the one factor that was shown to be involved in every attested case of relative clause position change.

In terms of change in the relative clause marker, however, the degree to which contact considerations play a role may depend on the marker type. Interrogatives, for example, have frequently spread through language contact, while certain other markers, e.g. those based on demonstratives, discourse markers, generic nouns and classifiers seem more often to be the result of language internal processes such as the analogical extension and reanalysis mentioned above.

7.3 Limitations of this study and possibilities for future research

Some of the limitations to this study were already discussed in the early chapters of the thesis. These are the limitations inherent in any typological or historical study, and especially in one that combines both interests. The vast majority of the languages of the world are undocumented and countless numbers of languages have existed and become extinct without documentation. We cannot even approximately determine the percentage of languages that have existed that any given sample covers, and without this figure, we cannot apply traditional statistical methods to allow us to generalise about differences in frequencies of particular changes, or to determine the chance that the lack of evidence for a particular change is significant. The languages for which information on changes is available tend to be biased in favour of particular geographical areas and language families, particularly European. I have taken care to point
out these possible biases throughout this thesis, so that the dangers of over-generalisation can be minimised.

Other limitations on this study were deliberately built in for the purpose of reducing the scope to a manageable size. I did not include certain “less core” types of relative clause, such as the non-finite RCs of the type, “I need a broom with which to sweep the floor”, nor did I systematically include non-restrictive relatives or headless relatives, mentioning these only when they were involved in a change that also affected restrictive headed constructions. Information on changes in these is not available for many of the less well-documented languages, but a smaller-scale investigation of changes in these might provide valuable understanding of how less prototypical variants of a construction relate diachronically to their more “standard” counterparts.

Although this thesis did not set out to investigate the role of language contact in grammatical change, contact consistently showed itself to be relevant to the changes that were found. For this reason I imagine that more in-depth studies of relative clause change in multilingual communities might yield valuable insights. Up until now, such studies have generally been synchronic and comparative (see e.g. Newbrook (1998), Johanson (2002), Mesthrie and Dunne (1990)), but as I have shown in this thesis, examination of change in languages with longer documented histories makes it easier to draw conclusions about the processes and directions of change. From a cross-linguistic perspective, a study with a specific focus on contact might find it worthwhile to investigate the differences between relative clause constructions copied from another language and their sources. There may be differences in distribution or even slight differences in features of the construction itself that were not identified in this thesis. As studies of language contact in recent years have taken an interest in different types of contact (e.g. adult learners, multilingual child-learners, pidginisation and creolisation, dialect borrowing), this would provide the basis for a systematic investigation into whether these different contact situations have different outcomes in terms of copying relative clause constructions and/or markers from one language to another.

From a theoretical syntactic view, the findings of this study have implications for the structure of the NP/DP and the analysis of the vari-
ious types of relative clause. In Chapter 5 I illustrated how the various changes in the relationship between the relative clause and main clause can be drawn on to help select one of various competing syntactic analyses. Because a formal syntactic analysis of the relative clause was not a goal of this thesis, I did not go on to mine the rest of the diachronic findings for their relevance to formal theory, but I am certain that many more such implications could be drawn.

In the context of implications of this study for broader areas of linguistics I should also note that a diachronic typology of a construction can be useful when deciding between various possibilities for reconstruction. For example, we have seen in chapters 3 and 4 that attested cases of similarity between relative clause markers andpossesses result either from a demonstrative that is extended to each of these functions, or from the extension of a relative clause marker into possessive constructions. Therefore when confronted with a case of similarity between a possessive and relative element in a language without a well-documented history, it would be preferable to reconstruct a demonstrative or relative source, unless there was good reason to believe otherwise.

Thus it can be seen that the findings of this thesis have applications beyond the area of diachronic typology, with implications for other areas of synchronic and historical investigation. Although the scope of my investigation here was one particular construction, the thesis has not only resulted in a typology of changes affecting the relative clause but has also yielded insights into the nature of language change in general.
APPENDIX
## Appendix of constructions

Here I have included a list of all the constructions that were taken into account in this study, along with the languages they are from. The constructions are classified by whether they precede or follow their referent (*pre* or *post*), or whether they are internally-headed (*ihrcs*) or correlatives (*correl*), whether the verb in the RC is deranked or balanced, and the type of marker(s) present. The language the construction is found in is also given. Where the historical period is not specified, it should be assumed that the construction is not restricted to any one historical period. The references from which this information comes are given in appendix C.

<table>
<thead>
<tr>
<th>Construction Type</th>
<th>Language</th>
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</thead>
<tbody>
<tr>
<td>Post, deranked, head-marked</td>
<td>Akkadian</td>
</tr>
<tr>
<td>Post, deranked, clause-initial invariant mkr</td>
<td>Akkadian</td>
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<td>Akkadian</td>
</tr>
<tr>
<td>Post, balanced, clause-initial inflecting mkr</td>
<td>Albanian</td>
</tr>
<tr>
<td>Pre, deranked, verb prefix</td>
<td>Amharic (Old)</td>
</tr>
<tr>
<td>Post, deranked, verb prefix</td>
<td>Amharic (Mdn)</td>
</tr>
<tr>
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<td>Arabic (Classical)</td>
</tr>
<tr>
<td>Post, balanced, clause-initial invariant mkr</td>
<td>Arabic (Mdn)</td>
</tr>
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</tr>
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</tr>
<tr>
<td>Post, balanced, clause-initial inflecting and/or invariant mkr</td>
<td>Armenian</td>
</tr>
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<td>Pre, deranked, (participle)</td>
<td>Armenian (Mdn)</td>
</tr>
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<td>Correl, balanced, clause-initial invariant and/or inflecting mkr + dem correl</td>
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<td>Construction Type</td>
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<td>Correl, balanced, clause-initial inflecting + dem correl</td>
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</tr>
<tr>
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<td>Pre, deranked, verb suffix</td>
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<td>Egyptian (Middle)</td>
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<tr>
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<td>Post, balanced, head-marked</td>
<td>Hebrew</td>
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<td>Language</td>
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<tr>
<td>Pre, deranked, verb suffix</td>
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<td>Pre, deranked, verb suffix</td>
<td>Telugu</td>
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<td>Pre, deranked, verb prefix</td>
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<td>Post, balanced, clause-initial and clause final invariant mkrs</td>
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<td>Yiddish</td>
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Appendix of markers

Here I have listed the relative clause markers that were included in this study for which sources are suspected or known, along with the languages they are found in. Where multiple sources are given, this is because multiple competing proposals exist. Question-marks accompany the most speculative sources. I have not included multiple markers from different periods of a language if one is simply a continuation of the other: e.g. because I have included Latin què and Late Latin ille quælís, I have not listed French quà, que, lequel, or Spanish que, quien. The references from which this information comes are given in appendix C.

<table>
<thead>
<tr>
<th>Marker</th>
<th>Source</th>
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<td>ša etc.</td>
<td>dem</td>
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<tr>
<td>qì</td>
<td>int</td>
<td>Albanian</td>
</tr>
<tr>
<td>se</td>
<td>int</td>
<td>Albanian</td>
</tr>
<tr>
<td>i cili, etc</td>
<td>dem + int</td>
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<tr>
<td>yā</td>
<td>dem</td>
<td>Amharic</td>
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<td>ayna</td>
<td>int</td>
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<tr>
<td>wi:n</td>
<td>int</td>
<td>Arabic (Tunisian)</td>
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<td>al-la-ši</td>
<td>def + “deictic” + dem</td>
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<tr>
<td>'aš</td>
<td>int</td>
<td>Arabic (Moroccan)</td>
</tr>
<tr>
<td>zy</td>
<td>dem</td>
<td>Aramaic</td>
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<tr>
<td>or</td>
<td>int</td>
<td>Armenian</td>
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<tr>
<td>yātš</td>
<td>dem</td>
<td>Avestan</td>
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<td>zein</td>
<td>int</td>
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<td>nor</td>
<td>int</td>
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Appendix of sources

A list of the references primarily relied on for each language included in this study.

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