

Typological Studies

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Word Order and Relative Clauses
Guglielmo Cinque

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Introduction

I owe some justification for my titling this book *Typological Studies*. Contemporary typology has come to be associated with certain assumptions about the nature of language which are in principle independent from typological concerns (understood as the study of cross-linguistic variation at a macro-level, and the limits thereon). Among these assumptions is the idea that there is no need to postulate a specific Language Faculty or Universal Grammar underlying all languages. Rather, whatever similarities happen to be found among languages are taken to be due either to “general properties of human cognition or the common communicative purpose all languages serve” (Daniel 2011, 44) or to constraints imposed by the parser (Hawkins 1990, 2007); in other words, to principles external to language proper (Newmeyer 1998a, chapter 3; Polinsky 2011, section 4). A further, related, assumption of much current work in typology is that there is no principled limit to the extent to which languages can vary (much as in the Boasian tradition of American structuralism of the first half of the last century, recently revived in such works as LaPolla and Poa 2002; Haspelmath 2007, 2010; and Evans and Levinson 2009).

The works gathered here are based on very different assumptions. They address typological questions (concerning word order and relativization) from a generative perspective, which adheres to the hypothesis that all languages are built on a common set of categories, operations and principles (considered at the appropriate level of abstraction), with limited possibilities of variation.¹ In addition to the possible arguments for postulating the existence of a Universal Grammar (see Berwick, Pietroski, Yankama and Chomsky 2011 and Cinque 2012), I mention here a methodological one, which bears some similarity to “Pascal’s wager”. It is rational to bet on the existence of Universal Grammar, for were we not to proceed as if there was such a common structure underlying all languages, we would risk not finding it if there is one (if there isn’t, we will simply not find it). In general, starting from the opposite assumption (that there is no common set of grammatical categories, operations and principles and that languages can differ arbitrarily and without limits), one is bound to be less demanding, possibly missing any underlying unity if there is one.

2 Typological Studies

1 Consider one example. Relative clauses are reported in the typological
2 literature to come in one of the following seven types (Dryer 2005a, 366):
3

- 4 (1) a. The [**book** [_{RC} that we read]] *English*
5 (externally headed postnominal)
6
7 b. [[_{RC} nuna ranti-shqa-n] **bestya**] *Quechua* (Cole 1987, 279)
8 (externally headed prenominal)
9 man buy-PERF-3 horse.NOM.
10 ‘the horse the man bought.’
11
12 c. [[_{RC} nuna **bestya-ta** ranti-shqa-n]] (alli bestya-m) *Quechua*
13 (Cole 1987, 279) (internally headed)
14 man horse.ACC buy-PERF-3 (good horse)
15 ‘the horse the man bought (was a good horse.)’
16
17 d. [[_{RC} **doü** adiyano-no] **doü**] deyalukhe *Kombai*
18 (Papuan—de Vries 1993, 78) (double-headed)
19 sago give.3PL.NONFUT-CONN sago finished.ADJ
20 ‘The sago that they gave is finished.’
21
22 e. [_{RC} **what** you did] (is nice.) *English* (‘headless’, or free)
23
24 f. [_{RC} **jo laRkii** khaRii hai] **vo laRkii** lambii hai *Hindi* (Dayal 1996,160)
25 (correlative)
26 which girl standing is that girl tall is
27 ‘The girl who is standing is tall.’
28
29 g. ngajulu-rlu rna **yankirri** pantu-rnu [_{RC} kuja-lpa ngapa nga-rnu]
30 *Warlpiri* (Hale 1976) (adjoined)
31 I-ERG AUX emu spear-PAST COMP-AUX water drink-PAST
32 ‘I speared the emu which was/while it was drinking water.’
33

34 Were we not to start from the idea that there could be a unique relative
35 clause structure, common to all languages, underlying the above seven
36 types, we would stop at that, taking these differences at face value. But
37 these seven types can be shown, I think, to be minor variants of each other,
38 derived from one and the same structure through operations that are inde-
39 pendently available (like “movement” and “deletion”).² For a preliminary
40 sketch of such a unitary analysis, see Chapter 13 of this volume, which
41 refers to a forthcoming, more detailed, treatment.

42 It is unfortunate that practitioners of formal grammar and practitioners
43 of typological linguistics pay so little (or no) attention to each other’s find-
44 ings. On the formal grammar side, there is no doubt that cross-linguistic
45 studies of both the macro- (typological) and micro- (dialect) comparative
46 type are crucial for the study of Universal Grammar. Even if many aspects
of the nature of human language can be discovered from the in-depth study
of a single language (Chomsky 1981: 6), only the comparison of different
languages and dialects allows us to see the range of possible variations

admitted by Universal Grammar (Kayne 1996, ix). Such comparisons may	1
lead us to discard or modify principles that were developed on the basis of	2
a single language, as they turn out to be insufficiently general to account for	3
comparable properties in other languages/dialects.	4
On the other hand (a point made in Cinque 2007, Chapter 12 of this	5
volume), typological studies would no doubt gain from keeping abreast	6
with the findings of formal syntax and semantics (as they did until the	7
early 1970s). In the domain of relativization, for example, there have been	8
advances in our understanding of a number of its aspects, which could bear	9
in interesting ways on typological issues and could help avoid possible mis-	10
analyses. I list a number of them here (cf. Chapter 12 below):	11
	12
1) in the semantic typology of relative clauses, in addition to restrictive	13
and nonrestrictive relatives, another type has been recognized; that of	14
“amount”, or “maximalizing”, relative clauses (or relatives “of the third	15
kind”), which cuts across the syntactic typology of pre- and postnominal	16
externally-headed, internally-headed, headless relative clauses, and	17
the other types of relatives mentioned earlier. They differ from restric-	18
tives and nonrestrictives in a number of respects. See Carlson (1977),	19
Heim (1987) and Grosu and Landman (1998). ³	20
2) closely related to this finding (in that “amount” relatives appear to	21
employ only the first of the two derivational options), evidence has been	22
accumulating for two distinct derivations for relative clauses: the “rais-	23
ing” one (according to which the overt Head behaves as if it directly	24
raised from inside the relative clause) and the “matching” one (accord-	25
ing to which the overt Head is external to the relative clause and is	26
matched inside the relative clause by an identical internal Head which	27
gets reduced or deleted). From the substantial literature that has been	28
produced on this subject, see for example Vergnaud (1974), Kayne	29
(1994, chapter 8), Bianchi (1999), Bhatt (2002), Sauerland (1998, 1999,	30
2003), de Vries (2002), and Szczegielniak (2005, 2006, 2012).	31
As discussed in Carlson (1977) and Hulsey and Sauerland (2006),	32
only the “matching”, not the “raising”, type allows for relative clause	33
extraposition and stacking (a finding which remains to be properly	34
understood).	35
3) concerning the so-called resumptive strategy, formal in-depth studies of a	36
number of languages have uncovered the existence of at least three dif-	37
ferent types of resumptive pronouns: i) resumptive pronouns displaying	38
properties associated with movement (e.g., sensitivity to islands), like	39
the resumptive pronouns of Romanian (Dobrovie-Sorin 1990, 353f),	40
and those of Lebanese Arabic definite relatives (in non-island contexts;	41
Aoun, Benmamoun and Choueiri 2010, §7.6); ii) resumptive pronouns	42
not displaying properties associated with movement, like those of Irish	43
(McCloskey 2006) or those of <i>deto</i> relatives in Bulgarian (cf. Krapova	44
2010, §3.2 and §4.5); iii) last resort resumptive pronouns (which are	45
inserted to save a structure which would otherwise be in violation of	46

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1 some principle, hence ungrammatical) (see, for example, Kroch 1981,
2 McDaniel and Cowart 1999, Omaki and Nakao 2010 on English,
3 Shlonsky 1992 on Hebrew). Other parameters of variation are the clitic
4 vs. nonclitic status of the resumptive pronoun, its obligatoriness or
5 optionality, cross-cutting the raising vs. matching derivations and the
6 semantic typology of restrictive, nonrestrictive and “amount” relatives,
7 with interesting implicational relations (see Bianchi 2004, 2008).

8 4) Detailed studies of internally headed relative clauses brought to light
9 the fact that such relatives do not constitute a homogeneous type. One
10 type is subject to an indefinite restriction (the internal head can only
11 be preceded by weak determiners like indefinite articles, numerals
12 and multal/paucal quantifiers), while the other has no such limita-
13 tion. Interestingly, other properties correlate with this distinction: the
14 former type shows no island sensitivity and allows stacking, while the
15 latter is sensitive to islands and disallows stacking. See, among oth-
16 ers, Basilico (1996), Grosu and Landman (1998), Grosu (2000, 2009,
17 2012), Hiraiwa (2005, 2009), Bodomomo and Hiraiwa (2010).

18 5) The same seems to be true of nonrestrictive relative clauses. Two fun-
19 damental types appear to exist: a “sentence grammar” one, virtually
20 identical to the restrictive construction, and a discourse grammar one,
21 which is apparently possible only if relative pronouns, with properties
22 similar to demonstrative (or E-type) pronouns, are available in the lan-
23 guage. See Chapter 14 of this volume. Languages differ as to whether
24 they possess **both** types (Italian, German, Greek, etc.); **one**, either the
25 discourse grammar type (English, Romanian) or the sentence grammar
26 one (Chinese, Japanese); or **neither** (Bunun, Dagbani, Gungbe, Muna,
27 Supyire, etc.): an analysis which, if correct, may offer a rationale for
28 Downing’s (1978) statement that “[s]ome languages apparently have no
29 nonrestrictive RC’s; in others [restrictive and nonrestrictive RC’s] are
30 syntactically quite distinct; in others restrictive and nonrestrictive RC’s
31 are syntactically indistinguishable” (p.380).

32 For the suggestion that nonrestrictives in languages with exclu-
33 sively prenominal relatives may only be of the sentence grammar
34 type, the one virtually identical to the restrictive construction, see
35 Chapter 14, §6, of this volume, and Del Gobbo (2010); a fact presuma-
36 bly related, as noted, to Downing’s (1978, 392) and Keenan’s (1985,
37 149) observation that languages with exclusively prenominal relative
38 clauses lack genuine (initial) *wh*-pronouns.⁴

39 There is also evidence (cf. Cinque 2010a, 52–54) that the restric-
40 tive/nonrestrictive distinction found with relative clauses is of a fun-
41 damentally different type from the one found with adjectives (*the*
42 *industrious Japanese*), despite widely held assumptions in the typo-
43 logical literature (stemming from Comrie 1981, 132).

44 6) Should the invariant “complementizer” (often of distal demonstrative
45 origin) that introduces the RC in many languages prove to be a weak
46 relative pronoun, as the authors mentioned in note 4 have argued,

then the often made point that the relative pronoun strategy is rare in the languages of the world (Comrie 1981, 142; 1998, 61) would have to be redressed.

- 7) The existence of so-called pseudo-relatives after verbs of perception and presentation, which are formally identical in some languages to run-of-the mill relative clauses but differ from the latter in various respects (*Ho visto/C'era un ragazzo/Gianni che correva* ‘I saw/there was a boy/Gianni running’, lit. ‘that was running’; cf. Cinque 1995d and references cited there), should suggest caution in utilizing examples of relative clauses with such predicates when illustrating the relative clause construction of some language.

Also in the domain of word order there has been a major theoretical breakthrough with Kayne’s (1994) theory of Antisymmetry, a theory which forces a stricter intertwining between linear order and hierarchy (asymmetric c-command), and invites the reconsideration of many syntactic aspects of word order, such as head-initiality and head-finality, word order correlations, and more generally the status of linear order in Universal Grammar. Also see Kayne (2003, 2005, 2010), and Chapters 1 and 4 of this volume. In general, typologists have not paid much attention to approaches to word order pursued within formal grammar, two notable exceptions being Siewierska (1988) and, more recently, Song (2012), where an entire chapter is devoted to generative approaches to word order typology (what Baker 2010 calls “formal generative typology”). Attention has rather been attracted by claims about an alleged fundamental distinction between formal grammar and typology in the way language universals are conceived of, and more generally in their respective goals. Newmeyer’s (1998b, 2005) suggestion that the results of one approach are largely irrelevant to the other, with formal grammar interested in characterizing the notion “possible human language” and typology interested in characterizing the notion of “probable human language” has found wide audience, but in my opinion does justice neither to formal grammar nor to typology. It is clear that any restrictions on the extent to which languages can vary, even if they are not absolute, are of the utmost importance for the precise formulation of the principles that enter into UG. At the same time typology, since its modern origins in Greenberg’s work, aims at discovering the constraints on *possible* variation among languages, the probability of occurrence of a certain type of language being only one aspect of the program. Formal grammar and (functional) typology are from this perspective pursuing largely convergent goals, their principal difference lying in what they take to constitute an explanation for the absolute regularities, or the statistical tendencies, that have been (and are) being discovered.

It is my feeling, or at least my hope, that an approach that brings the perspectives of formal syntax and semantics to bear on traditional typological questions may contribute novel insights to them (as well as to the general theory of language), and may take us one step further in the rapprochement (ultimately the merger) of typology and linguistic theory.

AN OVERVIEW OF THE MAIN THEMES

The chapters gathered in Part I of the present volume deal with word order. Some of them are devoted to what appears to be a fundamental property of natural languages, the pervasive left-right asymmetry found with the heads, complements and modifiers associated with lexical heads (N, V, etc.). What one finds is that in the DP, in the clause, and in a (spatial) PP, the functional elements associated with them enter a unique (rigid) order when they precede the lexical head while more than one order is available to them when they follow the lexical head. This asymmetry is discussed for the DP in Chapter 4, for the clause in Chapter 5, for spatial PPs in Chapter 6, and in more general terms in Chapter 7, where it is shown to arise from a unique structure of Merge; a structure in which all elements are introduced in the extended projection to the left of the lexical head, and the multiple orders available to the right of the head are derived from different ways in which the head raises across them, as originally proposed in Chapter 2 (and Chapter 3 for the Semitic DP).

A second major issue is the question of how to derive the word order types (VSO, SVO, SOV, etc.). This is discussed in Chapter 1, where it is proposed that they derive from a unique structure of Merge (plausibly reflecting the relative scope of the elements involved) through different types of derivational options.

The chapters in Part II deal with the syntax of relative clauses, from the status of Keenan and Comrie's Accessibility Hierarchy, to such other issues as the position of the Head and relative clause in relation to the position of the verb vis à vis its object, the proper analysis of correlatives, the need to distinguish a sentence- from a discourse-grammar type of nonrestrictives (with languages differing as to whether they possess both, one, the other, or neither), and a tentative sketch of a larger work in progress on a unified analysis of externally headed, internally headed, double-headed, and headless relative clauses (Chapter 13).

PART I: WORD ORDER

Chapter 1, Word Order Typology: A Change of Perspective

This chapter suggests the opportunity of reversing the perspective of current word order typology, by proposing a derivational analysis of the two ideal head-final and head-initial types from a universal structure of Merge that reflects the relative semantic scope of the categories involved, with actual languages derived by partial deviations from the ideal types (where more deviations should imply fewer languages instantiating that type, as in Hawkins 1983).

Chapter 2, The ‘Antisymmetric’ Program: Theoretical and Typological Implications	1
	2
	3
This chapter (originally a review article of Kayne 1994) explores the typological implications of Kayne’s antisymmetric program for word order studies, as well as its possible extension to syllable structure in phonology. It contains the first discussion of a possible way to derive Greenberg’s Universal 20 from a single structure, common to all languages, via two basic types of movement. The analysis is further refined, and actually corrected on the basis of a larger sample of languages in Chapter 4 (to the effect that also head-initial languages are taken to involve XP-, rather than head-, movement). For the possible extension of antisymmetry also to the grammar of discourse, see Chapter 14.	4 5 6 7 8 9 10 11 12 13 14
Chapter 3, Greenberg’s Universal 20 and the Semitic DP	15
	16
This chapter explores the consequences of Greenberg’s Universal 20 for the structure of Arabic (and, more generally, Semitic) noun phrases, suggesting an analysis of the Semitic Construct State in terms of phrasal rather than head movement.	17 18 19 20 21
Chapter 4, Deriving Greenberg’s Universal 20 and Its Exceptions	22
	23
This chapter proposes a derivation of Greenberg’s Universal 20. Of the 24 mathematically possible orders of the four elements Demonstrative, Numeral, Adjective, and N, only 14 appear to be attested in the languages of the world. Some of these are unexpected under Greenberg’s formulation of the Universal. Here it is proposed that the actually attested orders, and none of the unattested ones, are derivable from a single, universal, order of Merge (Dem > Num > Adj > N), and from independent conditions on phrasal movement. For refinements of this analysis that take into account the proposals contained in Chapter 1, see Cinque (forthcoming).	24 25 26 27 28 29 30 31 32 33
Chapter 5, Again on Tense, Aspect, Mood morpheme order and the Mirror Principle	34
	35
This chapter shows that the order of Tense Mood and Aspect morphemes in the languages of the world is reminiscent of the distribution of nominal modifiers as described in Greenberg’s Universal 20 and proposes to derive it through similar principles. As it turns out, Baker’s (extended) Mirror principle proves responsible for what is the prevalent, but not the sole, order of these elements.	36 37 38 39 40 41 42
Chapter 6, Mapping Spatial PPs	43
	44
This chapter (originally the Introduction to Cinque and Rizzi 2010b) summarizes the findings of recent theoretical and typological work on the	45 46

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1 internal structure of spatial prepositional phrases, proposing a general map
2 of their internal structure.
3

4 **Chapter 7, The Fundamental Left-Right** 5 **Asymmetry of Natural Languages** 6

7 This chapter generalizes the left-right asymmetries in the nominal phrase
8 and in the clause discussed in the previous articles to all functional heads,
9 modifiers, and arguments associated with a lexical head, proposing a uni-
10 fied derivation for them. The account is based on a unique underlying struc-
11 ture for each head and the modifiers and functional heads associated with
12 it, in interaction with independent conditions on phrasal movement.
13

14 **Chapter 8, Are All Languages ‘Numeral Classifier Languages’?** 15

16 The article discusses evidence, based in part on word order considerations,
17 to postulate the existence of a limited class of numeral classifiers even in
18 languages, like Italian and English, which are traditionally assumed not to
19 be numeral classifier languages.⁵
20

21 **Chapter 9, Greenberg’s Universal 23 and SVO Languages** 22

23 This short chapter exemplifies the nonhomogeneity of SVO languages by
24 considering the extensive variation existing in the order of proper noun/
25 common noun in such languages (here exemplified with Bulgarian, Chi-
26 nese, English, Greek, Italian and Norwegian). The relative order of com-
27 mon noun/proper noun is typically common noun > proper noun in rigid
28 head-initial languages and proper noun > common noun in rigid head-final
29 languages (Greenberg’s Universal 23).

30 Needless to say, inconsistencies are also found in head-final languages;
31 for example, in Turkish, where the common noun ‘professor’ precedes the
32 proper noun and where the common noun ‘hour’ precedes the name of the
33 hour (*Profesör Chomsky* and *saat 8’(de)* ‘hour 8 (at)’—İsa Bayirli, p.c.),
34 or Persian, where the common noun precedes the proper name (*xonum-i*
35 *Javodi* ‘Mrs. Javadi’) and the common noun ‘city’ precedes the proper name
36 of the city (*šahr-e Tehrān* ‘the city of Tehran’) (Windfuhr 2009, 474).
37

38 **PART II: RELATIVE CLAUSES** 39

40 **Chapter 10, On Keenan and Comrie’s** 41 **Primary Relativization Constraint** 42

43 This chapter critically examines one constraint on Keenan and Comrie’s
44 Accessibility Hierarchy; namely, the claim that RC strategies necessarily
45
46

operate on a continuous segment of their hierarchy.⁶ In Italian the gap strategy, which is the primary relativization strategy (that applying to subjects) also applies to direct objects, to predicate DPs, and to certain obliques (a subclass of temporal NPs), but fails to apply to indirect objects, thus skipping one position of the hierarchy. As argued in the chapter, this counterexample to Keenan and Comrie's Primary Relativization constraint appears instead to follow from the structure-dependent character of relativization (the NP vs. non-NP nature of the position relativized on).⁷

In fact, many other such cases have been reported in the literature. See Ceña (1979) for Tagalog, Joseph (1983) for Modern Greek, Reesink (1983, §3.2) for Usan, Svantesson (1986) for Kammu, Cennamo (1997) for various Italian dialects, Subbarao, Devi and Devi (2003) for Manipuri, Kimbi (2005, §§3.5-6) for Kom, Natchanan (2005) and Natchanan and Amara (2008) for Khmer, Foreman and Munro (2007) for Zapotec, Shibatani (2008) for Sasak and Sumbawa, Cerrón-Palomino (2010, 2.1.2) for Spanish, Fried (2010, 159) for Bao'an Tu, and Manaster-Ramer (1979) for a number of different languages.

Even though certain languages may only represent an apparent counterexample (cf. Keenan and Comrie 1977), all of this seems to suggest that the continuous segment constraint on the Accessibility Hierarchy, and the Accessibility Hierarchy itself, where it does not fail⁸, may be epiphenomena following from the interplay of more general principles.⁹

Chapter 11, A Note on Verb/Object Order and Head/Relative Clause Order

This chapter discusses the rightward skewing in the distribution of relative clauses in head-initial and head-final languages, relating it to the presence vs. absence of initial complementizers.

Chapter 12, A Note on Linguistic Theory and Typology

This chapter discusses the relation between linguistic theory and typology, stressing the importance for typology and grammar writing of keeping abreast with developments in the formal study of syntax and semantics, exemplifying it with recent findings in the theory of relative clauses.

Chapter 13, More on the Indefinite Character of the Head of Restrictive Relatives

This chapter presents evidence for the indefinite (nonspecific) nature of the Head of restrictive relative clauses (even those introduced by definite determiners), and sketches a unified analysis of the different types of relative clauses which is developed in ongoing research by the author.

1 **Chapter 14, Two Types of Nonrestrictive Relatives**

2
3 This chapter discusses evidence for distinguishing two types of nonrestrictive
4 relatives: an “integrated” type (with properties essentially identical to
5 those of restrictive relatives) and a “nonintegrated” type (with properties
6 more typical of discourse grammar), showing that languages differ as to
7 whether they have both, one, the other, or neither.

8 Earlier focus on English, which possesses only one of the two construc-
9 tions, has had the effect of biasing the theoretical analyses proposed in the
10 literature for the nonrestrictive construction.

11
12 **Chapter 15, Five Notes on Correlatives**

13
14 This chapter deals with five aspects of the syntax of relative correlative clauses
15 which point to the nonindependent status of this type of relatives from the oth-
16 ers (externally headed postnominal and prenominal; internally headed; and
17 headless, or free). In particular, it is shown that correlatives consist of a DP
18 containing one of the other types of relative clauses (externally headed post-
19 nominal and prenominal; internally headed; and headless, or free; to which
20 one may add double-headed relative clauses—see Chapter 17, note 13) in a left
21 peripheral position (either via direct base generation or via movement).

22
23 **Chapter 16, On a Selective “Violation”**
24 **of the Complex NP Constraint**

25
26 This short article discusses an apparent extraction out of relative clauses in
27 Romance and English reminiscent of those discussed in the 1970s for the
28 Scandinavian languages, arguing that the Complex Noun Phrases Constraint
29 should not be taken as a locus of parametric variation among languages.

30
31 **Chapter 17, On Double-Headed Relative Clauses**

32
33 Starting from Dryer’s (2005c) mention of Kombai (non-Austronesian Pap-
34 uan) as a language whose relatives “combine the features of externally-
35 headed and internally-headed relative clauses in a single structure”, this
36 chapter documents double-headed relative clauses in a number of other
37 languages and language families, discussing their relevance for a unified
38 analysis of relative clauses and for the conclusion that common nouns may
39 possibly always be merged as specifiers of functional classifier nouns.

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Part I

Word Order



1 Word Order Typology

A Change of Perspective*

1 INTRODUCTION

In much work stemming from Greenberg (1963), the order of the direct object with respect to the verb has been claimed to correlate (to varying degrees) with the relative order of many other pairs of elements, among which those in (1):

(1)	VO	OV
a.	P > DP (Prepositional Phrases)	DP > P (Postpositional Phrases)
b.	Aux > V	V > Aux
c.	copula > predicate	predicate > copula
d.	V > manner adverb	manner adverb > V
e.	(more) A (than) 'Standard of Comparison'	'Standard of Comparison' (than) A (more)
f.	A > PP	PP > A
g.	V > complement/adjunct PP	adjunct/complement PP > V

Despite the feeling that we are confronting some *great underlying ground-plan*, to borrow one of Sapir's (1949²,144) expressions, and despite the numerous attempts to uncover the principle(s) governing it¹, the concomitant demand of empirical accuracy with respect to actual languages has reduced all of the correlations proposed to the state of mere tendencies. In particular, with the increase of the number of languages studied, the neat mirror-image picture emerging from some of the works mentioned in note 1 has come to be drastically redressed.²

As shown in Dryer (1991, 1992a, 2007), virtually all *bidirectional* correlations, like those in (1), have exceptions. For example, the existence of OV languages with prepositions, and VO languages with postpositions (Dryer 1991, 448, and 452; 2007, 87f) is an exception to (1)a.³

Mande languages (Kastenholz 2003, Nikitina 2009) and some Chibchan languages (Ngäbére–Young and Givón 1990), with the order **SAuxOVX**, are

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1 an exception to (1)b, as is VSO Island Carib (Northern Maipuran—Heine
2 1993, 133, note 4) with inflected auxiliaries following the main verb.⁴ OV
3 Ngäbére, with the copula preceding the predicate, is also an exception to
4 (1)c, as is VO Wembawemba (Pama-Nyungan) with the copula following
5 the predicate (Dryer 1992a, 94).

6 Angami, an OV Tibeto-Burman language, with manner adverbs follow-
7 ing the V (Ghiridar 1980, 85, cited in Dryer 2007, §2.2; Patnaik 1996, 72)
8 is an exception to (1)d. Chinese (VO with Standard >Adjective) is an excep-
9 tion to (1)e. And so on.

10 Even the second type of correlations, *unidirectional* ones, like that in
11 (2),⁵ are not exempt from exceptions. Mandarin, Cantonese, Hakka, Bai
12 (Sinitic), Amis (Formosan—Austronesian) (Dryer 2005a), and Asia Minor
13 Greek (Campbell, Bubenik and Saxon 1988, 215), are VO and RelN.

14
15 (2) N(P) and Relative clause (Dryer 1992a, 86; Cinque 2005a)

- 16 a. VO \supset NRel
17 b. RelN \supset OV
18

19
20 Finally, other word order pairs have seemingly turned out to be *no correla-*
21 *tion pairs* at all; for example, those in (3):

- 22
23 (3) a. Adjectives with respect to N (Dryer 1988a, 1992a, §3.1)
24 b. Numerals with respect to N (Dryer 2007, §7.3)
25 c. Demonstratives with respect to N (Dryer 1992a, §3.2, 2007, §7.2)
26 d. Intensifiers with respect to Adjectives (Dryer 1992a, §3.3, 2007,
27 §7.6; Patnaik 1996, 70)
28 e. Negative particles with respect to Verbs (Dahl 1979, Dryer 1988b,
29 1992a, §3.4, 2007, §7.4; LaPolla 2002, 209)
30 f. Tense/aspect particles with respect to Verbs (Dryer 1992a, §3.5,
31 2007, §7.5)

32
33 So, this viewpoint (which strives for absolute formulations that may cap-
34 ture the underlying ground-plan and avoid at the same time being falsi-
35 fied by actual languages) leads at best to the scarcely enlightening picture
36 of the three cases just seen (nonexceptionless bidirectional correlations,
37 nonexceptionless unidirectional correlations, and no correlations at all);
38 in other words, to at most statistical tendencies (however important they
39 may be).

40 41 2 A CHANGE OF PERSPECTIVE 42

43 We may wonder whether something would change if we reversed this per-
44 spective; not by asking what the *predominant* correlates of OV and VO
45 orders in actual languages are, but by asking what precisely the harmonic
46

word order types are that we can theoretically reconstruct, and to what extent each language (or subset of languages) departs from them.

This change of perspective entails viewing the “harmonic” orders as abstract and exceptionless, and independent of actual languages, though no less real⁶ (below I will suggest that these harmonic orders should not be regarded as primitives, but rather as derived from a universal structure of Merge reflecting the relative scope relations of the elements involved, via two distinct movement options, with actual languages departing to varying degrees from the “ideal” derivations).

This way of looking at things has a number of implications, some apparently undesirable (under its strongest interpretation):

- (4) a. Every word order pair belongs to one or the other of the harmonic word order types. In other words, **there are no noncorrelation pairs.**
- b. Each correlation pair is related **bidirectionally** to every other correlation pair of its harmonic type (Dem N \supset DP P and DP P \supset Dem N. Dem N \supset V Aux and V Aux \supset Dem N, etc.). In other words, **there are no merely unidirectional correlations.**
- c. It should in principle be possible to measure the distance of a certain language (or group of languages) from one of the abstract harmonic types (how much it “leaks”, in another of Sapir’s expressions⁷), thus leading to a finer-grained typology than just VO and OV.⁸
- d. More interestingly, perhaps, such measuring should lead one to try and determine which correlation pairs are more stable and which more prone to be relaxed, possibly along a markedness scale, which in turn should correlate with the number of the languages belonging to that (sub)type (though it is not to be excluded that each language will ultimately represent a subtype of its own, of some higher order (sub)type).⁹

To take one illustrative example from the literature, Table 1, from Hawkins (1979, 645) (adapted from Mallinson and Blake 1981, 416), shows that there is a decline in the number of attested languages (in Hawkins’ sample) the more the language deviates from the word order type:¹⁰

SOV	Postposition	AN	GN	(consistent)	80 languages
SOV	Postposition	NA	GN	(one deviation)	50 languages
SOV	Postposition	NA	NG	(two deviations)	11 languages

Table 1

If we take this general perspective, then the first task should consist in determining precisely what the abstract harmonic orders are.

3 THE TWO ABSTRACT HARMONIC ORDERS

A complete reconstruction of the two abstract harmonic orders is out of the question here. I will present a fragment of these orders merely to illustrate the logic of the approach. The harmonic orders can to a large extent be gathered from the correlations pairs attributed in the literature to OV and VO languages (in the Appendix, I list a number of such pairs, with an indication of their source, forcing, as noted, their bidirectionality even when this flies in the face of the empirical data, as with the order of noun and adjective in “head-final” languages). These orders should be seen as ideal mirror-image orders drawn from the most polarized language types (rigid SOV and rigid VOS languages, which are the best approximations to the ideal orders, but mostly still not quite coincident with the ideal orders).¹¹

What renders the task more difficult is the fact that correlations pairs, though important, do not suffice to reconstruct the “ideal” harmonic orders. They fall short of giving the *total* order of functional heads, arguments, circumstantials and modifiers of the clause, and of the other major phrases in “head-initial” and “head-final” languages.¹² Exclusive focus on correlation pairs can even mislead one into attributing to the same type word order types that should be kept distinct. To take one example, if one considers only the orders of *pairs* of elements like NA/AN, NNum/NumN, NDem/DemN, without considering their *total* order, one is led to put three languages like Lalo (Tibeto-Burman—Björverud 1998, 116ff), which has N A Dem Num, Luo (Nilotic—Heine 1981), which has N Num A Dem, and Gungbe (Niger-Congo—Aboh 2004, chapter 3), which has N A Num Dem, in one and the same class, as all of them are: NA, NNum, NDem. Yet, while the order found in Gungbe is the overwhelmingly prevalent post-nominal order of these elements, the orders found in Lalo and Luo are quite rare in the languages of the world (cf. Cinque 2005b, 319f). Thus one runs the risk of not singling out the correct subtypes and of misrepresenting the number of languages belonging to each. Cases like this, where attention is limited to lists of word order pairs of elements, rather than to the complete sequence of these elements in each phrase, are unfortunately the norm.

For the two abstract harmonic types I will use the widespread terms of “head-initial” and “head-final” even though these are, strictly speaking, misnomers; in many cases it is a projection of a head rather than a head which is initial or final. This appears to be the case with the Head of a relative clause, which may (arguably, must) contain more than just the head N (cf. Kayne 1994, 154 fn.13; Cinque 2005a, note 11):

- (5) The [two or three recently arrived sick immigrants] that each doctor had to visit

And the same may be true of the verb in relation to subordinate clauses. It too can, possibly must, head a phrase containing more than just the lexical V:

- (6) a. He [convinced us] that he was the right person 1
 c. They [doubt (it)] that you will go 2
 b. I [went home] before they arrived 3

Nonetheless, as we will see, phrases containing the lexical nucleus (NP, VP, . . .) and the (X-bar) functional heads of the extended projections of the lexical nucleus align similarly. 4
 5
 6
 7

3.1 The “Head-Initial” Type 8 9

The generalization concerning the harmonic “head-initial” word order type appears to be that **all higher (functional) heads precede VP/NP in their order of Merge, and phrasal specifiers (arguments, circumstantials, and modifiers) follow, in an order which is the reverse of their order of Merge.** 10
 11
 12
 13
 14
 See (7) and (8), which also give some suggestive examples (I postpone consideration of arguments and circumstantials): 15
 16

- (7) a. COMP° Tns° Asp° V(P) AdvP₃ AdvP₂ AdvP₁¹³ 17
 18
 b. Tsy manasa tsara foana intsony mihitsy Rakoto¹⁴ 19
 Neg Pres.AT.wash well always no longer at all Rakoto 20
 ‘Rakoto does not wash at all any longer always well’ 21
 22
 c. Mae hi wedi bod yn socian am dridiau 23
 be:PRS 3FSG PFV be PROG soak for three.days 24
 ‘It’s already been soaking for three days’ 25
 (Welsh—Celtic, VSO—Cf. Tallerman 1998a, 31) 26
 27
 d. Ñjé Adé yòò máa wá ní ìròlé? 27
 Q Ade fut hab come in evening 28
 ‘Will Ade be coming in the evenings?’ 29
 (Yoruba—Niger-Congo—SVO, O. Ajíbóyè, p.c.) 30
 31
 e. ye uxe dheya wada gmeeguy di? 32
 Yes/No Neg. 3pl Aux_{past} steal AF Part 33
 ‘Have/Had they stolen (the basket of pears)?’ 34
 (Seediq -Austronesian, Formosan, VOS—Lin 2005, 116) 35
 36
 (8) a. Art° PL° N(P) AP₂ AP₁ NumP DemP¹⁵ 37
 38
 b. àwon okùnrin méta yĩ 38
 PL man three this 39
 ‘these three men’ 40
 (Yoruba—Niger-Congo, SVO—Dryer 1989a, 875)¹⁶ 41
 42
 c. ea pi kaaroo neey 43
 ART PL car this 44
 ‘these cars’ 45
 (Yapese—Austronesian, VSO—Dryer 1989a, 868) 46

3.2 The “Head-Final” Type

The generalization concerning the “head-final” word order type is that **all higher (functional) heads follow the lexical VP/NP in an order which is the reverse of their order of Merge, and phrasal specifiers (arguments, circumstantials, and modifiers) precede VP/NP in their order of Merge:**

- (9) a. AdvP₁ AdvP₂ AdvP₃ V° Asp° Tns° COMP°
 b. [ngasā shia natu][yingtung-tunga] ke pai **nuam hī**
 fish fish **PURP** early.in.morning I go **want IND**
 ‘I want to go out early in the morning to fish’
 (Siyin Chin—Tibeto-Burman, SOV—Dryer 2007, 120)
- c. yer ngeti tyapat **me tu**
 tomorrow I sit swim **PROG FUT**
 ‘Tomorrow I shall be swimming’
 (Maranungku—Australian, Daly, SOV—Tryon 1970, 46)
- (10) DemP NumP AP₁ AP₂ N° PL° Art°
 [Kí tu?lu **tem ci**] nuŋ
 house big **PL the** in
 ‘in the big houses’
 (Ao—Tibeto-Burman, SOV— Gurubasave Gowda 1975, 65)

3.3 The Over-Arching Generalization

The property which both the “head-initial” and the “head-final” word orders have in common is that whatever precedes the VP/NP reflects the order of Merge, and whatever follows is in the mirror-image of the order of Merge. In actual languages the mirror-image order found postverbally and postnominally is in fact just the prevalent order (cf. Cinque 2005b, 2009a and also Kiss 2008).

4 DERIVING THE TWO ABSTRACT HARMONIC TYPES

As I said, I take the two abstract (mirror-image) harmonic types to be epiphenomenal. They are the product of the application of two different sets of movement options to one and the same structure of Merge, common to all languages, which, as noted, presumably reflects the relative scope of the elements involved.¹⁷

If we want to capture the fact that manner adverbs take scope over the lexical verb whether they precede it (typically in “head-final” languages) or follow it (typically in “head-initial” languages), and that modal (functional) verbs also take scope over the lexical verb (and the manner adverb), whether

1 functional head endowed with the same categorial feature, so it seems (in
 2 the case of VP: auxiliaries, modals, aspectual verbs, certain particles, com-
 3 plementizers, . . .). If the raising takes place via pied-piping of the *whose*-
 4 picture type (Cinque 2005b), we have the “head-initial” order; if it takes
 5 place via pied-piping of the picture-of-*whom* type, we have the “head-fi-
 6 nal” order.

7 Let us consider the two cases in turn (needless to say, at this stage, any
 8 proposal can only be programmatic in character, and extremely tentative).
 9

10 **4.1 The “Head-Initial” Type**

11 Recall the generalization concerning the “head-initial” word order type:
 12 **all higher (functional) heads precede VP/NP in their order of Merge, and**
 13 **phrasal specifiers (arguments, circumstantials, and modifiers) follow, in an**
 14 **order which is the reverse of their order of Merge.** See (7)a and (8)a, repeated
 15 here (I postpone consideration of arguments and circumstantials):
 16

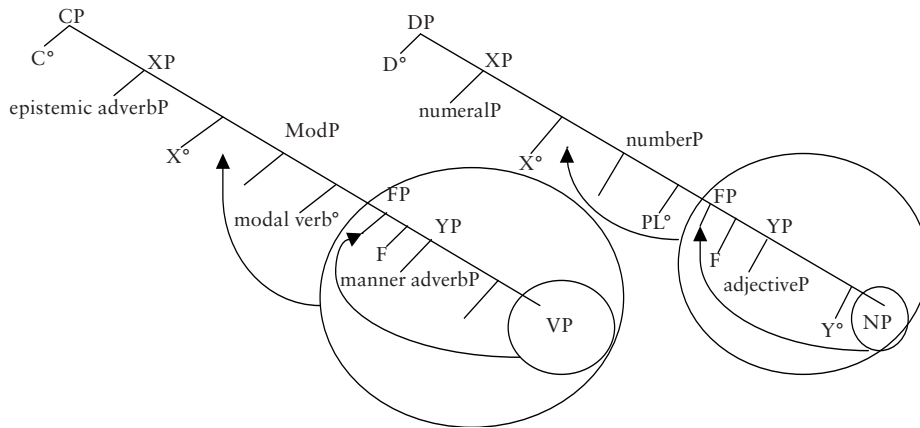
17 (7)a. COMP° Tns° Asp° V(P) AdvP₃ AdvP₂ AdvP₁

18 (8)a. Art° PL° N(P) AP₂ AP₁ NumP DemP

19 The orders in (7) and (8) can be achieved if the VP/NP rolls up around
 20 the first phrasal specifier (is attracted to the Spec of a functional head
 21 above the phrasal specifier—see (13), after which it continues with pied-
 22 piping of the *whose*-picture type (cf. Cinque 2005b) around additional
 23 phrasal specifiers, if any (thus reversing their order of Merge). When the
 24 VP/NP crosses over a head endowed with the same categorial feature (an
 25 auxiliary, a modal, or (certain) tense/mood/aspect particles in the clause,
 26 (plural) number in the DP), it is the latter that becomes the “engine” of
 27 the movement.²⁰
 28
 29
 30

31 (13) a.

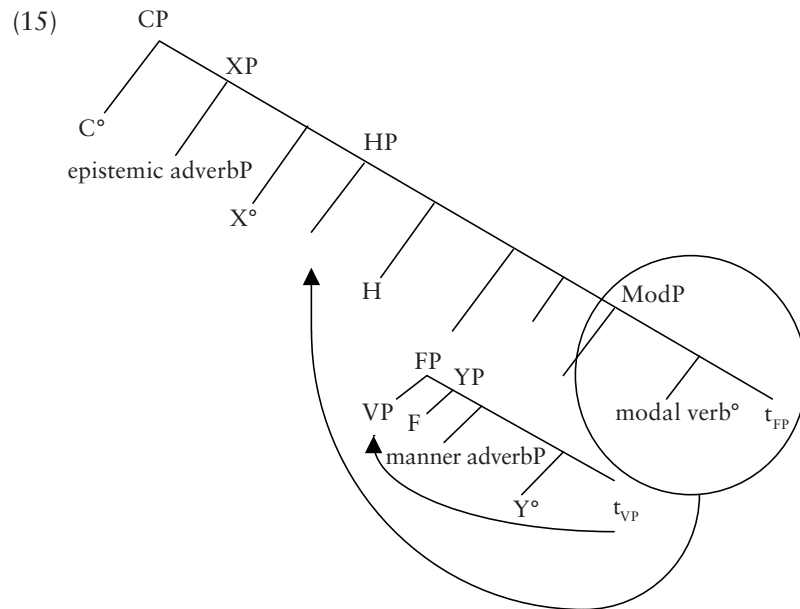
b.



For “head-initial” languages, I will assume, after Kayne (2005a, §9.4.5) (also see Koopman and Szabolcsi 2000, Jayaseelan 2010a,b), that aspectual verbs (but also modals, auxiliaries, and (certain) particles) are crossed over by their complement, after which the insertion of a (possibly covert) complementizer-like preposition attracts the remnant (with the effect of restoring the initial linear order), as shown in (14):

- (14) a. try leave (merger of K) →
- b. K try leave (movement of InfinP to Spec,K) →
- c. leave_i K try t_i (merger of P/C) →
- d. to leave_i K try t_i (movement of VP to Spec,P/C) →
- e. [try t_i]_j to leave_i K t_j

Applied to (13)a, this gives (15):



As noted, if raising were to continue (in the *whose*-picture mode), it would be the higher ModP that becomes the “engine” of movement, pied-piping HP around epistemic adverbP. This would yield the overall order COMP° modal verb° lexical VP manner adverbP epistemic adverbP, which appears to be the order of many verb-initial languages. Cf. the sentence in (16), from VSO Peñoles Mixtec:²¹

- (16) ní šitu ba?a na?i-dě (Daly 1973,15)
- ASP_{COMPLETIVE} plow well probably-he
- ‘He probably plowed well’

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1 Subject, complements, and circumstantial DPs, which I take to be merged
 2 above VP/NP in the following (partial) hierarchy $DP_{time} DP_{location} \dots$
 3 $DP_{instrument} \dots DP_{manner} DP_{agent} DP_{goal} DP_{theme} VP$ (cf. Cinque 2002; Schweikert
 4 2005a,b; Takamine 2010), and which raise to higher licensing positions,
 5 also surface, in “head-initial” languages, in the reverse order (owing to
 6 the roll-up derivation):

- 7
 8 (17) $V(P) DP_{theme} DP_{goal} DP_{agent} DP_{manner} \dots DP_{instrument} \dots DP_{location} DP_{time}$
 9

10 This is a special case of what we have seen in (13). Here it is to the
 11 Spec of a functional head above the licensing position targeted by each
 12 DP that the (extended) VP is moved, with pied-piping of the *whose-*
 13 *picture* type.

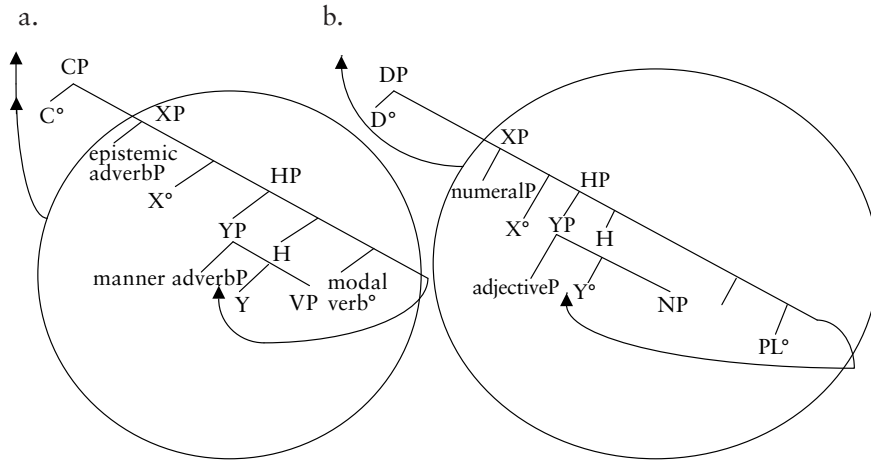
14 The order in (17) is again tentatively reconstructed from the order of
 15 arguments and circumstantials in verb-initial languages (see, for exam-
 16 ple, Massam 2000, 98 on Niuean and Sells 2000, 124 on Pangasinan).²²
 17 There may be more than one (specialized) licensing position for each
 18 DP, as shown by the Malagasy case in (18), from Rackowski and Travis
 19 (2000, §1.3), where the object DP may occur in different places among
 20 the adverbs (depending on the position it reaches before the reversal oper-
 21 ated by the raising of the (extended) VP with pied-piping of the *whose*
 22 *picture*-type). On the position of subjects with relation to adverbs, see
 23 §6.1 below.

- 24
 25 (18) Tsy manasa tsara foana <ny lamba> intsony <ny lamba> mihitsy <ny
 26 lamba> Rakoto
 27 NEG PRES.AT.wash well always <DET clothes> anymore
 28 <DET clothes> at.all <DET clothes> Rakoto
 29 ‘Rakoto does not wash at all any longer always well the clothes’

30 In case a DP has to be licensed also by a (functional) P I will assume,
 31 following Kayne (1999, 2000a, 2005b), that the P is merged not with
 32 the DP directly, but above the licensing (Case) position targeted by the
 33 DP; a merger that causes, in “head-initial” languages, attraction of the
 34 remnant. See the illustrative derivation in (19) (similarly for IPs and
 35 complementizers—see (20)):

- 36
 37 (19) a. [$\dots [DP \dots VP]$] (insertion of the licenser and attraction of DP) \rightarrow
 38 b. [$DP_i [K^\circ \dots [t_i \dots VP]]$] (insertion of P and attraction of the remnant) \rightarrow
 39 c. [$[t_i \dots VP]_k [P [DP_i [K^\circ \dots t_k]]]$]
 40
 41 (20) a. [$\dots [IP \dots VP]$] (insertion of the licenser and attraction of IP) \rightarrow
 42 b. [$IP_i [K^\circ [\dots t_i \dots VP]]$] (insertion of C and attraction of the remnant) \rightarrow
 43 c. [$[\dots t_i \dots VP]_k [C [IP_i [K^\circ t_k]]]$]
 44
 45
 46

(24)



Subject, object, and circumstantial DPs, when present, raise to higher licensing positions, and surface in the same relative order in which they were merged:²⁴

(25) DP_{time} DP_{location} .. DP_{instrument} .. DP_{manner} . . . DP_{agent} DP_{goal} DP_{theme} V°

In case a DP has to be licensed by a P, I will assume that it, rather than the remnant (as in “head-initial” languages), raises to Spec,P, after raising to Spec,K to check its Case. See (26) (again the same possibly holds of C’s. See (27)):²⁵

- (26) a. [. . . [DP . . . VP]] (insertion of the licenser and attraction of DP) →
 b. [DP_i [K . . . [t_i . . . VP]]] (insertion of P and attraction of DP) →
 c. [DP_i [P [t_i [K . . . [t_i . . . VP]]]]]

- (27) a. [. . . [IP . . . VP]] (insertion of the licenser and attraction of IP) →
 b. [IP_i [K [. . . t_i . . . VP]]] (insertion of C and attraction of IP) →
 c. [IP_i [C [t_i [K [. . . t_i . . . VP]]]]]

Particularly telling in this regard is the distribution of PPs in nominal phrases of “head-initial” and “head-final” languages. In Cinque (2005b, fn.34; also see Cinque 2010a, chapter 6, note 14)), it is observed that prepositional phrases are final in the DP of “head-initial” languages, while postpositional phrases are initial in the DP of “head-final” languages (which appears to betray the higher merger of P, obscured in “head-initial” languages by the movement of the remnant):

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- (28) a. PP Dem Num A N (Armenian, Hindi, Malayalam, Tatar, Turkish, etc.) 1
 vs. 2
 b. N A Num Dem PP (Gungbe—Enoch Aboh, p.c.)/N Dem Num A PP 3
 (Kîûtharaka—Muriungi 2006, 36)/Dem Num A N PP (English, 4
 Bulgarian) 5
 6

5 THE MOVEMENT TRIGGER: A SPECULATION 8
 9

An important question, whose answer remains to be established, is what 10
 the force is that is responsible for such movements. In Cinque (2005b, 11
 325f; 2010, chapter 6, note 4) I conjectured that the movement of the 12
 lexical nucleus of DPs, the NP (and its extensions through pied-piping), 13
 could be due to the need for its extended projection to inherit the nomi- 14
 nal feature of the nucleus, thus fully qualifying as nominal. I will ten- 15
 tatively hold to that conjecture (which directly extends to VP and its 16
 extended projection CP). We can think of this as effected by merging 17
 above each phrase of the extended projection of the NP/VP that is not 18
 marked categorially a functional head, F°, whose Spec ultimately comes 19
 to have such a nominal, verbal, etc., feature by movement of phrases 20
 endowed with such a feature. 21
 22

6 DEVIATIONS FROM THE “IDEAL” DERIVATIONS 24

6.1 Some Attested Deviations from the Ideal 25
 Derivation for “Head-Initial” Languages 26
 27

(a) Within VOS languages there appears to be variation as to how high 28
 subjects raise. “[A]ll postverbal adverbs are presubject in Malagasy, 29
 whereas some of them are postsubject in Seediq” (Holmer 2006, 103); 30
 in other words subjects do not raise in Seediq higher than all the adverbs 31
 (which are also in the reverse order) (Holmer 2006, note 50), so that 32
 subjects do not end up last in the clause after raising of the remnant to 33
 their left.²⁶ 34
 35

- (29) a. Malagasy: V AdvP₃ <O> AdvP₂ <O> AdvP₁ <O> S 36
 b. Seediq: V AdvP₃ <O> AdvP₂ <O> S AdvP₁ 37
 38

(b) Certain “head-initial” languages (Italian) do not reverse the order 39
 of AdvPs, thus yielding COMP° T° Asp° V AdvP₁ AdvP₂ AdvP₃ instead 40
 of (7)a (cf. Cinque 1999, chapters 1 and 2). In other words, the VP 41
 (containing just the V) appears to raise by itself (up to a certain point), 42
 without pied-piping any other material (thus giving the impression of 43
 head-movement).²⁷ 44
 45
 46

26 *Typological Studies*

- 1 (30) Non è stato lavato mica più sempre bene
 2 Not is been washed at all any longer always well
 3 ‘It wasn’t washed any longer always well’
 4

5 (c) Certain “head-initial” languages show the order: V DP P

- 6
 7 (31) a. Savîli ááni váík ímai [giñ-ooñí-ga viitári]
 8 bought I three squash [my-wife-POSSD for]
 9 ‘I bought three squash for my wife’
 10 (Northern Tepehuan, VSO—Uto-Aztecan)²⁸
 11

12 Thinking of Kayne (1999, 2000a, 2005b), I take such cases to involve the
 13 derivation of postpositions as in “head-final” languages (cf. (26)) plus the
 14 (more marked) merger of a higher (silent) P, which causes the remnant to
 15 raise to its Spec (as indicated in (32) with English glosses):

- 16
 17 (32) a. I [my-wife-POSSD] [three squash] [bought] raising of VP [bought] →
 18 b. [bought] I [my-wife-POSSD] [three squash] t
 19 Merge of ‘for’ and attraction of [my-wife-POSSD] →
 20 c. [my-wife-POSSD] for [bought] I t [three squash] t
 21 Merge of silent P and attraction of the remnant →
 22 d. [bought] I t [three squash] t P [my-wife-POSSD] for
 23

24 In a number of languages the two attracting P heads are both pronounced.
 25 See the case of the Iranian languages in (33):

- 26
 27 (33) a. Lîstika bi navê “Rojnivîska Dînekî” ji aliyê Gogol ve hatiye
 28 nivîsandin (Kurmanji Kurdish)²⁹
 29 The play named “Rojnivîska Dînekî” by Gogol by was written
 30 b. bi *wan re* (Kurmanji Kurdish—Thackston 2006a, 19)
 31 with *them* with ‘with them’
 32 c. *lagat min’ â* (Sorani Kurdish—Thackston 2006b, 20)
 33 with me with ‘with me’
 34
 35

36 **6.2 Some Attested Deviations from the**
 37 **“Ideal” Derivation for “Head-Final” Languages**
 38

39 (a) In certain “head-final” languages (Hindi—Mahajan 1989, 225) the
 40 lexical V and the auxiliaries can be separated by the negation and (certain)
 41 adverbs (which suggests that the raising of the projection hosting the lexical
 42 verb may target a position above some AdvPs).

43 (b) In certain “head-final” languages the raising is not total, with the
 44 effect that some of the highest heads remain initial (for example, in Punjabi
 45 (Indo-Aryan), the Yes/No Question head *kii* is only initial—Davison 2007,
 46

180; as are the illocutionary force markers of SOV Nama (Khoisan—
<http://celaeno.phonetics.cornell.edu/khoisan/nama/nama.htm>). 1
 2

(c) In certain “head-final” languages there is attraction of phrases to the
 Spec of a (silent) C head followed by merger of another (overt) C head that
 fails to attract the same phrases or the remnant: 3
 4
 5

- (34) [kan [kalēsa gale]] C namtičča an arge 6
 Rel yesterday arrived(finite) man-def I saw 7
 ‘I saw the man that arrived yesterday’ 8
 (Galla (Oromo)-Mallinson and Blake 1981, 289) 9
 10

6.3 Unattested (Or Rare) Deviations from the Ideal Derivations 11 12

While there are numerous deviations from the ideal orders, as noted, it
 seems that some types of deviations are never (or almost never) found. So,
 for example, as Steele (1978, 42) points out, (35)d is apparently unattested³⁰,
 in contrast to the attested “harmonic” orders (35)a-b and the attested dis-
 harmonic order (35)c (also see Dryer 1996, 1059; Kayne 2005a, §9.3.2; and
 the Konstanz Universals Archive, no.’s 1382 and 1553): 13
 14
 15
 16
 17
 18
 19

- (35) a. Aux [V O] 20
 b. [O V] Aux 21
 c. Aux [O V] 22
 d. *[V O] Aux 23
 24

Similarly, as observed in Dryer (1992a, §4.3, 2009, §5), (36)a–c are all attested,
 but (36)d is seemingly never found (at least with complement CPs):³¹ 25
 26
 27

- (36) a. C [V O] 28
 b. [O V] C 29
 c. C [O V] 30
 d. *[V O] C 31
 32

These and similar patterns have been brought in Holmberg (2000), Biber-
 auer, Holmberg and Roberts (2008a,b, 2009, 2010) under a general con-
 straint, the Final-over-Final-Constraint (FOFC). They correctly observe
 that the constraint is rigidly operative within the extended projection of a
 certain category, V or N (namely with heads sharing the same categorial
 feature), but is not as rigidly operative across the extended projections of
 different categories. 33
 34
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 39

Whether the FOFC is an absolute constraint, or only a very strong ten-
 dency, (in either case an important finding) is a point that remains to be
 ascertained (see the discussion of certain apparent counterexamples in Bib-
 erauer, Holmberg and Roberts 2008a,b, 2009 and Sheehan 2009, and the
 VO languages with final complementizers mentioned in note 31 and below
 in section 7). Be it as it may, it would in any event be interesting to derive
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1 it from the general properties of the theory which tries to derive the word
 2 order types (here the two sets of movement options for “head-initial” and
 3 “head-final” languages).³² Let’s consider (35) as an example.

4 (35)a and b are straightforwardly derived by applying consistently the
 5 movement options sketched above for the ideal “head-initial” and “head-
 6 final” languages (cf. (37) and (38), respectively):

7
 8 (37) derivation for [Aux [V O]]:

- 9 a. [_{VP} V] (merger of F and DP_{object}) →
 10 b. [_{FP} DP_{object} F [_{VP} V]] (merger of F’ and raising of VP to Spec,F’) →
 11 c. [_{FP} [_{VP} V] F’ [_{FP} DP_{object} F t_{VP}]] (merger of Aux and raising of VP plus
 12 pied-piping of the *whose*-picture type across Aux) →
 13 d. [[_{FP} [_{VP} V] F’ [DP_{object} F t_{VP}]]] [Aux t] (merger of F’’ and raising of
 14 the remnant [Aux t]) →
 15 e. [Aux t] F’’ [[_{FP} [_{VP} V] F’ [DP_{object} F t_{VP}]]] t

16
 17 (38) derivation for [O V] Aux:

- 18 a. [_{VP} V] (merger of F and DP_{object}) →
 19 b. [_{FP} DP_{object} F [_{VP} V]] (merger of Aux and raising of VP plus
 20 pied-piping of the picture-of-*whom* type to a Spec higher than
 21 Aux) →
 22 c. [[_{FP} DP_{object} F [_{VP} V]]] [Aux t]

23
 24 (35)c can also be derived as in (38) by merging Aux but not applying
 25 raising of VP (plus pied-piping of the picture-of-*whom* type) across Aux
 26 (i.e., by a *nontotal* application of the consistent movement options for
 27 “head-final” languages).

28 The derivation of (35)d ([V O] Aux) requires instead a movement option
 29 for the derivation of “head-initial” languages (the raising of VP around
 30 the DP_{object}) followed by the raising of VP around Aux without the further
 31 raising of the remnant [Aux t] as in “head-final” languages. Possibly, this
 32 hybrid is not available (or is extremely costly), thus accounting for the non-
 33 existence (or the exceedingly rare existence) of this order.

36 7 THE APPARENTLY ANOMALOUS BEHAVIOR OF PARTICLES

37
 38 Particles are generally regarded as bad harmonic patterners (Dahl 1979,
 39 Dryer 1992a, §§3.4 and 3.5, 2007, §7.5, Biberauer, Holmberg and Roberts
 40 2009, §§2.1, 2.2, 3.3). Although in some languages they behave as run-of-the
 41 mill functional heads like the initial question and tense and aspect particles
 42 of “head-initial” languages or the final particles of “head-final” ones (non-
 43 distinct from inflected auxiliaries), in other languages they appear to pattern
 44 differently. The reasons for this may be various. In some cases they may be
 45
 46

categorially adverbs (AdvPs), like the invariant negation particles *pas* of French or *mica* of Italian. This seems to be the case, for example, of the postverbal particles of VSO Guajajara (Tupi-Guaraní), discussed in Newton (2007), the basic meanings of which indeed are adverbial: ‘in vain’, ‘still’ ‘unfortunate/successful action’, etc. In other cases, despite being invariant free functional head morphemes, they might behave differently from the corresponding auxiliaries (i.e. dummy verbs sustaining the corresponding functional bound morphemes) for principled reasons. If it is correct to take the trigger of movement in both “head-initial” and “head-final” languages to be the need to mark the extended projection of a VP, or NP, with verbal or nominal features (cf. §5 above), only those particles that have such a feature will behave like verbal or nominal heads (which is possibly the case of the preverbal particles of VSO Semitic, Celtic and Austronesian languages). But those that do not have such a feature will essentially behave like nonheads, requiring movement of (extended projections of) the VP, or NP to acquire such a feature. This might be the case of some of the particles discussed in the literature as “bad patterners” (like the final modal *đuoc* of SVO Vietnamese—see (39)a; or the final aspect particle *di* of VOS Seediq—see (39)b):

- (39) a. Tòi [không ăn thịt] **đuoc**
 I NEG eat meat CAN
 ‘I can’t eat meat.’ (Duffield 1998: ex.10a)
- b. Wada msange ciga bubu mu **di**
 PST ACT-rest yesterday mother 1SG.GEN PERF
 ‘Yesterday my mother rested (i.e. refrained from work)’
 (Holmer 2005, 177)

Even more problematic is the case of VO Xârâcùù and Tinrin (Melanesian—Austronesian) with two postverbal particles in the direct (rather than the reverse) order of Merge. See (40)a and b:³³

- (40) a. ke xâpârî kae na mûduè-nâ?
 2sg see Q PAST brother-1sg
 ‘Have you seen my brother?’ (Xârâcùù—Moyse-Faurie 1995, 157)
- b. wiri tramwâ **ghai nrâ**
 2pl know Q PAST
 ‘Did you know?’ (Tinrin—Osumi 1995, 204)

Such cases may involve raising of (an extended projection of) the VP “engine” above higher Tense and Mood heads, as shown in (41) for (40)b (with English glosses):

- (41) a. Q PAST [_{FP} 2pl know] (raising of FP above C) →
 b. [_{FP} 2pl know] Q PAST t

1 A similar case is represented by the final subordinators of SVO East !Xóõ of
 2 note 31, of VSO Guajajara (Tupi-Guaraní—Dryer 1992b, §2) and of VOS
 3 Seediq (Formosan, Austronesian—Holmer 1996) and Chol (Mayan—Coon
 4 2010). See, for example, (42)a-b, from Chol and Seediq, respectively:

- 5
 6 (42)a. i-muty [chächäk-bä]
 7 Gen.3ps-chicken [red-RelSub]
 8 ‘Her chicken that is red’ (Coon 2010,fn.18)
 9
 10 b. [Menaq ku hini **han**] sluhe kari seediq rmabang malu
 11 [stay.AF 1s.n. here **when**] learn.AF language people more good
 12 ‘While I am staying here, I had better learn Seediq’
 13 (Holmer 1996, 60)

14 I take such cases to involve a subordinator that attracts the IP to its Spec (as
 15 in “head-final” languages—cf. (27) above), followed by merger of a higher
 16 (silent) head, which may ((42)a) or may not ((42)b) cause the remnant to raise
 17 to its Spec (as the overt head in the OV Oromo case seen in (34) above).

18 There appear to be languages where the two heads are both pronounced,
 19 with the higher C attracting material to its Spec ((43)) or not ((44)):

- 20
 21 (43) a. tuisi tu?i ke hu hamut bwika-kai
 22 very good **comp** this woman sing-**subord**
 23 ‘It is very good that this woman sings’
 24 (Yaqui—Dryer 1980, fn.7)
 25
 26 b. [[chele je poR-be] bole] ami mon-e kor-i ni
 27 boy **comp** study-Fut3 **comp** I mind-loc do-1 neg-pst
 28 ‘I haven’t thought that the boy will study’
 29 (Bangla—Bayer 1996, 263f)
 30
 31 (44) [se mi-wi’é a] mí-kò fíe
 32 **when** 1sg-finish **when** 1sg-go home
 33 ‘When I’m finished, I go home’ (Fanti—Welmers 1946, 72)

34 35 36 8 CONCLUSIONS

37
 38 In the preceding sections I have suggested that we should take a different
 39 look at word order typology and that, to paraphrase Weinberg (1976), we
 40 should give a higher degree of reality to the two reconstructed harmonic
 41 types than to the observable tendencies shown by actual languages. I
 42 have also suggested that the two harmonic types should be seen as deriv-
 43 ing from a common structure of Merge (reflecting the scope properties
 44 of the various elements involved) via two consistent movement options.
 45 In view of the fact that most (perhaps all) languages deviate from such
 46

consistent derivations to different degrees (and, plausibly as a consequence of that, in different proportions), the question arises how to capture the range of admitted variation, the frequency rate of the subtypes actually attested, and how the languages deviating from the ideal orders are acquired.	1 2 3 4 5
These are empirical questions that remain to be studied. I only hint here at possible ways one could try to address them, starting with the acquisition problem. If we accept that the structure of Merge and the movement options that derive the two abstract orders are given by UG, then positive evidence from the primary data should be sufficient for the child to compute any deviations from the consistent application of such movement options. If so, even languages deviating more substantially from the two ideal word order types should, perhaps, not be more difficult to acquire.	6 7 8 9 10 11 12 13 14
Concerning variation, it would seem that intra-category variation is more constrained (cf. the “FOFC” generalization discussed above) than cross-category variation (where, for example, DP can be “head-initial” while IP and CP are “head-final”, as in a number of SOV languages. Nonetheless, even cross-category alignment seems to be tendentially harmonious. This is the fundamental finding of Hawkins (1983), whose Principle of Cross-Category Harmony asserts “that there is a quantifiable preference for the ratio of preposed to postposed operators within one phrasal category (i.e., NP, VP/S, AdjP, AdpP) to generalize to the others” (p. 134).	15 16 17 18 19 20 21 22 23 24
The different attested subtypes of languages, formed by different combinations of “consistent” and “inconsistent” movements of the derivations that yield the ideal harmonic types differ in the number of languages they contain, presumably as a function of the number and quality of the deviations from the ideal derivations; a calculation that remains to be done.	25 26 27 28 29 30
To summarize, the points that I have tried to stress are:	31
(a) Virtually every single correlation pair is violated in some language.	32 33
(a) Possibly there are no fully harmonic languages.	34
(c) If we try to formulate word order generalizations holding of actual languages we can at most get statistically significant tendencies.	35 36
(d) Such tendencies are nonetheless important as they allow us to glimpse the existence of two (abstract) consistent word order types.	37 38
(e) Limitation to (lists of) correlation pairs fails short of giving a full description of the two abstract order types and may be misleading.	39 40
(f) We should take seriously the task of reconstructing in detail these two consistent word order types, and try to derive them from a unique structure of Merge via two distinct sets of movements.	41 42 43
(g) The costs associated with relaxing a certain word order should provide a basis for measuring the distance of each word order subtype (to the	44 45 46

32 *Typological Studies*

- 1 limit, of each language) from the consistent word order types and per-
 2 haps account for language frequencies (recall Hawkins' table 1 above).
 3 (h) The attested tendencies can also help us single out what word orders
 4 are more stable or more prone to be relaxed.
 5 (i) There are innumerable more word order types than the conventional
 6 SOV,SVO,VSO,VOS, OVS, OSV ones, the number being a function of
 7 the number of single word order pairs which can differ. With 26 cor-
 8 relation pairs (certainly a tiny fraction of the total correlation pairs)
 9 the number of existing types risks being, if not 2^{26} (= 67.108.864),
 10 extremely high:
 11 (i) Languages with "head-initial" correlation pairs except for DP P
 12 instead of P DP
 13 (ii) Languages with "head-initial" correlation pairs except for DP P
 14 instead of P DP and V Aux instead of Aux V
 15 (iii) Languages with "head-initial" correlation pairs except for DP P
 16 instead of P DP, V Aux instead of Aux V, and Num N instead of
 17 N Num
 18 (iv) . . .
 19 (v) . . .
 20 etc.

21
 22 Many more questions remain to be answered.³⁴ One I want to mention,
 23 venturing an answer, is:

24 Why are there more SOV languages than VOS languages, if these are the
 25 best approximations to the two word order types?

26 If SVO languages are essentially derived via a nontotal application of the
 27 same sets of movements that derive VOS languages, in the sense that (pro-
 28 jections containing) the VP do not raise all the way up as they do in VOS
 29 languages, one can expect the same nontotal application of the relevant
 30 movements to be found in SOV languages. Here, however, the nontotal
 31 application of the movements is not as visible, as it also yields an SOV
 32 order (cf. SOV languages with *initial* higher functional heads). The correct
 33 computation then would have to refer to the number of SOV languages
 34 compared to the number of VOS(/VSO) **plus** SVO languages; which seems
 35 roughly right. See the frequencies in the samples of Ruhlen (1975), Tomlin
 36 (1979), Mallinson and Blake (1981), as reported in Tomlin (1986, 19f), and
 37 those of Cysouw (2008):³⁵

	SOV	SVO	VSO	VOS	OVS	OSV
Ruhlen (1975):	51.5%	35.6%	10.5%	2.1%	0.0%	0.2%
Tomlin (1979):	45.8%	41.5%	11.0%	1.5%	0.3%	0.0%
Mallinson and Blake (1981):	41.0%	35.0%	9.0%	2.0%	1.1%	1.0%
Cysouw (2008):	47.1%	41.2%	8.0%	2.4%	0.8%	0.4%

46

If correct, this conjecture raises the further question why the nontotal application of the movements deriving the ideal harmonic types should be less marked (yielding a larger number of languages) than the total one.

APPENDIX

This is a partial list of 26 regularized word order pairs correlating with “head-initiality” and “head-finality”:³⁶

“head-initial”	“head-final”	
a) V > DP (VO)	DP > V (OV)	1
b) Aux > V(P)	V(P) > Aux ³⁷	2
c) Copula > Predicate	Predicate > Copula ³⁸	3
d) modal/functional V > V(P)	V(P) > modal/functional V ³⁹	4
e) tense/aspect/negative particle > V(P)	V(P) > tense/aspect/negative particle ⁴⁰	5
f) Art > N(P)	N(P) > Art ⁴¹	6
g) PL > N(P)	N(P) > PL ⁴²	7
h) V(P) > PP/NP _{adjunct}	PP/NP _{adjunct} > V(P) ⁴³	8
i) V(P) > CP	CP > V(P) ⁴⁴	9
j) P > DP (Prepositional Phrase)	DP > P (Postpositional Phrase) ⁴⁵	10
k) C > argument IP	argument IP > C ⁴⁶	11
l) Yes/No Q marker > IP	IP > Yes/No Q marker ⁴⁷	12
m) Subordinator > adverbial IP	adverbial IP > Subordinator ⁴⁸	13
n) marker > Standard (‘than John’)	Standard > marker (‘John than’) ⁴⁹	14
o) A > [(marker)Standard] (&c, more generally, A > PP)	[Standard (marker)] > A ⁵⁰ (&c, more generally, PP > A)	15
p) A > degree word	degree word > A ⁵¹	16
q) N > Gen	Gen > N ⁵²	17
r) PP-complements of a N are final in the DP	PP-complements of a N are initial in the DP ⁵³	18
s) common noun > proper noun	proper noun > common noun ⁵⁴	19
t) V > DP > resultat > ODepict > SDepict	SDepict > ODepict > DP > resultat > V ⁵⁵	20
u) V Manner (Loc Time) (or Time Loc Manner)	(Time Loc) Manner V ⁵⁶	21
v) ascending order of temporal/locative phrases	descending order of temporal/locative phrases ⁵⁷	22
w) NP(XP) > Rel Cl	Rel Cl > NP(XP) ⁵⁸	23
x) N > A	A > N ⁵⁹	24
y) N > Dem	Dem > N ⁶⁰	25
z) N > Num	Num > N ⁶¹	26

2 The ‘Antisymmetric’ Program Theoretical and Typological Implications¹

1 INTRODUCTION

2
3 In more mature fields of inquiry, the existence of anomalies is no reason to
4 reject a theory which provides nontrivial explanations for a significant set of
5 relevant phenomena. It may, however, decree the superiority of one theory
6 over another when one but not the other is able to explain the anomalies away
7 (while retaining an explanation for the same basic set of phenomena).²

8 A well-known anomaly of all theories of syntax in the 1960s, 1970s
9 and 1980s was the existence of various (unexpected) left-right asymme-
10 tries in the syntax of natural languages, both within single languages, and
11 cross-linguistically.

12 For example, it was known since the mid-1960s that while movement to
13 the left (in a ‘right branching’ language like English) could apply over an
14 unbounded domain, apparent movement to the right was ‘upward bounded’
15 (Ross 1967, 307).

16 More puzzling still was the subsequent observation that in what were
17 then analyzed as the mirror-image left branching languages of the OV type
18 (see Chomsky 1964, 123, fn. 9), no mirror-image unbounded movement
19 to the right was attested either (see Bach 1971, 161, Bresnan 1972, 42ff.),
20 despite a few occasional claims to the contrary.³

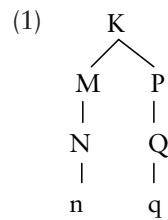
21 The various theories proposed, up to the Principles and Parameters theory
22 of the 1980s and the early 1990s, were unable to provide an answer to these
23 (as well as other) anomalies, due to their excessively unconstrained character.

24 In Kayne’s (1994) *The antisymmetry of syntax* (henceforth AS), a drastic
25 tightening of the theory is proposed, which, among other things, appears to
26 be able to derive the ‘anomaly’ of the general left-right asymmetry of natu-
27 ral languages.⁴ This tightening involves a particular view of the mapping
28 between hierarchical structure and linear order, which—Kayne suggests—
29 used to be conceived of in an overly permissive way, with precedence entirely
30 dissociated from hierarchical relations such as c-command. Kayne proposes
31 interlocking the two, in such a way that the fundamental antisymmetry of
32 linear order (not (A > B and B > A)) be rigidly matched by a corresponding
33 antisymmetry in the underlying hierarchical structure : namely, ASYMMETRIC
34 C-COMMAND (not (A c-commands B and B c-commands A)). The idea is

that, given two nonterminals, X and Y, and the terminals they dominate, x and y, 'if X asymmetrically c-commands B, x precedes y' (33).⁵

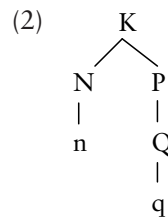
The fact that all terminals must be ordered in a (consistent) precedence relation, and the assumption that asymmetric c-command between nonterminals maps to linear precedence between the respective terminals (formulated by Kayne in a 'Linear Correspondence Axiom' (LCA—see pp. 5 f.), have a number of nontrivial theoretical and empirical consequences, first and foremost, the exclusion of many hierarchical configurations which are too symmetric, and which thus fail to determine a unique precedence relation between their terminals.

For example, the case of a phrase (K) exhaustively dominating two phrases (M and P) is ruled out for this reason:



The nonterminal M asymmetrically c-commands the nonterminal Q, thus implying that M's terminal, *n*, PRECEDES Q's terminal, *q*. On the other hand, the nonterminal P also asymmetrically c-commands the nonterminal N, thus implying that P's terminal, *q*, PRECEDES N's terminal, *n*: a contradictory result.

A phrase (K) dominating a head (N) and another phrase (P) instead permits assigning a noncontradictory precedence relation among the respective terminals (as N alone asymmetrically c-commands Q):



This has the effect of deriving part of the basic tenet of X-bar theory that all phrases be headed (be endocentric).

DERIVING X-BAR THEORY

Kayne's LCA, in fact, derives most stipulated properties of X-bar theory: in addition to (3a), just mentioned, we have (3b–d):

36 *Typological Studies*

- 1 (3) a. There can be no phrase dominating two (or more) phrases. (p. 11)
2 b. There cannot be more than one head per phrase. (p. 8)
3 c. A head cannot take another head as complement. (p. 8)
4 d. A head cannot have more than one complement. (p. 136, fn. 28)⁶
5

6 Moreover, the adoption of a particular definition of c-command, exclu-
7 sively referring to categories rather than segments,⁷ achieves the interesting
8 related properties in (4):
9

- 10 (4) a. A specifier is an adjunct. (p. 17)
11 b. There can at most be one adjunct/specifier per phrase. (p. 22)
12 c. At most one head can adjoin to another head. (p. 20f)
13 d. No nonhead can adjoin to a head. (p. 19)
14 e. Adjuncts/specifiers c-command out of the category they are adjoined
15 to. (p. 18)
16 f. An X' (the sister node of a specifier) cannot be moved. (p. 17)
17

18 Note that the identification of adjuncts with specifiers, and the prohibi-
19 tion against more than one adjunct/specifier per phrase, are by no means
20 logically necessary properties of X-bar theory. It could well be that natural
21 languages allow for phrases with multiple specifiers, and multiple adjuncts
22 (Chomsky 1995). In fact, a definition of C-COMMAND slightly different
23 from the one assumed in AS would seem to achieve just that, while retain-
24 ing most other features of Kayne's system.⁸

25 It is however clear that the one-specifier/one-head theory is more restrictive
26 (in that it gives a principled limit to the number of adjuncts/specifiers avail-
27 able), and hence should be preferred, it seems, if empirically adequate.

28 In fact, were no such limit imposed, some desirable empirical conse-
29 quences of Kayne's system would seemingly be lost. Consider one example
30 discussed in AS (p. 54).

31 If C⁰ is the highest clausal head (necessarily preceding its complement),
32 languages with final complementizers must be analyzed as requiring move-
33 ment of the IP complement of C⁰ to its left, plausibly into Spec,CP. (This,
34 incidentally, accords well with the general OV character of such languages,
35 where the complement of V can also be taken to move leftward over V.) If
36 so, Spec,CP is no longer available for a *wh*-phrase to move to: a desirable
37 consequence, as it was observed in Bach (1971,161)⁹ that interrogative *wh*-
38 movement is generally absent from SOV languages.¹⁰

39 A system which systematically allows for multiple specifiers derives
40 instead no such consequence, as more landing sites could in principle be
41 available, one for the IP complement of C⁰, and one for *wh*-phrases.¹¹

42 Besides the theoretical advantage of deriving (hence explaining) the
43 basic properties of X-bar theory, the AS system has the important theoret-
44 ical consequence of introducing severe restrictions on the possible phrase
45 structures (and derivations) admitted by UG.
46

**A UNIVERSAL (SPECIFIER > HEAD > COMPLEMENT)
ORDER AND LEFT/RIGHT ASYMMETRIES**

If asymmetric c-command maps to linear precedence, as noted, adjuncts/specifiers, which asymmetrically c-command their heads, necessarily precede them; analogously, heads which asymmetrically c-command their complements, necessarily precede them; and this imposes a rigid specifier > head > complement order. A complement which is to the left of its head cannot be in 'complement position', but must have raised to a position (adjunct/specifier) which asymmetrically c-commands (its trace and) the head. Analogously, a head which is to the left of its specifier must have raised to a head position asymmetrically c-commanding (its trace) and the specifier.

This clearly requires a radical rethinking of many traditional analyses and assumptions (a typical feature of a change of paradigm). OV languages can no longer be seen as mirror images of VO languages, but rather as VO languages whose objects have raised across their heads. Moreover, all apparent movements of X to the right of Y must be rethought of as movement of Y to the left of X, or in terms of independent 'base generation' of X to the right of Y.

Kayne shows that in most cases independent considerations are against a rightward movement analysis of Right Node Raising (p. 67f.), Heavy NP shift (p. 71ff.), Subject Inversion (or Postposing) in Romance (p. 77f.), Right Dislocation (p. 78ff.), Relative Clause (and PP) Extraposition (p. 117ff.), Result and Comparative Clause Extraposition (p. 126ff.), and in favor of either an independent base generation or stranding of the (apparently) moved constituent in a c-commanded position.

As anticipated above, a general consequence of the AS system is a principled account of many left/right asymmetries in natural languages. The general 'upward boundedness' of all (apparent) movements to the right, which has to be stipulated in theories that allow such movements, follows if no adjunction (hence no movement) TO A C-COMMANDING POSITION TO THE RIGHT is permitted.¹²

From the same ban against rightward movement/adjunction also follows the mentioned absence of *wh*-movements to final position in OV languages (as opposed to leftward *wh*-movements to initial position in VO languages).

It is impressive how many standard analyses have to be reconsidered and reanalyzed in the light of the AS system, with illuminating results.

In addition to the consequences already mentioned, the AS system forces the adoption of a 'promotion' analysis of relative clauses (where the relative CP is a sister of D⁰ and the relative clause 'head' raises from inside the relative CP to Spec, CP (p. 86ff.)), and opens up alternative analyses for possessive phrases (pp. 85,101ff.) and adjective phrases (p. 97ff.), within the DP. As Kayne succinctly and aptly puts it, if one adopts the AS system, one has 'the all too infrequent pleasure of seeing the theory choose the analysis'

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(p. 132), with obvious desirable repercussions for the rational reconstruction of language acquisition.

Any attempt to discuss the many language specific and typological consequences of the AS system is clearly out of the question here. In what follows, I will limit myself to four points : first, to discussing one additional case of left/right asymmetry which appears to find an interesting account in the AS system (section 4); secondly, to pointing out certain areas where a further tightening of the AS system may be possible (section 5) ; thirdly, to discussing the AS analysis of clitics, for which I will suggest an alternative compatible with the antisymmetric programme (section 6), and finally to suggesting a possible extension of the LCA to phonology (section 7).

AN ADDITIONAL LEFT/RIGHT ASYMMETRY

One more left/right asymmetry which the AS system appears to accommodate naturally is Greenberg's (1966, 87) Universal 20:

“When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.”

The left/right asymmetry consists in the fact that while to the right of the N both the order Dem(onstrative) Num(eral) A(djective), and its mirror-image, A Num Dem, are possible, to the left of the N only the order Dem Num A is attested.

How can we make sense of this asymmetry? A clue comes from the finer grained study of Hawkins (1983).¹³ Hawkins points out that in prepositional languages “if the demonstrative determiner follows the noun, the adjective follows the noun; I.e. Prep \supset (NDem \supset NA)” (p. 71). In other words, we have prepositional languages displaying the orders in (5), but no prepositional language displaying the order in (6) (also see Greenberg 1966, 86, table 6):

- (5) a. NDem & NA (Swahili, Fulani, Bahasa Indonesian, . . .)
- b. DemN & NA (Maori, Baure, Douala, Tunen, . . .)
- c. DemN & AN (Greek, Maya, Norwegian, . . .)

(6) NDem & AN

Likewise, considering the relative order of numerals and adjectives, Hawkins points out that in prepositional languages “if the numeral follows the noun, the adjective follows the noun; i.e. Prep \supset (NNum \supset NA)” (p. 72). In other words, there are prepositional languages displaying one of the orders in (7), but none displaying the order in (8):

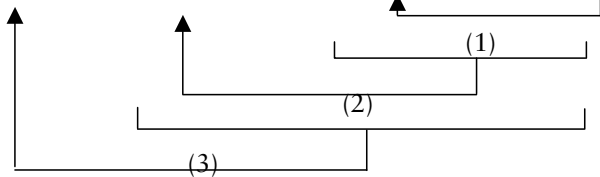
(7) a.	NNum, & NA (Swahili, Douala, Tunen, . . .)	1
	b. NumN & NA (Maori, Baure, Bahasa Indonesian, . . .)	2
	c. NumN & AN (Greek, Maya, Norwegian, . . .)	3
		4
(8)	*NNum & AN	5
		6
	The pattern of attested (and unattested) word orders in (5) through (8), and Hawkins' implicational universals based on them (Prep \supset (NDem \supset NA) and Prep \supset (NNum \supset NA)) appear to follow from the two simple assumptions in (9):	7
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(9) a.	The base structure is:	11
	. . . [_{XP} [_{XP} X [_{YP} Dem [_{YP} Y [_{WP} Num [_{WP} W [_{ZP} Adj [_{ZP} Z [_{NP} N]]]]]]]]]]]	12
		13
	i.e. with demonstratives in a Spec higher than the one containing numerals, which in turn is higher than the Spec containing adjectives. ¹⁴	14
		15
		16
	b. N either remains in situ or raises to one of the higher (functional) heads (W in Maori—see (5b), (7b) ; Y in Douala—see (5b), (7a) ; X in Swahili—see (5a), (7a)). ¹⁵	17
		18
		19
		20
	This implies that whenever N precedes Num (is in Y or higher) it will a fortiori precede the adjective; whence the theoretical impossibility of (prepositional) languages displaying the word order correlations in (8). Similarly, whenever N precedes Dem (is in X, or higher), it will a fortiori precede the adjective; whence the theoretical impossibility of the word order correlation in (6) above. ¹⁶	21
		22
		23
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		26
	Consider now postpositional languages. As Hawkins (1983, 81–82) notes, “[i]nstead of the expected mirror-image implication, Post \supset (DemN \supset AN), we find that postpositional languages obey the same implicational regularity as prepositional languages: NDem \supset NA”. Analogously, NNum implies NA. In other words, while there are postpositional languages with the orders (10) and (11), there are none with the orders (12) and (13) (see Hawkins 1983, 81f.):	27
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(10) a.	NDem & NA (Selepet, Mojave, Diegueño, . . .)	35
	b. DemN & NA (Burmese, Kabardian, Warao, . . .)	36
	c. DemN & AN (Burushaski, Hindi, Japanese, . . .)	37
		38
(11) a.	NNum & NA (Selepet, Mojave, Kabardian, Warao, . . .)	39
	b. NumN & NA (Burmese, Hixkaryana, Ubykh, . . .)	40
	c. NumN & AN (Burushaski, Hindi, Japanese, . . .)	41
		42
(12)	*NDem & AN	43
		44
(13)	*NNum & AN	45
		46

40 *Typological Studies*

1 If postpositional (OV) languages were ‘symmetric’ to prepositional (VO)
 2 languages, with Spec’s on the right and with rightward movement, as illus-
 3 trated in (14), one would expect that DemN implied AN, thus ruling out
 4 the existence of postpositional languages with both DemN and NA. But
 5 these are attested (see (10b) above):¹⁷

6
 7 (14) $[_{NP}N] [_{ZP}Z] [_{Adj}ZP] [_{WP}W] [_{Num}WP] [_{YP}Y] [_{Dem} YP] [_{XP}X] [_{XP}] \dots$
 8 

9
 10 The AS system, in ruling out any such mirror-image structures and deriva-
 11 tions, leaves only two general possibilities, beginning from the structure
 12 in (9a) (shared with prepositional languages).¹⁸ Either nothing moves, in
 13 which case we have the order: DEM > Num > Adj > N, as found in, for
 14 example, Hindi (see Hawkins (1983, 119); the same order as that yielded by
 15 prepositional languages where nothing moves); or we have a number of suc-
 16 cessive leftward movements of the complements of the functional heads Z,
 17 W, Y of (9a) to Spec positions of intermediate (possibly Agreement) XPs, as
 18 shown in (15). This gives the N Adj Num Dem order possibility of Green-
 19 berg’s Universal 20 displayed by postpositional OV languages like Selepet
 20 (Hawkins 1983: 119):¹⁹

21
 22 (15) $\dots XP [_{XP}X \dots [_{YP}Dem [_{YP}Y \dots [_{WP}Num [_{WP}W \dots [_{ZP}Adj [_{ZP}Z [_{NP}N]]]]]]]]]]$
 23 

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 30 Evidence apparently supporting the derivation shown in (15) is provided
 31 by the fact that the intermediate steps of (15) are also attested; namely
 32 the orders: Dem N Adj Num, found in such postpositional languages as
 33 Kabardian and Warao (Hawkins 1983, 119), derived via the steps (1)
 34 and (2) of (15), and the order Dem Num N Adj of such postpositional
 35 languages as Burmese, Kokama and Ubykh (Hawkins 1983, 81f.), which
 36 can be taken to be derived via step (1) of (15).²⁰

37 That it is NP raising to the left of the Adj in the latter postpositional
 38 languages (rather than N raising, as in prepositional languages) may
 39 be indicated by the fact that in these languages the Genitive (in Spec,
 40 NP) precedes the N, whereas in prepositional languages when the adject-
 41 ive follows the N so does the Genitive (see Hawkins 1983, 66). This
 42 follows if we have N raising across the Adjective in prepositional lan-
 43 guages ((16a)), and NP raising across the Adjective in postpositional
 44 languages (16b):
 45
 46

- (16) a. ... [_{WP}W [_{ZP}Adj [_{ZP}Z [_{NP}Gen [_{NP}N]]]]]
 b. ... [_{WP}W [_{ZP}Adj [_{ZP}Z [_{NP}Gen [_{NP}N]]]]]

It should be noted that whereas postpositional languages have (successive) leftward XP movements, as seen (and, possibly, no leftward movement of just the N), prepositional languages have N raising, but crucially no leftward XP movements here. If they could move the XP complements of the functional heads W and Y, as illustrated in (17), orders should be possible which are not attested, namely Dem Adj N Num, and Num Adj N Dem:

- (17) ... [_{XP}X ... [_{YP}Dem [_{YP}Y ... [_{WP}Num [_{WP}W ... [_{ZP}Adj [_{ZP}Z [_{NP}N]]]]]]]]]

Hawkins (1983, 118) explicitly notes that no such orders are attested in his data.²¹

In sum, in as much as it is able to derive the Dem Num A N order, as well as the N Dem Num A and the N A Num Dem orders, but is unable to derive the unattested A Num Dem N order (among others), the AS system affords a principled explanation of Greenberg's Universal 20 (with its left/right asymmetry), and Hawkins' refinements of it; a remarkable feat.

POSSIBLE FURTHER RESTRICTIONS OF THE AS SYSTEM

The system proposed in AS drastically limits, as seen, the possibilities made available by UG. Nonetheless, it is possibly open to still more restrictions. For example the targets of many leftward movements are left open, as is the general architecture of the clause, certainly because determining their status is largely an empirical question that has barely begun to be investigated.

Clearly, the predictions made by the system will be all the more precise as these questions are ultimately settled one way or the other.

If projections were not FUNCTIONALLY SPECIALIZED (and labeled), and were not limited in stock, the derivation of the left/right asymmetry in *wh*-movement discussed above in section 2 would not be straightforward. For example, the possibility must be excluded that a head be freely created, to host a *wh*-phrase in its specifier, above the CP in whose specifier IP has raised. If the structure of the clause is fixed once and for all, this possibility may be excluded as a matter of principle.

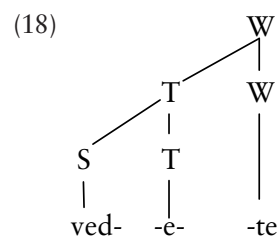
42 *Typological Studies*

1 The existence of more than one CP does not by itself jeopardize the
 2 account of the left/right asymmetry of *wh*-movement, at least if the various
 3 CPs are functionally specialized, and, for example, IP were to raise to the
 4 Spec of a CP higher than the WH CP.²² Once again, this ultimately reduces
 5 to an empirical issue (within a more general matter of principle). The same
 6 is clearly desirable for the ‘space’ below C.²³

7 I will now turn to another apparent consequence of the AS system dis-
 8 cussed by Kayne, suggesting a possible alternative which is still compatible
 9 with the antisymmetric spirit.

11 THE ADJUNCTION SITE OF CLITICS (IN ROMANCE)

12 Differently from Kayne (1975, Chapter 2), AS takes clitics not to adjoin
 13 directly to verbs; a conclusion based on the following *reductio ad absurdum*. If the
 14 LCA extends to subword structure, a verb of the form stem + thematic vowel +
 15 suffix must have the thematic vowel adjoined to the suffix, the head of the word,
 16 and the stem adjoined to the thematic vowel:
 17



19 A clitic could not adjoin to the nonterminal dominating the suffix nor to
 20 that dominating the thematic vowel as it would qualify as a second adjunct.
 21 It could only adjoin to the stem. By the same token, however, if the stem
 22 were preceded by a prefix (which would have to be adjoined to the stem)
 23 the clitic could only be adjoined to the prefix, not to the stem; thus giving
 24 an apparently unnatural result.
 25

26 So, either the LCA does not extend to subword structure, or clitics adjoin
 27 to an (empty) functional head higher than the verb.²⁴

28 Since they clearly adjoin to higher heads in certain cases (for example,
 29 *En fort bien parler* ‘of-it strong well to-speak’—Kayne (1991, 654 fn. 18)),
 30 taking them to always do so allows the LCA to hold of subword structure:
 31 a welcome result because of its restrictiveness.
 32

33 This implies, then, that in a French subject clitic—verb inversion like
 34 (19) the verb is not in C, as there must be a distinct higher head, between
 35 Spec, C and the verb, to which the (object) clitic *la* is adjoined:
 36

- 37 (19) Depuis quand *la* connais-tu?
 38 since when her know you
 39 ‘Since when do you know her?’
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If it may have the desirable effect of giving an account for complex inversion (<i>Quand Jean est-il arrivé?</i> 'When has Jean arrived?'), and the impossibility of <i>*Est Jean à Paris?</i> 'Is Jean in Paris?' in French (see AS, p. 44), this assumption does not extend as straightforwardly to other Romance constructions, where a clitic still precedes a verb which has arguably raised to C. For example, in Italian, the construction in (20), which displays the order complementizer + subject + subjunctive verb, has an alternative where the subjunctive verb precedes the subject and no complementizer can be present, thus suggesting that the V has raised to C. See (20) and (21): ²⁵	1 2 3 4 5 6 7 8 9 10 11
(20) <i>*(Che) tu sia convinto di questo, o no, fa poca differenza.</i> 'Whether (lit. 'that') you are convinced of this, or not, makes little difference.'	12 13 14 15
(21) <i>*(Che) sia tu convinto di questo, o no, fa poca differenza.</i> 'Whether you are (lit. 'Be you') convinced of this, or not, makes little difference.'	16 17 18 19
Crucially, if a clitic is present it must precede the verb (in C):	20 21
(22) <i>Ne sia tu convinto, o no, fa poca differenza.</i> 'Whether you are convinced of this, or not, makes little difference.'	22 23 24
As a matter of fact, French presents a comparable construction:	25 26
(23) a. <i>Peut-être qu'il l'a reçu.</i> Maybe that he it has received 'Maybe he has received it.'	27 28 29
b. <i>Peut-être (*que) l'a-t-il reçu.</i> maybe (*that) it has he received 'Maybe he has received it.'	30 31 32 33
In both cases, the order clitic > verb > subject follows automatically if the clitic is indeed adjoined to the verb in I, before its movement to C across the subject.	34 35 36
In the AS system, there must be a higher C to which the clitic independently moves, and a separate principle that demands that clitics always attach to a head preceding the position of the finite verb, whatever that is, I or C. Note, however, that in the latter analysis one could in principle expect some element to intervene between the clitic and the verb even in the COMP space (as it does in the IP space, as seen above). But no such case (as <i>*Le peut-être a-t-il reçu</i> 'It maybe has he received') is attested, as far as we know, in any regional, stylistic, or ancient variety of French.	37 38 39 40 41 42 43 44
Suppose we were to conclude then that clitics can adjoin to a verb (when this has raised to the relevant functional category). ²⁶ Would that exclude	45 46

1 an extension of the LCA to subword structure? Not necessarily. It seems
 2 possible to retain the extension of the LCA to subword structure while at
 3 the same time permitting clitics to adjoin to verbs; namely by having the
 4 LCA apply in the subword (morphological) component with results that are
 5 ‘invisible’ to the syntactic component.

6 This amounts to saying that a verb, even if morphologically complex
 7 ([re[at[*test*[s]]]]) is syntactically simplex; merely a V.

8 Under a CHECKING BY RAISING theory (Chomsky 1995, AS 140,fn.10),
 9 this conclusion is in fact almost forced, it seems. If words come fully inflected
 10 from the lexicon, should the SYNTACTIC category of the word be determined
 11 by its rightmost morphological element, we would never have a VP, but,
 12 directly TenseP (in a case like *reattested*); or NumberP, in a case like *reat-*
 13 *tests*, if *-s* codes number (Kayne 1989): not a fully satisfactory result.

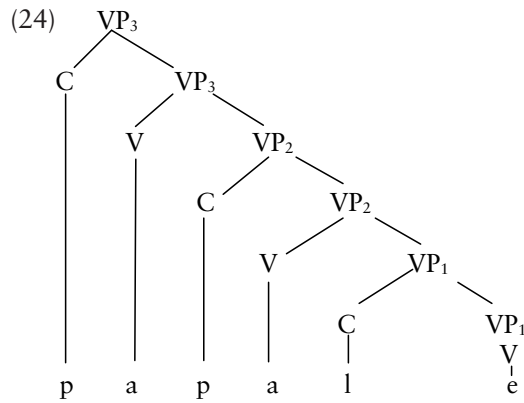
14 Moreover, if the LCA were to extend to phonology, as I tentatively put
 15 forth in the next section, there would be one more reason for separating the
 16 application of the LCA to subword (morphological) and above word (syn-
 17 tactic) structure. For, in that case, I think, we would have little doubt about
 18 the essential irrelevance of any internal phonological structure of the word
 19 to syntax. By the same token, our view of morphological subword structure
 20 vis-à-vis syntactic structure should probably be no different.

23 THE LCA IN PHONOLOGY

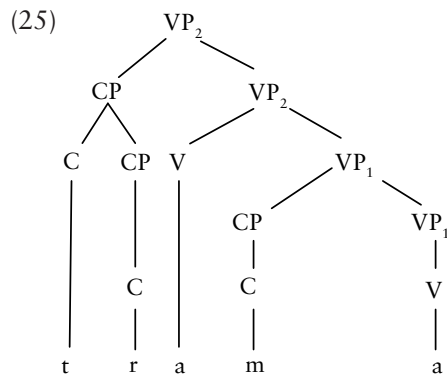
24
 25 As seen, the LCA implies that the antisymmetry of linear order reflects
 26 a comparable antisymmetry in underlying hierarchical structure. In AS,
 27 Kayne considers the consequences of this idea for syntax and morphology.
 28 Suppose we took it to hold of phonology as well. That would mean that
 29 the linear order of segments should reflect a comparable antisymmetric
 30 underlying hierarchical structure. As a matter of fact, such structure is
 31 (virtually) already given if one thinks of syllable structure, which a rich
 32 tradition views in an X-bar format, with the ONSET as the Specifier of a
 33 head (the NUCLEUS), which is taken to form a constituent (the RHYME)
 34 together with a complement (the CODA): [_{syllable} onset [_{rhyme} nucleus coda]],
 35 where syllable = NucleusP, or, for simplicity, V(owel)P (see Kenstowicz
 36 1994, Chapters. 6, 8 and references cited there). In this view, the organi-
 37 zation of segments into syllables would be a consequence of the antisym-
 38 metric nature of language.

39 Needless to say, a proper extension of the LCA to the syllable plane
 40 requires a number of nontrivial modifications of standard assumptions,
 41 whose phonological significance would have to be ascertained. That can-
 42 not be done here. Here we limit ourselves to some of the implications that
 43 ensue from such an extension.

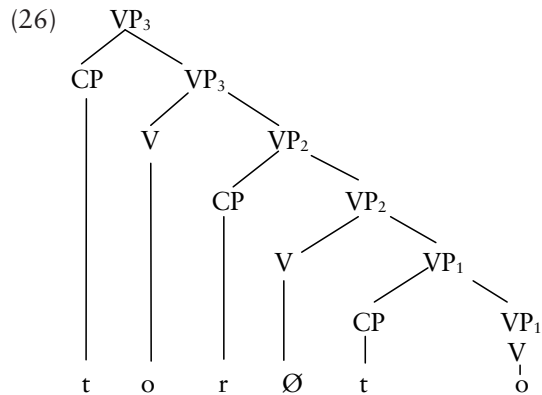
44 For example, to give a total linear order of all the Cs and Vs, the rep-
 45 resentation of a plurisyllabic word would have to look something like the
 46 tree in (24):



Although CV is the unmarked syllable (in some languages, the only type of syllable), departures from it, involving complex onsets and codas, are very common. For onsets, this could imply replacing C with a NONTERMINAL C(onsonant)P (actually expected in the AS system, where heads cannot be in Spec; see fn. 6 above) dominating C with an optional CP complement:²⁷



Codas would instead have to consist of VPs with empty Vs (nuclei)—see (26):



1 The postulation of empty nuclei is not unprecedented. It is in fact system-
2 atically employed in Government Phonology (Kaye et al. 1990, Kaye 1990,
3 Charette 1991 and related work), where consonant clusters are indeed
4 analysed as CV.CV.CV sequences, with general and language particular
5 principles determining where nuclei can be empty, or must be phonetically
6 realized (with an interesting unified analysis of such apparently independ-
7 ent processes as syncope, epenthesis, harmony, metathesis, etc.).

8 Moreover, the general format of (24)/(25)/(26) lets us see a possible way
9 to unify the X-bar and moraic theories of the syllable, which are currently
10 taken to be alternatives. This can apparently be achieved by taking each
11 VP to count as a mora (with the direct consequence that codas—which
12 are onsets of empty nucleus VPs—contribute to the weight of the syllable,
13 a structure consisting of up to 2 (or 3) VPs, while onsets (of overt nucleus
14 VPs) do not by themselves).

15 Other adjustments would be necessary if we were to follow up this exten-
16 sion, which, needless to say, at this stage, can only be a promissory note.

18 19 CONCLUSION

20
21 Even if I have decided to focus here on a very limited number of conse-
22 quences of Kayne's work, I hope I have at least given a sense of the extremely
23 far-reaching implications of his overall theoretical program. If one were
24 not to feel uneasy when comparing the theory of syntax with the theories
25 of more mature sciences, one could picture Kayne's theory as our closest
26 approximation to a revolution, which will be followed by a period of nor-
27 mal science trying out all of its consequences and implications (until the
28 next revolution).

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3 Greenberg's Universal 20 and the Semitic DP¹

One of the programmatic goals of Kayne's (1994) antisymmetry theory is that of accounting for the many left-right asymmetries found in natural languages. In Cinque (1996) [see here Chapter 2], I suggested that in addition to the left-right asymmetries which Kayne discusses, another could be seen to follow elegantly from antisymmetry: that embodied in Greenberg's Universal 20.

After briefly reviewing that proposal, I will examine certain generalizations presented in a recent analysis of Standard Arabic DPs (Fassi Fehri 1998a, 1998b, 1999), suggesting that in that language (and Semitic languages more generally), differently from the received opinion, DPs involve successive internal XP-raising, rather than N-raising (to D), with consequences also for the proper analysis of the so-called Construct State.²

Greenberg's (1966: 87) **Universal 20** reads:

"When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite."

In other words, to the left of the N only one ordering is possible (cf.(2)), while to its right both the same ordering, ((3)a), or its mirror-image, ((3)b), are possible:

- (2) a. Dem > Num > A > N
b. *A > Num > Dem > N

- (3) a. N > Dem > Num > A
b. N > A > Num > Dem

How can we make sense of this left-right asymmetry? Capitalizing on the necessary merger of specifiers to the left of a head, due to Kayne's (1994) Linear Correspondence Axiom, and on the two options open to leftward movements (head-movement and XP-movement), the pattern in (2) and (3) appears to follow if we take the order of the specifiers to be rigidly Dem > Num > A, as shown in (4):

(4) [_{XP}X [_{YP}Dem [_{YP}Y ... [_{WP}Num [_{WP}W ... [_{ZP}AdjP [_{ZP}Z [_{NP}N]]]]]]]]]

If N remains in situ (or moves to a head below the lowest adjective), we have (2)a (Dem > Num > A > N). If N raises as a head to X, we have (3)a (N > Dem > Num > A). If N raises as part of NP, in a “roll-up” fashion, to a Spec,KP in between Num and Adj; then KP raises to a Spec,JP in between Dem and Num; and JP raises to a Spec,XP to the left of Dem, then we get (3)b, the mirror image of the “base generated” sequence (I ignore here the stopping of N or NP in intermediate positions, for which see Cinque 1996 [Chapter 2, here]).

Given this scenario, if the “roll-up” movement is local and successive, like head-movement (and N-raising to X cannot be followed by “roll-up” movements of the remnant), there is no way of generating (2)b. Fassi Fehri (1998a, 1998b, 1999) shows that Standard Arabic (but, apparently, the same, slightly parametrized, holds in the other Semitic languages) conforms to Greenberg’s universal, in that it is N A Num Dem (cf. (5)), as well as Dem N A Num (cf. (6)a) and Dem Num N A (cf. (6)b), where the obligatory post-nominal APs are themselves in an order which is the mirror image of the English order (cf.(7)):

- (5) a. *ṣ-ṣuḥuf-u* *l-jadiidat-u* *t-talaat-u* (*NA Num Dem*)
 the-newspapers.nom the-new.nom the-three.nom
 haadihi
 these
 ‘These three new newspapers’
- b. **ṣ-ṣuḥuf-u* *haadihi* *t-talaat-u* (**N Dem Num A*)
 the-newspapers.nom **these** the-three.nom
 l-jadiidat-u
 the-new-nom
 ‘These three new newspapers’
- (6) a. *haadihi ṣ-ṣuḥuf-u* *l-jadiidat-u* (*Dem NA Num*)
these the-newspapers.nom the-new.nom
 t-talaat-u
 the-three.nom
 ‘These three new newspapers’
- b. ? *haadihi t-talaat-u* *ṣ-ṣuḥuf-i/in* (*Dem Num NA*)
these the-three.nom the-newspapers.gen
 l-jadiidat-u
 the-new-nom
 ‘These three new newspapers’

- (7) a. l-hujuum-u l-ʔamiriikiyy-u l-wahšiy-y 1
the.attack.nom the.American.nom the.savage.nom 2
l-baliid-u l-muḥtamal-u 3
the.stupid.nom the-probable.nom 4
‘The probable stupid savage American attack’ 5
6
b. šaay-un siiniy-un ʔaxdar-u jayyid-un (N AP₃ AP₂ AP₁) 7
tea.nom Chinese.nom green.nom excellent-.nom 8
‘An excellent green Chinese tea’ (AP₁ AP₂ AP₃ N) 9

These important observations suggest that the N raises as part of a larger XP, *obligatorily* around the APs, reversing their base order,³ and *optionally* around the higher specifiers Num and Dem, and the still higher Q (cf. (8)): 11
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- (8) a. l-kutub-u l-xadraʔ-u t-talaʔat-u (N A Num Q) 14
the.books.nom the.green.nom the.three.nom 15
kull-u-haa 16
all.nom.them 17
‘All the three green books’ 18
19
b. kull-u l-kutub-i l-xadraʔ-i t-talaʔat-i (QNANum) 20
all.nom.them the.books.gen the.green.gen the.three.gen 21
‘All the three green books’ 22
23
24

If there is a Construct State genitive, it is right adjacent to the N and precedes the APs (which are in the usual mirror-image order): 25
26

- (9) a. hujuum-u l-hukumat-i l-wahšiy-y l-baliid-u 27
attack.nom the.government.gen the.savage.nom the.stupid.nom 28
l-muḥtamal-u 29
the.probable.nom 30
‘The government’s probable stupid savage attack’ 31
32
b. kutub-u l-ʔaqqad-i l-xadraʔ-u t-talaʔat-u kull-u-haa 33
books.nom al-Aqqad.gen the.green.nom the.three.nom all.nom.them 34
‘All of al-Aqqad’s three green books’ 35
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37

Fassi Fehri, adopting the standard N-raising to D analysis, assumes, in addition to N-movement, a separate movement of the possessor and separate movements of the APs (the latter motivated by the need to reverse their order). But his findings follow in a simple and unified fashion from successive leftward movements of larger and larger XPs: first of the (remnant) NP around the genitive possessor (yielding the Construct State); then, of the larger phrase containing the Construct State around the next higher specifier, and so on. The otherwise curious conspiracy of three different types of movements can be dispensed with. 38
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Let's consider how.

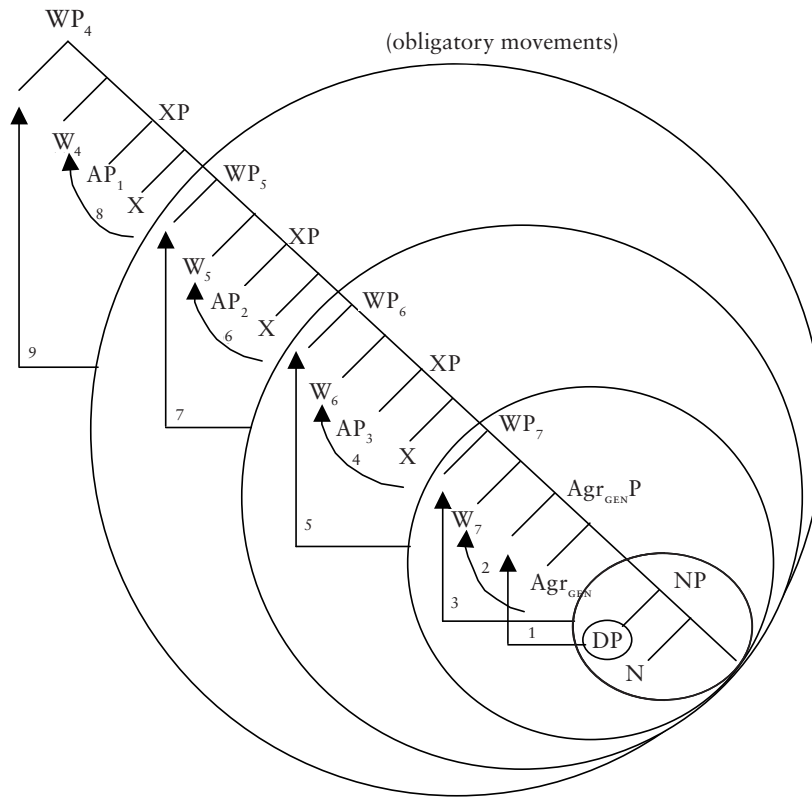
Following Siloni (1994, chapter 2), I take the argument DP to raise to the Spec of an immediately dominating Agr_{GEN}P, where it is assigned (structural) Genitive (cf. also Fassi Fehri 1993, 220). In line with Kayne (1998a), I assume Agr_{GEN} raises to a head W, thereby activating Spec,WP, which attracts the remnant NP (the complement of the raised Agr_{GEN} head). This is the core of the Construct State: [_{WP} [_{NP} N] Agr_{GEN}+W [_{Agr_{GEN}P} DP t t]].

The analogous raising of the next head, X, to W₆ activates Spec,WP₆, which attracts the complement of the raised head X, WP₇, yielding the order N DP_{GEN} AP₃. The subsequent head-raising to WP₅, and attraction of WP₆ to Spec,WP₅, yields the order N DP_{GEN} AP₃ AP₂.

Finally, the entirely similar head-raising to WP₄, and attraction of WP₅ to Spec,WP₄ yields the order N DP_{GEN} AP₃ AP₂ AP₁, which is the exact mirror-image of the base order.

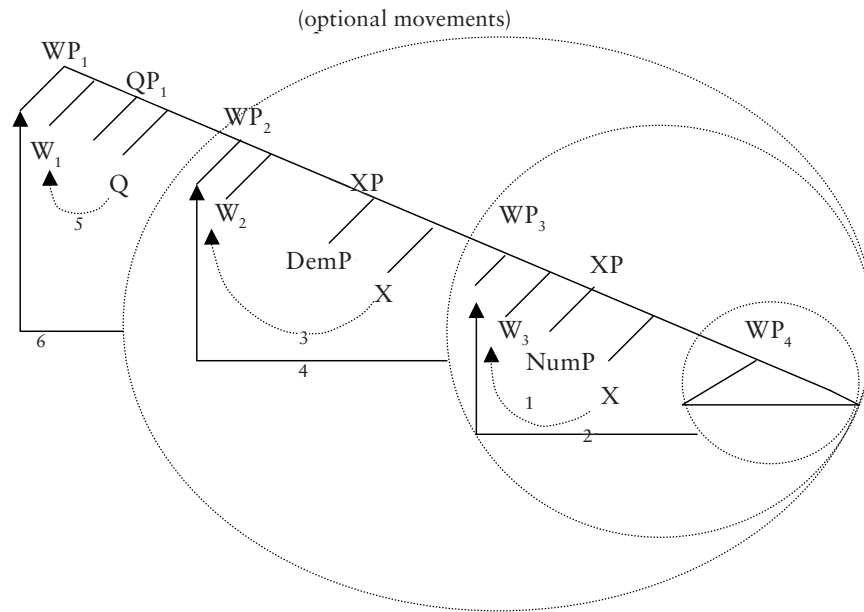
The derivation is shown in (10):

(10)



Above the projections hosting the APs, head-raising and attraction to Spec of WP are apparently optional:⁴

(11)



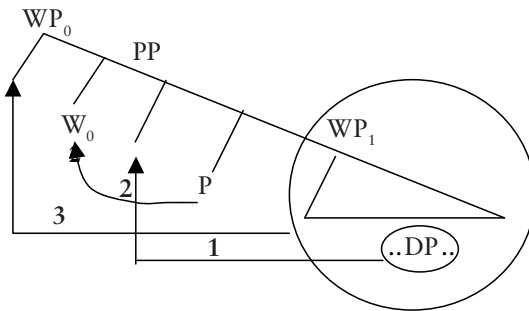
Depending on whether just WP₄ raises to Spec,WP₃, or WP₄ to Spec,WP₃, WP₃ to Spec WP₂, etc., one gets the different possibilities of (12), all attested in Standard Arabic (cf. again Fassi Fehri 1998a, 1998b, 1999):

- (12) a. Q Dem Num N A₃ A₂ A₁
- b. Q Dem N A₃ A₂ A₁ Num
- c. Q N A₃ A₂ A₁ Num Dem
- d. N A₃ A₂ A₁ Num Dem Q

As prepositional complements, when present, are DP-final (cf. (13)), I will assume, following Kayne (2000a), that the preposition is generated above the containing DP, attracts to its Spec its complement DP, and raises to W, W attracting the remnant to its Spec. Cf. (14):

- (13) a. muḥaarabat-u l-ḥukuumat-i l-muntaḍarat-u li-l-irtišaa?-i
 fighting.nom the.government.gen the.expected.nom of.the.corruption
 ‘The expected fighting of the corruption by the government’

(14)



This analysis calls into question the traditional analysis of the Construct State as N-raising-to-D (cf. Ritter 1988, and subsequent works) as it reanalyses it as local NP movement to Spec, AGRgen+W (followed by possible further roll-up movements).⁵

Independent evidence that XP-raising rather than N-raising to the left of the genitive DP is involved in the Construct State in Arabic comes from the possibility of coordinating two head-nouns. See (15):

- (15) taṭwiir-u wa taḥdit-u l-luġat-i
 development.nom and modernization.nom the.language.gen
 d-daaʔim-aa-ni
 the.constant.dual.nom
 ‘The constant development and modernization of the language’

If no coordination of X⁰s is possible, but only of XPs (Kayne 1994, 59ff), (15) indicates that the apparent head-noun of the Construct State is actually (at least) a NP (the marking of dual number on the adjective rules out the possibility that (15) involves the coordination of one elliptical and one full Construct State DP, each containing a single head-noun).⁶

The XP-raising analysis of the Semitic DP just sketched derives naturally many of the characteristic properties of Construct States. See the Appendix.

This analysis, if correct, calls into question N-to-D raising not only for Semitic, but also for Celtic and Romance, as successive raisings of the NP from Spec,WP to Spec,WP (with no pied-piping of the containing WP) could be involved, giving the illusion of N-raising.

The general pattern of the Celtic DP is the one given in (16) (cf. Rouveret 1994, chapter 3; Duffield 1995, chapter 5):

- (16) Q NUM A₁ N A₂ A₃ GEN/DEM (P DP)

As opposed to Semitic, in the Irish Construct State the head noun can (in fact, must—Duffield 1995, 290) be separated from the Genitive DP by the lower APs, if present.⁷

This suggests that the (remnant) NP, after being attracted to the Spec of AGR_{gen+W} (as in Semitic), continues alone from Spec to Spec, without pied-piping WP (obligatorily to the Spec of a W above the lower APs). This is supported by the fact that the serialization of the APs corresponds to the direct one of English, not to the inverse one of Semitic (Sproat and Shih 1991, 586f; Duffield 1995, 295ff).⁸

The same situation holds in Welsh (Rouveret 1994, 209ff.).⁹

Romance, which conforms to the minimally different pattern of (17) (cf. Cinque 1994, 2010a), can be taken to differ from Celtic in not having an active AGR_{GEN} licensing a structural Genitive DP, thus requiring the insertion of a Preposition above the DP to license the subject DP (Central and Eastern Romance also differ from Celtic in not allowing a demonstrative in the postnominal “deictic” demonstrative position—cf. Brugè 1996, Brugè and Giusti 1996).¹⁰

(17) Q DEM NUM A₁ <N> A₂ <N>A₃ P DP

As a matter of fact, Romanian, among the Romance languages, provides independent evidence for XP-raising (to Spec,DP) rather than N-raising (to D). The first piece of evidence comes from the possibility of such cases as (18)a, where an entire phrase (an AP) is found to the left of the determiner; the second from coordination facts entirely parallel to the Semitic fact noted above (cf. (18)b, and especially (18)c,d, provided by Giuliana Giusti and Carmen Dobrovie Sorin)¹¹:

- (18) a. Foarte frumosul portret
very beautiful.the painting ‘the very beautiful painting’
- b. Soțul și soția precauți nu fac mai mult de un copil
husband-the (sing) and wife-the (sing) careful (pl) not make more than a child
- c. Directorul și presedintele nou
The new(sing) director and president (one individual)
- d. Directorul și presedintele noi
The new(pl) director and president (two individuals)

APPENDIX: THE MAIN PROPERTIES OF THE SEMITIC CONSTRUCT STATE (CF. FASSI FEHRI 1993, BORER 1999, SHLONSKY 2004) AND THEIR RELATION TO THE ABOVE ANALYSIS

- 1) Inseparability of the “head noun” + genitive DP (e.g., no adjective can intervene between them)
- a) (daxal-tu) daar-a r-rajul-i l-waasi’at-a
(entered-I) house-acc the-man-gen the-large-acc
‘(I entered) the man’s large house’

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- b) *... daar-a l-waasi'at-a r-rajul-i
 ... house-acc the-large-acc the-man-gen
 '... the man's large house'

The strict adjacency follows from attraction of the genitive DP to Spec,AGR_{GEN}, raising of AGR_{GEN} to W, and attraction of the remnant NP to Spec,WP (cf. (10)).

2) **Adjectival modification of the “head noun” follows the rightmost genitive DP (and it may modify any of the nouns if featurally non-distinct)**

- (Hebrew) *delet beit morat ha-kite ha-yafa* (Borer 1999, 45)
 door-f house-m teacher-f the-class-f the-beautiful-f
 a) 'the door of the house of the teacher of the beautiful class'
 b) 'the door of the house of the beautiful teacher of the class'
 c) 'the beautiful door of the house of the teacher of the class'

This follows from the fact that the AP can be internal to the DP headed by *kite*, or that headed by *morat*, or that headed by *delet* (though not the one headed by *beit*, which is featurally distinct), and the fact that in either case it ends up in final position by being crossed over by the NPs *kite*, *morat ha-kite*, *delet beit morat ha-kite*, respectively.

3) **If more than one noun is modified by an adjective, the configuration is nested: N₁ N₂ A₂ A₁**

This also follows directly from the ‘base-structure’ [_{DP1} AP₁ [_{DP2} AP₂ [_{NP2} N₂]] [_{NP1} N₁]] by NP₂ crossing over AP₂ ([_{DP1} AP₁ [_{DP2} [_{NP2} N₂] AP₂ t] [_{NP1} N₁]]), NP₁ crossing over the genitive DP₂ to Spec,WP ([_{DP1} AP₁ [_{NP1} N₁] [_{DP2} [_{NP2} N₂] AP₂ t] t]), and WP crossing over AP₁, to yield: [_{DP1} [_{NP1} N₁] [_{DP2} [_{NP2} N₂] AP₂ t] t AP₁ t].

4) **“(In)definiteness spreading” (the definiteness value of the head depends on that of the genitive)**

- a) ... daar-a r-rajul-i l-waasi'at-a
 house-acc the-man-gen the-large-acc
 'the/*a large house of the man'
 b) ... daar-a rajul-i-n waasi'at-a
 house-acc man-gen large-acc
 'a/*the large house of a man'

This property may follow from feature sharing. The (in)definiteness feature of the DP in Spec,AGR_{GEN} is shared under Spec/head agreement with AGR_{GEN}. When AGR_{GEN} raises to W, it enters another Spec/head agreement relation with Spec,WP (hence can transmit its (in)definiteness feature to the remnant NP raised to Spec,WP).

5) The “head noun” cannot be directly modified by a determiner

(daxal-tu) (*d-)daar-a r-rajul-i l-waasi'at-a
 (entered-I) (the-)house-acc the-man-gen the-large-acc
 ‘(I entered) the man’s large house’

This property may be related to the preceding. If the (in)definiteness feature is already visible through Spec/head agreement with the (in)definiteness feature of the genitive, it need not (hence, by economy, cannot) be realized. This is more natural if the definite article in Semitic is “a base-generated feature on the head N”, as proposed in Borer (1989). For a prosodic approach to the question, see Siloni (2000, sect.4).

6) The non prepositional nature of the genitive

As opposed to the so-called Free State, the Construct State genitive is not introduced by a preposition (Arabic *li-*, etc., Hebrew *šel*). This follows from the “structural” nature of the genitive assigned in Spec,AGR_{GEN}P. The “structural” nature of the genitive in the Construct State is shown by its occurrence in ECM contexts:

- (i) dann-u r-rajul-i dakiyy-an xataʔun
 believing-nom the-man-gen clever-acc error-nom
 (Literally: the man’s believing clever (is) an error)
 ‘Believing that the man is clever is an error’

(Arabic, Fassi Fehri 1993, 220)

- (ii) meci’at ha-ne’ešam ‘ašem vs.*ha-meci’a šel ha-ne’ešam ‘ašem
 finding the-accused guilty the-finding of the-accused guilty

(Hebrew, Siloni 1997, 41)

7) The obligatoriness of the genitive (more clearly visible in Hebrew)

See (Hebrew) Beit *(more) (‘a house (of a teacher)’) vs. Bayit (šel mora) (‘a house (of a teacher)’). This follows from the fact that the Construct State is dependent on the presence of AGR_{GEN}, which attracts the remnant NP to its Spec (assigning to it structural Genitive Case).

8) The “head noun” cannot bear main stress (in Hebrew it may have a phonetic shape different from that of the Free State)

Following Siloni (1997, 43), “[t]his may be conceived as some phonetic reflex of the presence of AGR_{GEN} features on the noun” (to be checked in Spec,AGR_{GEN}P). For more recent discussion of the prosodic nature of Case checking, see Siloni (2000).

1 9) **A thematic restriction** (Borer 1996, 41; Siloni 1994; Siloni 1997, 96ff;
2 Shlonsky 2004, sect. 8)

3
4 When more than one genitive argument is present (one representing the
5 theme, the other the agent or the possessor) the genitive member of the
6 Construct must be the theme (examples from Shlonsky 2000):

- 7
8 a. *tmunat ha xamanyot šel vangox*
9 picture the sunflowers of Van Gogh
10
11 b. **tmunat vangox šel xamanyot*
12 picture Van Gogh of the flowers

13 If the theme is not genitive, the genitive member of the Construct can be an
14 agent or a possessor (examples from Siloni 2000):

- 15
16 c. *mixtavey ha xayal le-imo*
17 letters the-soldier to-mother-his
18
19 d. *harisat ha-cava et ha-ir*
20 destruction the army *acc* the-city

21 If only one genitive can be assigned within a DP (cf. Cinque 1995c), then
22 the second genitive must be assigned within a reduced relative clause.
23 When both a theme and an agent (or a possessor) are present, only the lat-
24 ter can be generated in a reduced relative clause, as themes (complements
25 more generally) cannot (cf. *A student which is of physics; *A letter which
26 is to his mother).¹²
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4 Deriving Greenberg's Universal 20 and Its Exceptions*

Greenberg's (1963) Universal 20,¹ under its most sensible interpretation (cf. Hawkins 1983, 117ff), states (1) that in prenominal position the order of demonstrative, numeral, and adjective (or any subset thereof) conforms to the order Dem > Num > A, and (2) that in postnominal position the order of the same elements (or any subset thereof) conforms either to the order Dem > Num > A or to the order A > Num > Dem.

Forty years after, the first part of this statement remains (virtually) unchallenged,² while the second part has proven both too restrictive and too permissive.

Some studies, for example, have uncovered the existence of postnominal orders that are excluded by Greenberg's formulation. Heine (1981) reports for Gabra (Cushitic), Luo (Nilotic), and Logoli (Bantu), the order N Num A Dem, which conforms neither to Dem > Num > A, nor to A > Num > Dem. Hawkins (1983, 119), citing Hyman (1979, 27), mentions the existence in Aghem (Bantu) of the order N A Dem Num, which again conforms neither to Dem > Num > A, nor to A > Num > Dem, and reports, from Hyman (1981, 31), that Noni (Bantu), in addition to N Dem Num A, displays the order N Dem A Num, again unexpected under Greenberg's formulation.

On the basis of these facts, Hawkins (1983, 119f) concludes that the second part of Greenberg's Universal 20 must be abandoned, and that for the postnominal order of demonstrative, numeral and adjective essentially every combination is possible.³ See (1), his proposed revision of Greenberg's Universal 20:

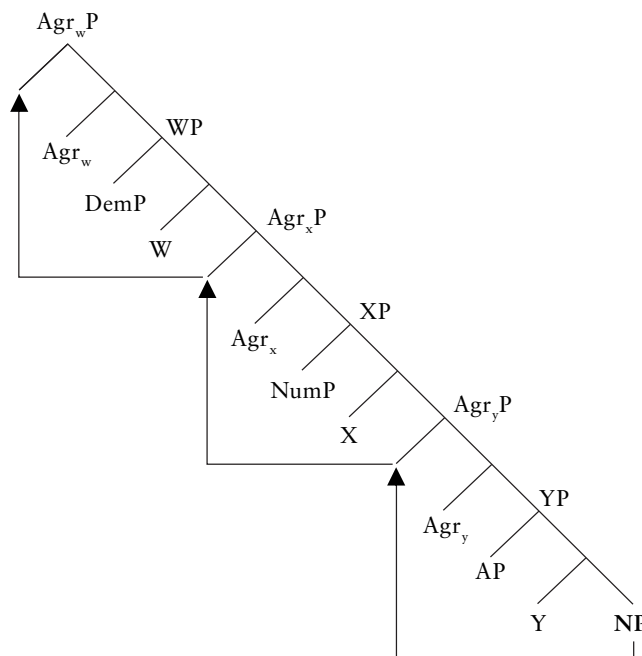
- (1) "When any or all of the modifiers (demonstrative, numeral, and descriptive adjective) precede the noun, they (i.e., those that do precede) are always found in that order. For those that follow, no predictions are made, though the most frequent order is the mirror-image of the order for preceding modifiers. In no case does the adjective precede the head when the demonstrative or numeral follow" (= (20') of Hawkins (1983, 119f)).

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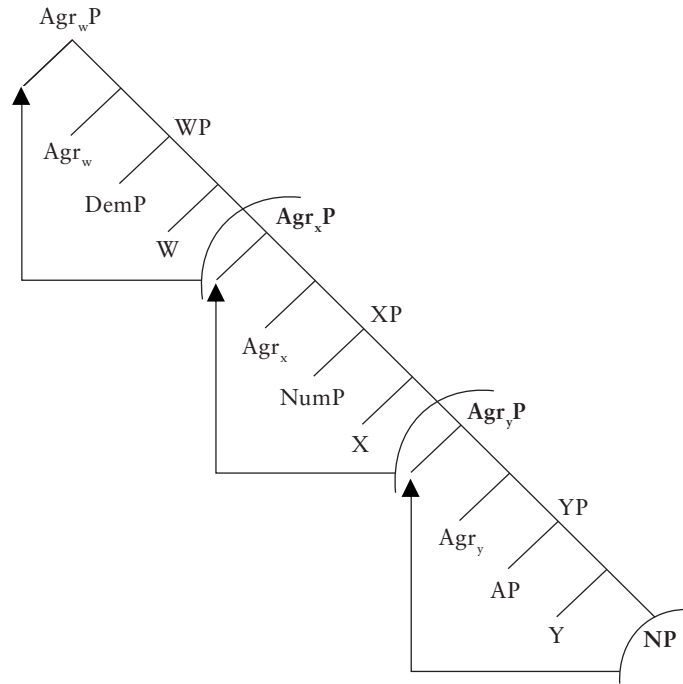
Given that certain postnominal order possibilities (namely, *N Num Dem A and *Num N Dem A⁴) are (still) unattested, as far as I was able to determine (see later), and given that even the actually attested orders differ significantly, as we shall see, in the percentage of languages that instantiate them, I will not follow Hawkins, and Croft and Deligianni, in their conclusion that postnominally anything goes, but will propose a refinement of an analysis I suggested in Cinque (1996, 2000) to derive Greenberg's basic generalization; one which may also derive its exceptions, and the different degree of markedness of the various orders.

The analysis I suggested in those works aimed at deriving the essential left-right asymmetry in word order possibilities found prenominally (one) and postnominally ((at least) two), starting from the idea (actually forced by Kayne's 1994 Antisymmetry Theory) that generating modifiers symmetrically to the left and to the right of the N could not easily account for the absence, prenominally, of the order A Num Dem.⁵ This asymmetry could instead be made sense of, I submitted, if all orders are derived by moving (or not moving) the NP around the modifiers, base-generated prenominally in the fixed order Dem Num A.

If nothing moves, one obtains the unique (Merge) order found prenominally (the Dem Num A N order). As to the two postnominal orders, they arise via the two ways in which the NP raises; either alone, from Spec to Spec, of agreement projections found above each of the functional projections hosting Adjectives, Numerals, and Demonstratives, to give the order N Dem Num A (as in Fig. 1),⁶



or by moving successively to each such Spec and pied-piping the category that dominates it, in a “roll-up” fashion that reverses the order of the modifiers, to give N A Num Dem (as in Fig. 2):



This was a simplification in that that analysis generated only the orders in (2) and, taking partial movements into consideration, those in (3); six out of the 24 orders which are the mathematically possible combinations of the four elements Dem Num A N (factorial 4 = 4x3x2x1 = 24):

- | | |
|-------------------|--------------------|
| 2) a. Dem Num A N | (3) a. Dem Num N A |
| b. N Dem Num A | b. Dem N Num A |
| c. N A Num Dem | c. Dem N A Num |

The crucial question then is: of the 24 orders, which ones are actually attested? And, if more are attested than the six indicated, how can the attested ones be derived in this system without also deriving the unattested ones?

(4) shows all the 24 orders. The “√” and “*” preceding them indicate whether the order is “attested”, or “non-attested”, respectively. This indication is based on the typological (or other) sources available in the literature on the order of N, demonstrative, numeral, and adjective (which I have been able to find). The “Ø” and references following some of the orders indicate that in those references the order in question

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1 is explicitly claimed not to be attested. (The orders in a box indicate the
 2 ones by far most common. See the remark in Hawkins' revised formula-
 3 tion of Greenberg's Universal 20 in (1) about the mirror-image of the
 4 prenominal order being the most frequent order in postnominal position.
 5 This is indeed matched by the relatively few languages instantiating the
 6 N Dem Num A order, as already noted in Greenberg's remark quoted in
 7 note 10 below.)
 8
 9

10	(4) a.	√	Dem Num A N		(very many languages) ⁷	
11	b.	√	Dem Num N A		(many languages) ⁸	
12	c.	√	Dem N Num A		(very few languages) ⁹	
13	d.	√	N Dem Num A		(few languages) ¹⁰	
14	<hr/>					
15	e.	*	Num Dem A N		(∅—Greenberg 1963; Hawkins 1983)	
16	f.	*	Num Dem N A		(∅—Greenberg 1963; Hawkins 1983)	
17	g.	*	Num N Dem A		(∅—cf. Lu 1998, 183)	
18	h.	*	N Num Dem A		(∅—cf. Greenberg 1963; Lu 1998, 162)	
19	<hr/>					
20	i.	*	A Dem Num N		(∅—Greenberg 1963; Hawkins 1983)	
21	l.	*	A Dem N Num		(∅—Greenberg 1963; Hawkins 1983)	
22	m.	√	A N Dem Num		(very few languages) ¹¹	
23	n.	√	N A Dem Num		(few languages) ¹²	
24	<hr/>					
25	o.	*	Dem A Num N		(∅—Greenberg 1963; Hawkins 1983)	
26	p.	√	Dem A N Num		(very few languages) ¹³	
27	q.	√	Dem N A Num		(many languages) ¹⁴	
28	r.	√	N Dem A Num		(very few languages—possibly spurious; see note 27)	
29	<hr/>					
30	s.	*	Num A Dem N		(∅—Greenberg 1963; Hawkins 1983)	
31	t.	√	Num A N Dem		(very few languages) ¹⁵	
32	u.	√	Num N A Dem		(few languages—but see note 32) ¹⁶	
33	v.	√	N Num A Dem		(few languages) ¹⁷	
34	<hr/>					
35	w.	*	A Num Dem N		(∅—Greenberg 1963; Hawkins 1983)	
36	x.	*	A Num N Dem		(∅—Greenberg 1963; Hawkins 1983)	
37	y.	√	A N Num Dem		(very few languages) ¹⁸	
38	z.	√	N A Num Dem		(very many languages) ¹⁹	
39	<hr/>					

41 Keeping to the idea that no symmetric base-generation of modifiers is
 42 possible, and that postnominal orders are only a function of the raising of
 43 the NP (or of an XP containing the NP), it seems possible to derive all the
 44 attested orders, without also deriving the unattested ones. What we have to
 45 assume is the following:
 46

5) a.	Order of merge: [. . . [_{WP} Dem . . . [_{XP} Num . . . [_{YP} A [_{NP} N]]]]] ²⁰	1
b.	Parameters of movement:	2
	i) No movement (unmarked), or	3
	ii) NP movement plus pied-piping of the <i>whose picture</i> -type ²¹ (unmarked), or	4
	iii) NP movement without pied-piping (marked), or	5
	iv) NP movement plus pied-piping of the <i>picture of who</i> -type ²² (more marked still)	6
	v) total (unmarked) vs. partial (marked) movement of the NP with or without pied-piping (in other words, the NP raises all the way up, as in (4)d,n,r,v,z, or just partially, as in (4)b,c,m,p,q,t,u,y, around its modifiers).	7
	vi) Neither head movement nor movement of a phrase not containing the (overt) NP are possible (except perhaps for focus-related movements of phrases to a DP initial position). ²³	8
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	Let's consider how these assumptions manage to derive the attested orders, and fail to derive the unattested ones (in the computation of markedness, we take the markedness induced by partial movement to be less severe than the markedness induced by movement without pied-piping, in turn less severe than that induced by movement with pied-piping of the <i>picture of who</i> -type):	17
		18
		19
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		23
(4) a.	(Dem Num A N) is derived if nothing moves (5bi) (no marked option: very many languages)	24
		25
(4) b.	(Dem Num N A) is derived from Dem Num A N if NP raises one notch, around A, either with (vacuous) pied-piping of the <i>whose picture</i> -type (5bii) (unmarked) ²⁴ , or without pied-piping (5biii) (marked) (despite the markedness of partial movement, it includes the unmarked case of pied-piping: many languages).	26
		27
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		31
(4) c.	(Dem N Num A) is derived if NP moves two notches, around A and Num (i.e., partially—marked option) without pied-piping (5biii: marked option) (two marked options: very few languages).	32
		33
		34
(4) d.	(N Dem Num A) is derived if NP moves three notches, around A, Num, and Dem (i.e. all the way up) without pied-piping (5biii: marked) (one marked option: few languages).	35
		36
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		38
(4) e.	(Num Dem A N) cannot be derived through (5). NP has not moved, and the modifiers to its left are in the wrong order of merge (cf. 5a).	39
		40
		41
(4) f.	(Num Dem N A) cannot be derived through (5). Raising of NP without pied-piping implies a wrong order of merge of the modifiers (Num Dem A N) (cf. 5a). Raising of NP with pied-piping of the <i>picture of who</i> -type either of [Dem N] or of [Num Dem N]	42
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		45
		46

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- 1 also implies a wrong order of merge (either Num A [Dem N], or A
 2 [Num Dem N]).²⁵
- 3
 4 (4) g. (Num N Dem A) cannot be derived through (5). Raising of NP
 5 without pied-piping implies that the merge order is Num Dem A N,
 6 which is a wrong order of merge. Raising of NP with pied-piping of
 7 the *whose picture*-type again implies a wrong order of merge of the
 8 modifiers (Num A Dem N), with N first raising around Dem and
 9 then [N Dem] raising around A. Raising of NP with pied-piping
 10 of the *picture of who*-type (raising of [Num N] two notches) also
 11 implies a wrong order of merge of the modifiers (Dem A Num N).²⁶
- 12 (4) h. (N Num Dem A) cannot be derived through (5). Raising of NP
 13 without pied-piping implies a wrong order of merge (Num Dem A
 14 N). Raising of NP with successive pied-pipings of the *whose pic-*
 15 *ture*-type also implies a wrong order of merge (A Dem Num N).
 16 Raising of NP without pied-piping around Dem and Num, followed
 17 by raising with pied-piping around A would derive (4)h, but, again,
 18 from a wrong order of merge (A Num Dem N) (similarly if NP
 19 were to move around Num and pied-pipe it to the left of A and then
 20 move on without further pied-pipings; the order of merge in this
 21 case would be Dem A Num N. Again the wrong order).
- 22 (4) i. (A Dem Num N) cannot be derived through (5). NP has not moved,
 23 and the modifiers to its left are in the wrong order of merge (cf. 5a).
- 24 (4) l. (A Dem N Num) cannot be derived through (5). NP has moved
 25 one notch, but the two modifiers to its left are in the wrong order
 26 of merge (cf. 5a). (4)l could also arise via raising of NP with pied-
 27 piping of the *picture of who*-type of either Dem N or A Dem N
 28 around Num, but both derivations presuppose a wrong order of
 29 merge (A Num Dem N, and Num A Dem N, respectively).
- 30 (4) m. (A N Dem Num) has a well-formed, though marked, derivation with
 31 raising of NP plus pied-piping of the *picture of who*-type of the lowest
 32 modifier (A), followed by raising of [A N] without pied-piping around
 33 both Num and Dem (two marked options: very few languages).
- 34 (4) n. (N A Dem Num) has a derivation with NP raising past A, followed
 35 by pied-piping of the *whose picture*-type past Num, followed by
 36 raising [N A] without pied-piping (marked) past Dem (one marked
 37 option: few languages).
- 38 (4) o. (Dem A Num N) cannot be derived through (5). NP has not moved,
 39 and the modifiers to its left are in the wrong order of merge (cf. 5a) (cf.
 40 note 2 for a discussion of the apparent existence of some such cases).
- 41 (4) p. (Dem A N Num) has a derivation with partial (marked) raising of
 42 NP plus pied-piping of the *picture of who*-type of [A N] (marked)
 43 around Num (two marked options: very few languages).
- 44
 45
 46

(4) q.	(Dem N A Num) has a derivation from (5a) involving partial (marked) raising of NP around A plus raising with pied-piping of the <i>whose picture</i> -type of [N A] around Num (one marked option: many languages).	1 2 3 4
(4) r.	(N Dem A Num). This order, if genuine (cf. note 27), may be especially marked as its derivation from (5a) would seem to involve raising of NP with successive pied-pipings of the <i>whose picture</i> -type around A and Num (alternatively, a single raising of the <i>picture of who</i> -type of [A N] around Num) and then extraction of the sole NP around Dem. ²⁷	5 6 7 8 9 10 11
(4) s.	(Num A Dem N) cannot be derived through (5). NP has not moved, and the modifiers to its left are in the wrong order of merge (cf. 5a).	12 13
(4) t.	(Num A N Dem) has a derivation with partial (marked) raising of NP plus pied-piping of the <i>picture of who</i> -type of A and Num ([Num A N]) (marked) around Dem (two marked options: very few languages).	14 15 16 17 18
(4) u.	(Num N A Dem) has a derivation with partial (marked) raising of NP around A, followed by raising plus pied-piping of the <i>picture of who</i> -type of [Num N A] (marked) around Dem (two marked options: few languages (but see note 32)).	19 20 21 22
(4) v.	(N Num A Dem) has a derivation with raising of NP without pied-piping around A and Num (marked), followed by raising plus pied-piping of the <i>whose picture</i> -type of [N Num A] around Dem (one marked option: few languages).	23 24 25 26 27
(4) w.	(A Num Dem N) cannot be derived through (5). NP has not moved, and the modifiers to its left are in the wrong order of merge (cf. 5a).	28 29
(4) x.	(A Num N Dem) cannot be derived through (5). Raising of NP without pied-piping implies a wrong order of merge of the modifiers (A Num Dem N) (cf. 5a). Raising of NP with pied-piping of the <i>picture of who</i> -type either of [Num N] or of [A Num N] also implies a wrong order of merge (either A Dem [Num N], or Dem [A Num N]).	30 31 32 33 34 35
(4) y.	(A N Num Dem) has a derivation from (5a) with raising of NP plus pied-piping of the <i>picture of who</i> -type of A around Num (marked), followed by raising of [A N Num] around Dem (one marked option: few languages). ²⁸	36 37 38 39
(4) z.	(N A Num Dem) has a derivation from (5a) involving raising of NP with successive pied-pipings of the <i>whose picture</i> -type all the way up (no marked option: very many languages). ²⁹	40 41 42 43
	The fact that all N-final orders which do not respect the Dem Num A order ((4)e: Num Dem A N; (4)i: A Dem Num N; (4)o: Dem A Num N; (4)w: A	44 45 46

1 Num Dem N) are very clearly unattested can indeed be taken as an indica-
 2 tion that it is the raising of NP (or of an XP containing it) that is responsible
 3 for word order variation within the DP (perhaps, more generally, that it is
 4 the raising of the lexical part of a phrase that is responsible for word order
 5 variation within its “extended projection”).³⁰

6 This offers a way to make sense of the fact that only to the right of the N
 7 are more orders possible (indeed, those deriving from the different modes
 8 in which the NP, or an XP containing it, raises).

9 It also offers a way to derive, at least in part, the different degrees of
 10 markedness of each order (and, we take, the ensuing differences in the num-
 11 ber of languages that instantiate them).

12 Although I know of no clear independent reason why movement *without*
 13 pied-piping should count as more marked than movement *with* pied-piping
 14 (of the *whose picture*-type) (whence the respective numbers of languages
 15 instantiating each order³¹), it seems natural that those orders that crucially
 16 involve pied-piping of the *whose picture*-type in their derivation should be
 17 less marked (and be represented by more languages) than those involving
 18 pied-piping of the *picture of who*-type.³² The different degree of marked-
 19 ness of the two types of movement appears to be suggested independently
 20 by contrasts like the following in English (and corresponding contrasts in
 21 other languages): *Whose pictures did you see yesterday?* vs. *?Pictures of*
 22 *who did you see yesterday?* *Now I know whose picture he saw yesterday,*
 23 *vs. *Now I know a picture of who he saw yesterday.*

26 QUESTIONS AND IMPLICATIONS

27
 28 The account sketched above raises a number of questions, which given our
 29 present state of knowledge can only receive very speculative answers. Here,
 30 I will briefly consider the following:

- 31
 32 (6) a. What triggers the movement of the NP (with or without pied-piped
 33 material) within the DP?
 34 b. Why are there languages that do not have movement of the NP
 35 (with or without pied-piped material)?
 36 c. Where does the NP (with or without pied-piped material) move to?
 37 d. Why is movement of phrases other than the NP (with or without pied-
 38 piped material) unavailable?
 39

40 One possible answer to (6)a and b relates to the presumable need for the
 41 various phrases that make up the “extended” projection of the NP (in
 42 Grimshaw’s 1991 sense) to be licensed. Suppose that each phrase (the one
 43 containing an Adjective Phrase, the one containing the Number Phrase,
 44 the one containing the Demonstrative Phrase, etc.) needs to be endowed
 45 with a nominal feature to be licensed (i.e. to count as part of the extended
 46

projection of NP), and that this can be brought about by merging above it an Agreement head whose Spec ultimately comes to have such a nominal feature, either by movement of the NP, or by merge of such a feature, which enters in an agreement relation with the NP without movement (the Agree operation of Chomsky 2000).

Some languages employ the first mode, others employ the second mode, and still others employ both, with the consequence that some will have movement all the way up, some will have no movement, and others will have partial movement of the NP. This also provides an answer to (6)c.

The further (sub)question why languages, in the unmarked case, move the NP together with pied-piped material (of the *whose picture*-type) is far less clear. Here, I will very tentatively submit that it may have to do with a general condition on movement/attraction proposed in Kayne (2005b, §5.6). There it is suggested that what moves to the Spec of a functional head H is the category closest to H that is not the complement of H (nor, we will add, the specifier of the complement of H).

The crucial question is how “closest to H” is defined. Consider (7):

- (7) The category closest to H is the category c-commanded by H that is dominated by the fewest number of nodes (where “node” includes every node, whether “category”, or “segment”, in Kayne’s 1994 sense).

For example, in a structure like (8) (derived by moving NP to the Spec of Agr₂P), this definition singles out Agr₂P as the category (distinct from its complement) closest to Agr₁. It is c-commanded by Agr₁ and is dominated by fewer nodes than either NP, ZP, or AP.

- (8) ... [_{Agr1P} Agr₁ [_{YP} NumberP [_{YP} Y [_{Agr2P} [_{NP} N] [_{Agr2P} Agr₂ [_{ZP} AP ... [_{NP} N]]]]]]]]]

We take (7) to be the unmarked definition of “closest to H”, with the consequence that only Agr₂P, not [_{NP} N] alone, will raise to the Spec of Agr₁, thus deriving the pied-piping option (of the *whose picture*-type) as the only unmarked option. For [_{NP} N] in (8) to count as “closest to” Agr₁, we would have to modify the definition in (7), introducing a limitation on the type of nodes that count in the calculation of “closest to H”; namely, “category” only, rather than the more general “node” (which includes both “categories” and “segments”). By doing this, the higher Agr₂P “segment” in (8) no longer counts, so that Agr₂P and [_{NP} N] will be equally close to Agr₁.³³

Let us consider now the last question of (6). We have noted that certain phrases other than NP (with pied-piped material), namely specifiers (APs), must be allowed to move up alone (under special and limited conditions). Cf. note 23. Yet, no movement of any other sort must be permitted if we do not want the prenominal orders that we ruled out with the assumptions in (5) to be derivable. In particular, “head” movement, and “remnant” movement will have to be unavailable. If we could move N, or NP, beyond AP, as in (8), and then move the remnant ZP across NumP (and DemP), we

1 would end up with the order A Dem Num N, and Dem A Num N, which
 2 are not found as the exclusive (or unmarked) order in any language. This
 3 result, however, is already achieved by the assumptions just sketched. Put-
 4 ting aside the special focus position, there is no other landing site for the
 5 “remnant” than Spec of Agr₁ (or that of a higher Agr). But Kayne’s condi-
 6 tion that what moves to the Spec of a functional head H is the category
 7 closest to H (that is not the complement of H) will ensure that Agr₂P, not
 8 the “remnant” ZP, will be attracted to Spec of Agr₁.
 9

10 FURTHER QUESTIONS AND IMPLICATIONS

11
 12
 13 Two of the crucial components of the analysis suggested here is that [Dem. .
 14 [Num. . [A. . [N]]]] is the (universal) structure of Merge of the DP, and
 15 that word order variations within DP across languages are fundamentally
 16 a function of how (different phrases containing) the NP move up the struc-
 17 ture. At least, such assumptions were seen to be able to derive the actually
 18 attested orders of the four elements cross-linguistically (without also deriv-
 19 ing the non attested ones). Other plausible options, such as the raising of
 20 just the N, and/or the movement of phrases not including the NP, were
 21 instead seen not to yield the same results.

22 Should this general approach to cross-linguistic word order variation
 23 within the DP be confirmed, it will be natural to ask whether the quite
 24 extensive cross-linguistic word order variation within the clause and other
 25 phrases should not also be treated in terms of movement of “extended”
 26 phrases (necessarily) containing the “lexical” projection (VP, AP, PP, etc.),
 27 rather than in terms of head-movement. This remains to be seen.

28 [Dem. . [Num. . [A. . [N]]]] is but a fragment of the internal structure
 29 of the DP. If we were to add universal quantifiers, ordinals, numeral clas-
 30 sifiers, and Relative Clauses (RCs), setting aside the fact that A is just an
 31 abbreviation for an ordered sequence of adjectives (Cinque 1994, Scott
 32 2002 and references cited there), and ignoring Case, Number, possessors,
 33 various types of determiners, functional adjectives like *other* and
 34 *same* (Kayne 2005b), diminutives/augmentatives, complements,³⁴ etc., we
 35 would have 8 elements, whose mathematically possible combinations are:
 36 (factorial 8 =) 40320.

37 The actually possible combinations would (luckily) be much fewer if the
 38 8 elements entered a fixed hierarchical structure of Merge, and if varia-
 39 tions of this structure could only arise via upward movements of phrases
 40 containing the NP.

41 There is suggestive evidence that universal quantifiers are higher than Dem,³⁵
 42 that ordinal numerals may be between Dem and cardinal ones (cf. Shlonsky
 43 2004), that numeral classifiers are between Num and A (see den Dikken 2003,
 44 Simpson 2005; and Kayne 2003b, Cinque, Chapter 8 here, for evidence that
 45 languages that do not have overt classifiers may have covert ones), that RCs
 46

may be merged between Dem/ordinals and cardinals, though reduced RCs are possibly (also) below cardinals (cf. Cinque 2003b). As a first approximation, this would give (9):³⁶

(9) [Q_{univ} . [Dem. . [Num_{ord} . [RC. . [Num_{card} . [Clf. . [A. . NP]]]]]]]

to which only (successive) movements of the NP or of phrases containing it would be expected to apply. Ideally, all and only the orders that are currently attested (or were/will be attested) should follow from the conditions on Merge and the conditions on Move of the type discussed above. Again, more extensive work is needed to check the correctness of this conjecture.

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5 Again on Tense, Aspect, Mood Morpheme Order and the Mirror Principle*

1 THE PRE- AND POST-VERBAL ORDERS OF MOOD, TENSE AND ASPECT MORPHEMES

If we set aside for a moment certain apparent exceptions, to which we return in section 2, the preverbal order of (free or bound) mood, tense, and aspect morphemes appears to be, across languages, Mood > Tense > Aspect.¹

Postverbally, the order of the same morphemes is predominantly the mirror image of the preverbal one (namely, Aspect > Tense > Mood), a fact which recalls, modulo the head vs. phrasal status of the elements involved, Greenberg's Universal 20 on the order of demonstratives, numerals, and adjectives with respect to the noun.²

The characteristic mirror-image relation of the preverbal and postverbal orders of mood, tense, and aspect morphemes has been raised in different frameworks to the status of a general principle. See Gerdts's (1982, 193, fn. 4) "Satellite Principle", within a Relational Grammar approach, Bybee's (1985, Chapter 2) "Principle of Relevance", within a functional-typological approach³, Foley and van Valin's (1984), and Van Valin and LaPolla's (1997, 46) "Principle of scope assignment", within Role and Reference Grammar, and the (generalized) "Mirror Principle", within a Principles and Parameters approach.⁴

We know however that in the DP the order A Num Dem (the mirror image of the prenominal order) is the predominant but not the exclusive order found postnominally, where the same order as the prenominal one is also found, albeit much less frequently (cf. the references given in fn. 2, and Cinque 2005, note 10). Moreover, Greenberg's formulation of the Universal allows for the possibility that in one and the same language some of the elements Dem Num A appear prenominally while others appear postnominally (as long as they conform to the unique prenominal order Dem Num A, and to one or the other of the two postnominal orders, A Num Dem and Dem Num A).

In Cinque (2005b) I reviewed other attested orders of the same elements, claiming that all of the attested ones (even those contradicting Greenberg's Universal 20), and none of the unattested ones, can in fact be derived from either not moving, or moving, the NP, alone, or within a larger phrase.

So the question arises whether the picture of the clause, seen as the extended projection of the VP, is different, or not, from that of the DP, seen as the extended projection of the NP.

I will argue that it is not, and that in fact many more orders of (speech act) Mood, Tense, and Aspect morphemes are documented in the languages of the world than the above principles would have us expect (among them, the orders in (I)c, (I)d, (I)m, (I)n, (I)v below).⁵

As with the DP, of the 24 mathematically possible combinations of Mood, Tense, Aspect and V only some are attested. Of these, those indicated with a ‘√’ in (I) below will be argued to derive from the raising of the VP, or of a larger phrase containing it (much as the attested orders of Dem Num A N in the DP have been argued to derive from the raising of NP, or of a larger phrase containing it, in Cinque 2005b).⁶ (I)e,f,i,l will instead be argued to arise in a fundamentally different way: through the raising of a Tense or Aspect particle to the left of a second position speech act Mood particle, comparable to the special raising within the DP of an Adjective Phrase to the specifier of a Focus projection—cf. Cinque 2005b, fns. 2 and 23). (I)w, if genuine, will be argued to arise from a separate, and more marked, derivation. The orders indicated with a plain asterisk (which are apparently unattested) will instead turn out not to be derivable.

Representative cases of the orders indicated with ‘√’ in (I) are given below, under Roman (II)). Cases representing (I)e,f,i,l, and w will be discussed in section 2.

(I)

a.	√	Mood	Tns	Asp	V	
b.	√	Mood	Tns	V	Asp	
c.	√	Mood	V	Tns	Asp	
d.	√	V	Mood	Tns	Asp	
e.	(*)	Tns	Mood	Asp	V	(see section 2)
f.	(*)	Tns	Mood	V	Asp	(see section 2)
g.	*	Tns	V	Mood	Asp	
h.	*	V	Tns	Mood	Asp	
i.	(*)	Asp	Mood	Tns	V	(see section 2)
l.	(*)	Asp	Mood	V	Tns	(see section 2)
m.	√	Asp	V	Mood	Tns	
n.	√	V	Asp	Mood	Tns	
o.	*	Mood	Asp	Tns	V	
p.	√	Mood	Asp	V	Tns	
q.	√	Mood	V	Asp	Tns	
r.	*	V	Mood	Asp	Tns	

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1	s.	*	Tns	Asp	Mood	V	
2	t.	√	Tns	Asp	V	Mood	
3	u.	√	Tns	V	Asp	Mood	
4	v.	√	V	Tns	Asp	Mood	
5	<hr/>						
6	w.	(*)	Asp	Tns	Mood	V	(see section 2)
7	x.	*	Asp	Tns	V	Mood	
8	y.	√	Asp	V	Tns	Mood	
9	z.	√	V	Asp	Tns	Mood	
10	<hr/>						

(II) a. (Mood Tns Asp V)

This order is attested in some Khoisan languages (see for example (1) from Nama, drawn from <http://instruct1.cit.cornell.edu/courses/ling700/nama.htm>,⁷ as well as the case of /Xam in <http://instruct1.cit.cornell.edu/courses/ling700/xam.htm>); in a number of Niger-Congo languages (see, for example, the case of Yoruba in (2), provided by Oládiípò Ajíbóyè, p.c; that of Eton—Van de Velde 2008,237; and that of Cinyanja—Lehmann 2002, 37 and 39); in some Amerindian languages (Apinajé (Macro-Jê))⁸, Canela–Crahô (Caribbean—see (3), from Popjes and Popjes 1986,157 and 182), Sochiapan Chinantec (Otomanguean)—Foris 1993⁹; and in a number of Austronesian languages (Nabukelevu—Pawley and Sayaba 1982, 68, 85; Samoan—Cinque 1999, 160; and in Seediq—Holmer 1996, 114, Holmer 2006, 92 and 109—where it is an alternative order). It is also a possible order in Papago (Tohono 'O'odham)—Mason (1950, 40, 45, 48), Zepeda (1983,14, 63).

(1) 'áop ke kè- rè !úu
man+cl DECL REMPAST PROG go
'the man was going'

(2) Nǎjé Adé yòò máa wá ní ìròlẹ̀?
Q Ade fut hab come in evening
'Will Ade be coming in the evenings?'

(3) a. xà capi te po curan?
Q Capi PAST deer kill
'Did Capi kill a deer?'

b. pē wa ajco apu to hane
PAST(distant) 1sg HAB PROG do thus
'I always used to do that'

(II) b. (Mood Tns V Asp)

This order appears instantiated in Khoisan (see (4) below from Nluu, and (i) of fn.7 from Nama) and Austronesian (Maori—Bauer 1993, 35 and section

- 2.1.33; Seediq, with Perfect Aspect—Holmer 2006, 102 and 109; Nabukelevu, with Progressive Aspect—Pawley and Sayaba 1982, 53ff; and Easter Island Language (see (5)).¹⁰ It is also an alternative order in Hmong Njua (see (6)).¹¹
- (4) η ke xη llʔae-a !gari
 1sg **DECL PAST** go-**ASP** Upington
 ‘I went to Upington’ (Nluu—Collins 2004, 188)
- (5) a. Hoki e haga rō koe ki te puaka mo hakahere?
Q NONPAST want rō you DAT the cattle INF buy
 ‘Do you want to buy cattle?’ (Easter Island—Chapin 1978, 168)
- b. E tagi ā te poki
NONPAST cry **PROG** the boy
 ‘The boy is crying’ (Easter Island—Chapin 1978, 153)
- (6) a. Yog kuv moog koj puas yuav quaj
 Comp 1sg go, 2sg **Q FUT** cry
 ‘If I go, will you cry?’ (Hmong Njua—Harriehausen 1990, 226)
- b. kuv tau moog tsev lawm
 1sg **PAST** go house **COMPL**
 ‘I have gone home’ (Hmong Njua—Harriehausen 1990, 57)
- (II) c. (Mood V Tns Asp)
- This order is documented in some Australian languages (see (7), from Kalaw Kawaw Ya (Pama-Nyungan), and (8), from Ngarinjin (Kimberley, North Western Australia));¹² it is also found in Uto-Aztecan (see (9), from Tümpisa Shoshone and (10), from Ute), as well as in the Panoan language Shipibo (see (11)), and in the Munda language Kharia (Biligiri 1965, 59, 98)¹³; it is also instantiated, as an alternative to the order Mood Tns Asp V, in Nama (Khoisan). See (ii) of fn.7 above.
- (7) Ezoera midh mul-i-z kedha+ Gabu nga-n im-a-n
 Ezra **Q** say-**PRES-PERF** thus Gabu who-Acc see-**PRES-PERF**
 ‘Who did Ezra say that Gabu saw?’ (Kalaw Kawaw Ya—Ford and Ober 1991, 129)
- (8) a. irani widjiga a-nga
 your father **Q** go-**PAST**
 ‘Did your father go?’ (Ngarinjin—Coate and Coate 1970, 75)

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b. η-a-ηge-ri
I-go-**PAST-CONT**
'I was going' (Ngarinjin—Coate and Coate 1970, 43)

(9) a. mungku ha pungi punikka-mmaa?
you (dl) Q horse see-**PAST**
'Did you two see the horse?'
(Tümpisa Shoshone—Dayley 1989, 325)¹⁴

b. . . . püe tammin tüpanna nayaa-tu'i-ppüh
. . . already our pinehut be taken-**FUT-PERF**
' . . . our pinehuts will already have been taken'
(Tümpisa Shoshone—Dayley 1989, 348)

(10) a. kúaw-aa pagá-nukwí-kya
yesterday-Q go-run-**ANT**
'Did he/she leave yesterday?' (Ute—Givón 1980, 242)

b. tuká-x^a-paa-mi
eat-PL-**FUT-HAB**
'(They) are supposed to always eat' (Ute—Givón 1980, 92)

(11) ja-tian-qui jahuerano mia i-cáti-ai?
3s-time-Q where 2s be-**PAST-CONT**
'At that time, where were you living?' (Shipibo—Black 1992, 54)

(II) d. (V Mood Tns Asp)

This order appears to be instantiated in some Salish languages.¹⁵ See, for example, (12), from Comox (Central Coast Salish—Harris 1977, Watanabe 2003):¹⁶

(12) qaʔeʔamm-a-êx^w-xʌm ʔot^h
work-Q-you(sg)-**FUT ASP**_{INCEPTIVE}
'Are you (sg) going to work?' (Harris 1977, 139)

To judge from Aikhenvald's (2006) glosses for (13)a-b below, it also appears to be realized (at least for some combinations of Mood, Tense and Aspect) in Tariana (North Arawak):¹⁷

(13) a. kawhi nu-iʃa – ka - sita
manioc.flour 1sgA-drink - **REC.PAST.VIS.- PERFECTIVE**
'I have already drunk manioc flour (mixed with water)'
(Aikhenvald 2006, 179)

b.	ñama – ita	[nu - eku nu – pinita –ka – na	1
	two-numeral.cl:anim	1sg–run 1sg-pursue–DECL – REM.PAST.VIS.	2
	‘I pursued two (pigs) by running’	(Aikhenvald 2006, 190)	3
			4
			5
(II) m.	(Asp V Mood Tns)		6
	This order is attested in Xârâcùù (see (14)), and Tinrin (see (15)), two Mel-		7
	anesian (Austronesian) languages of New Caledonia ¹⁸ , and in the Coast		8
	Salish languages Saanich (Montler n.d.—see (16)a-b) and Sooke (Efrat		9
	1969—see (17)a–b):		10
			11
(14) a.	è wâ catoa		12
	3sg PERF go.out		13
	‘He went out’	(Xârâcùù—Moyses-Faurie 1995, 116)	14
			15
b.	è nâ kwé		16
	3sg PROG dance		17
	‘He is dancing’	(Xârâcùù—Moyses-Faurie 1995, 117)	18
			19
c.	ke xâpârî kae na mûduè-nâ?		20
	2sg see Q PAST brother-1sg		21
	‘Have you seen my brother?’		22
		(Xârâcùù—Moyses-Faurie 1995, 157)	23
			24
d.	è xwa kae na amû		25
	3sg rain Q PAST yesterday		26
	‘Did it rain yesterday?’	(Xârâcùù—Lynch 2002a, 774) ¹⁹	27
(15) a.	wiri tramwâ ghai nrâ		28
	2pl know Q PAST		29
	‘Did you know?’	(Tinrin—Osumi 1995, 204)	30
			31
b.	nrâ re ubwê mwage tenisù		32
	3sg HAB ITER play tennis		33
	‘He often plays tennis’	(Tinrin—Osumi 1995, 188)	34
(16) a.	ʔənʔé ə čə sə		35
	come Q Evid FUT		36
	‘Is he coming?’	(Saanich—Montler, n.d., section 2.6.2.1.1)	37
			38
b.	kʷɪ xʷəy ʔal		39
	ASP <small>REALIZED</small> die Limit		40
	‘He already died’	(Saanich—Montler, n.d., section 2.6.1.1) ²⁰	41
(17) a.	qʷáč s é iəʔ sxʷ		42
	beat.up 1p Q Past 2p		43
	‘Did you beat me up?’	(Sooke—Efrat 1969, 189)	44
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- b. hu? yé? lə ɬt
ASP CONTEMPORARY go **FUT** 1pl
 ‘We’ll go’ (Sooke—Efrat 1969, 43)²¹

(II) n. (V Asp Mood Tns)

This order is instantiated in Kanoê (a language isolate of Brasil), with Past tense (see (18)); it also appears instantiated in Lummi (Coast Salish—Steele 1981; Jelinek 2000), with Iterative aspect (see the order V-Mood-T in (19), and the fact, pointed out in Jelinek and Demers (1997, 310f), that Iterative aspect in Lummi is expressed by reduplication of the root):

- (18) a. kamitsi aj kwini po ò-e tsere-re
 yesterday 1sg fish catch 1-DECL PAST-Aux
 ‘Yesterday, I caught fish’ (Kanoê—Bacelar 2004, 222)

- b. oj ty-e-ro-e-re
 3sg move-PROG-CLV-3-DECL-AUX
 ‘He is leaving [ele está indo]’ (Kanoê—Bacelar 2004, 226)²²

- (19) xçit-ə-lə-sx^w
 know-Q-PAST-you
 ‘Did you know it?’²³ (Lummi—Steele 1981, 60)²⁴

Another language displaying the order V Asp Mood Tns may be Lotha (Naga, Tibeto-Burman). Acharya (1983, 127) says that the structure of the verb with an aspect marker is V-aspect-tense, and says that “the structure of the interrogative verb is as follows: Verb+interrogative marker- Present tense marker”. Although no examples are given with tense, aspect, and interrogative mood markers occurring together, at p.158 the author says that the structure of the verb is V(-aspect)(-mood)-tense.²⁵

(II) p. (Mood Asp V Tns)

This order is documented (as Mood Asp-V-Tns) in Nevome (Uto-Aztecan—Shaul 1986) (see (20)a-b),²⁶ and in Gunwinggu, a North Australian language of Arnhem Land (Oates 1964). See (21)a-c. Apparently, it is also instantiated in Slave (Athapaskan—Rice 1989), as Mood Asp-V Tns. See (22)a-c:

- (20) a. n’-apimu ta am’-nonorha
 Q-2pl PERF Loc-return (Perf,pl)
 ‘Did you all return there?’ (Nevome—Shaul 1986, 85)
- b. an’-t’-haquirid’-cada
 1s-PERF-count-PAST
 ‘I had counted’ (Nevome—Shaul 1986, 25)

(21) a.	dja:gdu-ŋi		1
	rain- PAST.CONT		2
	‘It was raining’	(Gunwinggu—Oates 1964, 49)	3
			4
b.	ŋa-yawoyʔ-may		5
	1sg- ASP_{REPETITIVE} -good		6
	‘I am good again’	(Gunwinggu—Oates 1964, 53)	7
			8
c.	yidog manme yidjare		9
	Q food want		10
	‘Do you want some food?’	(Gunwinggu—Oates 1964, 82)	11
(22) a.	ʔasɨ netá ʔeghálayeda		12
	Q 2sg.father 3.works		13
	‘Is your (sg.) father working?’	(Slave—Rice 1989, 1003) ²⁷	14
			15
b.	rahéhdze yilé		16
	1sg.shout.repeatedly PAST		17
	‘I shouted repeatedly’	(Slave—Rice 1989, 420)	18
			19
c.	dedéhji		20
	ASP_{INCEPTIVE} ripe		21
	‘It is getting ripe’	(Slave—Rice 1989, 588)	22
(II) q.	(Mood V Asp Tns)		23
	(This order is attested in the Amerindian languages Sahaptin (Sahaptian)		24
	(see (23)), Nez Perce (Sahaptian) (Rude 1985, 52, 129), Northern Pomo		25
	(Hokan) (see (24) ²⁸ , Sliammon (Comox Salish—Watanabe 2003, 457 and		26
	515), Caddo (Caddoan—see (25)); in the Uto-Aztecan languages Coman-		27
	che (Wistrand-Robinson and Armagost 1990, 256 and 315), Timbisha		28
	(McLaughlin 2006, 58), and, with progressive aspect, in Nevome, (Shaul		29
	1986,22 and 84f), which has the order Mood Asp V Tns—see (20)a-b; as		30
	well as in the Australian languages Gidabal (see (26), from Geytenbeek		31
	and Geytenbeek (1971), Ngiyambaa (Pama-Nyungan—Donaldson 1980,		32
	196, 263), Ngawun (Breen 1981, 59, 70), Nunggubuyu (Hughes and Hea-		33
	ley 1971,57 and 65), and Pitjantjatjara (Glass and Hackett 1970, 32 and		34
	74). ²⁹ It is also attested in Iatmul (Papuan—Staalsen 1972, 49, 50, 57), in		35
	Bhojpuri (Indo-Aryan—Shukla 1981, 280, 310), and in the Munda lan-		36
	guages Santali (Gosh 1994,106 and 152) and Kharia (see fn.13 above).		37
			38
(23)	watxán=am á-qinu-šan-a. .		39
	Q =2sg 3Abs-see- IMPF-PAST		40
	‘Did you see..?’		41
		(Sahaptin—Rigsby and Rude 1996, 679)	42
			43
(24) a.	hosaha ta mito ʔuy dithal-e		44
	smoke Q 2S eye hurt- PRES		45
	‘Is the smoke hurting your eyes?’		46
		(Northern Pomo—O’Connor 1992, 269)	

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b. mo:wal ʔa: dade:-d-e
3sm 1sA push-**PROG-PRES**
'I am pushing him' (Northern Pomo—O'Connor 1992, 47)

(25) a. (ʔi)káh-nunʔ-ʔaʔ
shoot-**ITER-FUT**
'He will holler at intervals' (Caddo—Melnar 2004, 76)

b. t'án#si-wah-ʔawi-wid(i)-ʔaʔ
PARTIAL.NEG#2PAT-Q-ABS.SG-arrive-FUT
'Won't you come?' (Caddo—Melnar 2004, 86)³⁰

(26) niaŋ dařbaŋ gawa-le:-n njulaŋam
Q sticks break-**REP-PAST** they
'Were they breaking sticks?'
(Gidabal—Geytenbeek and Geytenbeek 1971, 45)

(II) t. (Tns Asp V Mood)

This order appears to be instantiated in a number of Oceanic (Austrone-
sian) languages (Gapapaiwa—see (27)), Loniū (Hamel 1994, 149), Tigak
(Beaumont 1979, 35, 78ff), and Taiof (Ross 2002f, 437f):

(27) a. a-na-tu-tutui
1sg-**FUT-IMP(PROG?)**-hammer
'I will be hammering' (Gapapaiwa—McGuckin 2002, 309)

b. Namada ku-vi-kovin=I bo
already 2sg.non-PRES-CAUS.PAST-finish=Trans Q
'Did you already finish?'
(Gapapaiwa—McGuckin 2002, 317)

It is also displayed, with free morphemes, by Kom (Benue-Congo—see
(28)), Thai (Tai-Kadai—see (29)), Cambodian (Khmer—cf. Jacobs 1968,61;
Spatari 2005, 490), and Coast Tsimshian (Sm'algyax) (Penutian—Mulder
1994, 80, 178); with bound morphemes (Tns-Asp-V-Mood), by Tiwi (Aus-
tralian—see (30)) and Blackfoot (Algonquian—see Franz 1991, 33 and
132f); and with both bound and free morphemes (Tns Asp-V Mood) by
Cogtse Gyarong (Tibeto-Burman—see (31)).³¹

(28) Sam tí men gwì a?
Sam **PAST COMPL/PERF** come Q
'Did Sam come?' (Kom—Chia 1976, 231)

(29) a. khun cà pay hãa phian máy
you **FUT** go see friend Q
'Are you going to see a friend?' (Thai—Hudak 1987, 45)

- b. lom khong cà? kamlang phát 1
 wind EPIST FUT PROG blow 2
 ‘The wind must be blowing’ (Thai—cf. Cinque 1999, 159) 3
 4
- (30) a. ηə-ru-untij-apa 5
 I-PAST-PROG-eat 6
 ‘I was eating’ (Tiwi—Osborne 1974, 42)³² 7
- b. waija tuap-ana 8
 already you.ate-Q 9
 ‘Have you eaten?’ (Tiwi—Osborne 1974, 68) 10
 11
- (31) a. na ke-nə-pya-n 12
 1sg TNS-PERF-take-1sg 13
 ‘I had taken (it)’ (Cogtse Gyarong—Nagano 2003, 477) 14
- b. ni-gyo tə-rgyap nət-sarn mo nos 15
 2PL (HON) marriage PERF.2PL-marry Q AUX 16
 ‘Have you got married?’ 17
 (Cogtse Gyarong—Nagano 2003, 476) 18
 19
- (II) u. (Tns V Asp Mood) 20
 21
 This order is attested in a number of Oceanic (Austronesian) languages. 22
 See (32), from Urak Lawoi’, as well as Ross (2002e, 400f and 407ff) on 23
 Kaulong (, and Ross (2002a) on Kairiru.³³ 24
 25
- (32) a. kaw na? pi ka? lawoc gə 26
 you FUT go to sea Q 27
 ‘Will you go to sea?’ (Urak Lawoi’—Hogan 1999, 38) 28
- b. siya? dah gər 29
 ready ASP_{STATIVE} Q 30
 ‘Are we ready?’ (Urak Lawoi’—Hogan 1999, 40)³⁴ 31
 32
- It is also documented in Ouldeme (a Chadic language of Cameroon—Kin- 33
 naird 1999), where Future and Aorist precede the V, Habitual and Comple- 34
 tive aspect are suffixed to the V, and an interrogation particle is found 35
 sentence finally (only followed by afterthoughts) (see (33)), and in the Bantu 36
 language Kĩĩtharaka (Muriungi 2006) (see (34)): 37
- (33) a. . . . , k-ə-ndəb-ar a gubar gwakw zij a 38
 2sS-Aorist-offer-3sSIO to man your really Q2 39
 ‘. . . , do you in fact offer any to your husband?’ 40
 (Kinnaird 1999, 15) 41
 42
- b. ana k-ə-bek-erge aghar yo áne də di n-ə-sliyo 43
 if 2sS-FUT-drive-COMPL co-wife my this Neg Top 1sS-FUT-leave 44
 ‘If you don’t drive out with my co-wife, I’ll leave’ 45
 (Kinnaird 1999, 26) 46

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- 1 (34) a. Maria a- rî- tûmir-a ki-a Musa
 2 1-Maria SM1-PRES-use- FV 7-AS 1Musa
 3 ‘Maria is using of Musa’s [class 7 objects]’
 4 (Kîitharaka—Muriungi 2006, 28)
 5
 6 b. aga i- kû- mam- ag- a mbea nyinî mûno
 7 here F-SM-17-sleep-HAB-FV 10-mouse many very
 8 ‘Here sleep many mice’
 9 (Kîitharaka—Muriungi 2006, 43)
 10
 11 c. Gi-ciati kî-rî nja î-no anga
 12 7-broom SM7-be 9-out 9-this Q
 13 ‘Is the broom here outside?’
 14 (Kîitharaka—Muriungi 2006, 38)

15 (II) v. (V Tns Asp Mood)

16 Quite a number of languages and language families appear to instantiate
 17 this order. Fernandez (1967, 30, 44) explicitly claims that this is the order
 18 of the tense, aspect, and interrogative mood suffixes of Remo (Munda).
 19 See (35)a-b.³⁵

- 20
 21 (35) a. sum-to-no-ki
 22 eat-IMPF-Pers.agr-Q
 23 ‘Do you eat?’ (Remo—Fernandez 1967, 51)
 24
 25 b. sum-o?-no-ki
 26 eat-PAST-Pers.agr-Q
 27 ‘Did you eat?’ (Remo—Fernandez 1967, 51)
 28
 29 c. o-sum-o?-ti-iŋ
 30 caus-eat-PAST-IMPF-Pers.agr
 31 ‘I have caused to eat’ (Remo—Fernandez 1967, 56)

32 The same order is attested in some Niger-Congo languages: Mundang
 33 (Adamawa) (see (36)) and Noon (West Atlantic) (see (37)a-b), and in some
 34 Nilo-Saharan languages (Me’en—Will 1989,sect.5.1), with Past Tense.³⁶

- 35
 36 (36) mò dòŋ fiē Bāā dôm nē
 37 2sg do what PAST HAB Q
 38 ‘What did you usually do?’ (Mundang—Elders 2000, 389)
 39
 40 (37) a. Ya toon-ee-ra wa
 41 s/he sell-PAST-ASP_{PUNCTUAL} obj(C1sg)
 42 ‘S/he sold it’ (Noon—Soukka 2000, 200)³⁷
 43
 44 b. Fu wo’-in Peer-e
 45 you tell-PERF Pierre-Q
 46 ‘Have you told Pierre?’ (Noon—Soukka 2000, 181)

The same order appears to be instantiated in Osage (Siouan), with Continuative aspect, (see (38))³⁸; and, with Inchoative aspect, in Hup (Maku) (which has the order V-Asp-Tns-Mood with other aspects); see (39); in Creek (Muskogean—Martin 2000, 388); in the Dravidian language Abujhmaria (with V-Tns-Asp Mood: Natarajan 1985, 199, 225) and in the (non-Austronesian) Papuan languages Salt-Yui (Irwin 1974, 11),³⁹ Golin (Bunn 1974, 21), and Amanab, with Habitual aspect (Minch 1991, 83).

(38) šoošówe naniópa đaašóe hta apai
 šoošówe naniópa Ø-đaašóe hta apa-đe
 always pipe A3s-smoke FUT 3.CONT-DECL
 ‘He will always smoke’
 (Osage—Quintero 2004, 328)

(39) yū’ wəhəd-tég-ay-há
 João old.man-FUT-INCH-DECL
 ‘João will get old’
 (Hup—Epps 2005, 222)

It is also documented in a number of Tibeto-Burman languages. Examples instantiating the order V-Past-Impf(Prog?)-Q are given for Limbu in Van Driem (1987) (see (40)); Tolsma (2006, 105 and 147) gives examples instantiating the order V-Past-Cont-Q in Kulung; Ebert (1997, 49 and 53) documents the same order in Athpare with Progressive aspect (alternating with V-Asp-Tns-Mood with Perfect aspect); Abraham (1985, 95) documents the orders V-Past/Fut-Prog and V-Past-Perf in Apatani, saying that “yes/no questions are formed by adding ‘ha’ to the end of the sentence” (p.103), which means that the language has V-Tns-Asp Mood at least as one of its orders.⁴⁰

(40) Kε-ips-ε-tchi-ba-ı
 2-sleep-PAST-du.ABS-IMPF-Q
 ‘Have you being sleeping?’
 (Limbu—Van Driem 1987, 90)

Another Tibeto-Burman language which displays this order with free morphemes is Hmar. (41) shows the postverbal order of tense and aspect morphemes:

(41) ká pèk láı zıŋ/mè:k
 Isg give PAST PROG
 ‘I was giving’
 (Hmar—Dutta Baruah and Bapui 1996, 67)

Dutta Baruah and Bapui (1996, 137) further say that although yes/no questions are generally formed by simply adding interrogative intonation, “an element like /ti/ or /ni/ could optionally appear in the final position in the sentence”, thus displaying an overall order V Tns Asp Mood.⁴¹

(II) *y.* (Asp V Tns Mood)

This order is attested in a number of (non-Austronesian) Papuan languages of New Guinea: Amanab (Minch 1991,10,17ff,60), Namia (see (42) from Feldpausch and Feldpausch 1992), Nend (Harris 1990, 139, 154), Yagaria (see (43), from Renck 1975)⁴², in the Austronesian languages Urak Lawoi' (Hogan 1999)⁴³, and Pazeh (Li 2000, 104), in the Hokan language Diegueño (see (44) from Langdon 1970), in the Athapaskan language Slave (Rice 1989,1114,1131), in Hungarian (Finno-Ugric—Cinque 1999, 154), and, with Habitual aspect, in the Tibeto-Burman language Nocte (Das Gupta 1971, 16ff):

- (42) a. *ne wala wir-e-a*
 2s place build-**PRES-Q**
 'Are you building a house?'
 (Namia—Feldpausch and Feldpausch 1992,55)
- b. *ija Tai par-po-ko-kwam-e . . .*
 and T. **REP-PERF-tr-say-PRES**
 'And Tai talked again saying . . .'
 (Namia—Feldpausch and Feldpausch 1992, 55)
- (43) a. *havi-d-i-vie*
 hear-**PAST-3sg-Q**
 'Did he hear?' (Yagaria—Renck 1975, 101)
- b. *no-d-a-pie*
PROG-eat-2sg-Q
 'Are you eating?' (Yagaria—Renck 1975, 101)
- (44) a. *tu-yak*
PROG.3sg-is lying there
 'He is lying there?' (Diegueño—Langdon 1970, 147)
- b. *ma'=x=a*
 you.go=**FUT=Q**
 'Are you going?' (Diegueño—Langdon 1970, 186)

This order is also found with free morphemes in Tondi Songway Kiini (Nilo-Saharan), where the Imperfect aspect morpheme precedes the verb and both the Past Tense morpheme and the question marker *wàlá* follow it in that order (cf. Heath 2005, 175, 182), in Mina (Chadic), where the future and interrogative particles follow the verb, in that order, and the Habitual aspect particle precedes the verb (Frajzyngier and Johnston 2005,183,200), and in the Adamawa-Ubangi (Niger-Congo) language Ngbaka (Thomas 1963), where aspectual morphemes precede the V (p.203), and tense and interrogative mood morphemes follow the V (in that order) (p. 200 and p. 252).

(II) z. (V Asp Tns Mood)

Very many languages instantiate this order, the mirror image of the preverbal Mood Tense Aspect order. It is found in many languages of the Caucasus (see, for example, Lezgian—Haspelmath 1993, 140, 417, Dargwa—Sumbatova and Mutalov 2003,135), in Dravidian (Hill Madia—Vaz 2005, 10 and 23, Malayalam—Jayeseelan 2005,20, Telugu—Vijayanarayana 1993,105) in Eskimo-Aleut languages (Aleut—Cinque 1999, 158, West Greenlandic—Fortescue 1984, 11 and 275; Sadock 1984, 213); in many Tibeto-Burman languages (Belhare—Bickel 2003, 568, Burmese—Soe 1999, 133 and section VI, Chepang—Caughley 1982, 46, Garo—Burling 2003, 391, 399, Burling 2004, 94f, Karbi—Jeyapaul 1987, 115,120, Kinnauri—Sharma 1988,155, Saxena 2000, 230, Kokborok—Pushpa Pai 1976,68,72f, Lai Chin—Kavitskaya 1997, 210, Manipuri—Bhat and Ningomba 1997, chapter 11 and 14, Mao Naga⁴⁴, Newari⁴⁵, Thulung Rai—Lahaussis 2002, 183 and 2003, 18, Tshangla—Andvik 2003, 446ff, Athpare—Ebert 1997, 53); in some Munda languages (Korku—Nagaraja 1999, 86, 101)⁴⁶; in Manchu-Tungusic (Evenki—Cinque 1999, 154, Nedjalkov 1997, 2, 256, and Bulatova and Grenoble 1999, 27, 52f), Turkic (Turkish—Kornfilt 1997, sections 1.1.1.2.1, 2.1.3.2, and 2.1.3.3; Sezer 2001; Cinque 1999, 155, 2001; Enç 2004)⁴⁷, Mongolian (Cinque 1999, 154), Japanese (Nakau 1976), and Korean (Cinque 1999, 154), all attributed to the Altaic family); in Indo-Aryan (Marathi—Pandharipande 1997,417 ; Oriya—Ray 2003, 457, 459; Asamiya—Goswami and Tamuli 2003,426 and 436); in some Niger-Congo languages (Obolo—Aaron 1999); in various (non-Austronesian) Papuan languages (Auyana—see (45)), Menya—Whitehead 1991, 266; 2004, 122), Sanio-Hiowe (Lewis 1972)⁴⁸ Fore, Wahgi—cf. Cinque 1999,66 and 161f, and references cited there; Tauya (MacDonald 1990,200); Tainae—Carlson 1991, 13, 106; Mauwake—Berghäll 2006; Eipo—Heesch 1998, 155); in some Oceanic (Austronesian) languages (Takia)⁴⁹; in various Amerindian languages: Lakota and Tutelo (Siouan—Ingham 2003, 33f, Oliverio 1996, 118), Nuuchahnulth (Nootka) (Wakashan—Nakayama 2001, 31, 87 and Davidson 2002, 288 citing Swadesh 1933, 109), Sabanê (Nambikwaran—see (46)), Hup (Maku—Epps 2005, 670); in various Australian languages (Walmadjari—Hudson 1976, 656f, 661f; Panyjima—Dench 1991, 172, 207); in Chukotko-Kamchatkan (Itelmen—cf. Georg and Volodin 1999, 157, ex. (249)).

It is also found in a number of isolate languages: Cohahuilteco (Cinque 1999, 165), and Urarina (Olawsky 2006, 456ff).

(45) Ati-yuwa-na-um-no

pour-COMPL-FUT-1sg-Q

‘Will I pour it all out?’

(Auyana—McKaughan and Marks 1973, 188))

(46) Uli ay-i-say-al-a

2SUBJ go-VERB.SUFF-PROG-PRES-Q

‘Are you leaving?’

(Sabanê—Antunes de Araujo 2004, 206)

Of the 24 mathematically possible combinations of (speech act) Mood, Tense, and Aspect, 13 (namely (I)a, (I)b, (I)c, (I)d, (I)m, (I)n, (I)p, (I)q, (I)t, (I)u, (I)v, (I)y, and (I)z) can be derived if the following assumptions are adopted (see Cinque 2005 on the attested orders of demonstrative, numeral, and adjective modifiers in the DP):

- (47) a. Order of merge: [. . . [_{MoodP}(speech act) Mood . . . [_{TenseP} Tense . . . [_{AspP} Aspect [_{VP} V]]]]⁵⁰
- b. Parameters of movement:
- i) No movement, or
 - ii) VP movement without pied-piping, or
 - iii) VP movement plus pied-piping of the *whose picture*-type⁵¹, or
 - iv) VP movement plus pied-piping of the *picture of who*-type⁵²
 - v) *total* vs. *partial* movement of the VP with or without pied-piping
 - vi) *obligatory* vs. *optional* application of movement.
 - vii) No movement of a phrase not containing the VP is possible (except for (focus) movements to the left of a second-position element).⁵³

(I)a is derived if nothing moves; (I)b is derived if VP raises to a Spec between Tense and Aspect, with no further movement involved (Mood Tns VP_k Asp t_k); (I)c is derived if the VP moves further to a Spec between Mood and Tense (Mood VP_k Tns (t_k) Asp t_k); (I)d is derived if the VP moves further to a Spec higher than Mood (VP_k Mood (t_k) Tns (t_k) Asp t_k); (I)m is derived if VP moves to a Spec higher than Mood pied-piping the projection dominating Asp ([Asp VP]_i Mood (t_i) Tns t_i); (I)n is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec higher than Mood pied-piping the projection dominating it and Aspect ([VP_k Asp t_k]_i Mood (t_i) Tns t_i); (I)p is derived if VP moves to a Spec between Mood and Tense pied-piping the projection dominating Asp (Mood [Asp VP]_i Tns t_i); (I)q is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec between Mood and Tense pied-piping the projection dominating it and Asp (Mood [VP_k Asp t_k]_i Tns t_i); (I)t is derived if VP moves to a Spec higher than Mood pied-piping the projection dominating Tense, Aspect and VP ([Tns Asp VP]_i Mood t_i); (I)u is derived if VP raises to a Spec between Tense and Aspect, and then raises to a Spec higher than Mood pied-piping the projection dominating Tense, VP and Aspect ([Tns VP_k Asp t_k]_i Mood t_i); (I)v is derived if VP raises to a Spec between Mood and Tense, and then raises to a Spec higher than Mood pied-piping the projection dominating it, Tense and Aspect ([VP_k Tns (t_k) Asp t_k]_i Mood t_i); (I)y is derived if VP moves to a Spec between Mood and Tense pied-piping the projection dominating Aspect, and then raises to a Spec higher than Mood pied-piping the projection dominating Aspect, VP and Tense ([[Asp VP]_i Tns t_i]_i Mood t_i); (I)z is derived if VP moves to a Spec between Tense and Aspect, then moves to a Spec between Mood and Tense pied-piping the projection dominating VP and Aspect, and then raises to a Spec higher

than Mood pied-piping the projection dominating it, Aspect and Tense ([[VP_i Asp t_i] Tns t_i] Mood t_i]).

The other attested orders appear to have special marked derivations, as discussed in the following section.

2 APPARENT VIOLATIONS OF THE MOOD > TENSE > ASPECT PREVERBAL ORDER

Abstracting away from arguably spurious cases of preverbal orders different from Mood > Tense > Aspect which arise from a non appropriate attribution of some morpheme to a certain category⁵⁴, there appear to be some genuine exceptions to the generalization that preverbally the order is rigidly (speech act) Mood > Tense > Aspect.

The first class of apparent exceptions involves reversals of either Tense or Aspect with (speech act) Mood. Such reversals can plausibly be argued to arise from special A-bar (focus) movements (much as with reversals of the prenominal order Dem Num A in the DP—cf. Cinque 2005, fns. 2 and 23).

One such case is provided by Amanab (Papuan—Minch 1991, 1992), where one finds the order Perfective Aspect particle > Interrogative particle > V (i.e. Asp Mood . . . V) as one of the possible orders of these elements. From Minch's description, however, it appears that the interrogative particle is a focussing particle attracting to its Spec what falls under its scope: "The yes/no question clause [...] is also marked by the question marker *ho* (QM) at the end of the clause or immediately following the particular argument questioned" (Minch 1992, 140). See:⁵⁵

- (48) a. ne-ba bu ne-gim ho?
 You-TOP water eat-INF Q
 'Do you want a drink of water?' (Minch 1992, 140)
- b. ati ho Kuma-ba rakona sis-ba
 PERF Q Kuma-TOP shoot kapul-TOP
 'Did Rata pound sago?' (Minch 1992, 140)

Mbili (Grassfield Bantu (Niger-Congo)—Ayuninjam 1998) may be another case in point. See (49):

- (49) a. a mi la (i)n nuu ntse daŋ
 he PAST₄ Q LINK drink water any
 'Did he drink any water?' (Ayuninjam 1998, 347)
- b. a mi lægə (i)n nuu ntse čə
 he PAST₄ DECL LINK drink water some
 'He drank some water' (Ayuninjam 1998, 347)

The question marker *la* appears to be a focussing particle (for example, it obligatory precedes *wh*-words (p.361) apparently forcing the remnant to raise to its left (cf. (50)):

- (50) *ni zwen la (a)kəə*
 2pl buy Q what
 ‘What did you buy?’ (Ayuninjam 1998, 234)

If so (49)a might also involve raising of [*nuu ntse dan* ‘drink water any’] to Spec.Focus, followed by merge of *la*, in turn followed by raising of the remnant to Spec,*la*. (possibly meaning more literally: “was it drink any water that he did?”).⁵⁶

The same analysis may carry over to Yurok (Algic (California)—see (51), from Dryer 2005, 374), as the question particle *hes*, to judge from Robins (1958, 139) (“*hes* is usually the second word, but it may occur anywhere except initially”) appears to be a second position particle, and to the Salishan languages Sliammon Comox (see (52)) and St’át’imcets (see (53)), which also have second position interrogative morphemes:

- (51) *kic hes neskw^wec-ok^w ku wɪʔyɪs*
 PAST Q come-3sg Def girl
 ‘Has the girl come back yet?’
- (52) *taʔat_a_čx^w θə.θt^θ- am’-uł nəgi*
 HAB_Q=2sg.Ind Red.Impf-jig-Mdl-PAST 2sg.Indp
 ‘Did you use to go jiggling yourself?’
 (Sliammon Comox—Watanabe 2003, 93)
- (53) *waʔ ha tuʔ čuk^w?*
 IMPF Q PAST finish
 ‘Did he already stop?’ (St’át’imcets—Matthewson 2003, 69)

Interestingly, such reversals appear to be limited to languages with second position elements and with free Mood, Tense and Aspect morphemes (particles), which are susceptible of independent movement. As far as I have seen no reversals of Mood, Tense, and Aspect is attested with bona fide prefixes. Such orders thus seem not to represent genuine counterexamples to the order of Merge: (speech act) Mood > Tense > Aspect.⁵⁷

A second class of exceptions may be represented by the systematic reversal of the order of Tense and Aspect morphemes in Athabaskan.

Speas (1991a,b) and Potter (1996), observe that the basic order of (conjunct) Subject/Object Agreement, Tense and Aspect prefixes in Navajo and Western Apache, respectively, is the opposite of what is taken to be the order of the corresponding syntactic heads preceding the verb: Object Agr-Aspect-Tense-Subject. Agr V (at least if what is called “primary aspect” in the Athabaskan literature, which comprises perfective, imperfective and

progressive aspect, is taken to be the closest representative of Tense in these languages).⁵⁸ Should this turn out to be a genuine reversal of the order of Merge (Mood>) Tense > Aspect, one could think of obtaining it from movement of the VP as in the languages of type (I)z (V-ObjA-Asp-Tns-SubjA), followed by raising of VP to a higher Spec([VP_i [t_i-ObjA-Asp-Tns-SubjA]]), followed by movement of the remnant ([[t_i-ObjA-Asp-Tns-SubjA]_k [VP_i t_k]]. But this case needs to be investigated further.

The remaining, unattested, cases appear not to be derivable under any of the derivational options assumed here.

APPENDIX: LIST OF ABBREVIATIONS

A = adjective	INCH = inchoative (aspect)	14
Acc = accusative	INGR = ingressive (aspect)	15
ANT= anterior tense	IRR= irrealis (mood)	16
ASP= aspect	ITER= iterative (aspect)	17
CAUS= causative	Loc = locative	18
CLF = classifier	MOD= modal	19
COMP= complementizer	N = noun	20
COMPL= completive (aspect)	Num = numeral	21
CONT= continuous (aspect)	PERF= perfect (aspect)	22
DECL= declarative (mood)	PERFV = perfective (aspect)	23
Def = definite	PL = plural	24
Dem = demonstrative	PRES= present (tense)	25
dl = dual	PAST= past (tense)	26
Det = determiner	PRES = present (tense)	27
DUB= dubitative (mood)	PROG= progressive (aspect)	28
DUR= durative (aspect)	PROH= prohibitive (mood)	29
EPIST= epistemic (mood)	Q= yes/no interrogative (mood)	30
EVID= evidential (mood)	RemPAST= remote past (tense)	31
FUT= future (tense)	REP= repetitive (aspect)	32
FV= final vowel	SM = subject marker	33
HAB= habitual (aspect)	TNS= Tense	34
HON = honorific	V = verb	35
IMP= imperative (mood)	VIS= visual (evidential)	36
IMPF= imperfect (aspect)		37

6 Mapping Spatial PPs*

1 In both the generative and nongenerative literature, recent years have
2 seen an impressive growth in the number of studies on prepositional
3 phrases that express spatial relations.¹ Cinque (2010) contributes to that
4 discussion by focusing on one particular aspect of their syntax that has
5 remained relatively neglected: the fine-grained articulation of their inter-
6 nal structure. As we shall see, the analyses presented here, in spite of
7 their being based on rather different data and considerations, reach strik-
8 ingly convergent conclusions.

9 Here I discuss some of the main threads of these analyses and one gen-
10 eral implication that seems to me particularly significant: that phrases com-
11 posed of spatial prepositions, adverbs, particles, and DPs do not instantiate
12 different structures but merely spell out different portions of one and the
13 same articulated configuration (see in particular Svenonius 2010 and, for
14 earlier insights in this direction, Kayne 2004a).

17 1 TWO TYPES OF PREPOSITIONS

18
19 Among prepositions expressing spatial relations (and among prepositions in
20 general), it is customary to distinguish between functional and lexical ones
21 (a question to which we return). See, for example, Rizzi (1985, 157n4), Rauh
22 (1993, 1995), Zwarts (1997), Koopman (2000 and 2010), Tseng (2000,
23 chapter 1), Zwart (2005), and Den Dikken (2010), for recent discussion. The
24 former are generally taken to comprise basic (i.e., stative and directional)
25 ‘simple prepositions’ such as ‘at’, ‘to’, ‘from’, and the latter ‘complex preposi-
26 tions’ like ‘in front of’, ‘under’, ‘behind’, ‘next to’, ‘inside’, and so on.²

27 Languages appear to make a systematic distinction between these two
28 types of prepositions. For example, in Italian, purely stative (*a* ‘at’) and
29 directional (*a* ‘to’ and *da* ‘from’) prepositions differ from prepositions
30 such as *sopra* ‘above’, *sotto* ‘under’, *davanti a* ‘in front of’, *accanto a* ‘next
31 to’, etc., in obligatorily taking a complement and in disallowing preposi-
32 tion stranding (Rizzi 1988). See the contrast between (1)a and b and that
33 between (2)a and b:
34

(1) a.	Vengo proprio adesso da *(Roma)	1
	I have just come from (Rome)	2
		3
b.	L'hanno messo sopra (la sedia)	4
	They put it on top (of the chair)	5
		6
(2) a.	*Quale paese viene da?	7
	Which country is (s)he from?	8
		9
b.	A chi eri seduto sopra?	10
	Who were you sitting on?	11
		12
	In Kîtharaka (Bantu, Niger-Congo), purely stative and directional prepositions differ in exactly the same way from complex prepositions like 'in front of', 'next to', 'under', 'above', and so on. See (3) and (4) and the discussion in Muriungi (2006, section 3.2): ³	13
		14
		15
		16
(3) a.	Maria a- mami *(î-kurungu-)ni	17
	1Maria sm1-sleep (5-cave-)loc	18
	'Maria is sleeping in (the cave)' (Muriungi 2006, 30)	19
		20
b.	Maria a-kari ru-ngu (rw-a ndagaca)	21
	1Maria sm1-sit 11-under (11-Ass 9bridge)	22
	'Maria is sitting under (of the bridge)' (Muriungi 2006, 30)	23
		24
(4) a.	*N-î-kurungu Maria a-mami-ni	25
	Focus-5-cave 1Maria sm1-sleep-loc	26
	'It is the cave that Maria is sleeping in' (Muriungi 2006, 31)	27
		28
b.	I-ka-raîMaria a-burabur-ir-e nkona	29
	Focus-12-pan 1Maria sm1-wiped-perf-fv 9bottom	30
	'It is (of) the pan that Maria wiped on the bottom'	31
	(Muriungi 2006, 33)	32
		33
	Muriungi (2006, section 3.3) also shows that in Kîtharaka the two types of prepositions differ in their ability to assign case directly. While the former can, the latter need a functional preposition to do so (cf. Aboh 2010, section 2, for a similar situation in Gungbe). The same may well be true of Italian, where most complex prepositions can (and in certain cases must) be followed by one of the 'functional' prepositions <i>a</i> ('at/to') and <i>di</i> ('of') (<i>dietro (al) l'albero</i> , literally, 'behind (to) the tree', <i>dietro ??(di)la noi</i> , literally, 'behind (of/to) us', <i>accanto *(a) noi</i> , literally, 'beside to us'. See Rizzi (1988). Perhaps, then, one should posit an unpronounced preposition where none is overt, as in <i>dietro l'albero</i> 'behind the tree' (see in fact the possibility, noted earlier, of pronouncing <i>a</i> with <i>dietro</i> 'behind'). ⁴	34
		35
		36
		37
		38
		39
		40
		41
		42
		43
	In Persian, too, simple (stative and directional) prepositions differ from complex prepositions. The former must occur with a complement ((5)) and	44
		45
		46

cannot take the Ezafe linker ((6)) (see Pantcheva 2006, 2008, for these and further differences):

- (5) a. *tup oftad æz
ball fell from
- b. tup oftad zir(*-e)
ball fell under-ezafe
'The ball fell down' (Pantcheva 2006, 10)
- (6) a. *æz-e miz
from-ezafe table
- b. zir(-e) miz
under-ezafe table
'under the table' (Pantcheva 2006, 8)

2 COMPLEX PREPOSITIONS

In this connection, some of the contributions to Cinque and Rizzi (2010) converge in the postulation of a finer structure in which the complex preposition is actually a (phrasal) modifier of an unpronounced head noun PLACE (as originally proposed in Kayne 2004, 2007c), selected by a (possibly covert) stative preposition, and where the complement of the complex preposition is in a possessor relation to that unpronounced head (see in particular the evidence from Modern Greek discussed in Terzi 2010 and that from Germanic discussed in Noonan 2010).⁵

Abstracting from certain differences, the structure that emerges from these proposals for a phrase like *under the table* is the one illustrated in (7):

- (7) [_{PPstat}(at)[_{DPplace} [_{XP}under[X [_{PP}P[_{NPplace} the table [PLACE]]]]]]]]

This proposal may actually shed light on another difference between the two types of prepositions, one that has to do with the binding theory. Complex (but not simple [i.e., stative and directional]) prepositions may constitute an independent binding domain (*Max_i saw a ghost next to/over him_i/himself_i* vs. *John_i spoke to/about himself_i/*him_p*; cf. Reinhart and Reuland 1993, 664, 686). If complex prepositions are modifiers of a (Place) DP, their behavior can be assimilated to that of ordinary DPs (*Lucie_i saw a picture of her_i/herself_i* [Reinhart and Reuland 1993, 661]).⁶

Complex prepositions like 'in front of', 'under', 'above', 'behind', and so on correspond to Jackendoff's (1996) and Svenonius's (2006b, 2007, 2008b, 2010) 'axial parts',⁷ which define a place by projecting vectors onto one of the possible axes (front/back, up/down, etc.) that depart from the object that provides the reference point (the 'ground'; here [the surface of] 'the table'):⁸

(8) [_{PPStat}(at)[_{DP_{place}}[_{AXPartP}under[_{PP}[_{NP_{place}}the table [PLACE]]]]]]

Of course, how this putative underlying structure actually surfaces in a language depends on independent word order and other parameters specific to that language, which may cause it to differ from the way the same structure surfaces in another language. In the spirit of Zhang (2002), Kayne (2004a), and Zwart (2005), it is tempting to derive the way (8) is realized in different languages by different types of leftward movements and by the pronunciation/nonpronunciation of some of its components.

For example, a conceivable analysis of the Gungbe case in (9) (the one sketched in Aboh 2004, 122, though not the one eventually adopted by Aboh 2010, but see his note 4) is that NP_{place} raises above AxPartP, with case assigned to the DP *xwé ló* ‘house the’ by the simple stative preposition *dó* ‘at’ or by a verb in its absence (see Aboh’s (2010) observation at p. 229 that adjacency between the preceding preposition or verb and the DP is required).⁹

(9) *Yé gbá cò fù ló dó xwé ló kpá*
 3pl build shop Det at house Det beside
 ‘They built the shop beside the house’ (= (16)b of Aboh, 2010)

The Zina Kotoko (Chadic) case in (10) could instead be analyzed as involving no movement, with a null P assigning case to the prepositional object ‘table’(the difference with Gungbe arguably depending on the difference between the two languages in the ordering of the possessor).¹⁰

(10) *Kitàbí dé a mwá táb`əl*
 books Det at under table
 ‘The books are under the table’ (Holmberg 2002, 163)

Their Italian (and English) equivalents plausibly have an unpronounced stative preposition selecting DP_{place} (*I libri sono A sotto il tavolo PLACE / the books are AT under the table PLACE*). See Holmberg (2002, 168n5), Kayne (2004a, section 4.2.2) on English and the fact that in Italian the preposition can actually be pronounced if a measure phrase is present: *Si trova (a) due metri sotto il livello del mare* ‘It is found (at) two meters under sea level.’ Italian (and English) may also have, as noted, an unpronounced preposition assigning case to the object *il tavolo/the table*.¹¹

The same presumably extends to directional prepositions (*I put it TO under P the bed*). See Svenonius (2010, section 2.1), who notes that *to* is in fact marginally possible in English in front of complex prepositions:¹²

(11) The boat drifted (?to) below the bridge

Another common order is ‘DP(+case) under/above/etc. at’. This is the order typically found in OV languages (e.g., Ainu and Japanese; see (12)a and b)¹³ and also in sundry VO languages (see the case of the Austronesian SVO

language Taba in (12) c), with raising of the DP (+ PLACE) around the axial preposition, followed by further raising plus pied-piping around the stative preposition:

- 1
2
3
4
5 (12) a. cikue ka ta hon an
6 desk on-top-of at book to-be
7 ‘there is a book on the table’ (Ainu—Tamura 2000, 27)
8
9 b. teeberu-no ué ni
10 table-GEN surface at
11 ‘on the table’ (Japanese—Zhang 2002, 55)
12
13 c. tabako adia kurusi ni soda li
14 cigarettes there chair POSS face LOC
15 ‘The cigarettes are there, on the front of the chair’
16 (Taba—Bowden 1997, 260)

17 Other OV languages displaying the same word order except for the use of cases
18 instead of adpositions are Arrernte (Pama-Nyungan—Wilkins 2006, 33),
19 Tamil (Dravidian—Pederson 2006, 428), and Manipuri (Tibeto-Burman—
20 Singh 2000, 87):

- 21
22 (13) a. tyaperapere-Ø chair-nge kwene-le
23 The ball-NOM chair-ABL under-LOC
24 ‘The ball is under the chair’ (Arrernte)
25
26 b. kutirai marattukku pinnaale irukku
27 horse tree-DAT behind-LOC Cop-PRES-3sn
28 ‘The horse is behind the tree’ (Tamil)
29
30 c. məhak ka-gi məpan-də lep-pi
31 he room-GEN outside-LOC stand-ASP
32 ‘He is standing outside the room’ (Manipuri)
33

3 STATIVE LOCATION AND DIRECTION

34
35
36 So far we have limited our attention to stative location (except for noting,
37 in the last section, that directional prepositions, like stative prepositions,
38 may also fail to be pronounced in certain languages). The recent literature
39 generally assumes a specific hierarchical structure for stative and direc-
40 tional Ps, with stative PPs embedded under directional PPs: [_{DirP} [_{StatP} P]],
41 though stative Ps are often taken to also comprise axial part adpositions
42 (see Jackendoff 1990; Van Riemsdijk 1990; Koopman 2000, 2010; Ayano
43 2001, 2005; Helmantel 2002; Van Riemsdijk and Huijbregts 2001, 2007;
44 Kracht 2002, 2008; Den Dikken 2003, 2010; Gehrke 2006).
45
46

In view of the systematic differences noted earlier between simple prepositions of stative location and direction (which behave like heads, are case assigners, require a complement, do not constitute independent binding domains, and resist pied-piping in many languages and perhaps also direct modification¹⁴) and complex or ‘axial part prepositions’ (which have the opposite properties), it is reasonable to assume that the latter are not candidates for the head position of PP_{Stat} but, following Terzi and others mentioned earlier, are modifiers of a DP_{Place} projection (headed by PLACE, or ‘place’) selected by an overt or a covert stative P, whose projection is in turn selected, where applicable, by an overt or a covert directional P, as schematically shown in (14), for a sentence like *(They extracted it) from under the table*:¹⁵

(14) [_{PPDir} from [_{PPStat} AT [_{DPPlace} [_{AXPartP} under X^o [_{PP} P [_{NPPlace} the table [PLACE]]]]]]]]

Some evidence for the relative position of stative and directional prepositions comes from those languages where the simple prepositions of stative location (‘at’) and direction (goal ‘to’ or source ‘from’) co-occur in directional contexts. See (15) through (19), which represent the expected word order possibilities of the three elements P_{Dir} P_{Stat} NP (Cinque 2009a, 167):¹⁶

(15) P_{Dir} P_{Stat} NP
 Ion vine **de la** magazin (cf. Ion este **la** magazin, literally, ‘Ion is at store’)
 Ion is coming **from at** store
 ‘Ion is coming from the store’
 (Romanian—Zegrean 2007, 40, 79)¹⁷

(16) NP-P_{Stat}-P_{Dir}
 Ta’wá-ci kani-**vee-tuk**’ paġáy’wa-y
 man house-**at-to** walk-PROG
 ‘The man is walking toward the house’
 (Ute (Uto-Aztecan)—Givón 1980, 66)¹⁸

(17) NP-P_{Dir}-P_{Stat}
 gay-**at-ba** (cf. gay-*ba*, literally, ‘house-at’)
 house-**to-at**
 ‘to the house’
 (Iatmul (Papuan)—Staalsen 1965, 21)

(18) P_{Dir} NP P_{Stat}
 Yak kgoras kapaya ni kowo **ap po** bbuk li.
 yak k=goras kapaya ni kowo **ap-po** bbuk li
 1sg 1sg=shave papaya 3sg.POSS seed ALL-down book LOC
 ‘I’m scraping the papaya seeds onto the book.’
 (Taba (Austronesian)—Bowden n.d.)

- 1 (19) $P_{Stat} NP P_{Dir}$
 2 d'ə rúru 'à jì kàskú kí
 3 3m go.PROG LOC inside market toward
 4 'he is going toward the market'
 5 (Zina Kotoko (Chadic)—Tourneux 2003, 294)
 6

7 Putting together these observations one arrives at a structure like
 8 $[P_{Dir} [P_{Stat} [P_{AxPart} [P [DP]]]]]$, which is the structure also arrived at by Kracht
 9 (2008), who in fact suggests that “each of these projections can independ-
 10 dently be motivated” semantically (p. 2).
 11
 12

13 4 ADDITIONAL PROJECTIONS

14
 15 As Svenonius (2008, 66) demonstrates, AxPartP can in fact be further
 16 qualified by adding, in the following order, a degree phrase (e.g., ‘two
 17 inches’) (cf. also Koopman 2010, p. 36, and Den Dikken 2010, p. 79) and
 18 a ‘mode of direction’ phrase (e.g., ‘diagonally’, ‘in a straight line’) for the
 19 vectors projected along a certain axis from the ground (*[from] two inches*
 20 *diagonally under the table*), thus suggesting a richer structure like the one
 21 in (20):¹⁹
 22

- 23 (20) $[_{PPdir} \text{from}[_{PPstat} AT[_{DPplace} [_{DegP} \text{two inches} [_{ModeDirP} \text{diagonally} [_{AxPartP} \text{under } X^\circ$
 24 $[_{PP} P[_{NPplace} \text{the table} [PLACE]]]]]]]]]]]$
 25

26 As a matter of fact, more projections need to be postulated between $PP_{dir/}$
 27 $stat$ and AxPartP. One of these, discussed also in Svenonius (2010, section
 28 2.5) encodes (optional) deictic information (whether the PLACE/place is
 29 near the speaker or not). As he notes, Tsez (North Caucasian) provides
 30 interesting morphological evidence for such a projection and also for its
 31 location between AxPartP and the projections hosting stative and direc-
 32 tional Ps. As Comrie and Polinsky (1998, section 3.2) have observed, the
 33 deictic morpheme *āz*, expressing distality (distance from the speaker), is
 34 sandwiched between the morphemes that express axial parts (which are
 35 closer to the N) and those that express stative location/direction:
 36

- 37 (21) besuro-*āz*-ay
 38 *fish-under-DIST-from*
 39 ‘from there under the fish’ (Svenonius 2010, p. 139)
 40

41 Assuming the Tsez suffixes to be a perfect mirror image of the correspond-
 42 ing syntactic heads, we have evidence for the hierarchy in (22):²⁰
 43

- 44 (22) $[PP_{dir/stat} \text{from/at} . . . [_{DeicticP} \text{there} . . . [_{AxPartP} \text{under} [_{NPplace} \text{the table} [PLACE]]]]]]]$
 45
 46

7 THE LEXICAL/FUNCTIONAL DIVIDE

I mentioned at the outset the widespread idea that (spatial) Ps come in two varieties, a functional and a lexical one (roughly corresponding to the distinction between simple, locative and directional, Ps and complex Ps), but no real consensus exists on the matter. While Van Riemsdijk (1990), Rauh (1993, 1995), and Zwarts (1995), among others, espouse this position, others have taken a different stand: Jackendoff (1973, 1977), Déchaine (2005), and Den Dikken (2010) treat Ps on a par with traditional lexical categories like Ns, Vs, and As, whereas Grimshaw (1991) considers them as essentially functional, part of the extended projection of N.

Lack of semantic content cannot, it seems, be a necessary condition for functional status (pace Zwart 2005), at least if one considers tense and aspect morphemes, demonstratives, and quantifiers to be functional elements (Cinque 1999; Kayne 2005b). More revealing diagnostics are perhaps membership in a closed (vs. open) class of elements and impairment in agrammatic aphasia, which is traditionally believed to selectively affect grammatical, or functional, elements.

Concerning impairment in agrammatic aphasia, an in-depth study of the behavior of prepositions discussing previous works, presents interesting new data on the issue, and concludes that there exists “a great deal of evidence from aphasia that (all) prepositions pattern with f[unctional]-heads, not lexical categories, when language is focally damaged” (Froud 2001, 12). With regard to the closed vs. open class diagnostic, simple Ps clearly constitute a very small, closed class that ranges from four (‘at’, ‘to’, ‘from’, ‘across’) to a few more, if orthogonal parameters like ‘precise vs. vague location’ are represented (‘to’ vs. ‘toward’, ‘from a precise point’ vs. ‘from the general area of’, etc.; see Van Riemsdijk and Huijbregts 2007, n. 10, and Tortora’s article mentioned in note 4). As for the class of complex Ps, which characterize the particular spatial relation between the ‘figure’ and the ‘ground’ (the marble is ‘in front of’/‘behind’/‘under’/‘on’/‘in’, etc., the box), even if they constitute a larger set, they, too, seem to constitute a closed class (Svenonius 2007, 64f). In fact, analyses of complex Ps in a number of languages explicitly claim that they constitute a closed class (see, for example, Ameka 2003, 55, on Ewe).²⁷

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7 The Fundamental Left-Right Asymmetry of Natural Languages*

1 In both the typological and generative literature various left-right asymme-
2 tries of natural languages have been discussed; among these, the rightward
3 skewing shown by the location of sentential complements with respect to the
4 verb (Dryer 1980, Hawkins 1988, §2.2); the similar rightward skewing of rela-
5 tive clauses with respect to their Head (Hawkins 1988, §2.1; Cinque 2005a);
6 the cross-linguistic preference of suffixing over prefixing (Cutler, Hawkins,
7 and Gilligan 1988, Hawkins 1988, §2.3, Hawkins and Gilligan 1988); the
8 existence of “unbounded leftward movement” vs. the (virtual) inexistence of
9 “unbounded rightward movement” (Bach 1971, 160f; Bresnan 1972, 42ff;
10 Kayne 1994, 54; Cinque 1996; Hawkins 1998); and the left-right asymme-
11 tries in quantifier scope interactions mentioned in Lu (1998, 10, fn.3).

12 Here I would like to discuss yet another pervasive left-right asymmetry
13 of natural languages: that found in the ordering of functional modifiers and
14 heads to the left and to the right of a lexical head.

15 The first glimpse of such an asymmetry is to be found in one of Green-
16 berg’s universals, his Universal 20: “When any or all of the items (demon-
17 strative, numeral, and descriptive adjective) precede the noun, they are
18 always found in that order. If they follow, the order is either the same or its
19 exact opposite.” (Greenberg 1963, 87).

20 The left-right asymmetry implicit in Greenberg’s formulation appears
21 more clearly when all the modifiers are on the same side of the noun, as is
22 the case in (1). What we find is that to the left of the noun only one order
23 is possible, while to its right two orders are possible (either the same one or
24 its mirror image).¹

25 26 27 ORDER OF DEMONSTRATIVES, NUMERALS, AND 28 ADJECTIVES (GREENBERG 1963, CINQUE 1996, 2005b)

- 29
30 (1) a. Dem > Num > A > N (English, Malayalam, . . .)
31 b. *A > Num > Dem > N 0
32 c. N > Dem > Num > A (Abu‘, Kikuyu, . . .)
33 d. N > A > Num > Dem (Gungbe, Thai, . . .)
34

This is not an isolated property of such modifiers. The same pattern is found with the order of attributive adjectives ((2)), with the order of adverbs ((3)), with the order of circumstantial PPs ((4)), with the order of locative and directional prepositions ((5)), with the order of Mood, Tense, and Aspect morphemes ((6)), with the order of auxiliaries (and restructuring verbs) ((7)), etc.

Consider first the order of attributive adjectives. Restricting ourselves, for convenience, just to adjectives of size, color and nationality among the substantial number of existing classes (see Scott 2002, and references cited there), we find that their order is fixed (if we control for the independent relative clause source of attributive adjectives—see Cinque 2010a for discussion).

Order of attributive adjectives (not derived from RCs):
(Hetzron 1978; Sproat and Shih 1991; Cinque 1994, 2010a; Plank 2003, 2006)

- (2) a. $A_{size} > A_{color} > A_{nationality} > N$ (English, Serbo-Croatian . . .)
- b. $*A_{nationality} > A_{color} > A_{size} > N$ 0
- c. $N > A_{size} > A_{color} > A_{nationality}$ (Welsh, Irish, Maltese . . .)²
- d. $N > A_{nationality} > A_{color} > A_{size}$ (Indonesian, Yoruba, . . .)

Similarly, if we take some selection of the many different classes of adverbs that are found within the clause (say, the terminative aspect adverb *no longer*, the completive aspect adverb *completely*, and *always*), we find the same thing:

Order of adverbs: (Cinque 1999, 42f, Rakowski and Travis 2000, Pearson 2000)

- (3) a. $Adv_{no\ longer} > Adv_{always} > Adv_{completely} > V$ (English, Chinese, . . .)
- b. $*Adv_{completely} > Adv_{always} > Adv_{no\ longer} > V$ 0
- c. $V > Adv_{no\ longer} > Adv_{always} > Adv_{completely}$ ((main clause) German, Italian . . .)
- d. $V > Adv_{completely} > Adv_{always} > Adv_{no\ longer}$ (Malagasy, Niuean, . . .)

This is also what we find with the relative order of circumstantial PPs. If we limit ourselves to Time, Place and Manner PPs, whose order has been investigated from a cross-linguistic perspective by Boisson (1981), and Lu (n.d.) (also see Cinque 2002, Hinterhölzl 2002, Schweikert 2005a, Takamine 2010), we find the same pattern:³

Order of circumstantial PPs

- (4) a. Time > Place > Manner V (Basque, Nambikuara, . . . — Lu n.d., Kroeker 2001,3)
- b. *Manner > Place > Time > V 0
- c. V > Time > Place > Manner (V/2 clause German)
- d. V > Manner > Place > Time (Vietnamese, Yoruba—Lu n.d.)

A similar pattern is apparently found (in those languages in which they overtly combine) with the order of locative ('at') and directional ('to', 'from') prepositions ($P_{Dir} > P_{Loc} > NP$; $NP > P_{Dir} > P_{Loc}$; $NP > P_{Loc} > P_{Dir}$):⁴

Order of directional and locative prepositions

- (5) a. $P_{Dir} P_{Loc} NP$ (Romanian: *Ion vine de la școală* '(lit.) Ion comes from at school (from school)' Zegrean 2007, 79)
 b. $*P_{Loc} P_{Dir} NP$ 0
 c. $NP P_{Dir} P_{Loc}$ (Iatmul (Papuan): *gay-at-ba* '(lit.) house-to-at (to the house)'—Staalsen 1965, 21)
 d. $NP P_{Loc} P_{Di}$ (Jero (Tibeto-Burman): *thalu=na=k* 'where=LOC=SOURCE (from where)'—Opgenort 2005, 92)

This is also what we find with the order of (speech act) Mood, Tense, and Aspect with respect to the V (see Bybee 1985, Foley and Van Valin 1984, Cinque 1999, Chapter 5 here, and the text below):

Order of (speech act) Mood, Tense, and Aspect morphemes

- (6) a. Mood Tense Aspect V (Nama, Yoruba, . . .)
 b. $*Aspect$ Tense Mood V 0
 c. V Mood Tense Aspect (Comox, . . .)
 d. V Aspect Tense Mood (Korean, Malayalam, . . .)

If one considers the relative order of auxiliary and restructuring (or clause union) verbs (Cinque 2006) with respect to each other and to the lexical verb, one finds a similar pattern. See Koopman and Szabolcsi (2000), Nilsen and Vinokurova (2000), Wurmbbrand (2004), Barbiers (2005), Svenonius (2006) and Abels (2011):

Order of auxiliary (restructuring) verbs

- (7) a. $Aux_1 Aux_2 Aux_3 V$ (Italian, English, . . .)
 b. $*Aux_3 Aux_2 Aux_1 V$ 0
 c. $V Aux_1 Aux_2 Aux_3$ (Hungarian, West Flemish, . . .)
 d. $V Aux_3 Aux_2 Aux_1$ (Hungarian, German, . . .)

The same pattern is also found within a single language, with respect to the ordering of certain elements. To take one example, Terzi (1999) notes that in front of the verb in Modern Greek only the order in which the dative clitic precedes the accusative clitic is admitted, while after the V either order of the two clitics is possible (see (8)):

Order of (dative and accusative) clitics in Modern Greek
(Terzi 1999, 86)

- (8) a. mou to edoses
 me_{dat} it_{Acc} gave.2sg
 ‘you gave it to me’
 b. *to mou edoses
 it_{Acc} me_{dat} gave.2sg
 c. Dos’ mou to
 give me_{dat} it_{Acc}
 ‘give it to me!’
 d. Dos’ to mou
 give it_{Acc} me_{dat}
 ‘give it to me!’

All of the cases seen above instantiate exactly the same pattern:

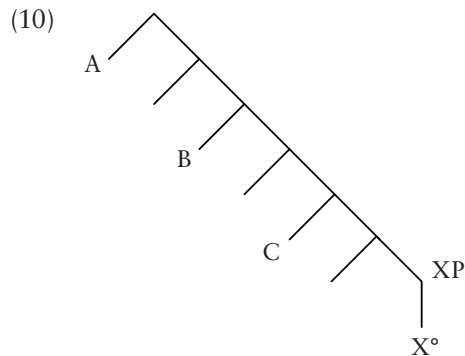
- (9) a. AB(C)X°
 b. *(C)BA X°
 c. X° AB(C)
 d. X° (C)BA

Clearly, this cannot be an accident. It is equally clear that these orders are not independent of one another. One feels in fact that they are the *same* order at a more abstract level, for they are either literally the same, modulo their pre- or post-head location ((9)a and c), or the mirror image of each other on the two sides of the head ((9)a and d). It would thus seem desirable to express this more abstract identity by deriving them from a unique structure.

Sometimes it is assumed that this more abstract identity is expressed by a principle which determines the relative distance of each class of elements from the head, thus accounting for what are possibly the two most common orders of each of the above cases, (9)a (ABC X°) and (9)d (X° CBA), and for the non existence of the order (9)b (CBA X°). But, if one takes this line, one can only state the principle as a tendency given that the fourth order, (9)c (X° ABC), even if it is generally rarer, plainly violates it.

The principle (whatever it ultimately follows from) can however be stated as an absolute principle, rather than just a tendency, if we are willing to abandon the symmetrical view underlying the above account (as in fact Kayne’s 1994 antisymmetry principle would have us do), and to adopt a more abstract, asymmetrical, view, whereby there is only one order/structure available for all languages ((10)), and whatever word order difference there is among them is a function of independently motivated types of movement of the lexical core XP.

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We know that certain phrases in certain languages can, or must, appear displaced; for example (single) interrogative *wh*-phrases in English must be displaced to sentence initial position (as in (11), below). And we know that languages vary with respect to whether they displace them or not. In some languages (e.g., Indonesian—see (12)) *wh*-phrases remain *in situ*. We also know that depending on certain conditions movement can affect just the phrase bearing the feature triggering the movement—here the *wh*-feature—as in (11), or a larger phrase containing the phrase bearing the relevant feature (as in (13)); what Ross (1967) called pied-piping:

(11) [*Who*] did you see ?



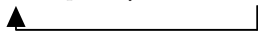
(12) Siti mau *apa*?

Siti want what

‘What does Siti want?’

(Cole, Hermon and Tjung 2005,553)

(13) [[*Whose*] pictures] did you see ?

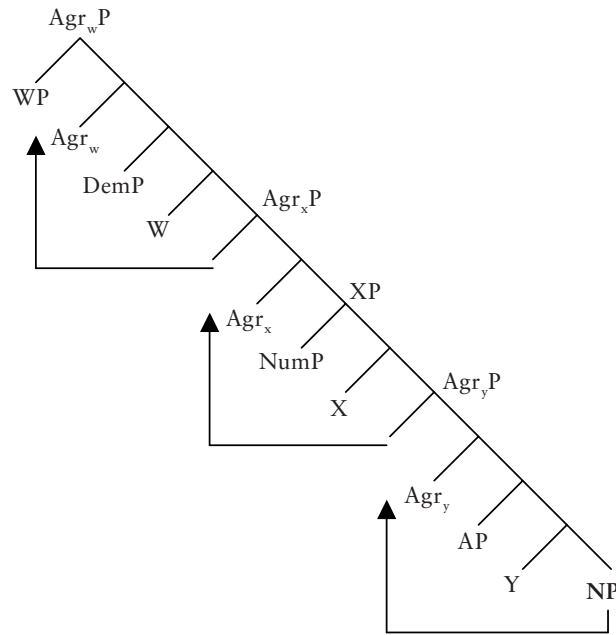


In Cinque (1996, 2003a, 2005b) I suggested that precisely these two independent parameters (whether the relevant phrase remains *in situ* or moves; and, if it moves, whether it moves by itself, or by pied-piping each time the immediately dominating phrase) can account for the three attested orders of Dem Num A N ((1)a,c,d) and for the principled absence of the fourth ((1)b).

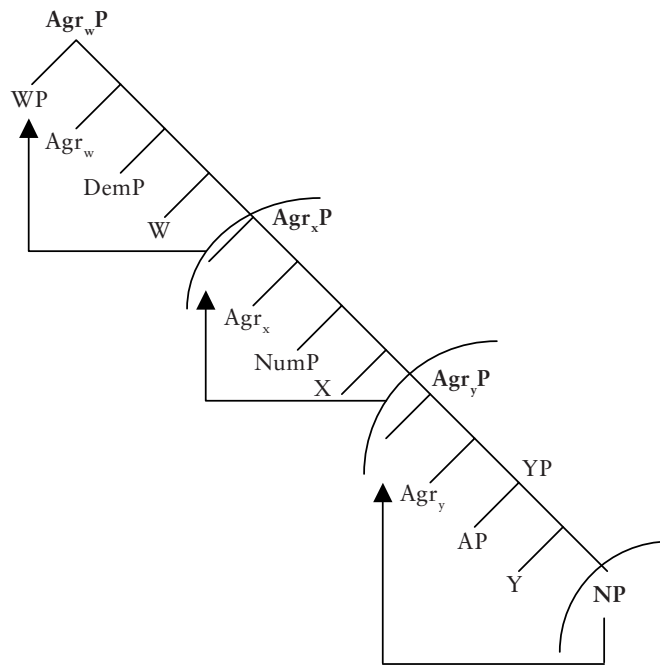
The phrase bearing the relevant feature triggering the movement (a nominal feature) is in this case NP.

If NP does not move, we get (1)a. If NP moves by itself (all the way up), as shown in (14a), we get (1)c. If it moves (all the way up) each time pied-piping the immediately dominating phrase, as in (14b), we get (1)d. (1)b cannot be derived because the NP has not moved and the base structure has the modifiers in the wrong order. Crucially AP, NumP, or DemP cannot move by themselves just as phrases not bearing the *wh*-feature cannot move by themselves to the sentence initial *wh*-position.⁵

(14a)



(14b)



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Note that if the principle governing the degree of proximity of each modifier to the head is stated on the “base level” (10), before movement takes place which disrupts the original order of elements, it can be stated as an absolute principle forcing AP to be merged closer to the head than NumP, and NumP closer to the head than DemP.

This logic extends to the other instances of the same pattern seen above. This is however a simplification. The orders that it accounts for are the orders in (15)a,c,d, repeated here as (15)a-c, and, taking partial movement into account (i.e., when the NP does not move all the way up), the orders in (16)a-c:

- (15) a. Dem Num A N
 b. N Dem Num A
 c. N A Num Dem
- (16) a. Dem Num N A
 b. Dem N Num A
 c. Dem N A Num

But, of the 24 mathematically possible orders of the four elements Dem, Num, A and N, more than the six indicated in (15) and (16) are attested, as is apparent from the table in (17), from Cinque (2005b), which documents 14 orders as attested (although in the same article I suggested that one ((17)r) may be spurious, with the position of A really being the position of reduced relative clauses).⁶

(17)

a.	√	Dem	Num	A	N	(very many languages) ⁷
b.	√	Dem	Num	N	A	(many languages) ⁸
c.	√	Dem	N	Num	A	(very few languages) ⁹
d.	√	N	Dem	Num	A	(few languages) ¹⁰
e.	*	Num	Dem	A	N	(Ø—Greenberg 1963; Hawkins 1983)
f.	*	Num	Dem	N	A	(Ø—Greenberg 1963; Hawkins 1983)
g.	*	Num	N	Dem	A	(Ø—cf. Lu 1998, 183)
h.	*	N	Num	Dem	A	(Ø—cf. Greenberg 1963; Lu 1998, 162)
i.	*	A	Dem	Num	N	(Ø—Greenberg 1963; Hawkins 1983)
l.	*	A	Dem	N	Num	(Ø—Greenberg 1963; Hawkins 1983)
m.	√	A	N	Dem	Num	(very few languages) ¹¹
n.	√	N	A	Dem	Num	(few languages) ¹²
o.	*	Dem	A	Num	N	(Ø—Greenberg 1963; Hawkins 1983) ¹³
p.	√	Dem	A	N	Num	(very few languages) ¹⁴
q.	√	Dem	N	A	Num	(many languages) ¹⁵
r.	√	N	Dem	A	Num	(possibly spurious)

s.	*	Num	A	Dem	N	(Ø—Greenberg 1963; Hawkins 1983)	1
t.	√	Num	A	N	Dem	(very few languages) ¹⁶	2
u.	√	Num	N	A	Dem	(few languages) ¹⁷	3
v.	√	N	Num	A	Dem	(few languages) ¹⁸	4
w.	*	A	Num	Dem	N	(Ø—Greenberg 1963; Hawkins 1983)	5
x.	*	A	Num	N	Dem	(Ø—Greenberg 1963; Hawkins 1983)	6
y.	√	A	N	Num	Dem	(very few languages) ¹⁹	7
z.	√	N	A	Num	Dem	(very many languages) ²⁰	8

All of the attested orders, and none of the unattested ones, can be derived, it seems, by slightly refining our earlier assumptions.

Note that in addition to the pied-piping of the [[whose] pictures] type, which drags along constituents to the right of the phrase triggering movement, there is also a pied-piping of the [pictures [of whom]] type, which drags along constituents to the left of the phrase triggering movement:

(18) [pictures [of whom]] did you see ?

This means that in addition to movements like the one in (19)a, giving the order N A Num, one can also expect to find movements like the one in (19) b, giving the order A N Num:

(19) a. . . [NP [AP]] NumP

b. [AP [NP]] NumP

As I suggested in (2005b), all of the attested orders (and none of the unattested ones) can be derived if we revise our earlier assumptions in the way indicated in (20):

- (20) a. Base order: [. . . [_{WP}DemP . . . [_{XP}NumP . . . [_{YP}AP [_{NP}N]]]]]
- b. Parameters of movement:
- i) No movement (unmarked), or
 - ii) NP movement plus pied-piping of the *whose pictures*-type (unmarked), or
 - iii) NP movement without pied-piping (marked), or
 - iv) NP movement plus pied-piping of the *pictures of whom*-type (more marked still)

- 1 v) *total* (unmarked) vs. *partial* (marked) movement of the NP with
 2 or without pied-piping (in other words, the NP raises all the way
 3 up, or just partially, around its modifiers).
 4 vi) Neither head movement nor movement of a phrase not containing
 5 the NP are possible (except perhaps for a single focus-related move-
 6 ment to a DP initial position).²¹
 7

8 The “marked”, “unmarked”, “more marked”, etc., values attached to
 9 each parameter of movement (some of which appear to be independently
 10 motivated—see Cinque 2005b) were meant to account, at least in part, for
 11 the different numbers of languages that appear to instantiate the different
 12 orders (although no precise statistics were carried out).

13 I review here the derivation of some of the orders in (17) (for a systematic
 14 review of all of the orders see Cinque 2005b).
 15

- 16 a. (Dem Num A N) is derived if nothing moves (no marked option:
 17 very many languages).
 18 d. (N Dem Num A) is derived if NP moves three notches, around
 19 A, Num, and Dem (i.e. all the way up) without pied-piping
 20 (one marked option: few languages).
 21 e. (Num Dem A N) cannot be derived. NP has not moved, and the
 22 modifiers to its left are in the wrong order of Merge.
 23 m. (A N Dem Num) has a well-formed, though marked, derivation
 24 with raising of NP plus pied-piping of the *pictures of whom*-type
 25 of the lowest modifier (A) around Num, followed by raising (of
 26 [A N]) without pied-piping around Dem (two marked options:
 27 very few languages)
 28 n. (N A Dem Num) has a derivation with NP raising past A, fol-
 29 lowed by pied-piping of the *whose pictures*-type past Num,
 30 followed by raising (of [N A]) without pied-piping (marked) past
 31 Dem (one marked option: few languages).
 32 p. (Dem A N Num) has a derivation with partial (marked) raising
 33 of NP plus pied-piping of the *pictures of whom*-type of [A N]
 34 (marked) around Num (two marked options: very few languages)
 35 t. (Num A N Dem) has a derivation with partial (marked) raising of
 36 NP plus pied-piping of the *pictures of whom*-type of A and Num
 37 ([Num A N]) (marked) around Dem (two marked options: very
 38 few languages).
 39

40 The question that arises is whether exactly the same fine-grained variation
 41 that we find with the order of Dem Num A and N is also found with the
 42 order of the other elements reviewed in (3)–(7). I think it is.

43 In Cinque (2006c), I documented it for the relative orders of (speech act)
 44 Mood, Tense, Aspect and V. The order of these elements is often taken to be
 45 governed by a principle that determines the degree of proximity to the V of
 46

Mood, Tense, and Aspect morphemes (Aspect being closer to V than Tense, which in turn is closer to V than speech act Mood—see Gerdts’s 1982, 193, fn.4 “Satellite Principle”, Bybee’s 1985 “Principle of Relevance”, Foley and van Valin’s 1984 “Principle of Scope Assignment”, and Baker’s 1985 “Mirror Principle”).

These principles account for the two prevailing orders of such elements ((21)a-b), but, as shown in table (22), the actual orders attested are thirteen, five of which (c.,d.,m.,n.,v.) do not conform to the proposed principles.²²

- (21) a. Mood Tense Aspect V
 b. V Aspect Tense Mood

(22)

a.	√	Mood	Tns	Asp	V ²³	
b.	√	Mood	Tns	V	Asp ²⁴	
c.	√	Mood	V	Tns	Asp ²⁵	
d.	√	V	Mood	Tns	Asp ²⁶	
e.	*	Tns	Mood	Asp	V	(∅)
f.	*	Tns	Mood	V	Asp	(∅)
g.	*	Tns	V	Mood	Asp	(∅)
h.	*	V	Tns	Mood	Asp	(∅)
i.	*	Asp	Mood	Tns	V	(∅) ²⁷
l.	*	Asp	Mood	V	Tns	(∅)
m.	√	Asp	V	Mood	Tns ²⁸	
n.	√	V	Asp	Mood	Tns ²⁹	
o.	*	Mood	Asp	Tns	V	(∅)
p.	√	Mood	Asp	V	Tns ³⁰	
q.	√	Mood	V	Asp	Tns ³¹	
r.	*	V	Mood	Asp	Tns	(∅)
s.	*	Tns	Asp	Mood	V	(∅)
t.	√	Tns	Asp	V	Mood ³²	
u.	√	Tns	V	Asp	Mood ³³	
v.	√	V	Tns	Asp	Mood ³⁴	
w.	*	Asp	Tns	Mood	V	(∅)
x.	*	Asp	Tns	V	Mood	(∅)
y.	√	Asp	V	Tns	Mood ³⁵	
z.	√	V	Asp	Tns	Mood ³⁶	

1 The same parameters (with VP in place of NP) that we saw in (20) appear
2 to provide an account of the attested and unattested orders of Mood, Tense
3 and Aspect with respect to the verb.

4 Barbiers (2005) shows that much the same holds for the orders of two aux-
5 iliary/modal verbs and the lexical verb attested in the dialects of Dutch, and
6 Abels (2011) for the order of three auxiliary/modal verbs in Germanic.

7 What remains to be seen is whether the rest of the patterns of (3)–(7)
8 also show the same variation displayed by Dem Num A N and Mood Tense
9 Aspect V. If they do, there will not only be evidence for the existence of the
10 left-right asymmetry discussed here, but also some plausibility to the idea
11 that such asymmetry should be accounted for in terms of a unique hierar-
12 chical structure shared by all languages, with extant differences stemming
13 from the limited (and independently motivated) ways phrases can move.
14 This is because such an account can discriminate precisely between the
15 actually attested orders and the unattested ones.

16 A more general implication of this analysis, if correct, is that the lexi-
17 cal head is the lowest head of the projection (the one starting the syntactic
18 computation), and that constituents found to the right of the lexical head
19 are not base-generated there, but come to be there as a consequence of
20 the head moving leftward past them, merged in pre-head position. Only if
21 we assume that can we provide a unique structure complying with scope
22 requirements which underlies all attested word order variations, in terms of
23 independently motivated types of movement.
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8 Are All Languages ‘Numeral Classifier Languages’?*

Greenberg (1975) observes that, “it is generally the case that numeral classifier languages will apparently lack a classifier in nouns indicating periods of time, units of distance and the word ‘time’ in such phrases as ‘five times’”. [In Greenberg 1972] it was hypothesized that in these cases the correct interpretation was not that the classifier is omitted but that words like ‘day’, ‘mile’ and ‘time’ are themselves measures of verbal action so that we have to do with a subtype of the overall classifier or measure phrases. In other words, such phrases as ‘five days’ are rather to be identified with (Q \longleftrightarrow Cl) than (Q \longleftrightarrow N).” (p. 30).¹

Certain numeral classifier languages provide direct evidence for this conclusion as the apparently classifier-less N does not occupy the normal position of the noun but that of the “absent” classifier. This is especially evident in Thai, where the noun and the numeral classifier are on opposite sides with respect to the numeral: N Num CL.

As Allan (1977, 306f) notes, nouns like ‘year’, in adverbial constructions, unexpectedly appear with a numeral without an accompanying numeral classifier:

- (1) n̄̀n̄̀ pi·
one year
Num N

What is even more striking, Allan says, is that they do not appear in the ordinary position occupied by the noun (i.e., before the numeral—see *mǎ si tua* ‘dog four body’ = ‘four dogs’), but after the noun, in the position normally occupied by the classifier (see *sì tua* ‘four body’ = ‘four (of them)’ [animals, coats, etc.]).

Very insightfully he concludes, citing Haas (1942, 204), that in order to accommodate these facts *pi·* ‘year’ in (1) “must be interpreted as a classifier, and [(1)] must be given a new structural description, [(2)]” (p. 307), adding that “the alternative, that the labels [Num] and N [.] be swapped, is absurd.” (p. 307).²

1 (2) nỳŋ pi·
2 Num CL
3

4 It is at this point interesting to note that time units like ‘year’, when used
5 adverbially, display properties of numeral classifiers of ‘numeral classifier
6 languages’ (rather than those of ordinary nouns) even in ‘non numeral clas-
7 sifier languages’ like Italian or English.³

8 For example, it is generally the case that adjectives can modify nouns,
9 and mensural “classifiers” (like ‘box’, ‘cup’, ‘kilo’, etc.), but not (sortal)
10 numeral classifiers. See the contrast between (3) and (4), observed for Chi-
11 nese in Cheng and Sybesma (1999, 516):
12

13 (3) na yi xiao xiang shu
14 that one small CL-box book
15 ‘that (one) small box of books’
16

17 (4) a. *yi da zhi gou
18 one big CL dog
19 b. *yi da wei laoshi
20 one big CL teacher
21

22 Now exactly the same thing is found with the ‘nouns’ *anno* ‘year’ in Italian,
23 *year* in English, and *godina* ‘year’ in Bulgarian, when they are used adver-
24 bially to express a time measure. See (5), (6) and (7):⁴
25

26 (5) a. Sono rimasto a Londra per tre (*bellissimi) anni
27 I.stayed in London for three (beautiful) years
28

29 b. Tre (*bellissimi) anni fa ero a Londra
30 three (beautiful) years ago I.was in London
31

32 (6) a. I lived in London (for) three (*beautiful) years
33 b. Three (*beautiful) years ago I was in London
34

35 (7) a. Živjax tri (*prekrasni) godini v London
36 I lived three (beautiful) years in London
37

38 b. Predi tri (*prekrasni) godini bjax v London
39 before three (beautiful) years I.was in London
40 ‘Three (beautiful) years ago I was in London’
41

42 These facts suggest that in this usage Italian *anno*, English *year*, and Bul-
43 garian *godina*, are really numeral classifiers in (5), (6) and (7), like Thai *pi·*
44 is in (2).
45

46 The fact that when they are used as arguments (say as objects of a transi-
tive verb), they can be modified by adjectives (see (8), (9) and (10)), further

suggests that they can also be ordinary nouns; which recalls the case of so-called 'self-classifiers' or 'repeaters' in many 'numeral classifier languages' (see (11), from Simpson 2005, 832), except that in Italian, English, or Bulgarian, either the noun or the classifier, but not both, can be pronounced: ⁵	1
	2
	3
	4
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(8) Ho passato/trascorso tre bellissimi anni a Londra I.spent three beautiful years in London	6
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	8
(9) I spent three beautiful years in London	9
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(10) Prekarax tri prekrasni godini v London I.spent three beautiful years in London	11
	12
(11) a. hoong saam hoong (Thai) room three CL-room 'three rooms'	13
	14
	15
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b. cun ta cun (Burmese) island one CL-island 'one island'	17
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	19
	20
If this interpretation of the facts is plausible, then the conclusion is that even traditional 'nonnumeral classifier' languages <i>are</i> numeral classifier languages, with mostly abstract, or non pronounced, classifiers. ⁶	21
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9 Greenberg's Universal 23 and SVO Languages

1 That the order of proper noun and common noun, when co-occurring,
2 (partially) correlates with the order of the genitive with respect to the N
3 (hence with the VO/OV order) is recognized in Greenberg (1966²,88). See
4 his Universal 23, given in (1):
5

- 6 (1) If in apposition the proper noun usually precedes the common noun,
7 then the language is one in which the governing noun precedes its
8 dependent genitive. With much better than chance frequency, if the
9 common noun usually precedes the proper noun, the dependent geni-
10 tive precedes its governing noun.
11

12 In other terms: proper noun > common noun implies N > Gen and (with
13 much better than chance frequency) common noun > proper noun implies
14 Gen > N.
15

16 Curiously, the correlation appears to be just the opposite. In his note
17 19, Greenberg gives the list of languages for which he has some data
18 on common noun/proper noun orders: "Languages with common noun-
19 proper noun are Greek, Guarani, Italian, Malay, Serbian, Swahili, Thai,
20 Welsh, Zapotec. Those with proper noun-common noun are Basque,
21 Burmese, Burushaski, Finnish, Norwegian, Nubian and Turkish".
22

23 The former are largely N > Gen (VO) languages and the latter Gen > N
(mostly OV) languages.
24

25 The inadvertent reversal of the correlation on Greenberg's part was
26 observed in Bennett (1979) (also see Elisa Roma's comment in the Konstanz
27 Universals Archive, no.9 <http://typo.uni-konstanz.de/archive/>).
28

29 It is in fact the case that many head-initial languages and head-final
30 languages display a mirror-image order of the two. I only consider here a
31 subset of the different kinds of proper noun/common noun pairs (titles of
32 address, names of places, calendar time appellations, and a few others), but
33 this suffices to make the point. See the case of Hebrew (VSO) and that of
34 Japanese (SOV) in (2):

(2) a. Hebrew (VSO,NG)	b. Japanese (SOV,GN)	1	
(Tal Siloni, p.c.)	(Yoshio Endo, p.c.)	2	
year/number	be-šnat 1950 (in-year 1950)	1950 nen (1950 year)	3
hour/number	be-ša'a 8 (at-hour 8)	hati zi (8 hour)	4
month/name	be-xodeš may (in-month May)	zyuu gatu '(lit.) ten month'	5
		(the month of October)	6
title/name	profesor xomski	Chomsky kyoozyu	7
street/name	rexov gordon (street Gordon)	Asakusa doori (Asakusa street)	8
city/name	ba-ir xeyfa (in.the-city Haifa)	Chiba si (Chiba city)	9
mountain/ name	har miron (mount Miron)	Fuji yama (Fuji mountain)	10
island/name	iyey fokland (islands Falkland)	Tori sima (Tori island)	11
river/name	nehar ha-yarden (river the-Jordan)	Edo gawa (Edo river)	12
colour/name	mexonit be-ceva adom	Ki iroi kuruma ((lit.) yellow	13
	(car in-colour red)	colour car)	14
letter/name	ha-ot kaf (the-letter "k")	"k" to yuu roomazi	15
		((lit.) k called letter)	16
			17
Consideration of the relative order of common noun and proper noun in			18
SVO languages shows that they are not as homogeneous a group as one			19
might think. I illustrate it here with the following SVO languages: Chi-			20
nese, Norwegian, Bulgarian, English, Greek and Italian (also indicating			21
the relative position of the Genitive and Noun, which, as already noted in			22
Greenberg [1966 ² , 89], appears to be related to some extent). Each of these			23
languages happens to behave differently from the others. ¹			24
			25
(3) a. Chinese ² (GN)	b. Norwegian (Øystein Nilsen p.c.)	26	
	(GN/NG) ³	27	
year/number	yi-jiu-wu-ling nian	år 1950	28
	(1-9-5-0 year)		29
hour/number	ba dian (zhong)	klokken åtte (clock.the 8)	30
	(8 point (clock))		31
month/name	wu yue (five month 'month	Mai måned (May month)	32
	of May)		33
title/name	Qiaomusiji jiaoshou	Professor Chomsky	34
street/name	Huaer jie (Wall street)	Lovisenberggata (Lovisenberg street)	35
city/name	Beijing shi (Beijing city)	Oslo by/byen Oslo	36
mountain/name	Zhumu Langma feng	Galdhøpiggen (Galdhø (pointed)	37
		mountain)	38
island/name	Huaite dao (White island)	Senjaøya/ øya Senja	39
river/name	Yangzi jiang (Yangzi river)	Viggaelva/elva Vigga (the river Vigga)	40
colour/name	hong (yan)se (red colour)	en rødfarget bil (a red-coloured car)	41
letter/name	"k" zi	"k" bokstaven/bokstaven "k"	42
		("k" letter.def)	43
			44
			45
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1	(4) a. Bulgarian (Iliyana Krapova p.c.)	b. English (GN/NG) ⁴
2	(GN/NG)	
3		
4	year/number	v 1950 godina (in 1950 year) (in the) year 1950
5	hour/number	v osem časa (at 8 hour) (at) 8 o'clock
6	month/name	v mai mesets/mesets mai (in the) month of May
7	title/name	profesor Čomski Professor Chomsky
8	street/name	ulitsa Rakovski Wall street
9	city/name	grad Sofia/Sofia-grad (the) city of Boston/ New York city
10		
11	mountain/name	Pirin planina/planinata Pirin Mount Auburn/ Auburn
12		Mountain
13	island/name	ostrov Corsica isle of Wight/ Ellis island
14	river/name	reka Maritsa (the) river Mississippi/
15		Mississippi river
16		
17	colour/name	kola tsvjat červen/ a red color car
18		červen tsvjat (Kayne 2005c, 289)
19	letter/name	bukva “k” the letter “k”
20		
21		
22	(5) a. Greek (Arhonto Terzi, p.c.)(NG(GN))	b. Italian (NG)
23	year/number	to (etos) 1950 l'anno 1950 (the year 1950)
24	hour/number	okto (i ora) le ore 8 (lit. the hours 8)
25	month/name	o minas Maios/o Maios minas il mese di maggio
26		(the month of May)
27	title/name	(o) kathigitis Chomsky (il) professor Chomsky
28	street/name	i odos Kolokotroni via Garibaldi
29	city/name	i poli tu Londinu la città del Cairo (the city of the
30		Cairo)
31	mountain/	to oros Olibos (il) monte Grappa
32	name	(Mount Grappa)
33	island/name	to nisi tis Mitilinis l'isola di Wight (the isle of
34		Wight)
35	river/name	o Ilisos potamos/o potamos (il) fiume Po (the river Po)
36		Ilisos
37	colour/name	Ena aftokinito kokinu una macchina (di) color rosso
38		xromatos (a car (of) color red)
39	letter/name	to grama “k” (la) lettera “k”

Incidentally, proper nouns are possibly always specifiers of a common noun, whether overt or silent (Kayne 2007a, Appendix). Confirming evidence comes from certain agreement facts, which become understandable if a silent head is postulated that controls the agreement: *città* ‘city (fem. sing.)’ in (6)a (cf. Cinque 2008a, fn. 11); *lettera* ‘letter (fem.sing.)’ in (6)b; and *ore* (fem.pl.) and *ora* ‘hour (fem. sing.)’ in (6)c:

(6) a. Il Cairo (CITTA') è stata, e resta, il centro più importante del	1
mondo arabo.	2
The (masc.sg.) Cairo (masc.sg.) ('city (fem.sg.)) has been (fem.sg.),	3
and remains, the most important center of the Arab world.	4
b. la "o", la "k", etc. (scilicet LETTERA 'letter (fem.sg.))	5
the (fem.sg.) "o", "k"	6
	7
c. Sono le una (i.e., Sono le ORE una ORA) ⁵	8
(Lit.) are the (fem.pl.) one (fem.sg.) 'it is one o'clock'	9
	10
The moral we can draw even from this minute correlation pair (the order	11
proper noun/common noun and the head-initiality vs. the head-finality of	12
a certain language) is that reference to SVO languages as if they made up	13
a consistent word order type may be seriously misguided (as evidenced by	14
other facts as well—cf. Chapter 1 here).	15
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Part II

Relative Clauses



10 On Keenan and Comrie's Primary Relativization Constraint*

1. Two opposite views on the nature of syntactic rules which are often implicitly or explicitly assumed are: (a) the idea that syntactic rules are merely “structure dependent” (that is, sensitive just to syntactic categories and phrase structure information), and (b) the idea that they (or at least some of them) are “function dependent” (that is, they may (or must) be sensitive to grammatical functions such as *subject of*, *object of*, etc.).¹
- The facts we will bring to bear on this issue, from relative clause phenomena in Italian, cannot provide conclusive evidence that *all* syntactic rules are in essence structure dependent, but they do seem to offer an interesting confirmation of the idea that the rules involved in the derivation of the (restrictive) relative clause in Italian are (in every relevant respect) structure dependent, in spite of a recent general claim to the contrary (cf. Keenan and Comrie (1977); henceforth, K & C). What the latter claim amounts to is that (restrictive) relative clause formation in all languages is, in at least one respect, crucially dependent on a fixed hierarchy of grammatical functions such as subject (NP), object (NP), indirect object (NP), etc.
- It is our intention here to show, in the first place, that a number of non-trivial properties of the (restrictive) relative construction in Italian follow from the general assumptions of the Extended Standard Theory (EST), as espoused most recently in Chomsky (1980), and, in particular, that such properties are explained by the strict structure dependent interpretation of syntactic rules.
- We also intend to show that the universal conditions proposed by K & C and collectively known as the “Primary Relativization Constraint” are, for Italian (in the face of a relevant fragment of its grammar), at least partly incorrect, and that, where they are a correct “description” of the facts, they follow, for the relevant part, as special cases from the independently motivated principles of EST.²
2. Italian has essentially two forms of relative pronouns, *cui* (invariable) and (article +) *qual-* (where the article agrees in gender and number with the head and *qual-* just in number).³ We will assume here that the specific difference between the two forms is that the first is a realization of the feature *wh* attached directly under NP, whereas the second is a realization of

1 the feature *wh* under a specifier node of N.⁴ We will also assume, without
 2 much justification, that the feature *wh* is not base-generated in those
 3 positions but is placed there transformationally. In no way are these assump-
 4 tions crucial to the points being made below. Both for expository conven-
 5 nience and because of K & C's similar limitation, we will restrict ourselves,
 6 in the following discussion, to the restrictive relative construction. With
 7 certain qualifications which are not relevant here, the same point can be
 8 carried over to the appositive construction (cf. Cinque (1978)).

9 Consider first the following properties of the construction, under either
 10 choice of pronoun:

11 (1) a. La proposta $\left\{ \begin{array}{l} \text{che} \\ *cui \\ *la\ \text{quale} \end{array} \right\}$ è stata fatta è assurda.

12 'The proposal that has been made is absurd.'

13
 14 b. La proposta $\left\{ \begin{array}{l} \text{che} \\ *cui \\ *la\ \text{quale} \end{array} \right\}$ avete fatto è assurda.

15 'The proposal that you have made is absurd.'

16
 17 c. La proposta $\left\{ \begin{array}{l} \text{di cui} \\ \text{della quale} \\ *che \end{array} \right\}$ parlerò è già nota.

18 'The proposal about (of) which I will talk is already known.'

19
 20 d. La proposta $\left\{ \begin{array}{l} \text{a cui} \\ \text{alla quale} \\ *che \end{array} \right\}$ aderiamo è ben nota.

21 'The proposal to which we adhere is well known.'

22
 23 e. La proposta $\left\{ \begin{array}{l} \text{da cui} \\ \text{dalla quale} \\ *che \end{array} \right\}$ sono partiti è questa.

24 'The proposal from which they have started is this one.'

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When either a subject or an object is relativized, neither *cui* nor (art. +) *qual-* may appear. The only form allowed is *che* (see fn. 3 and below). When an NP position preceded by a preposition is relativized, *che* never appears.⁵ The relative clause is instead introduced by *cui* or (art. +) *qual-* preceded by that preposition. The traditional description of this state of affairs was to posit three relative pronouns in Italian: *che* for subject and object NPs and *cui* or (art. +) *qual-* preceded by the appropriate preposition for the "oblique" cases. However, this treatment fails to provide an explanation for two facts. First, the fact that the "relative pronoun" *che* is homophonous with, and occurs in the same (subordinate clause) initial position of, the "complementizer" *che*. Second, the fact that *che*, on the one hand, and *cui* and (art. +) *qual-*, on the other, are in strict complementary

distribution, whereas *cui* and (art. +) *qual-* are not. Such a distribution remains unaccounted for under the assumption that *che*, *cui*, and (art. +) *qual-* are all relative pronouns.⁶ These two facts call for an explanation.

It is interesting to observe that under the assumptions currently held within EST, such facts receive a principled account, with the intervention of no ad hoc hypotheses.

2.1. We will briefly recall the general principles and conventions of EST which seem crucially involved in the derivation of restrictive relative structures of Italian.

We assume a very general (cyclic) rule (schema): *Move α* (where “α” is a category). This rule (schema) collapses the NP and *Wh* Movements of previous analyses (see Chomsky (1980)). We also assume that the relativization structure in which *Move α* applies, in the restrictive construction, is [_{NP} NP \bar{S}].

We further assume a rule of free deletion in COMP which Chomsky (1980) interprets, elaborating on an idea of Kayne (1976), as: “Delete (obligatorily) whenever possible” (that is, except where the deletion leads to a violation of the general principle of recoverability).⁷

Relating to the logical form (LF) component, we assume a procedure ensuring that the head NP and the relativized NP in COMP be coindexed, to allow for the correct interpretation of the structure. Cf. Chomsky (1973), Vergnaud (1974).⁸

Finally, we assume two filters (one related to Chomsky and Lasnik's (1977) filter (178), and the other identical to their filter (53)),⁹ which will be seen to play a more extensive role in the syntax of the complementizer system of modern standard Italian. For our purposes, this seems to exhaust the theoretical and language-specific apparatus needed.

A few examples will illustrate the interaction of the above-mentioned principles and rules in the derivation of Italian (restrictive) relative clauses.

Consider the derivation of (1a). Applying *Move α* to an initial structure essentially of the form (2),

(2) [_S[_{NP}[_{NP} la proposta] [_S[_{COMP}—WH] [_S[_{NP} wh] è stata fatta]]] è assurda]

we arrive (simplifying somewhat) at (3),

(3) [_S[_{NP}[_{NP} la proposta] [_S[_{COMP}[_{NP} wh₃₇]—WH] [_S[_{NP} e₃₇] è stata fatta]]] è assurda]

where [_{NP} e₃₇] is the trace of [_{NP} wh₃₇] with an arbitrary index assigned as a consequence of the movement.

We will not consider at this point the coindexing procedure of LF mentioned above. See section 2.2 below.

Consider, instead, the rule of free deletion in COMP under the interpretation illustrated above. Its application gives rise to no violation of the

1 principle of recoverability since the relativized NP is nondistinct from the
 2 head NP.¹⁰ Thus, it may apply, and, in fact, it must apply if the structure is
 3 not to be discarded.

4 The result of the deletion will be as follows:

5
 6 (4) [_S[_{NP}[_{NP} la proposta] [_S[_{COMP} φ—WH] [_S[_{NP} e] è stata fatta]]] è assurda]

7
 8 In accord with EST conventions, we assume here that the subordinate
 9 sentence introducer (complementizer) *che* is the expansion of—WH,
 10 which in turn is expanded from the node COMP. Recall that base and
 11 transformational rules (of the core grammar) are taken to be optional,
 12 in the framework adopted here. If—WH is expanded to *che*, we derive
 13 (1a,b), as desired, under either choice of pronoun. On the other hand,
 14 consider the case where—WH is not expanded (or, for that matter,
 15 the analogous case where COMP is not expanded). In modern Italian,
 16 structures corresponding to (1a,b) in which *che* is omitted are ill-formed.
 17 For example:

- 18
 19 (5) a. *_{[NP} La proposta è stata fatta] è assurda.
 20 b. *_{[NP} La proposta avete fatto] è assurda.

21 Thus, some (principled) account must be found which will account for
 22 their “unexpected” status.¹¹

23 In the spirit of Chomsky and Lasnik’s (1977) discussion of partly similar
 24 facts in English, we take it that the ungrammaticality of (5) is not unrelated
 25 to that of ordinary cases of complementation like (6a–d),
 26

- 27
 28 (6) a. *Sapevo [_S era stanco].
 29 ‘I knew he was tired.’
 30 b. *Mi dicono [_S i ragazzi sono appena arrivati].
 31 ‘I am told the boys have just arrived.’
 32 c. *E’ triste [_S lei sia ubriaca].
 33 ‘It is sad she is drunk.’
 34 d. *_{[S} Giorgio beva] lo sanno tutti.
 35 ‘(That) Giorgio drinks, everybody knows it.’
 36
 37

38 where the complementizer is equally absent from the subordinate clause,
 39 with similar consequences for grammaticality.

40 The ill-formedness of (5a,b) may thus be a particular instance of a more
 41 general property of Italian whereby the COMP position of a tensed sub-
 42 ordinate clause cannot be null, except apparently in a very restricted (and
 43 stylistically marked) class of cases.¹² These cases are in general very poorly
 44 understood. Even a brief discussion of them would take us too far away
 45 from our present goals. Tentatively, we assume that some filter related to
 46

Chomsky and Lasnik's filter (178) will account in a sufficiently general fashion for (5a,b) and (6) above (cf. fn. 12).

Notice that a direct consequence of the analysis so far sketched is that the *che* introducing relative clauses in Italian is not a relative pronoun but rather the complementizer *che* of ordinary subordinate clauses. This accounts for the first of the two facts observed above and left unexplained under the traditional account. Precisely the same considerations hold for (1b), in which an object is relativized rather than a subject.

Let us consider now the case where a PP (containing the relativized NP), rather than just an NP, is moved to COMP by Move *α*. By applying Move *α* to an initial structure like (7), underlying (1c), we get (8):

(7) [_S[_{NP}[_{NP} la proposta] [_S[_{COMP}—WH] [_S parlerò [_{PP} di [_{NP} wh]]]]]] . . .]

(8) [_S[_{NP}[_{NP} la proposta] [_S[_{COMP}[_{PP} di [_{NP} wh]]—WH] [_S parlerò [_{PP} e]]]]] . . .]

If the rule of deletion in COMP were to delete the entire PP, there would be a violation of recoverability. The PP is distinct from the head NP. On the other hand, the result of deleting just the *wh*-NP, which is nondistinct from the head NP, is just as bad. It may be that whatever principle excludes preposition stranding in Italian (cf. fn. 5) will apply here (for somewhat different, or, maybe, additional, reasons why the latter case of deletion is illegitimate, see Chomsky and Lasnik 1977, 446 and fn. 43, Cinque 1982).

This accounts for the fact that a sentence like **La proposta che parlerò è già nota* is ill-formed in the intended sense of (1c), as is **La proposta di parlerò è già nota*.

Structures like (8) in which—WH does not expand to *che* correspond to well-formed sentences. Depending on where the *wh* feature has been attached within the NP, they will be realized as the structures represented by (9a,b):

- (9) a. La proposta di cui parlerò. . . .
 b. La proposta della quale parlerò. . . .

Notice, on the other hand, that if—WH expands to *che*, the resulting structure (*la proposta di cui (della quale) che parlerò . . .*) will be ill-formed (in standard Italian). This is taken care of within this system by Chomsky and Lasnik's filter (53) (= (10)),

(10) *_[COMP wh-phrase φ] where "φ" is nonnull

which is again language-specific.¹³ Identical considerations hold for the remaining cases of (1).

It is therefore an automatic consequence of the general principles and conventions of EST (in particular those governing the syntax of the complementizer system) that *che* and the relative pronouns are in strict complementary

1 distribution. This accounts for the second fact left unexplained under the
 2 traditional account which considered *che* a relative pronoun. Reduced to
 3 essentials, this property follows from the structure-dependent nature of the
 4 deletion rule in COMP. Subject and object NPs, when relativized, will give
 5 rise to a relative clause introduced by *che* simply because they are “bare”
 6 NPs, nondistinct from the head NP, and thus can—in fact, must—be
 7 deleted. Various types of complements which are realized by a [_{PP} P NP]
 8 structure, in Italian, will not be deletable in COMP, since that would lead
 9 to a violation of recoverability.

10 2.2. We will consider now, in more detail, the nature of the above-
 11 mentioned general procedure to ensure the coindexing of the relativized
 12 NP with the head NP. We will also see that a certain formulation of that
 13 procedure can be made to interact in an interesting way with the general
 14 rule Move α , with the effect of reducing the overgeneration that the rule
 15 intrinsically induces.

16 Following Cinque (1978), we assume here that such a procedure is
 17 plainly the very general rule *Coindex* (an NP with a *c*-commanding NP)
 18 of Chomsky (1980), applying in the relativization structure (of obligatory
 19 control) (11):

20 (11) [_{NP} NP[_S[_{COMP} . . . NP . . .] . . .]]

21 Notice that no special stipulations may be required for this rule to apply
 22 in the desired way, if it is the case that the only NPs found in COMP are
 23 NPs containing the feature *wh*. In particular, there is no need to mention
 24 the feature *wh* or, for that matter, the forms *cui* or (art. +) *qual-* which
 25 we take to be “anaphors” in (11) (in the technical sense of Chomsky
 26 (1980)). Thus, we may retain *Coindex*, applying to (11) in its most gen-
 27 eral form, rather than having a separate construal rule apply to assign
 28 coreference to *cui* (or (art. +) *qual-*) with an appropriate antecedent. This
 29 has interesting consequences.

30 We are assuming that some appropriate version of the A-over-A Prin-
 31 ciple constrains the application of construal rules (as well as other rules; see
 32 Chomsky (1973) for relevant discussion). Given the hypothesis that *Coindex*
 33 itself applies in (11), subject to the A-over-A Principle, with *cui* and
 34 (art. +) *qual-* being anaphors, a first consequence is that, in all those cases
 35 where the general rule Move α fronts an NP larger than (and containing)
 36 the *wh*-NP, the structure will be blocked (by the A-over-A Principle).¹⁴ This
 37 is in fact what we observe in the data:

38 (12) a. *Questo è il ragazzo [_S[_{NP2} la sorella di [_{NP3} cui]] è venuta ieri].
 39 b. *Questo è il ragazzo [_S[_{NP2} la sorella del [_{NP3} quale]] è venuta ieri].
 40 ‘This is the boy the sister of whom came yesterday.’

41 (13) a. *Il libro [_S dal [_{NP2} frontespizio di [_{NP3} cui]] ho ricavato questa idea
 42 è questo.
 43
 44
 45
 46

- b. *Il libro [_S dal [_{NP2} frontespizio del [_{NP3} quale]] ho ricavato questa idea] è questo.

'The book from the front cover of which I got this idea is this.'

In both (a) and (b) of (12)–(13), the rule Coindex applies inappropriately and thus the structures are ruled out.¹⁵

A further interesting consequence of interpreting *cui* and (art. +) *qual-* as “anaphors” in the restrictive relative construction of Italian is the fact that structures derived with Move α applying to sentential phrases are also blocked:

- (14) *Il ragazzo [_S[_S per telefonare a [_{NP} cui]] era rimasta a casa] non c'era.
'The boy to call up whom she had remained at home was not there.'

- (15) *Quello è il monte [_S[_S trovandoti sopra [_{NP} cui]] puoi vedere l'eclisse].
'That is the mountain being on top of which you can see the eclipse.'

- (16) *La barca [_S[_S montati su [_{NP} cui]] sono andati a picco] era di Giorgio.
'The boat embarked on which they sank belonged to Giorgio.'

Under this interpretation, their ungrammaticality is traced to a violation of Opacity (see Chomsky (1980)). In each of them, there is a free anaphor, *cui* (or (art. +) *qual-*) in \bar{S} in the domain of the (PRO) subject of \bar{S} .¹⁶

We thus find that the desired reduction of a significant class of overgeneration induced by the very general rule Move α is provided by the simple hypothesis that *cui* and (art. +) *qual-* are “anaphors”, in (11). Cf. also Kayne (1978).

2.3. So far the properties of the restrictive relative clause system of Italian essentially mirror the situation of the French system described in detail by Kayne (1976). In fact, our analysis has followed, in the terms of Chomsky (1980), the basic idea of Kayne (1976) (cf. also Klima (1964); Chomsky (1973)). Italian, however, seems to offer a further interesting confirmation to this line of analysis, in that it displays a neat class of facts for which the above analysis can be extended to make nontrivial predictions.

The general prediction of the analysis just sketched is that, should there be other types of “nominal positions” that do not take a preceding preposition, the relative clause constructed relativizing on them would necessarily be introduced by *che*. This is, in fact, borne out in an interesting way.

Two more nominal positions exist in Italian that are not preceded by a preposition, namely predicative (postcopular) NPs and (some) temporal adverbials:¹⁷

- (17) Era *un gentiluomo*.
'He was a gentleman.'

1 (18) La proposta Banfi era stata bocciata *il giorno prima*.

2 'The proposal made by Banfi had been rejected the day before.'

3
4 In both cases, the relative clause constructed relativizing on them is
5 introduced by *che*:

6
7 (19) Il gentiluomo [₅ *che era*] gli impedì di reagire in malo modo.

8 'The gentleman that he was prevented him from reacting nastily.'

9
10 (20) Il giorno [₅ *che la proposta Banfi fu bocciata*] non c'era nessuno.

11 'The day that the proposal made by Banfi was rejected nobody was there.'

12
13 The case of temporal adverbials is even more interesting from this point
14 of view. Notice that the following three possibilities exist with regard to the
15 presence of a preposition in front of temporal adverbials in Italian:

16
17 (a) Certain temporal adverbials *optionally* take a preposition:

18 (21) La proposta Banfi è stata discussa $\left\{ \begin{array}{l} \text{in quel giorno} \\ \text{quel giorno} \end{array} \right\}$.

19
20 'Banfi's proposal was discussed (on) that day.'

21
22 (b) Certain temporal adverbials *obligatorily* take a preposition:

23 (22) La proposta Banfi sarà discussa $\left\{ \begin{array}{l} \text{in quella occasione} \\ \text{*quella occasione} \end{array} \right\}$.

24
25 'Banfi's proposal will be discussed on that occasion.'

26
27 (c) Certain temporal adverbials *never* take a preposition:

28 (23) Gianni sbaglia $\left\{ \begin{array}{l} \text{ogni volta} \\ \text{*in ogni volta} \end{array} \right\}$.

29
30 'Gianni makes a mistake every time.'

31
32
33 This is a situation that allows us to put to test the analysis so far
34 assumed. If the analysis is correct, we should expect a tripartite situa-
35 tion when relativizing on temporal adverbials. We should expect that,
36 relativizing on an adverbial of class (a), the relative clause will be intro-
37 duced either by a P plus a relative pronoun or by *che*, depending on
38 whether a preposition has been selected for the adverbial position in the
39 relative clause, or not.

40 On the other hand, we should expect that, relativizing on an adverbial of
41 class (b), the relative clause may never be introduced by *che* but will invari-
42 ably be introduced by P plus a relative pronoun.

43 Finally, we should expect that, relativizing on an adverbial of class (c),
44 the relative clause will only be introduced by *che*, never by P plus a rela-
45 tive pronoun.

This is in fact the complex situation we observe in the data:

(24) Il giorno $\left\{ \begin{array}{l} \text{che} \\ \text{in cui} \\ \text{nel quale} \end{array} \right\}$ è stata discussa la proposta Banfi, . . .

'The day (on) which Banfi's proposal was discussed, . . .'

(Compare with (21).)

(25) Per l'occasione $\left\{ \begin{array}{l} * \text{che} \\ \text{in cui} \\ \text{nella quale} \end{array} \right\}$ si discuterà la proposta Banfi, . . .

'For the occasion on which Banfi's proposal will be discussed, . . .'

(Compare with (22).)

(26) Dalla volta $\left\{ \begin{array}{l} \text{che} \\ * \text{in cui} \\ * \text{nella quale} \end{array} \right\}$ l'ho conosciuta, non l'ho più vista sorridere.

'Since the time I met her, I have never again seen her smile.'

(Compare with (23).)

2.4. The same line of reasoning that allows us to construct the above predictions and thus to explain facts like (24)–(26) can be extended to make a prediction about some closely related semantic facts.

A number of adverbials entering class (a) select (partially) different senses depending on whether they are preceded by a preposition or not. Take the following example:

(27) a. Mi prendo le ferie nella settimana di Pasqua.

'I will go on holidays for Easter week.'

b. Mi prendo le ferie la settimana di Pasqua.

'I will go on holidays Easter week.'

(27a) can only mean that I will be on holidays for a period which falls exhaustively within the limits of the week including Easter Day. (27b) may be interpreted this way, but also in a second way; namely, that the period of my holidays will begin in the week including Easter Day but need not end within that week.¹⁸ (27b) is thus vague between these two interpretations. What we may expect, now, given the analysis sketched above, is that this subtle, but, I think, real, semantic difference is carried over to the interpretation of the relativized adverbial in the corresponding relative clauses. The relative clause introduced by P plus a relative pronoun will have only the single interpretation of (27a), whereas the relative clause introduced by *che* will have the two interpretations of (27b), since its source can only be a "bare" NP such as the one in (27b). Compare:

(28) a. La settimana $\left\{ \begin{array}{l} \text{nella quale} \\ \text{in cui} \end{array} \right\}$ mi prendo le ferie è la prossima.

'The week in which I go on holidays is the next one.'

- 1 b. La settimana che mi prendo le ferie è la prossima.
2 ‘The week that I go on holidays is the next one.’
3

4 The prediction seems to be borne out according to the judgments of native
5 speakers about the interpretation of (28a,b). Again this is a direct conse-
6 quence, in a partially different domain, of the analysis assumed above.

7 3. We will now compare this analysis of the (restrictive) relative clause
8 system of Italian with the entirely different analysis forced by the general
9 framework proposed in K & C to account for some universal aspects of
10 (restrictive) relativization.

11 Essentially, they claim that natural languages may employ (among oth-
12 ers) either of two general strategies of relative clause formation.¹⁹

13 Depending on whether or not a nominal element is present in the restrict-
14 ing clause “that unequivocally expresses which NP position is being relativ-
15 ized”, they distinguish a “case coding” strategy and a “non-case coding”
16 strategy, respectively (henceforth, “+case RCS” and “-case RCS”).²⁰

17 They observe that the number and type of NP positions that can be
18 relativized may vary from language to language and are dependent on the
19 strategy employed, in a way that does not seem to be entirely random.

20 In particular, they claim that the general accessibility of an NP position
21 to relativization “is universally dependent on that of others” and that such
22 relative accessibility to relativization of NP positions may be expressed
23 essentially by the following (accessibility) hierarchy (AH) (p. 66):

24 Subject > Direct Object > Indirect Object > Oblique Object > Genitive >
25 Object of Comparison

26 (where “>” means ‘is more accessible than’)

27 The core of their proposal consists in three putatively universal condi-
28 tions on relativization based on such a hierarchy, which they refer to as the
29 *Primary Relativization Constraint*:

- 30
31 (29) a. A language must have a primary RC-forming strategy. [where by
32 *primary RC-forming strategy* K & C mean a strategy that “can be
33 used to relativize subjects”/GC]
34 b. If a primary strategy in a given language can apply to a low posi-
35 tion on the AH, then it can apply to all higher positions.
36 c. A primary strategy may cut off at any point on the AH.
37

38 Of these conditions, (b) and (c) seem to be directly relevant to our case.
39 Their relevance resides in the fact that the Italian evidence we have discussed
40 above appears to constitute a serious difficulty for them, given some reason-
41 able assumptions within the spirit of Keenan and Comrie’s framework.

42 Notice that they are forced to analyze the (standard) Italian restrictive
43 relative clause system as involving two different strategies: the first a -case
44 one, in relation to subject, direct object, predicative, and (temporal) adver-
45 bial NP positions, since these are characterized by an invariable relative
46

particle *che* (not preceded by a preposition) and a gap in the restricting clause corresponding to the relativized position; the second a +case one for all the other positions, since these explicitly express the function of the relativized nominal by means of a relative pronoun preceded by the appropriate preposition.

This is, in fact, how they seem to analyze the case of Italian in their table 1 of p. 77. Notice, however, that they take the –case strategy to cover just the subject and direct object NP positions, since their hierarchy does not contemplate a position for either predicative NPs or adverbial (place and time) complements.²¹

If we extend their hierarchy, at least tentatively, on the basis of our evidence from Italian, to include the two missing positions, it seems that only two choices are available which preserve the empirical content of their condition (b) of (29) intact. Either one supposes that predicative and temporal adverbial NP positions are placed in the hierarchy between the direct object NP position and the indirect object NP position, so that they constitute a continuous segment with subjects and direct object NPs, or, assuming predicative and temporal adverbial NP positions not to be adjacent to the direct object NP position, one denies that the RC-forming strategy used for them is the same as that used to relativize subject and object NPs. For, assuming the RC-forming strategy to be the same for all four positions, and assuming predicative and temporal adverbial NP positions not to be adjacent to the direct object NP position, one would face a neat counterexample to their condition (b) (of (29)), since the same strategy could not be used to relativize the intervening indirect object position (and possibly others). As it is difficult to see, in the light of the available evidence, how one could seriously maintain, in K & C's system, that the RC-forming strategy used to relativize predicative and temporal adverbial NP positions in Italian is different from the one used to relativize subject and direct object NP positions, we will take only the former alternative, above, as worthy of consideration.

It is not clear whether a revision of K & C's AH along the lines required to save condition (b), namely something like (30),

- (30) Subject > Direct Object > Predicative NP > Temporal Adverbial >
 Indirect Object > Oblique Object > Genitive > Object of Comparison²²

has any independent cross-linguistic basis. Even supposing it should turn out to be compatible with known facts, we see, in any event, at least two problems with it: first, such revision of K & C's AH drastically reduces the general applicability of the hierarchy, which is thought to be relevant in accounting for universal aspects of such other unrelated phenomena as causative constructions and advancement processes. These are phenomena which seem to require a hierarchy with subjects, direct objects, and indirect objects constituting a continuous segment (see K & C, pp. 95–96 and references cited there).²³

1 The second problem is more minute but not trivial. Again, it is not clear
 2 how even such a revision of the AH can account for the behavior of Ital-
 3 ian temporal adverbial complements, which show—as indicated above—a
 4 threefold possibility with regard to relativization.

5 In K & C's terms, some such temporal adverbials would appear to
 6 employ a –case RC-forming strategy; others would appear to use a +case
 7 RC-forming strategy; and still others would seem to partake in both strate-
 8 gies. Apparently, nowhere in their system, as it stands, can this choice of
 9 strategy be related to the prepositional or prepositionless nature of the rela-
 10 tivated position (see, however, fn. 24).

11 At this point, it is interesting to note that whereas such a situation was
 12 seen simply to follow within EST from independent principles and rules, in
 13 K & C's system it would have to be stipulated somehow (perhaps by positing
 14 two (or three) distinct positions for the temporal adverbials in the AH).

15 However, what is more important is that, even granting an acceptable
 16 solution to such problems and admitting the reduction in generality of the
 17 hierarchy, K & C's system appears to be inherently unable to “predict” that
 18 the facts (of Italian) should be the way they are. For their general system
 19 would be equally compatible with a different distribution of the relevant
 20 facts; for instance, with one in which the –case RC-forming strategy cut
 21 off at some other point in the hierarchy, say the indirect object position or
 22 the place adverbial position. More generally, within such a system, there is
 23 no principled way to predict at which point a given strategy will cut off (in
 24 a given language).²⁴ On the other hand, the EST analysis we have sketched
 25 above, insofar as it exposes what subjects, direct objects, predicative NPs,
 26 and temporal adverbials have in common (in Italian)—their structural prop-
 27 erty of being the only prepositionless positions—and insofar as it excludes,
 28 on a principled basis, distributions of the facts different from that actually
 29 found, may be considered a genuine explanation of the phenomenon.

30 Looked at from a different angle, this case can be seen as an interesting
 31 confirmation of the general explanatory import of the “structure depen-
 32 dence” hypothesis of syntactic rules held within EST.

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11 A Note on Verb/Object Order and Head/Relative Clause Order*

That some typological relation exists between the order of the object with respect to the verb and the order of the relative clause (RC) with respect to its Head is known since Greenberg (1963). While VO languages (SVO, VSO and VOS) have postnominal RCs, prenominal RCs are found almost exclusively in OV languages.¹ In other words:

- (1) a. $VO \supset NRel$
- b. $RelN \supset OV$

These implications cannot be strengthened by adding $NRel \supset VO$ and $OV \supset RelN$, because OV languages seem to show no clear preference for either a pre- or postnominal positioning of their RCs. This appears most clearly from Dryer's (1992a) 543-language sample:

- (2) Order of Relative clause and Head and the VO/OV distinction (source: Dryer 1992a, 86)²

	NRel	RelN
OV	37	26
VO	60	1

Dryer's conclusion that Verb/Object order and Head/RC order do not form a correlation pair in the same sense as Verb/Object and Adposition/Object do is very widely shared. See, among others, Hawkins (1994, 265, 273);³ Croft and Deligianni (2001, 3); Diessel (2001, 446); Song (2001, 244); Rijkhoff (2002, 307).⁴

The mere numbers, however, may conceal the existence of a significant generalization relating the order of the verb and its complements to the order of the Head and the RC. In their chapter 5 ("Relative Clauses", pp. 261–371), Mallinson and Blake (1981) list the 150 languages of their sample according to subject/verb/object order, and according to whether they display RC-Head order, Head-RC order, or both.⁵ The numerical results largely confirm (ante litteram) Dryer's results in showing no clear tendency

1 for OV languages (especially if languages with exclusive NRel and those
2 with both NRel and RelN as alternative options are added together):⁶

	NRel	RelN	both NRel and RelN
3			
4			
5	OV	5	17
6	VO	109	1
7			12
8			6

8 However, more telling than the actual numbers is to observe from their table
9 which OV languages allow only the RelN order and which allow the NRel
10 order as the exclusive or as an alternative order. The former group (Ainu,
11 Amharic⁷, Basque, Burmese, Burushaski, Chibcha, Fore, Japanese, Kannada,
12 Korean, Mongolian, Piro, Sherpa, Sinhala, Sri Lanka Malay, Sri Lanka Portu-
13 guese, Tamil, Telugu) appears to contain languages corresponding to Green-
14 berg's (1963, 79) "rigid" type; the latter group (Adyghe, Fur, Galla (Oromo),
15 Hindi, Hittite, Hottentot (Nama), Kanuri, Khamti, Marathi, Nubian,
16 Quechua, Rashad, Sandawe, (Classical) Tibetan, Tigre, Turkish⁸) appears to
17 contain languages corresponding to his "non rigid type".⁹

18 Assuming this generalization to be essentially right, one could propose
19 the following correlations:

- 20
21 (3) a. If VO then NRel
22 b. If "rigid" OV, then RelN
23 c. If "nonrigid" OV, then NRel or both NRel and RelN

24 Even if possibly correct, such a statement would, however, fail to expose what
25 is at the basis of these correlations. We submit that the correlation between
26 V/O order, and the order of RCs and their Heads is intimately related to the
27 order of complement and adjunct subordinate clauses with respect to the verb.
28 In VO languages subordinate clauses follow the V, as they, typically, can in
29 "nonrigid" OV languages (cf. Dryer 1980, 130, 172). In the same languages,
30 RCs follow the Head. Subordinate clauses, however, do not ordinarily follow
31 the V in "rigid" OV languages, which are more strictly V-final.¹⁰ In the same
32 languages, RCs do not follow their Head either.

33 The generalization could be phrased more perspicuously as follows:

- 34
35 (4) a. In the general case, OV languages that do not allow *postverbal*
36 subordinate clauses ("rigid" OV languages) do not allow *post-*
37 *nominal* RCs.
38 b. In the general case, OV languages that allow *postverbal* subordinate
39 clauses ("non rigid" OV languages) also allow *postnominal* RCs
40

41 If this generalization survives further scrutiny, then there may be a genuine
42 correlation between V/(clausal) O order in the sentence and N/RC order in
43 the DP.¹¹

44 From the languages in the two Appendices below, which includes the OV
45 languages of Mallinson and Blake's own sample and a number of other OV
46 languages, it appears that the generalization is basically correct.

Generalization (4) says that in those OV languages in which there can be a post-Head clause in the sentence ([. . V Clause . .]) there can be a post-Head RC in the nominal phrase ([. . N RC. .]).

In turn, the possibility for a clause to follow the V or the N seems to some extent related to the presence of initial complementizers. While preverbal and prenominal (finite) clauses have final rather than initial complementizers ([[_{Clause}. . . .COMP] V/N], postverbal and postnominal (finite) clauses have initial rather than final complementizers ([V/N [_{Clause} COMP. . . .]]).

Hawkins (1990,256) notes that VO languages are exclusively Comp initial, while OV languages are either Comp initial or Comp final (see also Dryer 1992a, sections 4.3 and 4.5, 1992b; Diessel 2001):

- (5) VO languages _S[Comp S] only
- OV languages _S[Comp S] or _S[S Comp]

In the light of what we just observed about V/O order and RC/Head order, the double possibility in complementizer positioning of OV languages, vs. the single possibility of VO languages, leads us to expect that _S[S Comp] will be found preverbally in “rigid” OV languages and _S[Comp S] will be found postverbally in both VO and “nonrigid” OV languages. This appears confirmed by the following passage from Hawkins (1994): “[. .] grammars that would potentially generate D [i.e., Comp S V] seem to have an extraposition rule converting D into A [i.e., V Comp S] [. .]. This is true for Persian and for German. It is also true for the finite S’ structures of Yaqui and Turkish (cf. Dryer 1980). Moreover, in all the languages mentioned, Extraposition is *obligatory* in this environment, with the result that these languages exhibit a “left-right asymmetry” [. .]: a rightward skewing for sentential direct objects, even in languages that are SOV for nonsentential objects [. .].”(pp. 263–64).¹²

Bayer (2001), noting that “Indo-Aryan languages with Dravidian contact often show a dual system of sentential complementation with clause-initial complementizers for clauses in post-verbal position and clause-final complementizers for clauses mainly in pre-verbal position” (p. 11), makes the important observation that the initial and final complementizers are lexically different, and cannot be used interchangeably (i.e. “the lexical choice of the complementizer goes hand in hand with word order”, p. 15). The so-called ‘quotative’ complementizers, which derive from verbs of saying, are necessarily final. The necessarily initial complementizers, instead, appear to have originated in noun-modifying clauses as relative pronouns (p. 18ff).¹³ More important than their origin, though, is the fact, pointed out by Bayer, that they are differently specialized with relation to the types of clauses they select, and seem to enter different structures. Observing that with postverbal clauses introduced by an initial complementizer there can be a nominal correlate “in the expected position to the left of the verb”¹⁴ (p.21) (cf.(6) from Bengali (Bangla) = his ex. (10)), Bayer suggests that perhaps they always do, and that when nothing appears one should posit an unpronounced nominal correlate.¹⁵

- 1 (6) chele-Tae kOtha jane na *(je) baba aS-be
 2 boy-CL this story knows not (that) father come-will
 3 'The boy does not know it that his father will come
 4

5 This conjecture appears to be supported by the fact that postverbal finite
 6 clauses with initial complementizers (as opposed to preverbal ones with
 7 final complementizers) behave the same way as "extraposed" relative
 8 clauses and "extraposed" clausal complements of N(P)s. They are "frozen"
 9 in place; e.g. they cannot be topicalized (cf. Bayer 2001, 18ff).

10 What all of this suggests is that to be clause initial is possibly a property
 11 of those complementizers that are nominal in character; i.e., that appear
 12 with RCs, with complements of Ns, and nominalized clausal complements
 13 of verbs.¹⁶

14 What is crucial from the present perspective is that such "initial" com-
 15 plementizers/subordinators turn out to be a feature of VO and "non rigid"
 16 OV languages.

17 To judge from Diessel (2001), a similar pattern is displayed by adver-
 18 bial clauses: "While adverbial clause constructions that tend to precede the
 19 main clause/predicate only occur in OV languages in my sample, adverbial
 20 clauses that are commonly pre- and postposed occur in both VO languages
 21 and a significant minority of OV languages. If we look at the latter more
 22 closely, we find that (almost) all of them are marked by an initial conjunc-
 23 tion or adverb, while adverbial clauses that usually precede the main clause/
 24 predicate always include a final subordinator (i.e., a final conjunction,
 25 adverb, or suffix). There is thus a strong correlation between the order-
 26 ing of main clause/predicate and adverbial clause and the position of the
 27 subordinator in the subordinate clause: adverbial clauses including a final
 28 subordinator tend to precede the main clause/predicate, whereas adverbial
 29 clauses that are marked by an initial subordinator are commonly found in
 30 both initial and final position regardless of the order of verb and object."
 31 (p. 434). Also see Dryer (1992a, §4.5). Once again, the postverbal position-
 32 ing of the adverbial clause in VO and, we take, "non rigid" OV languages
 33 appears to be a function of the initial subordinator/complementizer.

34 To summarize, we have suggested that, in OV languages, 1) the presence
 35 of prenominal RCs correlates with the presence of preverbal complement
 36 and adverbial clauses; 2) conversely, the presence of postnominal RCs cor-
 37 relates with the presence of postverbal complement and adverbial clauses¹⁷;
 38 and 3) the two correlations are related to the presence, in the three types of
 39 clauses, of final and initial complementizers, respectively. The latter claim
 40 is supported by the languages in Appendix II only partially, though. Of
 41 the 46 OV languages with postnominal RCs and postverbal complement
 42 and adverbial clauses considered there, only 13 (Brahui, Galla (Oromo),
 43 Georgian, Hindi, Hittite, Marathi, Pashto, Persian, Pima Bajo, Svan,
 44 Tùnen, Turkish, Zazaki) have an initial complementizer in the three types
 45 of clauses; 8 (Bagri, Bangla, Gapapaiwa, Latin, Santali, Somali, Xakas,
 46

Yaqui) have an initial complementizer in two of the three types of clauses; 1
 2 (Hopi and Teribe) have a final complementizer in two of the three types 2
 of clauses; 9 (Ala'ala, Coahuilteco, Evenki, Nama, Sandawe, Sentani, Ship- 3
 ibo-Konibo, Tol, West Greenlandic) show a (mainly final) complementizer 4
 for only one of the three types of clauses (the adverbial clause); 2 (God- 5
 beri, Santali) show a final complementizer only for complement clauses; 9 6
 (Desano, Eudeve, Kabardian, Kairiru, Manam, Northern Paiute, Quechua, 7
 Skou, Wichita) do not show any complementizer for any of the three types 8
 of clauses; and 3 (Canela-Crahô, Kuku Yalanji, Pech) have a *final* comple- 9
 mentizer for all three types of clauses. 10

Despite this less than perfect correlation between the postverbal/post- 11
 nominal positioning of the clause and the presence of a clause initial 12
 complementizer (which may in part depend on the limited character of 13
 the sample), we take the correlation to be real; and to follow from a 14
 property, recently discussed by Kayne (2000a, 2001, 2005b), of the (ini- 15
 tial) complementizer of finite subordinate clauses (whether complement, 16
 adverbial, or relative). 17

Initial complementizers. On the basis of various considerations, Kayne 18
 suggests that clauses are generated in their argument or adjunct position 19
 without a complementizer. They then move to their licensing position,¹⁸ to 20
 the left of which an overt complementizer is subsequently inserted. Exem- 21
 plifying with German:¹⁹ 22

- (7) a. [nicht [_{VP} [_{DP} [_{IP} Fritz Maria kennt] [_{NP}(es)]] glaubt]] → 24
 b. [[_{DP} [_{IP} Fritz Maria kennt] [_{NP}(es)]] [nicht [_{VP} t glaubt]]] → 25
 c. [[_{IP} Fritz Maria kennt] C [[_{DP} t [_{NP}(es)]] [nicht [_{VP} t glaubt]]]] → 26
 d. (Weil Hans) [daß [[_{IP} Fritz Maria kennt] C [[_{DP} t [_{NP}(es)]] [nicht 27
 (Because H.) that F. M. knows it does not 28
 [_{VP} t glaubt]]]]] 29
 believe 30

The property, here relevant, that complementizers have (in VO languages, 32
 and in many OV languages; i.e. those of the “nonrigid” type) is that of 33
 attracting to their left everything that follows their clausal complement, 34
 hence turning (7)d into (8) 35

- (8) (Weil Hans) (es) **nicht glaubt** daß [er Maria kennt] t .. 37
 ‘As Hans doesn’t think that he knows Maria.’ 38

with the consequence that both the complementizer and the clause “end 40
 up” after the matrix verb.²⁰ 41

This movement could be thought of as a kind of ‘intraposition’, the 42
 “antisymmetric” analogue of the ‘extraposition’ operation that in earlier 43
 stages of the theory was assumed to derive (the string of words in) (8) from 44
 (the string of words in) (7)d (Kayne 1994). 45

1 If we take the overt (and abstract) complementizers of RCs to have essentially the same attraction property (as in fact Kayne 2000a, 318f himself suggests), then the similarity in *post-“Head”* positioning of the clause in the sentence and in the nominal phrase (i.e., the generalization noted above) can be captured:²¹

- 2
3
4
5
6
7 (9) a. [[we bought [which expensive book]] expensive book] →
8 b. C [[we bought [which expensive book]] expensive book] →
9 c. [we bought [which expensive book] C [t] expensive book] →
10 d. [that [[we bought [which expensive book]] C [t] expensive book] →
11 e. [which expensive book [that [[we bought t] C [t] expensive book]] →
12 f. X [which expensive book [that [[we bought t] C [t] expensive book]] →
13 g. [expensive book X [~~which expensive book~~ [that [[we bought t] t]] C [t] →
14 h. (I lost) the [expensive book X [~~which expensive book~~ [that [[we bought t] t]]
15 C [t]

16
17 As noted, such “initial” complementizers turn out to be a feature of VO
18 and “nonrigid” OV languages.

19 The case of initial complementizers in pre-Head position, as in (7d) above,
20 is apparently rather marked. We interpret it as arising from the attraction
21 of IP by a nonpronounced lower complementizer (the C of (7)d and (9)d),
22 and from the (marked) property that the higher overt complementizer has
23 of attracting nothing.²²

24 Though again quite rare, the case of initial complementizers in finite
25 RCs also seems to exist. It is generally stated, or assumed, that there are
26 no languages with prenominal RCs that have an initial finite complementizer
27 (e.g., Andrews 1975, 44; Downing 1978, 394). Yet, Galla (Oromo)
28 (Cushitic), Silli Greek (which is spoken in Asia Minor, and on which Turkish
29 may have played a role), and Tigre (Ethio-Semitic), appear to be three
30 such languages. See (10)–(12):²³

- 31
32 (10) [**kan** [kalēsa gale]] namtičča an arge
33 Rel yesterday arrived(finite) man-def I saw
34 ‘I saw the man that arrived yesterday’
35 (Galla/Oromo)—Mallinson and Blake 1981,289

- 36
37 (11) [**kiát** [íra]] perí
38 COMP saw-I boy
39 ‘The boy that I saw’ (Silli Greek—Song 2001, 256)

- 40
41 (12) [**la** [zet fäggðr mðnna]] ’ðkðl
42 Rel marker oil it-comes from-it crop
43 ‘the crop from which oil comes’ (Tigre—Palmer 1961, 27f)

Although they are quite common in preverbal position (as well as in post-verbal position) in VO languages, subordinator-initial adjunct clauses normally occur postverbally in OV languages, though some exceptions exist. See, e.g., (13). 1
2
3
4

- (13) **kawu** [nji yakin-də-ro] bəri bukin 5
before water drink.1sg.impf-det-dat meal eat.1sg.impf 6
'I will eat before I drink water' 7
(Kanuri—Hutchison 1976, 141)²⁴ 8
9

In ("rigid") OV languages instead one typically finds in preverbal position subordinator-final adjunct clauses. See the quote from Diessel (2001) above and Dryer (1992a, §4.5). 10
11
12
13

Final complementizers. It is tempting to take the "final" complementizers typical of "rigid" OV languages to be the spell out of the lower C of (7) and (9); the one which attracts the "complement" IP or the relative IP (and which is ordinarily not spelled out in VO and "nonrigid" OV languages). See the case of complement clauses in (14), the case of relative clauses in (15) and the case of adjunct clauses in (16) and (17):²⁵ 14
15
16
17
18
19

- (14) a. Taroo wa [[Ziroo ga baka da] to] omotte ita 20
T. topic Z. nom. mad is COMP thought 21
'Taroo thought that Ziroo is mad' 22
(Japanese—Josephs 1976, 367) 23
24

- b. mene [[Madhu se bethane] ke liye] kaha 25
I M. to sit for said 26
'I asked Madhu to sit down' (Hindi—Singh 1977, 204) 27
28

- c. Chele-Ta [[or baba aS- be] bole] Sune-che 29
boy-CLF his father come-FUT COMP hear-PST3 30
'The boy has heard that his father will come' 31
(Bangla—Bayer 1996, 255)²⁶ 32
33

- (15) a. [[Vok rool ?a pee] mii] lawthlawpaa ka mu? 34
pig food 3sg give COMP farmer 1sg see 35
'I saw the farmer who gave food to the pig' 36
(Lai—Kathol and Vanbik 1999, 434) 37
38

- b. [[ngbā dzi] ná] tsštss kā ndzá 39
child buy.PrC COMP banana ripen.P Neg 40
'The bananas which the child is buying are not ripe' 41
(Lendu—Kutsch Lojenga 1987/2003,5) 42
43
44
45
46

- 1 (16) [[\varnothing *duma tún timi*] **seribi**] aríwaíí bó-mi
 2 3Pl song sing Cont.Past while I turn come-Past
 3 ‘While they were singing, I returned’

4 (Ijo—Williamson 1965, 78)²⁷

- 5
 6 (17) [[*enu-nege-pi*] **tawa**] tarep war-an
 7 spear-me-3sg MEDIAL lest dance get-1sg PAST
 8 ‘Lest he spear me, I dance about’

9 (Daga—Thompson and Longacre 1985, 188)

10
 11 In this respect, “rigid” OV languages would lack the higher complementizers
 12 of VO languages (the one that attracts VP in the case of complement and
 13 adjunct clauses and the ones that attract the relative pronoun and the Head
 14 NP in the case of relative clauses). Alternatively, they would have unpronounced
 15 ones which fail to attract any material. The existence of languages
 16 with postverbal or postnominal (“extraposed”) complement or relative
 17 clauses with final complementizers appears to support the second alternative.
 18 In these languages, we may assume that the higher unpronounced
 19 complementizers retain the property of attracting the VP, or the relative
 20 pronoun and the RC Head. See (18),(19), and (20):²⁸

- 21
 22 (18) a. *cu-te i-mã amji jarên* C [[*cu-mã akîn*] **na**]
 23 3-Past 1-Temp self told 3-Temp 2-like subord
 24 ‘He told me that he likes you’

25 (Canela-Crahô—Popjes and Popjes 1986, 165)

- 26
 27 b. *Tohá slolyáya he* C [[*wakpála ektá ohìhpaye*] **kí**]
 28 when you.know Q creek to fall COMP
 29 ‘When did you find out that he fell in the creek?’

30 (Lakota—Dryer 1980,132)

- 31
 32 (19) a. *domer* C [[*bor í-ga*] **li**]
 33 man 1sg see-ABIL REL
 34 ‘The man who saw me’

(Teribe—Quesada 2000, 129)

- 35
 36 b. *tthik’íhí* C [*neyaa yet’ah goḷ thehk’é síi*]
 37 gun 2SG.son it.with moose 3.shot COMP
 38 ‘the gun that your son shot the moose with’

39 (Slave—Dryer 2007)

- 40
 41 (20) a. *ami ekhane eSe-chi* C [[*tomar SONge kOtha bol-bo*] **bole**]
 42 I here come-Pst1 you with speech say-Fut1 COMP
 43 ‘I have come here in order to talk with you’

44 (Bangla—Bayer 1996, 255)

- b. ʔamá k'a way C [[ma híβe] mpes] 1
 land dry Cop Neg Pres.rain.3 because 2
 'The land is dry because it doesn't rain' (Tol—Holt 1999a, 51) 3
 4

Circumpositioned complementizers/subordinators. The existence of two 5
 complementizers/subordinators sandwiching the complement/adjunct or the 6
 relative clause also seems to constitute evidence for the hypothesized unpro- 7
 nounced higher complementizer, as it seems plausible to take the simultane- 8
 ous appearance of an initial and a final complementizer to be the spelling out 9
 of both positions. See (21) for examples of complement clauses, (22) for an 10
 example of an adjunct clause, and (23) for examples of relative clauses:²⁹ 11

- (21) a. tuisi tuʔi [ke hu hamut bwika-kai] 12
 very good COMP this woman sing-subord 13
 'It is very good that this woman sings' 14
 (Yaqui—Dryer 1980,fn.7) 15
 16

- b. rəpʃuû-qi [sè-na ná ya šá tsáwa neéma-qɔɔ-s] 17
 goat-tail-erg COMP-I top meat at all neg-want-comp 18
 Ləp-pə-reê 19
 say-perf/inference 20
 'The goat-tail said "I don't want any meat"' 21
 (Tibetan—Bayer 1999, fn. 25) 22
 23

- (22) [se mi-wi'é a] mí-kò fíe 24
 when 1sg-finish when 1sg-go home 25
 'When I'm finished, I go home' (Fanti—Welmers 1946, 72) 26
 27

- (23) a. mo [yə e jó sáŋ á'á] 28
 man Rel 3ps see.Past bird Rel 29
 '...the man who saw the bird' 30
 (Banjoun (Ghomala)—Watters 2003, 255) 31
 32

- b. ŋaʔ [naŋ ka-keŋ ɛŋ ge-ya polaʔ naŋ] ge-mu ge-meŋ 33
 man DEM 1sg-give 3sg 3sg-go:3 Polac DEM 3sg-go.back 3sg-go:1 34
 'Has the man I sent to Polac come back or not?' 35
 (Jabêm—Ross 2002d, 281) 36
 37

Internal complementizers. The case of Bangla "Comp-internal clauses" 38
 discussed in Bayer (1996, 1999, 247; 2001, fn. 12), Bhattacharya (2001), 39
 and references cited there, may possibly be another instantiation of the 40
 property that the (higher) finite complementizers have of attracting mate- 41
 rial to their left in "nonrigid" OV languages. Bayer and Bhattacharya 42
 point out that finite complement clauses can have an initial COMP if 43
 44

1 they follow the matrix verb ((24)a), but can no longer have an initial
 2 COMP if the complement clause precedes the matrix V ((24)b). In that
 3 case, the COMP is rather internal to the complement clause itself ((24)
 4 c). I would like to interpret both cases as consequences of the attraction
 5 property of the complementizer. Either the remnant following the com-
 6 plement clause—i.e., the matrix V(P)—is attracted (with the consequence
 7 that [COMP S] will be postverbal—see (25)), or part of the complement
 8 clause itself will (see (26) (with the consequence that the remnant—the
 9 matrix V(P)—can no longer be attracted, but has to stay in situ, to the
 10 right of its complement):³⁰

11
 12 (24) a. chele-Ta Sune-che [je [or baba aS-be]]
 13 boy-CL hear-Pst3 that his father come-will
 14 ‘The boy heard that his father will come’ (Bayer 1996, 255)

15
 16 b. *chele-Ta [je [or baba aS-be]] Sune-che
 17 boy-CL that his father come-will hear-Pst3
 18 ‘The boy heard that his father will come’ (Bayer 1996, 255)

19
 20 c. chele-Ta [or baba je [aS-be]] Sone-ni
 21 boy-CL his father that come-will hear-neg/Pst3
 22 ‘The boy hasn’t heard that his father will come’ (Bayer 1996, 263)

23
 24 (25) a. C chele-Ta [or baba aS-be] Sune-che →
 25 b. [or baba aS-be] C chele-Ta Sune-che →
 26 c. je [or baba aS-be] C chele-Ta Sune-che →
 27 d. chele-Ta Sune-che [je [or baba aS-be] C t] (= (24)a)

28
 29 (26) a. C chele-Ta [or baba aS-be] Sune-che →
 30 b. [or baba aS-be] C chele-Ta Sune-che →
 31 c. je [or baba aS-be] C chele-Ta Sune-che →
 32 d. chele-Ta [or baba je [t aS-be]] Sone-ni (= (24)c)

33
 34 That *je* corresponds to the higher complementizer *daß* (*that*) of (7), rather
 35 than to the lower complementizer *C*, is suggested by the fact that *C* may be
 36 spelled out as well (with the ‘final’ complementizer *bole* seen in (14)c). See
 37 (27) (also from Bayer 1996, 263f):

38
 39 (27) [[chele je poR-be] bole] ami mon-e kor-I ni
 40 boy JE study-Fut3 BOLE I mind-loc do-1 neg-pst
 41 ‘I haven’t thought that the boy will study’

42
 43 Like in complement and adjunct clauses in the sentence, in some OV lan-
 44 guages constituents of the RC may also end up to the left of the relative
 45 complementizer. This is more obvious (pace Kayne 1994, 93) in those cases
 46

where the relative and declarative (or interrogative) complementizers have the same form, as is the case, apparently, in Amharic (Demeke 2001, 196ff), and Basque (De Rijk 1972, 116; Lehmann 1984, 59). See (28):³¹

- (28) [lä-saba [yä-šäT-ku-t] C mäšhaf]]]
 to-Saba comp-sell_{perf} -1s-3ms book
 ‘a book that I sold to Saba’ (cf. Demeke 2001,203)

As (following Kayne 2000a, 2001, 2003a, 2005a,b) I take the post-“Head” positioning of a clause to depend on the presence of an overt (or abstract) complementizer (of the right kind), it could be that a nonrigid OV language with postverbal complement clauses still has only prenominal RCs if the language has no (relative pronoun or) relative complementizer of the same right kind.³² Conversely, it could be that a certain OV language with postnominal RCs introduced by relative pronouns or relative complementizers (of the right kind) has no postverbal clause as it lacks declarative complementizers (of the same right kind). Slave appears to be such a case. It has preverbal subordinate clauses (Rice 1989, chapt.42), but postnominal RCs (with final complementizers) (Rice 1989, chapt.47; Dryer 2003,31).³³ In any case, we submit that both such situations are marked, the more general case being that if a language allows *postverbal* subordinate clauses (i.e., is VO or “nonrigid” OV) then it also allows *postnominal* RCs. This was seen to be a consequence of a property of higher complementizers.

APPENDIX I

(M & B = MALLINSON AND BLAKE 1981)

OV languages of the “rigid” type (no postverbal subordinate clauses; no postnominal RCs):

Ainu (isolate—M & B,276; Tamura 2000), **Amharic** (Ethio-Semitic—see fn. 7 above), **Betta Kurumba** (South Dravidian—Coelho 2003, 78ff, 214, 223), **Burmese** (Tibeto-Burman—M & B, 277; Lehmann 1984, 183; Soe 1999), **Burushaski** (isolate—M & B,277), **C(h)amling** (Tibeto-Burman—Ebert 1997)³⁴, **Chibcha** (Chibchan—M & B,277), **Dhivehi** (Indo-Aryan—Cain and Gair 2000), **Dulong** (Tibeto-Burman—LaPolla, 2003), **Enets** (Samoyed—Künnap 1999,31ff.), **Fore** (East New Guinea Highlands Languages—M & B,278; Scott 1978), **Gadaba** (Central Dravidian—Bhaskararao 1998, 347, 350ff), **Hakha Lai** (Tibeto-Burman—Peterson 2003), **Ijo** (Niger-Congo—Lehmann, 1984,72; Carstens 2002), **Inor** (Ethio-Semitic—Chamora and Hetzron 2000, 64), **Japanese** (Altaic—M & B, 279), **Kannada** (South Dravidian—Steever 1987, 109; 1998a, 146ff; Sridhar 1990), **Koiari** (Non-Austronesian Papuan—Dutton 1996); **KoDava** (South Dravidian—Ebert 1996, chapter 5), **KoNDA**

(South Central Dravidian—Steever 1987,110; Krishnamurti and Benham 1998, 266ff), **Korean** (Altaic—M & B,280), **Lahu** (Tibeto-Burman—Lehmann 1984,61–63), **Lalo** (Tibeto-Burman—Björverud 1998), **Lushai** (Tibeto-Burman—Hillard 1977,339ff, 343); **Malayalam** (South Dravidian—Mohanam 1982,510; Asher and Kumari 1997, §1.1.2)³⁵, **Mao Naga** (Tibeto-Burman—Giridhar 1994)³⁶, **Meithei** (Tibeto-Burman—Chelliah 1997), **Mongolian** (Altaic—M & B,281; Binnick 1979,chapt.III)³⁷, **Parangi-Gorum** (Munda—Aze 1973, 263, 300f), **Piro** (Arawakan—M & B,281), **Qiang** (Qiangic (Tibeto-Burman)—LaPolla (with Huang), 2003,19f,221), **Sherpa** (Tibeto-Burman—M & B,282; Givón 1975, 78, 95–96, 99–100)³⁸, **Sinhala** (or **Sinhalese**) (Indo-Aryan—M & B, 282; Gair 1970,62ff;157ff; Gair 1992,443ff; Gair and Paolillo 1997, chapter 3; Keenan and Comrie 1979, 345), **Sri Lanka Malay** (Creole—M & B, 283), **Sri Lanka Portuguese** (Creole—M & B, 283; Smith 2001), **Tamil** (South Dravidian—M & B, 283; Steever 1992, 134–136; Annamalai and Steever 1998, 117ff), **Tauya** (Non-Austronesian Papuan—MacDonald 1990, 4, 289ff), **Telugu** (South Central Dravidian—Krishnamurti 1998, 233f)³⁹, **Thulung Rai** (Tibeto-Burman—Lahaussais 2003), **Tyvan** (Turkic—Anderson and Harrison 1999).⁴⁰

APPENDIX II

OV languages of the “non rigid” type (postverbal subordinate clauses; postnominal RCs, either as the exclusive, or as the alternative, option):⁴¹

‘Ala’ala (Non-Austronesian Papuan—Ross 2002c)

postverbal complement clauses:

Ia e-‘ou [Koloka ‘ani e-ba]

he 3sg-tell Koloka EMPH 3sg-die

‘He told me Koloka had died’

(Ross 2002d, 361)

postverbal adverbial clauses:

kau e-da’a luma [‘ola-na melo e-da’a loba]

man 3sg-go house because boy 3sg-go garden

‘The man went to the house because the boy went to the garden.’

(Ross 2002d, 360)

postnominal RCs:⁴²

Ate’ate [a-ika-ia] bosea e-vua-ia

woman 1sg-see-3sg basket 3sg-carry-3sg

‘The woman I saw was carrying a basket’

(Ross 2002d, 352)

Bagri (Indo-Aryan—Gusain 2000)	1
postverbal complement clauses:	2
<i>mē̃ socũ hũ [kε bó jawεgo]</i>	3
I think.Prst am that he go.Fut.3ms	4
‘I think that he will go’	5
(Gusain 2000, 66)	6
postverbal adverbial clauses: ⁴³	7
postnominal RCs:	8
<i>bó admi [jiko kál ayo ho]</i>	9
that man rel. yesterday come-Perf aux-pst.3ms	10
‘the man who came yesterday’	11
(Gusain 2000, 62)	12
	13
	14
	15
Bengali (or Bangla) (Indo-Aryan—Bayer 1996,1999,2001) ⁴⁴	16
postverbal complement clauses:	17
<i>chela-Ta Sune-che [je or baba aS-be]</i>	18
boy-CF hear-Past.3 that his father come-Fut.3	19
‘The boy has heard that his father will come’	20
(Bayer 1996, 255)	21
postverbal adverbial clauses: ⁴⁵	22
<i>?tomar ma khuSi hO-be [tumi kolkata-Y ge-le]</i>	23
your mother happy become-FUT2 you Calcutta-LOC go-CondPrtc	24
‘Your mother will be happy if you go to Calcutta’	25
(Bayer 1996, 282)	26
postnominal RCs:	27
<i>ami Sey lok-Ta-ke [je eSe-che] cin-i na</i>	28
I the man-CF-OBJ that come-Past.3 know-1 not	29
‘I don’t know the man who came’	30
(Bayer 1996,256)	31
	32
Brahui (North Dravidian—Elfenbein 1998) In addition to the	33
Dravidian prenominal pattern, Brahui (possibly due to the influence	34
of the neighbouring Indo-Aryan languages—Elfenbein 1998,	35
409, 411f) also has postverbal finite complement and adverbial	36
clauses and postnominal finite RCs introduced by the same	37
complementizer <i>ki</i> (borrowed from Balochi—Elfenbein 1998, 411):	38
postverbal complement clauses:	39
<i>ō tēnā ust-atī pārē [ki ī duzziw=ta]</i>	40
he-nom his heart-locI say-past-3 that I steal-fut1sg=3sobl	41
‘he said in his own heart that he would steal it’	42
(Elfenbein 1998, 412)	43
	44
	45
	46

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postverbal adverbial clauses:

ī nā xal-ōī uṭ, [ki nī dawn apāsa]?

I you hit-prt.necess be, that you thus speak-impfc-prs-2s

‘Am I to be struck by you because you are speaking in this way?’

(Elfenbein 1998, 404)

postnominal RCs:

kunē=nē hamē kučak-as [ki drust kē-nē]

bite-prs3s=2obl same dog-def that knowledge do-prs3s=2obl

‘The dog that bites you is the same dog that knows you’

(Elfenbein 1998, 412)

Canela-Crahô (Jê (Amazonian)—Popjes and Popjes 1986)

postverbal complement clauses:

cu-te i-mā amji jarēn, [cu-mā akīn na]

3-Past 1-Temp self told 3-Temp 2-like subord

‘He told me that he likes you’

(Popjes and Popjes 1986, 165)

postverbal adverbial clauses:

jaco me capi te pī hêre jakep [ame to ajpēn cabbyr prām te]

Jaco and Capi Past wood twig cut 3pl Inst Recip beat want because

‘Jaco and Capi cut twigs because they wanted to beat each other with them’

(Popjes and Popjes 1986, 165)

postnominal RCs:

wa i-te rop pupun, [capi te ih-curan ata]

I I-Past dog see Capi Past 3-kill Dem/Rel

‘I saw the dog Capi killed’

(Popjes and Popjes 1986, 171)

Coahuilteco (Language isolate formerly spoken in Texas—Troike 1981, 2004)

postverbal complement clauses:

na-k^wa·m [ta-x-pa-ta-wex san pa-n]

1S-hope 1O-2S-Sub-help Fut Rel-1Con

‘I hope that you will help me’

(Troike 1981, 664)

postverbal adverbial clauses:

na-k-ax in, . . [ux^wa·l tuk^we·-m mak-pa-čū· santupa·yok^we·-n]

1S-2°— give also sky Dem-2Con 2S:3pO-Sub-carry in order that-1Con

‘I give you also (the indulgences) in order that you carry them to Heaven’

(Troike 1981, 671)

postnominal RCs:	1
<i>saxpame pinapsa [xami·n xa-p-xo·] tupa·-n</i>	2
sins you 2-Sub-know Dem-1C	3
‘the sins that you know’	4
	5
	6
Desano (Tucanoan—Miller 1999)	7
postverbal complement clauses:	8
<i>yi?i pepi-a [sĩrĩ-a wa-gokũbõ]</i>	9
1s think-Non3^Pres die-Perf go-Prob^3fs	10
‘I think she will die’	11
	12
postverbal adverbial clauses:	13
<i>bĩã igo-re karta goha-bãsi-a [igo bãsi-bo-ro dopa-ta]</i>	14
2pl 3fs-Spec letter write-Abil-Nom3^Pres 3fs know-pot-deverb like-Lim	15
‘You can write her a letter so that she will know’	16
	17
postnominal RCs:	18
<i>yi-re su?ri [ãsi-basa-ra-ye] sãyã-bi</i>	19
1s-Spec clothes buy-Ben-Deverb-Clf put^on-Non3^Pst	20
‘I put on the dress that was bought for me’	21
	22
Eudeve (Uto-Aztecan—Shaul 1991)	23
postverbal complement clauses:	24
<i>nee aguãtera-n [dominco-tze amo missa ca vitzã-cauh]</i>	25
1sg know-Pre Sunday-Loc thy mass Neg see-Past	26
‘I know that you didn’t see mass on Sunday’	27
	28
postverbal adverbial clauses:	29
<i>eme-ne suba-m [eme deni-hipsi-cade]</i>	30
thee-1sg like-Pre thee good-heart-Nom	31
‘I like you because you have a good heart’	32
	33
postnominal RCs:	34
<i>hipsem-ta [no vvas-vva mavva-tzem-ta] ovvic</i>	35
people-Obj my field-Ali weed-Nom-Obj call	36
‘Call the Indians who are to weed my field’	37
	38
	39
Evenki (Tungusic—Nedjalkov 1997; Bulatova and Grenoble 1999)	40
postverbal complement clauses:	41
<i>nungan sa:-re-n [eme-d’enge-vi]</i>	42
he know-nfut-3sg come-part-prefl	43
‘He knows that he will (be able to) come’	44
	45
	46

1 postverbal adverbial clauses:⁴⁶

2 *nungan ala:t-cheche-n* [*o:kin girki-n eme-d'e-n*]
 3 he wait-impv-3sg when friend-3sg.pss come-FUT-3sg
 4 'He was waiting when his friend would come' (Nedjalkov 1997, 44)

5
 6 postnominal RCs:⁴⁷

7 *bi beje-ve* [*tatkit-tu haval-d'a-cha-ve*] *archa-0-m*
 8 I man-accd school-dat work-impv-part-accd meet-nfut-1sg
 9 'I met the man who worked at school' (Nedjalkov 1997, 36)

10
 11 **Galla** (Oromo) (Cushitic—M & B, 278, 289, Gragg 1972, 162–165;
 12 Dryer 1992a fn. 5; Stroomer 1995)⁴⁸

13
 14 postverbal complement clauses:

15 *atini hin-beek-tu,* [*akka bisaani nyaap'a-ii*]
 16 you Neg-know-2Neg.Pres, that water enemy-Subj
 17 [*irra ta-u*] ?
 18 on be.present-3Pres.Subord
 19 'Don't you know that your enemies are staying by the water?'
 20
 21 (Stroomer 1995, 127)

22 postverbal adverbial clauses:

23 *Nuu dandeenee guyyaa sadiillee hinoolluu,*
 24 . . .we be.able.1pl.Past day three.also neg.pass.day.1pl.neg.Pres,
 25 [*atoo bisani hind'ugini*]
 26 if water neg.drink.neg.Past
 27 '. . .we cannot live even three days, unless we drink water'
 28
 29 (Stroomer 1995, 126)

30 postnominal RCs:

31 *nam-tičča* [*kan kalēsa gale*] (*sana*) *an arge*
 32 man-def Rel yesterday arrived (Dem) I saw
 33 'I saw the man that arrived yesterday' (Gragg 1972,162; M & B, 289)

34
 35 **Gapapaiwa** (Oceanic (Austronesian)—McGuckin 2002)

36
 37 postverbal complement clauses:

38 *I-vona* [*da yaghiyaghina ko-na-vovira*]
 39 3:NON.PRES-say COMP quickly 2PL-FUT-return
 40 'They say that you must return quickly' (McGuckin 2002, 319)

41
 42 postverbal adverbial clauses:

43 *I-oru* *ku=okowa* [*da vi-towa kubiine*]
 44 3:NON.PRES-go-down to-river COMP CAUS-bathe PURP
 45 'They went down the river for the purpose of taking a bath'
 46
 (McGuckin 2002, 320)

postnominal RCs:	1
<i>ededa [i-riku] a-kita=i-si</i>	2
children 3:NON.PRES-dance 1Sg-see=TR-3PL	3
‘I saw the children who danced’ (McGuckin 2002, 305)	4
	5
	6
Georgian (Kartvelian—Aronson 1972; Harris 1992, 1994, 1995; Hewitt 1987; Testelec 1998)	7
	8
	9
postverbal complement clauses:	10
<i>me vici [rom sen xvai ar moxvai]</i>	11
I know.Prs that you tomorrow not come.Fut	12
‘I know that you will not come tomorrow’	13
(Khatuna Okroshidze, p.c.; cf. Testelec 1998, 240)	14
	15
postverbal adverbial clauses :	16
<i>ar gauvliia ert k’vires, [rom amas meore šemtxveva-c daerto]</i>	17
not it/pass one week, that him/DAT second incident-too it/occurred/him	18
‘Not a week had passed, when a second incident also occurred to him’	19
(Harris 1995, 1393)	20
	21
postnominal RCs: ⁴⁹	22
<i>Xalxi [romelic kareb-tan axlos idga] aqaqanda</i>	23
the people [who doors-at close were standing] began to shout	24
‘The people who were standing near the doors began to shout’	25
(Aronson 1972, 141)	26
	27
Godoberi (Dakho-Dagestania—Kibrik 1996)	28
	29
postverbal complement clauses:	30
<i>il-u-ra b=i?-at-a-da [waša Ridu]</i>	31
mother-OBL-AFF NEUT=know-PRS-CONV-COP boy to.Godoberi	32
<i>w-a?a-bu-ti]</i>	33
MASC=come-PST-PRT-SUB	34
‘Mother knows that they boy has come to Godoberi’ (Kibrik 1996, 175)	35
	36
	37
postverbal adverbial clauses: ⁵⁰	38
<i>mak’i čar-u wu=na [bac’a ha?-ir-a-di]</i>	39
child run.PAST-CONV Masc=go.PST [wolf see-MASD-OBL-ERG]	40
‘The child ran away because he saw the wolf’ (Kibrik 1996, 205)	41
	42
postnominal RCs:	43
<i>di-ra ha?a jaci [maHačqala-jalda j=ihi-bu]</i>	44
I-OBL-AFF see.PST sister Makhachkala.PLACE FEM=live.PST-PRT	45
‘I saw (my) sister who lived in Makhachkala’ (Kibrik 1996, 151)	46

Hindi (Indo-Aryan—M & B, 278; Singh 1977)

postverbal complement clauses:

Ram ne kaha [ki Sita bimar he]
 Ram Agt said that Sita sick be
 ‘R. said that S. was sick’ (Singh 1977, 204)

postverbal adverbial clauses:

Vo dhiire bol rahaa hai [kyon-ki us-ka gala kharaab hai]
 he softly talk progr be-pres why-that his throat bad be-pres
 ‘He is speaking softly because his throat is bad’ (Anoop Mahajan, p.c.)

postnominal RCs:

us aadmii ne [jo miir hai] ek makaan khariidhaa
 that man erg Rel rich is a house bought
 ‘The man who is rich bought a house’ (M & B, 290)

Hittite (Indo-European—M & B, 278; Lehmann 1984, 123ff;
Luraghi 1997)

postverbal complement clauses:

nu mahhan austa anda=kan [kui hatkesnuwantes . . .]
 CONN when see-1sg-Pret into-PTC COMP oppress-PART-NOM-PL
 ‘when I saw that they were being oppressed. . .’ (Luraghi 1997, 59)

postverbal adverbial clauses:

nu É-ri= ssi anniskizzi [kuitman=as
 CONN house-D/L POSS3sg-D/L work-3sg-ITER-PRES until-3sg-NOM
lazziyattat. . .]
 recover-3sg-PRES
 ‘and (he) works in his house, until he (sc. the injured) recovers. . .’
 (Luraghi 1997, 66f)

postnominal RCs:

^{GIS}*TUKUL=ma [kuin apiya harkun n= an] halissiyannun*
 weapon=Ptc Rel-Acc there have-1sg-Pret Conn=3sg-acc inlay-1sg-Pret
 ‘the weapon that I had there I had inlaid’ (Luraghi 1997, 39)

Hopi (Uto-Aztecan—Heath 1972⁵¹; Dryer 1980; Grune 1995)

postverbal complement clauses:

Pas nî qa navota [îñ hiroro-ta-q’ö]
 very I Neg hear you snore-dur-sub,ds
 ‘I certainly didn’t hear you snore’ (Dryer 1980, 130)

postverbal adverbial clauses:	1
<i>Pam waaya [nu' put tuwa-q'ö]</i>	2
he ran-away I him see-(subject-switch)	3
'He ran away when I saw him' (Grune 1995, 11)	4
	5
postnominal RCs: ⁵²	6
<i>nu' pookot [moosa kuukiqat] ngöyva</i>	7
I dog(obj) cat(subj) biting-him(obj) chased	8
'I chased the dog that the cat bit' (Grune 1995,12; cf. also Heath 1972, 238)	9
	10
	11
Kabardian (Northwest Caucasian—Colarusso 1992, 189–190) ⁵³	12
Postverbal complement clauses:	13
postverbal adverbial clauses:	14
<i>sa mazð-m sð-k'wð+a-aγ-ś [maraak'w a 0-q'a-s-śðpð-n-wa]</i>	15
I forest-obl I-move+intr-past-aff berries 3-hor-I-pick-inf-pred	16
'I went into the forest to pick berries'	17
	18
postnominal RCs:	19
<i>λð-r [a-tx ðλ-r 0-q'a-z-txð-aγ-wa]</i>	20
man-abs that-book-abs 3-hor-who-write-past-pred	21
'the man who wrote that book'	22
	23
	24
	25
Kairiru (Oceanic (Austronesian)—Ross 2002i)	26
postverbal complement clauses:	27
<i>ei o-wot [yieq qo-myai r'ũon]</i>	28
3sg 3sg-say 2sg 2sg-come COMP	29
'He said that you had come' (Ross 2002i, 210)	30
	31
postverbal adverbial clauses: ⁵⁴	32
postnominal RCs:	33
<i>moin nai [kyau u-r'im] ceik e-rib</i>	34
woman that 1sg 1sg-see:3sg stringbag 3sg-carry	35
'The woman I saw was carrying a stringbag' (Ross 2002i, 211)	36
	37
	38
	39
Kuku Yalanji (Pama-Nyungan—Patz 2002) ⁵⁵	40
postverbal complement clauses:	41
<i>karrkay-angka nyaji-ny, [jarba kuni-ji-nya]</i>	42
child-Erg.pt(A) see-Past snake.Abs(S) kill-Itr-Sub	43
'The child saw the snake being killed/how the snake was killed' (Patz 2002, 173)	44
	45
	46

1 postverbal adverbial clauses:

2 *ngayu baya waju-l, [yundu wumbul-ma-nka]*
 3 1sg.Nom(A) fire-Abs(O) burn-NonPast 2sg.Nom(S) warm-Inch-Purp
 4 ‘I light a fire so that you get warm’ (Patz 2002, 166)
 5

6 postnominal RCs:

7 *buliman-angka warru karrba-ny, [bayan*
 8 policeman-Erg.pt(A) yg.man.Abs(O) grab-Past house.Abs(O)
 9 *janjarri-l-janjarri-nya]*
 10 snoop-l-Red-Sub
 11 ‘The policeman apprehended the chap (who was/while he was) snooping
 12 in the house’ (Patz 2002, 181)
 13
 14

15 **Latin** (Indo-European—Ernout et Thomas 1964)⁵⁶

16 postverbal complement clauses:

17 *gaudeo [te interpellau]*
 18 I am glad (I) you-ACC asked
 19 ‘I’m glad I’ve asked you’ (Ernout et Thomas 1964, 298)
 20

21 postverbal adverbial clauses:

22 *relegatus mihi videor [posteaquam in Formiano sum]*
 23 exiled to me (I) appear since in my villa in Formia I am
 24 ‘I appear to myself an exile since the day I arrived in my villa in Formia’
 25 (Ernout et Thomas 1964, 361)
 26

27 postnominal RCs:

28 *puellae [quas rogavi] cras respondebunt*
 29 girls.[fem].pl.nom RelPro.fem.pl.nom. ask-past.[1s] tomorrow reply.Fut.[3.pl]
 30 ‘The girls whom I asked will answer tomorrow’ (M & B, 332)
 31

32 **Manam** (Austronesian—Lichtenberk 1983)

33 postverbal complement clauses:

34 *tamóata i-píle [mása ŋa-dúma-ya]*
 35 man 3sg.realis-say indef.irrealis 3sg.irrealis-help-1sg.obj
 36 ‘The man said he would help me’ (Lichtenberk 1983, 556)
 37

38 postverbal adverbial clauses:

39 *tágo u-duma-í?o [biéŋ u-lá ?o-be]*
 40 neg 1sg.realis-help-2sg.obj B. 1sg.realis-go-and
 41 ‘I did not help you because I went to Bieng’ (Lichtenberk 1983, 548)
 42

43 postnominal RCs:

44 *tamóata [tanépwá i-rá=ra-di] ?u-?awat-á?-idi?*
 45 man chief 3sg.realis-talk to=redupl-3pl.obj 2sg-know-trans-3pl.obj
 46 ‘Do you know the man the chief is talking to?’ (Lichtenberk 1983, 262)

Marathi (Indo-Aryan—M & B, 281; Pandharipande 1997)	1
postverbal complement clauses:	2
<i>Mohan mhanālā [kī madhū dillīla gelā]</i>	3
Mohan say-past-3sm COMP Madhu Delhi-to go-past-3sm	4
‘Mohan said that Madhu went to Delhi’ (Pandharipande 1997, 65)	5
postverbal adverbial clauses: ⁵⁷	6
<i>tī gāte [dzēmwhā tī ānandī aste]</i>	7
she sing-3sf when she happy is-3sf	8
‘She sings when she is happy’ (Pandharipande 1997, 105)	9
postnominal RCs:	10
<i>to mānūs [dzo itha śikawto] to mādzhā bhāū āhe</i>	11
that man rel here teach-pres-3sm that poss-ms brother is	12
‘The man who teaches here is my brother’ (Pandharipande 1997, 79)	13
Nama (Khoisan—M & B, 279; Andrews 1975, 58–61) ⁵⁸	14
postverbal complement clauses:	15
<i>Ti+ta ge goro #âi [lli+b ne+pa ha ti]</i>	16
I +me Ind Prog think Pron+He here+Loc be so	17
‘I thought that he was here’ (Levi Namaseb, p.c.)	18
postverbal adverbial clauses:	19
<i>Ti+ta ge go i [lli+b go !hasara te !khai+s !aroma]</i>	20
I + me Ind Past Circ. Past.left Pron+He Past insult me Fact+It therefore	21
‘I left because he insulted me’. (Levi Namaseb, p.c.)	22
postnominal RCs:	23
<i>khoi-b, [ia go //ari ha-b] gye mĩ . . .</i>	24
man-m.sg Rel Past yesterday come-m.sg Perf say	25
‘The man who came yesterday said . . .’ (Andrews 1975, 61)	26
Northern Paiute (Uto-Aztecan—Thornes 2003) ⁵⁹	27
Postverbal complement clauses:	28
<i>Ni u=supidakwatu [u-su kai i= bunni]</i>	29
I 3=know 3-Nom Neg 1=see.Dur	30
‘I knew he didn’t see me’ (Thornes 2003, 446)	31
postverbal adverbial clauses:	32
<i>Ni u=supidakwatu [ka u-su i=tiikwi]</i>	33
I 3=know Ka 3-Nom 1=tell	34
‘I know because he told me’ (Thornes 2003, 461)	35

1 postnominal RCs:

2 *ni ka=tihikva [oʔo wini-di] punni*

3 I Obl=deer Dem stand.Sg-NML see.Dur

4 ‘I see the deer (that is) standing out there’ (Thornes 2003, 428)

6
7 **Pashto** (Indo-Iranian—MacKenzie 1992; Tegey and Robson 1996;
8 Taylor Roberts—[http://www.cogsci.ed.ac.uk/~siamakr/Kurdish/](http://www.cogsci.ed.ac.uk/~siamakr/Kurdish/KURDICA/2001/3/trpashto.htm)
9 [KURDICA/2001/3/trpashto.htm](http://www.cogsci.ed.ac.uk/~siamakr/Kurdish/KURDICA/2001/3/trpashto.htm)) (when otherwise not indicated, the
10 example is from Roberts’ paper).

11 Postverbal complement clauses:

12 *Mamaad fiker kewi [_{CP} tshi de Sur Gwel day khwaass dey]*

13 Mamaad thought do COMP POSS Sur Gwel him like be

14 ‘Mamaad thinks Sur Gwel likes him’

15 postverbal adverbial clauses:

16 *asad wa nə gadedə [wale tse nājoɾa wə]*

17 Asad prf not danced why that sick was

18 ‘Asad didn’t dance because he was sick’ (Tegey and Robson 1996, 228)

19 postnominal RCs:

20 *hagheey haghā mayshem [_{CP} tshi uda dee] kkkol krro*

21 she DET baby [COMP sleep be] kiss do

22 ‘She kissed the baby who is sleeping’

23 (see also MacKenzie 1992, 170, and
24 Tegey and Robson 1996, 219ff)

25 **Pech** (Paya) (Chibchan—Holt 1999b)

26 Postverbal complement clauses:

27 *tàs-ma kà-h-ír-t-à-rí? [tèʔk-er-pí-kán]*

28 I-Emph them-Aff-know-Neg-1s-Past₂ come-3p-Fut-whether

29 ‘I didn’t know/find out regarding whether they would come’

30 (cf. Holt 1999b, 72)

31 postverbal adverbial clauses:

32 *apáskáʔté-pE? [asòw(a)-rás]*

33 we.not.leave-Fut rain-because

34 ‘We will not leave because it’s raining’ (cf. Holt 1999b, 69)

35 postnominal RCs:

36 *aʔ-árwA-ma [katUš-k-u-riʔ-ma] ò:n-íʔ*

37 that-man-Emph work-Sem-Hab-Past₂-Emph/Rel die- Past₂

38 ‘That man you used to work with died’ (Holt 1999b, 73)

Persian (Indo-Iranian—M & B, 281, 287f; Tabaian 1975; Mahootian 1997)	1
postverbal complement clauses:	2
<i>fekr—mi-kon-æm [(ke) šiva emšæb mi-res-e]</i>	3
thought-Dur-do-1s (that) Shiva tonight Dur-arrive-3s	4
‘I think (that) Shiva will arrive tonight’ (Mahootian 1997, 29)	5
postverbal adverbial clauses:	6
<i>ba otobus ræft-im [cunke mašin næ-dar-im]</i>	7
with bus went-1pl because car Neg-have-1pl	8
‘We went by bus because we don’t have a car’ (Mahootian 1997, 40)	9
postnominal RCs:	10
<i>mašin-i [ke diruz xærid-æm]. . .</i>	11
car-Dem that yesterday bought-1s. . .	12
‘The car that I bought yesterday. . .’ (Mahootian 1997, 29)	13
Pima Bajo (Uto-Aztecan—Estrada Fernández 1996)	14
postverbal complement clauses:	15
<i>ig hibik [ko-n huun hug-an]</i>	16
3s want(PERF) COMP-1s corn eat-IRR	17
‘He wanted me to eat corn’ (Estrada Fernández 1996, 37)	18
postverbal adverbial clauses:	19
<i>aan am him-ia [timosa dud-an]</i>	20
1s LOC go-PROB although rain-IRR	21
‘I will go although it is raining’ (Estrada Fernández 1996, 39)	22
postnominal RCs: ⁶⁰	23
<i>aan nukad vainom aita-[kik ap in-hivig-id]</i>	24
1s have(Impf) knife that-Rel 2s 1s(Obj)-lend-DTRVZ	25
‘I have the knife you lent me’ (Estrada Fernández 1996, 37)	26
Quechua (Ancash) (Quechuan—M & B, 282; Lehmann 1984, 55–58)	27
postverbal complement clauses:	28
<i>Musya-: [punu-nka-nqa-n-ta]</i>	29
know-1sg [sleep-Prog-Nominalizer.Real-3sg]-Acc	30
‘I know that he is sleeping’ (Lehmann 1984, 57)	31
postverbal adverbial clauses:	32
postnominal RCs: ⁶¹	33
<i>Kachi [qu-yku-ma-nqa-yki-ta] muna-n</i>	34
Salt [give-0-Obj.1-Nominalizer.Real-2]-Acc want-3	35
‘He wants the salt that you gave to me’ (Lehmann 1984, 58)	36
	37
	38
	39
	40
	41
	42
	43
	44
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	46

Sandawe (Khoisan—M & B, 282)⁶²

postverbal complement clauses:

1 *manaasi** [*happu n/emesuts'i t'ape iE*]
 2 *mana-si** *happu n/emesu-ts'i*-i t'ape ie~*
 3 know-1sg. you woman-?-2sg. beat stay-and
 4 'I know you are beating a woman'

postverbal adverbial clauses:

5 *haanga-sa* [*t'wAga iE //oosi'sa*]
 6 *haang-sa t'wA-aa ie~ //oo-si'-sa*
 7 wake up rain (N)-nom. stay-and rain (V)-when-3f.sg.
 8 'she woke up [when it was raining]'

postnominal RCs:

9 *há:w lá?'mū:* [*k^bùⁿdésē:-gà?*] *?i:é*
 10 that goat who.buttet-3Pl give.him
 11 'and they gave him the goat which butted (the chicken)'

(Elderkin 1991, 98)

Santali (Munda (Austro-Asiatic)—Neukom 2001)⁶³

postverbal complement clauses:

12 *ceKate am-dɔ-m badae-kid-iŋ-a [iŋ-dɔ-ŋmaran]*
 13 how you(s)-TOP-2sS know-PST:Act-1sO-IND [I-TOP-1sS
 14 *-ge-a mente]*
 15 big-FOC-IND COMP]

'How did you know about me that I am the big one?'

(Neukom 2001, 183)

postverbal adverbial clauses:

16 *thir-thir-te bɔlɔ-k'-me, [jɛmɔn alo-ko disə-me]*
 17 quiet-Red-Conv enter-MID-2sS in order PROH-3pS notice-2sO
 18 'Go in quietly that they may not take notice of you'

(Neukom 2001, 196)

postnominal RCs:

19 *ona dare [oka-m mak'-akat']*
 20 that(Inan) tree which-2sS cut-PF:ACT
 21 'the tree you have cut'

(Neukom 2001, 200)

Sentani (Papuan (Trans-New Guinea)—Hartzler 1994)

postverbal complement clauses:

22 *nebei reyæ ubene nekaise [reyæ e-me-i]*
 23 that I thoughts I.think.them he neg-come-Nt
 24 'I think he will not come'

(Hartzler 1994, 61)

postverbal adverbial clauses:

ako næi holo-na mæi fafa-re a lækei helen sele eweyei
 fathers their group-poss your children-to word strong much very don't
jæ, [na hibi-hibi kena beko konaiyende bele-ne]
 say, pos immediately desire bad they.will.do.it not-because
 'Fathers, don't speak strongly to your children, so that they will not want
 to do bad things.' (Hartzler 1994, 59)

postnominal RCs:

nane anuwau [ere-i-me-i-en-le] eyæ kena okoikoi..
 that place see-Nt-come-Nt-3dsR-VE we want do not
 'We don't want any of the places we have seen so far..' (Hartzler 1994, 54)

Shipibo-Konibo (Panoan—Valenzuela 2003)

postverbal complement clauses:

E-n-ra onan-ke [nato ochiti-nin bake natëshama-a]
 1-Erg-EV know-CMPL this dog-Erg child.Abs bite.Neg-PP2.Abs
 'I know that this dog did not bite the child' (Valenzuela 2003, 491)

postverbal adverbial clauses:

xontako-bo-ra jawen papa betan ik-ai [beno-ai
 unmarried.girl-PL.Abs-EV Pos3 father COM do.I-INC marry.PP1
kaman]
 until

'Young girls live with their parents until they get married'

(Valenzuela 2003, 497)

postnominal RCs:

jono [(ja) papa-n rete-ibat-a]-ra moa non-n keyo-ke
 c.peccary 3.Abs father-Erg kill-Pst2-PP2-EV already 1p-Erg finish-CMPL
 'We already finished the collared-peccary father killed yesterday'
 (Valenzuela 2003, 247)

Skou ((Non-Austronesian) Papuan—Donohue 2004)

postverbal complement clauses:

Nì=lúe=te [mè=ong fa].
 1SG=hear=DIR 2SG=deceive use
 'I know that you're fooling (me).'

(Donohue 2004, 432)

postverbal adverbial clauses:

Nì=re pá=fue [a pále=ing a nì=fu-fu li].
 1SG=go house=the pig=the 1SG=see.F-RED do
 'I went to that house to look at the pig.' (Donohue 2004, 482)

1 postnominal RCs:

2 *naké* [*hòe-nì=ne* *ke=k-ang=ing a*]
 3 dog sago-1SG.GEN=1SG.DAT 3SG.NF=3SG.NF-eat=the
 4 ‘the dog which ate my sago’ (Donohue 2004, 271)
 5

6 **Somali** (Cushitic) (Antinucci 1981; Antinucci and Puglielli 1980;
 7 Svolacchia and Puglielli 1999)

8 postverbal complement clauses:

9 *wax-ay doonaysaa* [*in-ay bish-a dambe tagto*]
 10 thing-SCL want-Pres.3sgF that-SCL month-the next go-Subj.3sg
 11 ‘She wants to leave next month’ (Svolacchia and Puglielli 1999, 109)
 12

13 postverbal adverbial clauses:

14 *Af Soomaaliga waan baranayaa* [*maxaayeelay waxaan*
 15 language Somali-the Foc.Prt-I am-studying because Foc.Prt-I
 16 *rabaa inaan Soomaaliya aadó*]
 17 want that-I Somalia go
 18 ‘I am studying Somali because I want to go to Somalia’
 19 (Antinucci 1981, 251)
 20

21 postnominal RCs:

22 *akhri buugagga* [*Cali kuu keenay*]
 23 read books-the Ali you-to bring.PAST
 24 ‘Read the books that Ali brought to you!’ (Antinucci and Puglielli 1980, 87)
 25

26 **Svan** (Kartvelian—Tuite 1997)

27 postverbal complement clauses:

28 *mi lo:kar* [*xw-le:kar*], [*ere mðxar-iž an-qd-en-i-x*]
 29 I S1-say-Aor that tomorrow-QT PV-come-Pass-Sm-Pl
 30 ‘I said that they would come the day after [lit. “they will come tomorrow”]
 31 (Tuite 1997, 40)
 32

33 postverbal adverbial clauses:

34 *xexw-s dæ:r ž-a-hwed-da* [*hawe mi moma*
 35 wife-Dat nobody-Nom O2-ObjVers-give-Imperf except I not
 36 *læ-m-(i)-maržw-æ:n*]
 37 PV-O1sg-ObjVers-help-Plpf
 38 ‘Nobody would have given you a wife, if I had not helped you’
 39 (Tuite 1997, 35)
 40

41 postnominal RCs:

42 *ež ma:re*, [*xedwæ:j ætywæč* (← *ad-x-e-ɣwæč*)], *gæč-d*
 43 that man-Nom which-Nom PV-O3-ObjVers-pursue:Aor knife-Adv
 44 *æd-(i)-sip’-æ:n*
 45 PV-sbjVers-turn- Pass.Aor
 46 ‘The man who was pursuing him turned into a knife’ (Tuite 1997, 42)

Teribe (Chibchan—Quesada 2000)	1
	2
postverbal complement clauses:	3
<i>Woydë-r [ga pa worong] pa llëbo shärio-no bor kong owa li</i>	4
want-1sg CONN 2sg die 2sg thing do-PERF 1sg to bad REL	5
<i>kĩ</i>	6
because	7
‘I want you to die because of the bad things you did to me’	8
(Quesada 2000, 160)	9
	10
postverbal adverbial clauses: ⁶⁴	11
<i>Yë-y dlo sbko [dan wlo]</i>	12
put-1pl.INCL sun in dry PURP	13
‘We put it under the sun so it dries’	14
(Quesada 2000, 164)	15
	16
postnominal RCs:	17
<i>Domer [bor i-ga li]</i>	18
man 1sg see-ABIL REL	19
‘The man who saw me’	20
(Quesada 2000, 129)	21
	22
Tol (Jicaque) (Hokan—Holt 1999a)	23
	24
postverbal complement clauses:	25
<i>ma kelél [wa mó?o hák-c^ba]</i>	26
Neg Aux-want house into 3s.Pres.come-Imperf	27
‘S/he didn’t want to come into the house’	28
(Holt 1999a, 50)	29
	30
postverbal adverbial clauses:	31
<i>?amá k’a way [ma hí?e mpes]</i>	32
land dry Cop Neg Pres.rain.3 because	33
‘The land is dry because it doesn’t rain’	34
(Holt 1999a, 51)	35
	36
postnominal RCs:	37
<i>hí?e mpes nop^b [ʔí?í’s way] t’-y-í na</i>	38
Pres.rain.3 because corn good Cop gr-Pres-ow.3s	39
‘Because it rains, corn that is good grows’	40
(Holt 1999a, 52)	41
	42
Tūnɛn (Bantu—Dugast 1971)	43
	44
postverbal complement clauses:	45
<i>m’eko lɛfɛkək [a sɛ? ikitɔ báka menyama y’ inɣìn]</i>	46
leopard thought that ram is an animal strong	
‘The leopard thought that the ram is a strong animal’ (Dugast 1971, 311)	

1 postverbal adverbial clauses:

2 *mé nòka munḡōl etàʔ*, [*mbà bá s' ibilò ka ton*]
 3 I will medicine take, so that they Neg the palm nut cut nolonger
 4 'I will take the medicine so that they will no longer cut the palm nut'
 5 (Dugast 1971, 321)

6 postnominal RCs:

7 *bùél [ò bóa nà bwòsú tòkòsòk]. . .*
 8 thing that has us bothered. . .
 9 'The thing that bothered us. . .'
 10 (Dugast 1971, 312)

11 **Turkish** (Turkic—M & B, 283; Andrews 1975; Veld 1993;
 12 Kornfilt 1997; Kural 1997):⁶⁵

13 postverbal complement clauses:

14 *isti-yor-um [ki yann ben-im-le sinema-ya gel-esin]*
 15 want-Pr.Prog-1sg that tomorrow I-Gen-with cinema-Dat come-2sg.Opt
 16 'I want you to come to the movies with me tomorrow'
 17 (Literally: 'I want that you should come.')
 18 (Kornfilt 1997, 46)

19 postverbal adverbial clauses:⁶⁶

20 *o kadar yorul-muş-tu-ø [ki konuş-ma-ya güç-ü*
 21 so much tired-perf-pst-3sg that talk-mE-Dat strength-3sg
 22 *yet-mi-yor-du-ø]*
 23 be.enough-neg-progr-pst-3sg
 24 'He was so tired that he could not speak'
 25 (Veld 1993, 304)

26 postnominal RCs:

27 *bir adam [ki çocuk-lar-ın-ı sev-me-z] yalnız yaşa-malı-dır*
 28 a man [that child-pl.-3sg-Acc love-Neg-Aor alone live-Neg-Ep.Cop.
 29 'A man who does not love his children must live alone'
 30 (Kornfilt 1997, 60)⁶⁷

31 **West Greenlandic** (Eskimo-Aleut—Fortescue 1984)

32 postverbal complement clauses

33 *ilisima-vaa [urni-ssa-giga]*
 34 know.3s-3s.ind. come-to future 1s-3s.part.
 35 'He knew I would come to him'
 36 (Fortescue 1984, 36)

37 postverbal adverbial clauses:

38 *uqar-puq ikinnguti-ni irniinnaq tiki-ssa-sut*
 39 say 3s-indic. friend his-refl.-pl right-away come fut 3p-part
 40 *[taku-juma-mmatigit]*
 41 see want 3p-3p-caus
 42 'He said his friends would come right away because they wanted to see them'
 43 (Fortescue 1984, 95)

postnominal RCs:	1
<i>niviarsiaq [kalaallisut ilinnia-lir-suq]. . .</i>	2
girl Greenlandic learn-begin-intr.part. . .	3
‘the/a girl who has begun learning Greenlandic. . .’ (Fortescue 1984, 49)	4
	5
	6
Wichita (Caddoan—Rood 1973; Dryer 1980)	7
	8
postverbal complement clauses:	9
<i>tac-iʔi:khi::taw [kiri-ʔi:s-ʔirʔi:sti-s]</i>	10
I-know neg-neg.3-steal-impf	11
‘I know that he did not steal it’ (Dryer 1980, 131)	12
	13
postverbal adverbial clauses:	14
<i>kiyaʔa:ʔákicta:rasʔakʔari:k [hikica:riyarih]</i>	15
person-past-horse-pl-stand-cause they graze	16
‘Someone took his horses to graze’ (Rood 1973, 84)	17
	18
	19
postnominal RCs:	20
<i>ka:hi:kʔa [na:wi:cʔi::sʔáskih] a:kibiʔinck</i>	21
woman sg.-man-see-come sg.-past-sleep	22
‘the woman who came to see the man slept’ (Rood 1973, 86)	23
	24
	25
Xakas (Turkic—Anderson 1998)	26
	27
postverbal complement clauses:	28
<i>min xinminčam, [aniŋ paribisxamina]</i>	29
I be.satisfied.w/-Neg-Pres.I.1 3-Gen go-Perf-Past.I-3.Dat	30
‘I wasn’t happy that he left’ (Anderson 1998, 82)	31
	32
postverbal adverbial clauses:	33
<i>kirleste turyan, [xažan oris semʔyazi čaydapčatxanda]</i>	34
porch-Loc stand-Past.I when Russian family-3 approach-Pres.Loc	35
‘(he) stood on the porch when the Russian family was approaching’	36
(Anderson 1998, 78)	37
	38
postnominal RCs:	39
<i>ol tayyada, [xaydar plIs taŋda pararbis], aŋ daa xuzux</i>	40
that taiga-Loc to.where we tomorrow go-Fut-1pl animal Emph nut	41
<i>taa köp</i>	42
Emph a lot	43
‘there are a lot of animals and nuts in the taiga we’re going to tomorrow’	44
(Anderson 1998, 84)	45
	46

1 **Yaqui** (Uto-Aztecan—Lindenfeld 1969, 1973; Givón 1975,64–65;
2 Song 2001)

3 postverbal complement clauses:⁶⁸

4 *aapo hunen hia [ke hu humut tutu ?uli]*
5 he thus say COMP this woman pretty
6 ‘He said that this woman is pretty’
7

8 (Lindenfeld 1973—quoted from Dryer 1980, 131)
9

10 postverbal adverbial clauses:

11 *neé kaá pahkó bičá-k [bwe?itúk ne kookwé]*
12 I not fiesta see-Perf because I sick
13 ‘I did not see the fiesta because I am sick’
14

(Lindenfeld 1969, 79)

15 postnominal RCs:

16 *hu kari [in acai-ta hinu-k-a?u] wece-k*
17 this house my father-Dep buy-Pfv-Rel fall-Pfv
18 ‘The house which my father bought fell down’
19

(Song 2001, 252)

20
21 **Zazaki** (Indo-Iranian—Sandonato 1994)

22 postverbal complement clauses :

23 *εz wazon [kε t^hi vεng ne-k^hεre]*
24 I-Dir want that you-Dir sound Neg-do.subj
25 ‘I want you not to make noise!’
26

(Sandonato 1994, 134)

27 postverbal adverbial clauses:

28 *Aε owa simit^hε [k^hε rεw t^hεsan mε-vo]*
29 she-Obl water drank that early thirsty Neg-become.subj
30 ‘She drank water so she wouldn’t soon get thirsty’
31

(Sandonato 1994, 135)

32 postnominal RCs:

33 *Her-e [k^hε hegai dε tsk^hεrεne] senik^h-i e*
34 donkey-Ez that field in graze few-NO are
35 ‘The donkeys that are grazing in the field are few’
36

(Sandonato 1994, 141)

12 A Note on Linguistic Theory and Typology

Let me say right away that I do not consider (“formal”) linguistic theory and linguistic typology as two separate approaches.	1 2
The in-depth, abstract, analysis of a certain phenomenon (say, how a restrictive relative clause is built) and the study of what variation there is concerning that phenomenon (how many ways of forming restrictive relative clauses are found across languages) are two sides of the same inquiry.	3 4 5 6
In the ideal case, linguistic theory should simultaneously account for the in-depth properties of the phenomenon, and for its range of variation across languages (e.g., by showing how the existing variants can be reduced to a unitary structure by selecting distinct parametric options). To my mind it would be desirable, for example, if (prenominal and postnominal) externally headed relative clauses, internally headed ones, as well as headless (“free”), adjoined, and correlative relative clauses could be shown to instantiate (derive from) one and the same underlying structure (see Kayne 1994, chapter 8; and Cinque 2008b, in preparation, for some discussion and an attempt in this direction).	7 8 9 10 11 12 13 14 15 16
Surely, not everyone shares the conviction that this is the ideal case, even though methodologically everyone, I think, should preliminarily strive to achieve just that. The reason is simply that, were we not to look for a unitary underlying plan, we would probably miss it, if there is one.	17 18 19 20
Be it as it may, in-depth, abstract, analyses of a certain phenomenon and the study of its cross-linguistic variation should not be alternative enterprises competing with each other. It is only an accident of recent history, destined to be overcome, that they are mostly practiced by separate communities of researchers. And it is only an accident of recent history that linguistic typology has been mostly developed by scholars working within functionalist approaches to language. To the extent that the results achieved within linguistic typology are solid results (and many certainly are), they constitute data that any approach, whether functionalist or formal, has to deal with.	21 22 23 24 25 26 27 28 29
In recent times, there are in fact signs that the two approaches may be converging a little more than in the past.	30 31
On one side, as Baker and McCloskey (2007) observe, more and more researchers working within the generative approach have started to pay	32 33 34

1 attention to (and even ventured accounts of) some of the results of linguistic
 2 typology. See, for example, Kayne (1994, 1998b, 2003a), Baker (1996, 2003), de
 3 Vries (2002), Julien (2002), Kihm (2005), Simpson (2005), Svenonius (2006b),
 4 Whitman (2005), Cinque (1999, 2005a,b). Some, like Benincà and Poletto
 5 (2005), have even come to propose, much in Greenberg's original spirit, cross-
 6 linguistic generalizations expressed in the form of implicational statements
 7 ("If a Romance language or dialect has adverbial clitics it has dative clitics; if
 8 it has dative clitics it has accusative clitics", etc.—cf. p. 227f).¹

9 On the other side, there are typologists who do not shy away from the
 10 same kind of abstract analyses that are proposed within the generative
 11 approach. To take a recent example, Plank (2003, 2006) arrives at the con-
 12 clusion that the principle governing the internal hierarchical organization
 13 of nominal phrases cannot be stated in a revealing and exceptionless way
 14 on the "manifest" or superficial order of these elements. This is because at
 15 such level the principle that requires adjectives to be closer to the N than
 16 numerals, and numerals to be closer to the N than demonstratives (giv-
 17 ing rise to the prevailing orders: Dem Num A N and N A Num Dem), is
 18 patently contradicted by some languages displaying the order N Dem Num
 19 A. That principle can however be stated as exceptionless, he suggests, at a
 20 more abstract level. What has to be assumed is that the N in the latter lan-
 21 guages has raised across A Num and Dem in a structure like [Dem [Num
 22 [A [N]]]]: essentially the same conclusion reached in Cinque (2005b).

23 Plank suggests that the same holds of the principle that establishes the
 24 relative order of adjectives with respect to the noun (say, those of Value,
 25 Size and Color). Since "the two most common orderings are mirror images
 26 of each other" (Value Size Color N and N Color Size Value—as already
 27 suggested in Hetzron 1978; and Sproat and Shih 1988, 1991), there is plausi-
 28 bly a principle that enforces Color to be closer to the N than Size and
 29 Size to be closer to the N than Value. Yet, once again, Plank adds, such a
 30 principle cannot be stated at the superficial level owing to the existence of
 31 languages (like Maltese and some of the Celtic languages) which display the
 32 surface order N Value Size Color).²

33 Note that Mallinson and Blake's (1981, 29) criticism against the pos-
 34 tulation of abstract word orders underneath surface orders does not apply
 35 here as here the postulation of a single universal hierarchy coupled with
 36 independently needed movements does some job. It derives the attested
 37 orders without also deriving the unattested ones (such as A Num Dem N,
 38 or Color Size Value N). See Cinque (2005b) and Plank (2003, 2006) for
 39 more detailed discussion.

40 Despite these convergences, a fundamental difference remains. This rests
 41 not so much in the conception of what counts as an explanation for why
 42 languages are the way they are. Functionalist approaches programmati-
 43 cally take such an explanation to be found "outside" of language, in terms
 44 of general cognition or in terms of the communicative functions of lan-
 45 guage" (Dryer 2006a, 4). But the possibility that the Faculty of Language
 46

may ultimately be shaped on the level of evolution by “principles that are language- or even organism-independent”, such as “principles of data processing, structural architecture, and computational efficiency” (Chomsky 2005, 1 and 8) has been assumed throughout the history of generative grammar.³ Plainly, there are different levels of “explanation”, internal and external to grammar, ontogenetic and phylogenetic.

Nor does the difference rest in the fact that typology deals with linguistic variation and the limits imposed thereon by implicational generalizations, “the universals of linguistic typology” (Croft 2003, 282), while the generative approach deals with what is invariant. Linguistic variation (as that uncovered by comparative syntax) is no less important to the generative enterprise than the study of the abstract invariant principles that enter into an account of language acquisition and use. This is especially true for the variation found in closely related languages and dialects (micro-variation), but the same holds for the variation found among non genetically related languages (macro-variation). Cf. Kayne (1996, 2005b).⁴

What constitutes the irreducible difference between the generative and functionalist approaches to language is rather the “biolinguistic” commitment of the former; the postulation of a “Faculty of Language” (or Universal Grammar) as one “component of human biology that enters into the use and acquisition of language” (Chomsky 2005, 2). This postulation has a number of important consequences; among these the fact that all languages are variants of one and the same system (which forces the search for a unitary account of any aspect of linguistic structure, be it the internal structure of phrases, the topic and focus articulation of the sentence, relative clauses, etc.), and the fact that any concept entering description of a language is (pace Dryer 2006a,5; 2006b) not just a convenient way to express the empirical generalizations to be explained by external functional principles, but a claim to truth, in the sense that it is either correct or not (or rather “more correct than other alternatives”).

My intention here, however, is not to discuss the relative merits or demerits of functionalist and formal approaches in their attempt to explain the nature of linguistic phenomena or the findings of typological research. The current state of our knowledge leaves little space any way for lasting explanations.⁵

The more limited point that I would like to make is that attention to the findings of formal approaches to language (in syntax and semantics) may help strengthen the very results of typology (and of grammar writing).

For reasons of space I will draw my examples in support of this view from just one phenomenon: the relative clause.

Attention to the findings of generative grammar, in one of its variants (the standard theory, generative semantics, the extended standard theory, or relational grammar) characterized the early work in typology (Dryer 2006b), with fruitful results. To take one example, Ross’s (1967) work on “chopping” and “copying” rules, island constraints, extraposition, etc.,

1 had some influence precisely on the typological analysis of relative clauses
 2 (Keenan and Comrie 1977; Comrie 1981, chapter 7; Keenan 1985).

3 More recently, this attention seems to have faded. Yet, it could contrib-
 4 ute, I think, to enlarge the data base (in leading one to look for new facts
 5 and correlations), and to formulate more appropriate analyses.

6 Consider, for example, the finding, in more recent work in formal synt-
 7 tax and semantics, of a third type of relative in addition to nonrestrictives
 8 and restrictives (with which it was once lumped together): the amount (or
 9 degree, or maximalizing) relative (Carlson 1977; Heim 1987; Grosu and
 10 Landman 1998). One example of an amount relative is given in (1), under
 11 the “identity of amount” reading of the Head.

- 12
 13 (1) It will take us the rest of our life to drink the champagne that they
 14 spilled that night” (Heim 1987, 38)

15
 16 The “identity of substance” reading (a less plausible one in such a con-
 17 text) is instead the only reading available to the corresponding restrictive
 18 relative.⁶ Amount (or maximalizing) relatives differ from restrictive rela-
 19 tives in a number of syntactic ways. So, for example, they (as opposed to
 20 restrictives) can only be introduced by strong determiners (definite articles,
 21 demonstratives, or universal quantifiers), not by weak ones (such as indefi-
 22 nite articles or multal/paucal quantifiers). See (2):

- 23
 24 (2) Every/*Some man there was on the life-raft died (Carlson 1977, 521)

25 They do not admit *wh*-pronouns, but only *that* and zero complementizers:

- 26
 27 (3) Every man that/0/*who there was disagreed (cf. Carlson 1977, 526)

28
 29 They do not allow “stacking” of non coordinated clauses:

- 30
 31 (4) *Jake noticed the headway we made that Fred said we couldn’t make
 32 (Carlson 1977, 540)

33
 34 And they do not allow extraposition:

- 35
 36 (5) a. *Mary praised the headway last year that John made (Hulsey and
 37 Sauerland 2006, 114)
 38 b. *Every man died that there was on the life-raft

39
 40 Possibly more interesting from a typological perspective is the fact that the
 41 tripartition among restrictive, nonrestrictive, and maximalizing relatives has
 42 implications, uncovered in Bianchi (2004), for the pronoun retention strategy.

43 After distinguishing three types of resumptive pronouns in relative
 44 clauses (a. the ones optionally alternating with a gap; b. the obligatory
 45 ones, in PPs or possessive positions; c. the ones rescuing island violations—
 46 for which also see Sells 1984 and de Vries 2002, chapter 5, §3.2), Bianchi
 suggests, on the basis of some cross-linguistic evidence (carefully adding

“to be further tested against a larger sample of languages”), that *optional* resumptive pronouns give rise to the implicational scale: nonrestrictive > restrictive > maximalizing (p.80). That is, if an optional resumptive pronoun is possible in a restrictive relative it is also possible in a nonrestrictive one (but not necessarily viceversa). She also says that she found no language with optional resumptive pronouns in maximalizing relatives (citing however Yiddish, as analysed in Prince 1990, as a possible case).⁷

The recognition of the existence of maximalizing relatives is connected to another issue recently in the center of attention of both formal syntactic and semantic work. The question whether relative clauses involve a “matching” derivation (whereby the relative clause contains a full internal copy, to be later reduced, of the external Head) or a “raising” (or “promotion”) derivation (whereby what appears to be the external Head is actually generated inside the relative clause and moves to an initial position within the relative clause itself, thus giving the impression of being external).

Although the “raising” analysis has a rather long history (having been proposed in Brame 1967 and further developed in Schachter 1973 and Vergnaud 1974), it was only after Kayne’s (1994) discussion that it became a serious alternative to the classical “matching” analysis (Ross 1967; Chomsky 1977, 1981).

While there is cogent evidence that amount (or maximalizing) relatives involve “raising”, as the Head is necessarily interpreted inside the relative clause (Grosu and Landman 1998; Grosu 2000; Bhatt 2002), it is still a moot question whether restrictive relatives should involve only a “raising” derivation (Kayne 1994; Bianchi 1999; de Vries 2002), or both a “raising” and a “matching” one, depending on the Head’s need to be interpreted inside or outside the relative clause (Sauerland 1998; Grosu and Landman 1998; Aoun and Li 2003, among others).

In this connection, typological evidence coming from prenominal and Head Internal Relative Clauses could crucially bear on this question.

Potentially interesting from a typological point of view, is the question whether all languages have amount/maximalizing relatives in addition to restrictive relatives (nonrestrictive relatives, to which I come back, are apparently missing in some languages—see Cinque 2008a, and references cited there), and the question whether there is any relation with the pre- or postnominal positioning of the relative clause.

Suggestive evidence that prenominal relatives can be maximalizing (and thus that a “raising” derivation is also possible prenominally) is provided by Aoun and Li’s (2003) discussion of Chinese. They explicitly note (p. 138f) that idiom chunks, like the NP *cu* ‘vinegar’ in (6), can be relativized:

- (6) [[ta chi de] cu] bi shei dou da
 he eat DE vinegar compare who all big
 ‘His jealousy is greater than anyone else’s’ (Lit. ‘The vinegar he eats is
 greater than anyone else’s’)

(Aoun and Li 2003, 138)

Clearly it would be crucial to gather more cross-linguistic evidence bearing on this question.

The “raising” derivation of (restrictive) relatives may also provide an interesting account of one type of Case attraction discussed in the literature (that whereby the external Head bears not the Case that would be assigned to it in the matrix clause, but that which is assigned to the relativized position within the relative clause).⁸

For example, in Dari, a Farsi variety of Afghanistan (Houston 1974), alongside ordinary cases like (7), where the Head is nominative given its subject role in the matrix, one also finds cases like (8), where the Head despite its subject role in the matrix bears Accusative or Dative Case, as a function of its role within the relative clause:

- (7) a. doxtar ey ke jon mišnose inja æs
 girl ART (NOM) COMP John know.3 here be.3
 ‘the girl that John knows is here’ (Houston 1974, 43)
- b. beča ey ke mori kitoba bare-iš dod injes
 boy art (NOM) COMP Mary book.ACC to-him gave.3 be.here.3
 ‘the boy that Mary gave a book to is here’ (Houston 1974, 40)

INVERSE CASE ATTRACTION⁹

- (8) a. doxtar ey ra [ke jon mišnose] inja æs
 girl ART ACC COMP John know.3 here be.3
 ‘the girl that John knows is here’ (Houston 1974, 43)
- b. ba beča ey [ke mori kitoba dod] injes
 to boy art COMP Mary book.ACC gave.3 be.here.3
 ‘the boy that Mary gave a book to is here’ (Houston 1974, 40)

An analogous case is provided by the Albanian dialect of Xranje (Bevington 1979). See, for example, (9):

- (9) a. Djali [që e pashë unë] iku
 the boy (NOM) that him saw I left
 ‘the boy that I saw left’ (Bevington 1979, 273)
- b. Djalen [që e pashë unë] iku
 the boy (ACC) that him saw I left
 ‘the boy that I saw left’ (Bevington 1979, 274)

This possibility is readily explainable, it seems, under a “raising” analysis of the relatives that display Inverse Case Attraction. If what looks like the external Head is actually the internal one, which has raised to the front of the relative clause, as illustrated in (10) below, no special “attraction” is

involved. The Case borne by the Head (the one assigned to the relativized position within the relative clause) is the one we should in fact expect, given that the apparently external Head originates (and remains) within the relative clause itself:¹⁰

- (10) a. [_{DP} [_{CP} **doxtar ey ra** [ke jon mišnose] (DOXTAR)] inja æs
 girl ART ACC COMP John know.3 girl here be.3
 ‘the girl that John knows is here’
- b. [_{DP} [_{CP} **Djalen** [që e pashë unë]] (DJALI)] iku
 the boy (ACC) that him saw I boy left
 ‘the boy that I saw left’

Interesting support for such an analysis comes from a property that relative clauses displaying Inverse Case Attraction have, which is not shared by the corresponding relatives without Attraction.

Both Houston (1974) and Bevington (1979) note that in the presence of Case Attraction extraposition is no longer possible (recall that the impossibility of extraposition was seen above to be a hallmark of maximalizing relatives, which necessarily involve “raising” of the Head):¹¹

- (11) a. ***doxtar ey ra** inja æs [ke jon mišnose]
 girl ART ACC here be.3 COMP John know.3
 ‘the girl is here that John knows’ (Houston 1974, 43)
- b. **doxtar ey** inja æs [ke jon mišnose]
 girl ART (NOM) here be.3 COMP John know.3
 ‘the girl that John knows is here’ (Houston 1974, 43)
- (12) a. ***Djalen** iku [që e pashë unë]
 the boy (Acc) left that him saw I
 ‘the boy left that I saw’ (Bevington 1979, 274)
- c. **Djali** iku [që e pashë unë]
 the boy (Nom) left that him saw I
 ‘the boy left that I saw’ (Bevington 1979, 273)

Why should “raising” of the Head be incompatible with extraposition of the relative clause is a deeper question, and one that cannot be addressed here. See Cinque (in preparation) for discussion.

Of potential relevance for typological investigations is also the evidence that Head Internal Relative Clauses do not constitute a unitary type of relative clause. Recent work in formal syntax and semantics on such relative clauses suggests that two different types should be recognized (Basilico 1996, and Grosu and Landman 1998). One of them, displayed by Lakhotá (Siouan), Mojave and Diegueño (Yuman), and Koyukon and Tanaina (Northern Athabaskan), shows an indefinite restriction on the internal

1 Head (which can be preceded by an indefinite article, a numeral, or an
 2 indefinite quantifier, but not by a definite article, a demonstrative or a uni-
 3 versal quantifier). The other, exemplified by Quechua and Navajo, among
 4 other languages, shows no such restriction. Interestingly, other properties
 5 correlate with this distinction. Those languages that display the indefinite
 6 restriction show no sensitivity to island constraints and allow stacking,
 7 while those that do not have the indefinite restriction show island sensitiv-
 8 ity and do not allow stacking. These clusters of properties can hardly be
 9 accidental, and clearly call for an explanation (which should presumably
 10 include the assumption that “movement” of the Head is involved in the lat-
 11 ter, though not in the former).

12 As a final point, let me mention my own work on nonrestrictive relative
 13 clauses (1982; 2008a), which also appears to point to the existence of two
 14 different types of such relatives: a sentence grammar one, virtually identic-
 15 al to restrictive relatives, and a parenthetical, or discourse grammar, one,
 16 with quite different properties. The latter but not the former, for exam-
 17 ple, can have a proposition as an antecedent (*Sheila was beautiful, which*
 18 *was too bad*), can have independent illocutionary force (*There is then our*
 19 *father, by whom will we ever be forgiven for what we have done?*), can
 20 retain the internal Head (*The French procured allies, which allies proved*
 21 *of the utmost importance*), can have pied-piping of phrases other than PPs
 22 (*..delicious entertainments, to be admitted to one of which was a privi-*
 23 *lege, . . .*), etc. Certain languages (Italian and other Romance languages)
 24 have both types; others have only one (English appears to have just the
 25 parenthetical, or discourse grammar, one, while Northern Italian dialects
 26 and Japanese only the sentence grammar one). Still others have neither; that
 27 is, they apparently lack nonrestrictives entirely, having to resort either to
 28 coordination—like Gungbe (Kwa—Aboh 2005, and p.c.) and Bunun (For-
 29 mosan (Austronesian)—Jeng 1977, 195)—or to the apposition of generic
 30 nouns (like ‘person’) followed by a restrictive clause, as is generally the case
 31 in Mixtecan, to judge from Bradley and Hollenbach (1992).

32 Though brief, I hope that this review of some of the work carried out in
 33 formal syntax and semantics on the specific phenomenon of relative clauses
 34 may have shown that formal approaches can contribute insights of interest
 35 to linguistic typology, just as linguistic typology contributes to the research
 36 of formal approaches to language.

37 In a similar vein, I think, that “basic linguistic theory”, which has
 38 become the metalanguage most commonly used in typologically oriented
 39 grammars (Dryer 2006b), could better serve its purpose if it kept abreast
 40 of the findings of work in formal syntax and semantics, just as it does with
 41 those of the functional-typological approach.
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13 More on the Indefinite Character of the Head of Restrictive Relatives

INTRODUCTION

The literature on relative clauses makes occasional reference to the fact that the Head internal to a (restrictive) relative clause is indefinite.

For example, Browning (1987, 129–131) observes (also see Bianchi 1999, 43) that the trace within a restrictive relative clause is interpreted as indefinite, appearing in contexts that exhibit an indefiniteness restriction: *The men that there were in the garden..* vs. **There were the men in the garden* (cf. *There were (some/many/three) men in the garden*).

Similarly, Kayne (1994, chapter 9, 124), suggests that an indefinite determiner should not necessarily be taken to occupy the same position as the definite determiner that takes scope over the Head and the relative clause (and that marks the uniqueness or maximality of the intersection of the set of things denoted by the Head and the set of things denoted by the relative clause). Rather it could be taken to head “some ‘smaller’ category, perhaps a QP” (Kayne 1994, 167, fn.15; also see Kayne 2008d, §7).¹

In what follows I will discuss three sets of facts that seem to provide further support for the conclusion that the Head internal to a (restrictive) relative clause is indeed inherently indefinite.

A. The first comes from the existence of languages that bear the indefinite character of the Head of restrictive relative clauses on their sleeves, so to speak. Kusaiean (Austronesian) has headed postnominal relative clauses, which (as in most other Austronesian languages) precede demonstratives: N . . . RC Dem. An interesting feature of Kusaiean is the regular co-occurrence of a lower indefinite article with the demonstrative. The indefinite article follows the Head and precedes the relative clause and the demonstrative. See:

- (1) [mwet se [elthal uniyah] ah] pa Sohn
[person a [they killed] Dem] TOP John
‘The person whom they killed was John’

(Kusaiean—Sohn 1973, 114f)

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1 This may be taken to suggest that the Head of the relative clause is an
 2 “indefinite DP” embedded in the larger (definite) DP.²
 3

4 **B.** The second piece of evidence for the indefinite character of the Head of
 5 restrictive relatives comes from a number of constructions in Italian (and
 6 other languages) which contain a DP that can only be indefinite except
 7 when it heads a restrictive relative clause; in which case it is allowed to be
 8 definite. See, for example, (2) to (6):³
 9

10 (2) a. Ho una/*la/*0 fame terribile⁴
 11 I.have a/the/0 hunger terrible
 12 ‘I am terribly hungry’

13 b. La fame terribile che ho..
 14 the hunger terrible that I.have..
 15

16 (3) a. Ha un/*il/*0 bel viso
 17 she.has a/the/0 beautiful face

18 b. Il bel viso che ha..
 19 the beautiful face that she has..
 20

21 (4) a. Hanno preso una/*la/*0 posizione diversa
 22 they.have taken a/the/0 position different
 23 ‘They have taken a different position’
 24

25 b. La posizione diversa che hanno preso..
 26 the position different that they.have taken..
 27 ‘The different position that they have taken..’
 28

29 (5) a. Ha preso un/*il/*0 granchio (in the idiomatic reading of
 30 ‘(S)he made a mistake’)
 31 (s)he.has caught a/the/0 crab

32 b. Il granchio che ha preso..
 33 the crab that (S)he.has caught..
 34 ‘The mistake that (s)he made..’
 35

36 (6) a. Pensava di essere un/*il/*0 genio incompreso
 37 he.thought he was a/the/0 genius undiscovered
 38 ‘He thought he was an undiscovered genius’
 39

40 b. Non era il genio incompreso che pensava di essere
 41 not he.was the genius undiscovered that he thought to be
 42 ‘He wasn’t the undiscovered genius that he thought he was’
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It is tempting to take all of the b. cases of (2) to (6) as evidence for the presence in front of the Head of a (lower) unpronounced indefinite determiner in Italian, as shown in (7):⁵

- (7) a. la [UNA fame terribile] che ho.. 5
the a hunger terrible that I.have.. 6
7
b. Il [UN bel viso] che ha.. 8
the a beautiful face that she.has.. 9
c. La [UNA posizione diversa] che hanno preso.. 10
the a position different that they.took.. 11
12
d. Il [UN granchio] che ho preso.. 13
the a crab that I.have caught.. (the mistake that I made..) 14
15
e. Il [UN genio incompreso] che pensava di essere.. 16
the a genius undiscovered that he.thought to be.. 17

If we assume that, nothing special needs to be said concerning the exceptional determiner that occurs with the NPs in (2)b–(6)b. 18
19

Other interesting evidence for the presence of a null indefinite determiner within the Head of a restrictive relative comes from two special interpretative properties of indefinite DPs, not shared by their definite counterparts. 20
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The first involves a specific interpretation of adjectives like *sconosciuto* ‘unknown’ observed in Abusch and Rooth (1997). They note that if the DP in which such adjectives occur is indefinite the adjectives, in addition to their meaning roughly paraphrasable as ‘little known, insignificant’, can also be interpreted in an ‘epistemic’ sense roughly paraphrasable as “that it is not known where it is”. See, for example, the ambiguity of (8) a, which contrasts with the non ambiguity of (8)b (if the latter sentence is at all good):⁶ 25
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- (8) a. Vive in un villaggio sconosciuto del Sud della Francia 33
1. ‘he lives in a village of the South of France and it is not known which one it is’ 34
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36
2. ‘he lives in some insignificant/little known village of the South of France’ 37
38
b. Vive nel villaggio sconosciuto del sud della Francia 39
1.* ‘he lives in the village of the South of France and it is not known where it is’ 40
41
42
2. ‘he lives in the insignificant/little known village of the South of France’ 43
44
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1 Now, consider the example (9), where the adjective *sconosciuto* appears in
 2 a definite DP containing a relative clause:

- 3
 4 (9) Nel villaggio sconosciuto del sud della Francia in cui vive..
 5 In the village unknown of the South of France in which he lives..
 6 ‘In the unknown village of the South of France in which he lives.’

7
 8 Here, differently from (8)b, the ‘epistemic’ interpretation is again available,
 9 which makes it plausible to assume the hidden presence of an indefinite
 10 determiner within the Head, as shown in (10):

- 11
 12 (10) Nel [UN villaggio sconosciuto del sud della Francia] in cui
 13 In the [a village unknown of the South of France] in which
 14 vive..
 15 he lives..
 16 ‘In the unknown village of the South of France in which he lives.’

17
 18 A second property typical of indefinite DPs in Italian (and, more generally,
 19 Romance) is the fact that a postnominal adjective is compatible with both a
 20 specific and a nonspecific interpretation of the DP (while a prenominal one
 21 forces the specific reading). This was originally observed by Bosque (1993,
 22 1996, 2001) for Spanish and is discussed by Picallo (1994), and Cinque
 23 (2010) for Catalan and Italian, respectively. Definite DPs cannot have the
 24 nonspecific interpretation. Consider, for example, (11)

- 25
 26 (11) a. So che un attore famoso interverrà alla festa
 27 I.know that an actor famous will.come to.the party
 28 ‘I know that a famous actor will come to the party’
 29 b. So che l’attore famoso interverrà alla festa
 30 I.know that the actor famous will.come to.the party
 31 ‘I know that the famous actor will come to the party’
 32

33 While (11)a is ambiguous between a reading in which the speaker has in
 34 mind a specific famous actor (the specific reading) and one in which he does
 35 not know the identity of the famous actor who will come to the party (the
 36 nonspecific reading), (11)b cannot have the nonspecific reading.

37 Again, it is interesting to observe that the nonspecific reading (in addi-
 38 tion to the specific one) becomes available in a definite DP if this contains a
 39 restrictive relative clause. See (12):

- 40
 41 (12) L’attore famoso che interverrà alla festa sicuramente avrà lo
 42 The actor famous that will.come to the party will surely wear a
 43 smoking
 44 tuxedo
 45 ‘The famous actor that will come to the party will surely wear a tuxedo’
 46

This interpretive effect can once again be understood if we take the Head of the relative clause to be indefinite:⁷

- (13) L' [UN attore famoso] che interverrà alla festa sicuramente avrà lo
 The [an actor famous] that will.come to the party will surely wear a
 smoking
 tuxedo
 'The famous actor that will come to the party will surely wear a tuxedo'

C. The third piece of evidence for the indefinite character of the Head of restrictive relatives comes from a reinterpretation, in the light of Cinque (2003/8, in preparation), of the indefinite restriction of Lakhota internally headed relative clauses discussed in Williamson (1987).

As Williamson shows, the Head of Lakhota (restrictive) relative clauses is internal to the relative clause and displays an indefiniteness restriction. Like the English existential *there*-construction, it can only contain 'weak determiners' (in the sense of Milsark 1974), i.e. indefinite articles like 'a', weak quantifiers like 'some', 'many', and 'few', and cardinal numerals. The presence of any 'strong determiners' (like definite articles, demonstratives, quantifiers such as 'all', 'every', 'most', etc.) renders the sentence ungrammatical (see p. 175f). See, for example, the contrast between (14)a and b:

- (14) a. [[Mary [owįža wą] kađe] ki/cha/k'ų] he ophewatų
 M. quilt a make the/a/the aforementioned Dem I-buy
 'I bought the/a quilt that Mary made' (Williamson 1987, 171)
 b. *[[Mary [owįža ki] kađe] ki] he ophewatų
 M. quilt the make the Dem I-buy (Williamson 1987, 171)

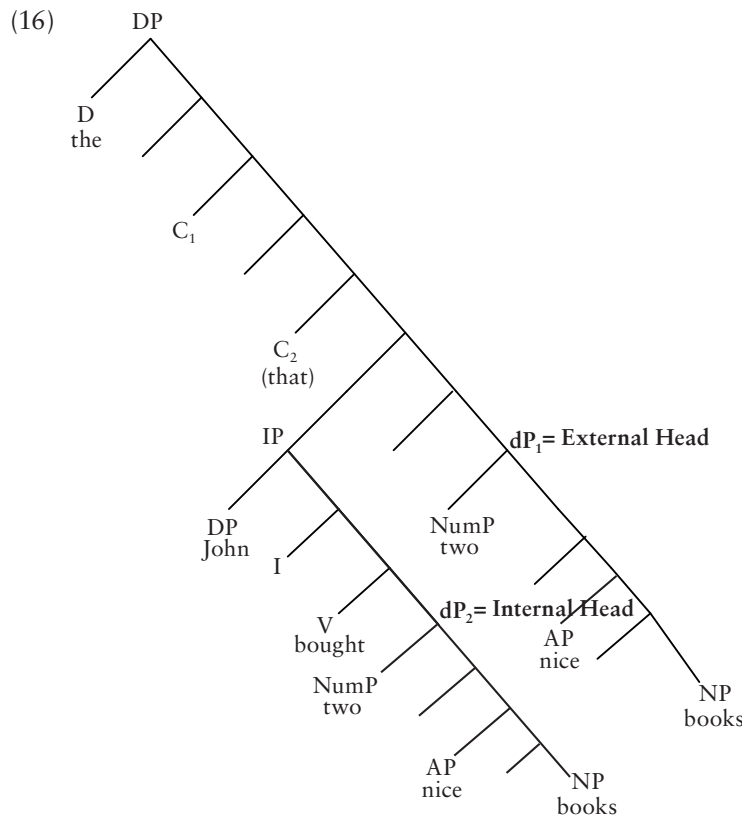
I would like to suggest that this indefinite restriction on the internal Head of internally headed relative clauses in Lakhota is to be expected under the unified analysis of relative clauses that I proposed in (2003/8) (see Cinque in preparation for more detailed discussion), and constitutes further evidence for the indefinite character of the Head of (restrictive) relative clauses in general.⁸

The core of Cinque's (2003/8) proposal is that a *single structure* underlies all types of relative clauses (externally headed postnominal, externally headed prenominal, internally headed, headless, and correlative), *in both the raising and the matching derivations*; a structure in which the relative clause is merged prenominally, with every difference among the distinct relative clause types due to different derivational options.⁹ The prenominal merger of relative clauses is arguably a consequence of a more general property of UG. In Cinque (2002, 2005b, 2009a), on the basis of a general left-right asymmetry of natural languages, I suggested that all elements found to the right of a lexical head (N(P),V(P),etc.) are not merged there, but come to be there as a consequence of the lexical head raising above them, merged in a lefthand specifier position. If so, also relative clauses, a sort of

1 “syntactic adjectives” in Benveniste’s (1966, 222) terms, are like adjectives
 2 merged preminally in one of the NP’s functional projections. In Cinque
 3 (2003/8, in preparation), it is suggested on the basis of cross-linguistic evi-
 4 dence that the Merge position of (finite) restrictive relative clauses is above
 5 the Numeral, the Adjectives, and the NP (in fact above all of Milsark’s
 6 ‘weak determiners’, (one type of) indefinite articles included), and below
 7 Universal Quantifiers, Demonstratives and definite articles (more generally,
 8 all of Milsark’s ‘strong determiners’), roughly as in (15), which I take to be
 9 a fragment of the universal structure of nominal phrases:¹⁰

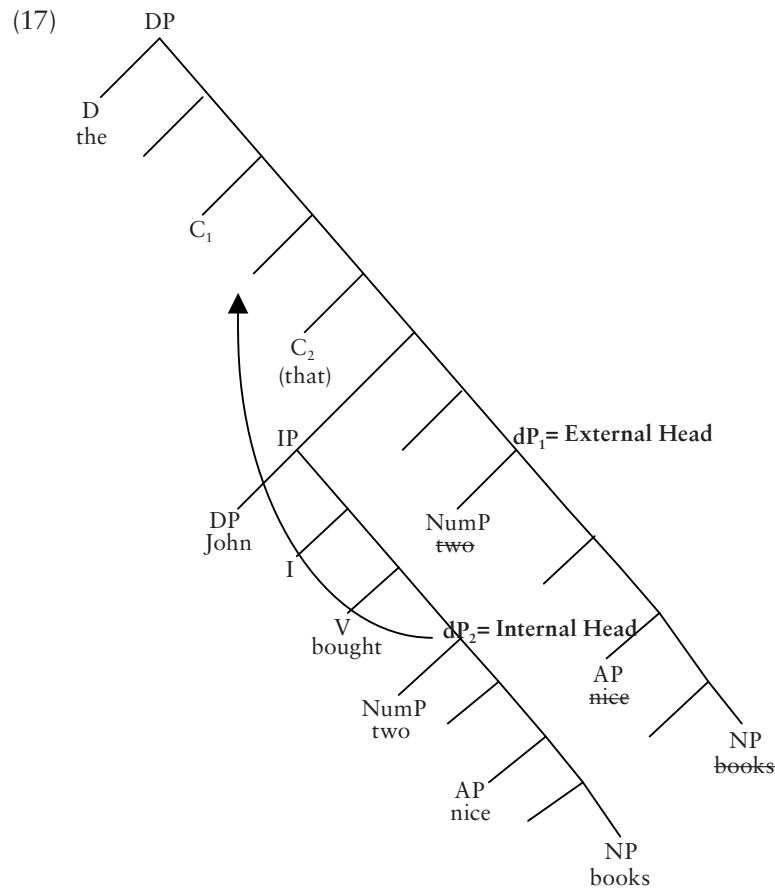
10
 11 (15) [DemP D° [RC X° [NumP Y° [AP . . . Z° [NP]]]]]

12 As more clearly apparent from (16), which is to be thought of as built bot-
 13 tom up (with Merge and Move interspersed), this unified structure has both
 14 an external Head, and a Head internal to the relative clause, which are
 15 exact matches of each other. Given that the external Head (the chunk of
 16 the extended projection of NP modified by the relative clause) is, as noted,
 17 ‘indefinite’, the Head internal to the relative clause must also be ‘indefinite’.
 18 This will be at the basis, as I suggest below, of the indefinite restriction
 19 holding of Lakhota’s internally headed relative clauses.¹¹



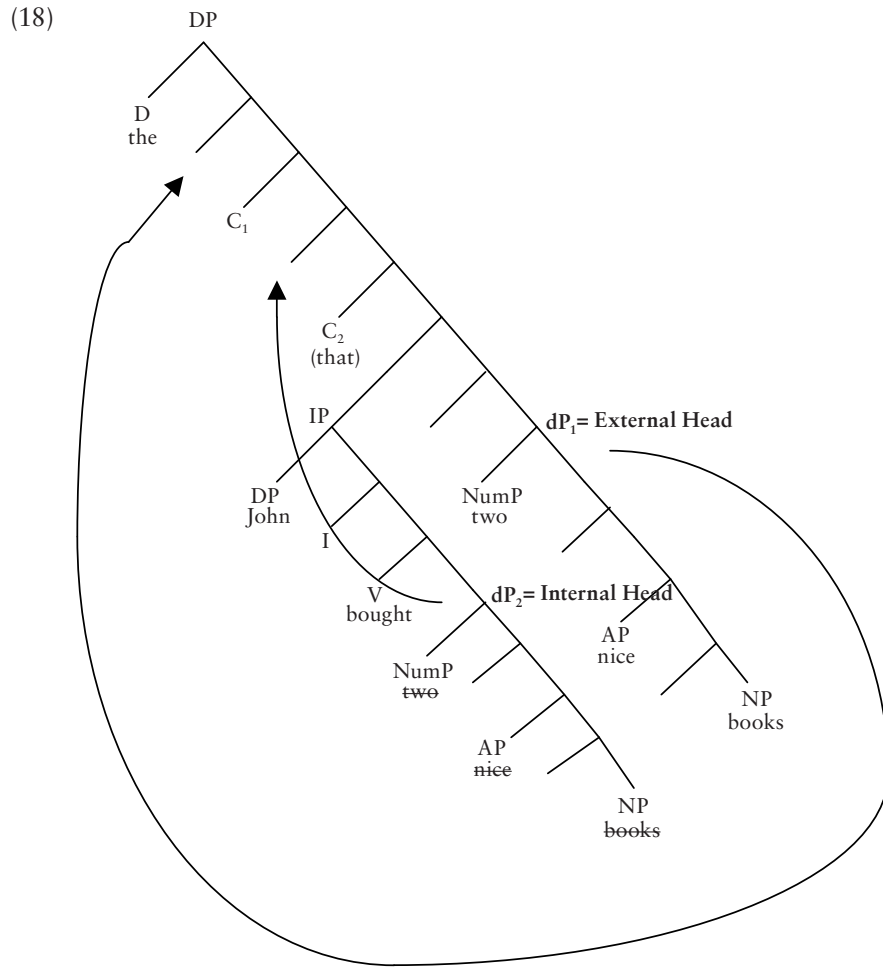
The “raising” and “matching” derivations can be seen as two different derivational options open to this structure; in the “raising” one, it is the Head internal to the relative clause that ends up being the *overt* Head; in the “matching” one, it is the external Head that ends up being the *overt* Head.

In other words, if only the Head internal to the relative clause raises (say to Spec, C₂) causing the c-commanded external Head not to be pronounced, we have the “raising” derivation, in which reconstruction and island effects are detectable as the *overt* Head is in a chain with the relative clause internal position (see (17)):



If on the other hand also the external Head raises (say, to Spec, C₁) *above* the position to where the Head internal to the relative clause has raised (Spec, C₂), causing the latter not to be pronounced, we have the “matching” derivation, in which reconstruction effects are not detectable as the surviving, *overt*, Head is not in a chain with the relative clause internal position (see (18)).¹²

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Under a copy theory of movement (Chomsky 1995, 202ff), and deletion as non pronunciation in PF of full structures in the computation, a number of problems arise. For one, in sentences like (19) we would expect a principle C violation when the Head internal to the relative clause is “reconstructed” in its position of Merge, contrary to fact.

(19) [The *pictures of Marsden*_i [which ~~pictures of Marsden~~_i he displays ~~which pictures of Marsden~~_i prominently] *pictures of Marsden*_i] are generally the attractive ones (cf. Safir 1998)

For another, in the idiom chunk case of “raising” derivations (cf. (20)), we would expect ungrammaticality (or at least marginality) due to the second, external, occurrence of the idiom chunk not being able to pair with the rest of the idiom:

(20) [The headway_i that [he made headway_i] headway] was satisfactory

For the first problem, we refer to Sauerland’s (1999, 2003) solution in terms of the notion of “vehicle change”. For the second (and for other problems), we refer to Cinque (in preparation). There the idiom case is tentatively treated in terms of a silent Head: AMOUNT, KIND, etc. (in the case at hand: [The AMOUNT of headway that [he made AMOUNT of headway] AMOUNT] was satisfactory).

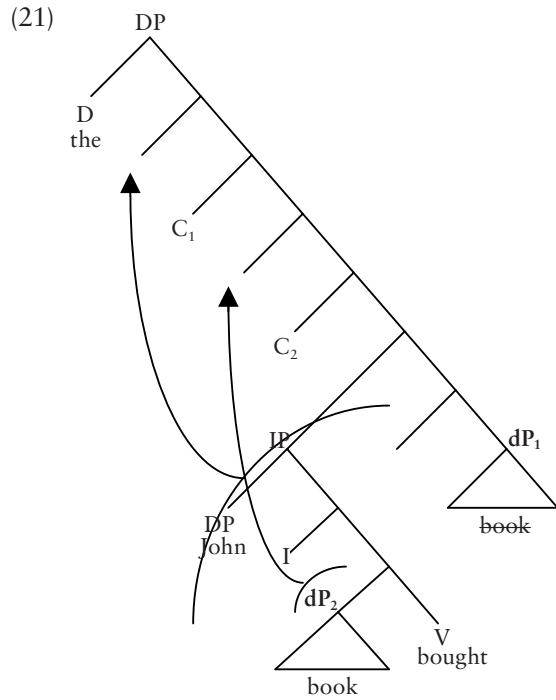
After sketching how the externally headed postnominal type of restrictive relatives is derived from (16) in both the “raising” and the “matching” derivations, I briefly review how the other types of restrictive relatives can be derived, under the two derivations, from the same, unique, structure.

EXTERNALLY HEADED PRENOMINAL RCS:

Raising (cf. (21)):

dP₂ is attracted to Spec,C₂, from where it controls the deletion of dP₁; after which the remnant raises to Spec,C₁.¹³

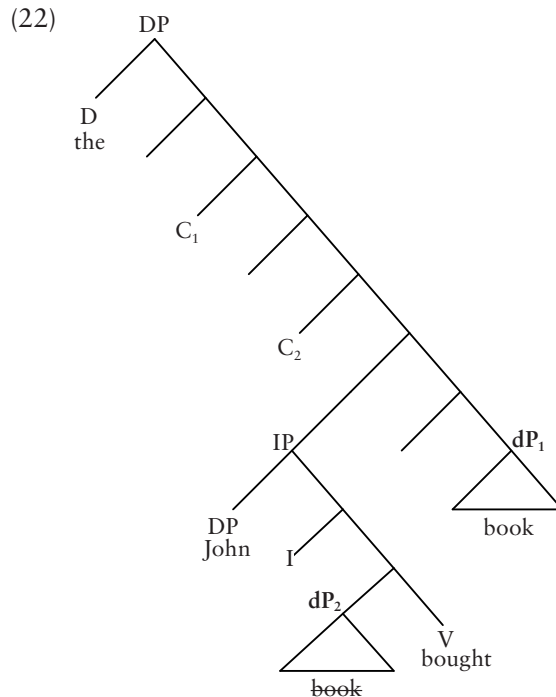
Reconstruction effects are expected as the overt Head is the ‘internal’ one (linked to the trace). And so is sensitivity to islands, due to the movement of the ‘internal’ Head.



This case seems to be instantiated by Chinese, which displays both relativization of idiom chunks (hence reconstruction) and island sensitivity (Aoun and Li 2003, 177), and Modern Tamil, where, according to Annamalai and Steever (1998, 123) and Vasu (1994, section 2.2), prenominal relative clauses are sensitive to islands.

Matching (cf. (22)):

dP_1 directly controls the deletion of dP_2 backward. No reconstruction effects are expected, as the *overt* Head is the ‘external’ one (the ‘internal’ Head not having moved). Nor is sensitivity to islands, as no movement of the internal Head is involved.

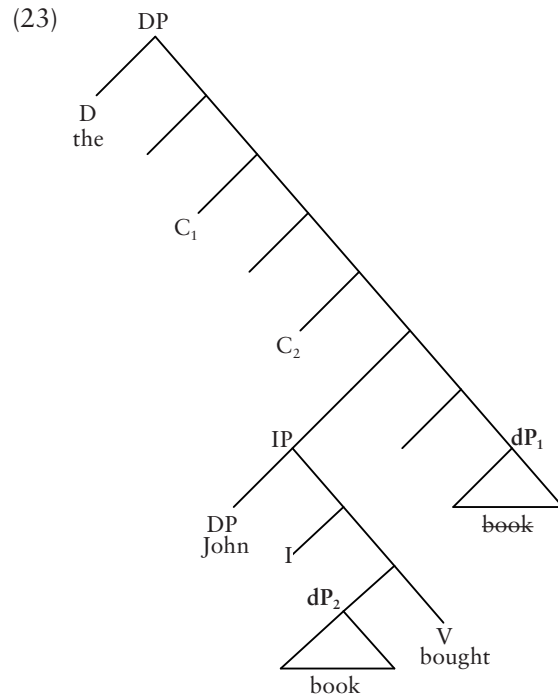


This case may be instantiated by (among other languages) Tsez (North-east Caucasian), which apparently shows no island sensitivity (Comrie and Polinsky 1999).

Internally headed RCs (which often alternate with prenominal RCs—Cole 1987):

If internally headed relative clauses always displayed the indefiniteness restriction of Lakhota, as Williamson (1987) originally conjectured (p. 169) (also see Culy 1990), and necessarily showed the other properties characterizing Lakhota (possibility of stacking and absence of island

sensitivity—Williamson 1987,173 and 177), internally headed relative clauses could be taken to involve just a “matching” derivation; one which in fact is the converse of the “matching” derivation of externally headed prenominal relatives. In this case, it is the internal Head that controls the deletion of the external Head forward (rather than viceversa). Compare (23) with (22):¹⁴



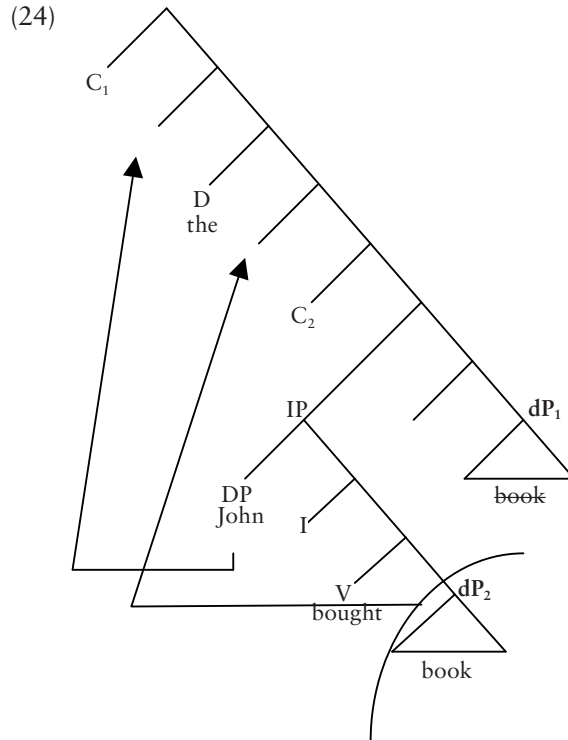
I take this to be correct, even if for just one type of internally headed relative clauses: those of Lakhota, as well as those of Diegueño (Yuman—Gorbet 1976), and Mojave (Hokan—Munro 1976), which show the same cluster of properties (indefiniteness restriction, the possibility of stacking and the absence of island sensitivity).¹⁵

In the recent literature (Basilico 1996, Grosu 2000, Grosu and Landman 1998), another type of internally headed relative clauses is recognized, which displays no indefinite restriction, and also the impossibility of stacking and the presence of island sensitivity (the opposite properties of the first type).

This type is apparently found in Japanese, Korean, Quechua, Navajo, and Haida, among other languages.

Given especially its property of island sensitivity, it is tempting to see this second type as involving movement (differently from the first type); more specifically to involve the “raising” derivation in (24), where the internal

1 Head, dp_2 , is attracted to $Spec, C_2$, from where it controls the deletion of
 2 dp_1 , the external Head. After that a phrase of the remnant must be taken
 3 to raise to $Spec, C_1$, higher than the strong determiners.¹⁶ In this case,
 4 reconstruction effects are expected, as the *overt* Head is the ‘internal’ one,
 5 linked to the trace, as is sensitivity to islands, due to the movement of the
 6 internal Head.



33 If dp_1 also raises above dp_2 and controls its deletion before a phrase of
 34 the remnant in turn raises above the strong determiners, the expected
 35 properties will be partly different. See Cinque (in preparation). Once the
 36 different types of internally headed relative clauses are teased apart, the
 37 indefiniteness restriction of the first type, where nothing moves, can be
 38 taken to provide independent evidence for the indefinite nature of the Head
 39 of restrictive relative clauses, as the internal Head and the external one, the
 40 traditional Head of relative clauses, are an exact match of each other under
 41 the analysis sketched above.¹⁷

42 We will be even more sketchy on the remaining two types, referring to
 43 Cinque (in preparation) and Chapter 15, here, for more detailed discussion.¹⁸

44 For headless, or free, relative clauses, which arguably involve movement of
 45 just the internal Head, we take there to be a silent external Head (of a
 46

restricted class: THING, AMOUNT, PLACE, TIME, PERSON, KIND, MANNER,..) as shown in (25):

- (25) a. (I don't like [[what THING you said] (SUCH) THING] 4
- b. (He weighs) [[what AMOUNT you weigh] (SUCH) AMOUNT] 5
- c. (Here is) [[where PLACE they slept] THERE PLACE] 6
- d. (I was there) [[when TIME he said that] THEN TIME] 7
- e. (She hates [[whoever PERSON does that] (SUCH) PERSON] 8

In certain languages the “dummy” external Head (‘thing’, ‘place’, ‘time’, ‘person’, etc.) is necessarily overt (‘thing (that) you said’ = ‘what you said’; . . .). See Rapanui (Austronesian)—Du Feu 1996, 47; Obolo (Niger-Congo)—Faraclas 1984, 45; Abun (Papuan)—Berry and Berry 1999, 146ff.

In Lakhota, it is instead in situ, within the relative clause, and optional. See (26):

- (26) [Mary (taku) kaḡe] ki] ophewatu 17
- M. (something) make the I-buy 18
- ‘I bought what Mary made’ 19

As to (Relative-)Correlative clauses, they are, strictly speaking, not a separate type, as they involve one or the other of the core types of relative clauses as one component. Abstracting away from the multiple headed *adjunct* correlative construction, simple correlatives can be analysed as the ‘left dislocation’ of a full DP containing (depending on the language) either an externally headed postnominal relative,¹⁹ or an externally headed prenominal one,²⁰ or an internally headed one,²¹ or a free relative (as in many Hindi correlatives), resumed in the matrix clause by a DP preceded by a demonstrative or by a demonstrative or pronominal alone. See Cinque (2009b, Chapter 15 here, and in preparation) for more detailed discussion.

For the facts reviewed here to be construed as evidence for the indefinite character of the Head of restrictive relative clauses, some questions and some apparent counterexamples should also be addressed.²²

A potential difficulty could come from the so-called definite conjugation of Hungarian, which marks (in main clauses) the definite character of the object. However, it seems that the trace of the relativized internal Head is indeed marked as indefinite, despite the apparent definite character of the external Head (and of the relative pronoun), thus confirming the evidence given above. See (27), from MacWhinney and Pléh (1988, 100):²³

- (27) A kutya kergeti a macskát, amelyet 40
- The dog(NOM) chase-3S-DEF the cat-ACC, which-ACC 41
- nez az eger. 43
- watch (3SINDEF) the mouse(NOM). 44
- ‘The dog chases the cat whom the mouse watches’ 45

1 But things may be more complex and need to be looked into more carefully.
 2 For example, Bianchi (1999, 82f) claims that the relative determiner *ami*
 3 (from the interrogative *mi* ‘who’) triggers the indefinite conjugation, while
 4 the relative determiner *amely* (from *mely* ‘which’) triggers the definite one
 5 (though this appears contradicted by (27) above). Should the *which*-type
 6 relative pronouns indeed turn out to sometime trigger the definite conjugation,
 7 it could be that they exploit the higher nonrestrictive Merge position,
 8 like the formal *il quale* restrictives of Italian in Cinque’s (1982, 2008a)
 9 analysis, which also show a definite relative pronoun.

10 Another possible difficulty for the indefinite character of the Head of
 11 restrictive relative clauses is the existence of restrictive relative clauses with
 12 definite resumptive pronouns, like the Palestinian Arabic case in (28), from
 13 Shlonsky (1992, 445),²⁴ or the Bulgarian example (29):²⁵

14
 15 (28) l-bint ?illi šufti-*(ha)
 16 the-girl that (you.fem.) saw-her
 17 ‘the girl that you saw’

18
 19 (29) Poznavam edin colega ot našata katedra deto toku-što
 20 I know a colleague from our institute that just
 21 go uvolnixa
 22 him they.fired
 23 ‘I know a colleague from our institute that they just fired’

24
 25 One possibility to reconcile these facts with the evidence reviewed above
 26 for the indefinite character of the Head of restrictive relatives would be to
 27 say that ‘definite’ pronouns can also stand for the smaller (indefinite) dP
 28 constituent postulated above.

29 Although more work is needed for an understanding of the phenom-
 30 enon, a suggestive piece of evidence for this idea seems to come from Clitic
 31 Left Dislocation. If the left dislocated nominal and the ‘resumptive’ clitic
 32 start out as a ‘big DP’ constituent, which is subsequently split apart,²⁶ we
 33 have to conclude that a definite clitic can double (‘resume’) an indefinite
 34 nominal (in Italian even a non specific one). See (30)a from Italian and (30)
 35 b from Bulgarian:

36
 37 (30) a. **Una ragazza** prima o poi **la** troverà
 38 a girl sooner or later **her** he.will.find
 39 ‘Sooner or later he will find a girl’
 40 b. **Edin colega** ot našata katedra toku-što **go** uvolnixa
 41 a colleague from our institute just **him** they.fired
 42 ‘A colleague from our institute they just fired him’
 43
 44
 45
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14 Two Types of Nonrestrictive Relatives

1 INTRODUCTION

Nonrestrictive relatives are usually conceived of as a unitary type of relative clause (semantically and syntactically opposed to both restrictive and “amount”, or “third type”, relatives). In the literature, they have been analysed either as a sentence grammar phenomenon, specifically as clauses internal to the nominal projection that also contains the Head, like restrictive and “amount” relatives (see, among others, Smith 1964, Jackendoff 1977, chapter 7; Huot 1978; Perzanowski 1980; Cornilescu 1981; Kayne 1994, chapter 8; Bianchi 1999, chapter 5; Kempson 2003; Arnold 2007), or as a discourse grammar phenomenon, i.e., as sentences generated independently of the sentence containing the Head, whose pronouns relate to the Head much like (E-type) pronouns relate to an antecedent across discourse (see, for instance, Ross 1967, 434ff; Aissen 1972; Emonds 1979; Stuurman 1983; Sells 1985; Haegeman 1988; Fabb 1990; Espinal 1991; Peterson 2004; Grosu 2005).¹

Here I would like to suggest that the two analyses proposed in the literature should not be seen as competing analyses for a single construction, but as complementary analyses for two distinct nonrestrictive constructions; what I will call the “integrated” and “nonintegrated” construction, respectively. Some languages (among which Italian and other Romance languages) display both. Other languages display only one. As suggested in section 6 below, northern Italian dialects (and possibly Chinese and Japanese) have just the sentence grammar, or “integrated”, nonrestrictive; others (English and Romanian) only the discourse grammar, or “nonintegrated”, one. Still others lack nonrestrictives entirely.

In what follows, I will first review a number of syntactic properties which differentiate the two types of nonrestrictives in Italian (the ‘integrated’ ones, introduced by *che/cui*, and the ‘nonintegrated’ ones, introduced by *il quale*), adding to those pointed out in Cinque (1978, 1982). I will then consider English, whose nonrestrictives will be seen to systematically pattern with the “nonintegrated” *il quale*-nonrestrictives of Italian. An (antisymmetric) analysis of the two types of nonrestrictives will then be suggested, followed by some comparative remarks.

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1 One general consequence of the analysis (if correct) is that the properties
 2 which are generally attributed to the nonrestrictive construction (because
 3 of the earlier focus on English) turn out to be representative only of the
 4 “nonintegrated” type.
 5

6 7 2 SOME DIFFERENCES BETWEEN *CHE/CUI*- AND 8 *IL QUALE*-NONRESTRICTIVES IN ITALIAN 9

10 In Cinque (1978, 1982) some evidence was presented which pointed to the
 11 existence of two separate nonrestrictive constructions, one of which virtu-
 12 ally identical to the restrictive construction.² For simplicity, I will call the
 13 ‘integrated’ one identical to the restrictive construction the *che/cui*-nonre-
 14 strictive, and the ‘nonintegrated’ one distinct from the restrictive construc-
 15 tion the *il quale*-nonrestrictive, from the different relative pronouns that
 16 introduce them.
 17

18 19 2.1 The *che/cui*-nonrestrictive

20
21 *a) subjects and direct objects are represented not by a*
22 *relative pronoun but by the complementizer che:*³
23

- 24
25 (1) a. Inviterò anche Giorgio, *che/*cui* abita qui vicino.
26 I will invite also G., *that/who* lives nearby.
27 b. Inviterò anche Giorgio, *che/*cui* voi certamente conoscete.
28 I will invite also G., *that/who* you certainly know.
29

30
31 *b) Prepositional objects are represented by the relative*
32 *pronoun cui preceded by a preposition:*
33

- 34 (2) Inviterò anche Giorgio, [_{pp} *di cui*]/**che* avete certamente sentito parlare.
35 I will invite also G., of whom/that you have certainly heard.
36

37
38 *c) no pied-piping is possible except for that of a prepositional phrase*
39 *(compare (2) with (3)):*⁴
40

- 41 (3) a. *Inviterò anche Giorgio, [_{DP} *il fratello di cui*] è uno dei nostri più cari
42 amici.
43 I will also invite G., the brother of whom is one of our dearest friends.
44 b. *Inviterò anche Giorgio, [_{AP} *affezionato a cui*] per altro non sono.
45 I will also invite G., fond of whom at any rate I am not.
46

- c. *Inviterò anche Giorgio, [_{CP} **liberarmi di cui**] non mi è proprio possibile. 1
 I will also invite G., to get rid of whom is really not possible for me. 2
 3
 d. *Inviterò anche Giorgio, [_{AdvP} **diversamente da cui**] io non serbo rancore. 4
 I will invite also G., differently from whom I bear no grudge. 5

2.2 The *il quale*-nonrestrictive 6

*a) subjects and direct objects are represented by the relative pronoun il quale:*⁵ 7
 8
 9

- (4) a. Inviterò anche Giorgio, **il quale**^(*) **che** abita lì vicino. 12
 I will invite also G., who lives nearby. 13
 14
 b. ?Inviterò anche Giorgio, **il quale**^(*) **che** voi certamente avrete avuto modo di apprezzare. 15
 I will invite also G., who you will have had some opportunity to appreciate. 16
 17
 18

b) Prepositional objects are represented by the relative pronoun il quale preceded by a preposition: 19
 20
 21

- (5) Inviterò anche Giorgio, [_{pp} **del quale**]/***che** avete certamente sentito parlare. 22
 I will invite also G., of whom/that you have certainly heard. 23
 24
 25

c) Pied-piping of different types of phrases is available: 26
 27

- (6) a. Inviterò anche Giorgio, [_{DP} **il fratello del quale**] è uno dei nostri più cari amici. 28
 I will invite also G., the brother of whom is one of our dearest friends. 29
 30
 b. Inviterò anche Giorgio, [_{AP} **affezionato al quale**] per altro non sono. 31
 I will also invite G., fond of whom at any rate I am not. 32
 33
 c. Inviterò anche Giorgio, [_{CP} **liberarmi del quale**] non mi è proprio possibile. 34
 I will invite also G., to get rid of whom is really not possible for me. 35
 36
 d. Inviterò anche Giorgio, [_{AdvP} **diversamente dal quale**] io non serbo rancore. 37
 I will invite also G., differently from whom I bear no grudge. 38
 39
 40
 41
 42

The two constructions also differ with respect to a number of other properties, listed in 2.3.1 to 2.3.10) 43
 44
 45

46

2.3 Additional Differences Between *che/cui-* and *il quale*-nonrestrictives⁶

2.3.1 *Illocutionary Independence*

Nonrestrictives (just like restrictives) can be declarative even if the matrix is interrogative or imperative:

- (7) a. Is even Clarence, who is wearing mauve socks, a swinger?
(Ross 1967, 435)
- b. Get Bill, who is in charge of this operation! (Andrews 1975, 28)

This property does not distinguish *che/cui*-nonrestrictives from *il quale*-nonrestrictives. See (8) and (9):

- (8) a. Sarà Gianna, **che** non sopporta tipi del genere, disposta ad aiutarlo? Will G., who (lit. that) cannot stand such kind of people, be willing to help him?
- b. Sarà Gianna, **la quale** non sopporta tipi del genere, disposta ad aiutarlo? Will G., who cannot stand such kind of people, be willing to help him?
- (9) a. Chiama i Rossi, **che** certamente non ti diranno di no! Call the Rossis, who (lit. that) will certainly not say no!
- b. Chiama i Rossi, **i quali** certamente non ti diranno di no! Call the Rossis, who will certainly not say no!

More interesting is the converse case, where the matrix is declarative and the nonrestrictive interrogative or imperative. Here *che/cui*-nonrestrictives differ from *il quale*-nonrestrictives. The former, like restrictives, can only be declarative (irrespective of the illocutionary force of the matrix clause), while the latter can have their own (nondeclarative) illocutionary force (e.g., interrogative or imperative), distinct from the illocutionary force of the matrix clause. See the contrasts in (10) and (11):⁷

- (10) a. L'unico che potrebbe è tuo padre, **il quale** potrà, credi, perdonarci per quello che abbiamo fatto?
The only one who could is your father, by whom will we ever be forgiven, you think, for what we have done?
- b. *?L'unico che potrebbe è tuo padre, **che** potrà, credi, perdonarci per quello che abbiamo fatto?
The only one who could is your father, who (lit.that) will ever forgive us, you think, for what we have done?
- c. *Questa è la sola persona **che** potrà, credi, perdonarci per quello che abbiamo fatto? (restrictive)
This is the only person that will he ever manage to forgive us, you think, for what we have done?

- (11) a. Ci sono poi i Rossi, **per i quali**, ti prego, cerca di trovare una sistemazione!
There are then the R.'s, for whom please try to find an accommodation!
1
2
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5
- b. *?Ci sono poi i Rossi, **per cui**, ti prego, cerca di trovare una sistemazione!
There are then the R.'s, for whom please try to find an accommodation!
6
7
8
9
- c. *Sono loro le sole persone **per cui** cerca di trovare una sistemazione! (restrictive)
It's them the only people for whom please try to find an accommodation!
10
11
12
13
14
15
- 2.3.2 Nonadjacency**
16
- As opposed to *che/cui*-nonrestrictives (and restrictives), which must be adjacent to the Head⁸, *il quale*-nonrestrictives can be separated from it within the sentence (see (12)) or across discourse (see (13) and (14)):⁹
17
18
19
20
- (12) a. Da quando i russi se ne sono andati, **i quali** non si erano mai veramente integrati con la popolazione, la pace è finita.
Since the Russians left, who had never really mixed with the population, there is no more peace.
21
22
23
24
25
- b. *Da quando i russi se ne sono andati, **che** non si erano mai veramente integrati con la popolazione, la pace è finita.
Since the Russians left, who (lit. that) had never really mixed with the population, there is no more peace.
26
27
28
29
30
- c. *Da quando i russi se ne sono andati **che** non si erano integrati la situazione è migliorata. (restrictive)
Since the Russians left that had not integrated the situation got better.
31
32
33
34
(Cf. Da quando i russi che non si erano integrati se ne sono andati la situazione è migliorata 'Since the Russians that had not integrated left the situation got better')
35
36
37
38
- (13) a. Ha difeso la sua tesi quasi contro tutti. **La quale** sosteneva la necessità del non intervento.
He defended his thesis against almost everyone. Which asserted the need of nonintervention.
39
40
41
42
- b. Ha difeso la sua tesi quasi contro tutti. ***Che** sosteneva la necessità del non intervento.
He defended his thesis against almost everyone. That asserted the need of nonintervention.
43
44
45
46

- 1 c. *Ha difeso la sua tesi quasi contro tutti **che** sosteneva la necessità
 2 del non intervento. (restrictive)
 3 He defended his thesis against almost everyone that asserted the need
 4 of nonintervention.
 5
 6
 7 (14) a. Non ho mai parlato dei miei parenti_j a Clara_i. **Ai quali_j** d'altronde
 8 non serve alcuna presentazione.
 9 I never talked about my relatives to C. For whom in any event no
 10 introduction is necessary.
 11 b. Non ho mai parlato dei miei parenti_j a Clara_i. ***A cui_j** d'altronde
 12 non serve alcuna presentazione.
 13 I never talked about my relatives to C. For whom in any event no
 14 introduction is necessary.
 15 c. *Non ho mai parlato dei miei parenti_j a Clara_i **a cui_j** non serve
 16 alcuna presentazione. (restrictive)
 17 I never talked about my relatives to C. to whom no introduction
 18 is necessary.
 19

2.3.3 *Split Antecedents*

22 *Il quale*-nonrestrictives, but not *che/cui*-nonrestrictives (and restrictives),
 23 can have split antecedents. See the contrast between (15)a and b (adapted
 24 from Cinque 1988, 450), and (16)a and b:

- 25
 26 (15) a. Se Carlo_i non amava più Anna_j, **i quali_{i,j}** d'altra parte non si erano
 27 mai voluti veramente bene, una ragione c'era.
 28 If C. was no longer in love with A., who at any rate never really
 29 loved each other, there was a motive.
 30
 31 b. *Se Carlo_i non amava più Anna_j, **che_{i,j}** d'altra parte non si erano
 32 mai voluti veramente bene, una ragione c'era.
 33 If C. was no longer in love with A., that at any rate never really
 34 loved each other, there was a motive.
 35
 36 c. *Se il ragazzo_i non amava più la ragazza_j **che_{i+j}** si erano voluti bene,
 37 una ragione c'era. (restrictive)
 38 If the boy no longer loved the girl that loved each other, there was a
 39 motive.
 40
 41 (16) a. Se Piero_i non si trova più tanto bene con Ida_j, **tra i quali_{i+j}**
 42 d'altronde non c'è mai stata una vera amicizia, . . .
 43 If P. no longer likes to stay with I., between whom in any event
 44 there never was a real friendship, . . .
 45
 46

- b. *Se Piero_i non si trova più tanto bene con Ida, **tra cui**_{i+j} d'altronde non c'è mai stata una vera amicizia, . . .
If P. no longer likes to stay with I., between whom in any event there never was a real friendship, . . .
- c. *Se il ragazzo non si trova più tanto bene con la ragazza **tra cui** non c'era stata una vera amicizia. . . (restrictive)
If the boy no longer likes to stay with the girl between whom in any event there never was a real friendship, . . .

2.3.4 Retention of the 'Internal' Head

In more careful styles of Italian the 'internal' Head, despite its nondistinctness from the 'external' one, may be retained in *il quale*-nonrestrictives, but not in *che/cui*-nonrestrictives (nor in *che/cui*-restrictives):¹⁰

- (17) a. Quel tale farmaco, **col quale** farmaco il Ministero intendeva iniziare la sperimentazione, era il frutto di molti anni di lavoro.
That medicine, with which medicine the Ministry intended to begin the experiment, was the result of many years' work.
- b. Giorgio riuscì a sposare quella ragazza. **Della quale** ragazza, devo dire, ero invaghito anch'io. (cf. Cinque 1988, 449)
G. managed to marry that girl. Which girl, I must say, I was also in love with.

2.3.5 Non Identity of the 'External' and 'Internal' Heads

Il quale-nonrestrictives, as opposed to *che/cui*-nonrestrictives (and restrictives), do not require absolute identity of the 'internal' and 'external' Heads (cf. Cinque 1988, 449; and Sandfeld 1936, 179, and Kayne 1975, chapt. 1, fn. 20, for corresponding facts in French):

- (18) a. Ha raggiunto la fama con *Il giardino dei Finzi-Contini*, **il quale** romanzo ha poi anche avuto una riduzione cinematografica.
He became famous with *Il giardino dei Finzi-Contini*, which novel was then also made into a film.
- b. All'appuntamento erano venuti quaranta studenti. **Il qual** numero non impressionò nessuno.
To the rendezvous forty students had come. Which number impressed nobody.

The example in (19) represents a different type of non identity (where the 'external' and the 'internal' Heads differ in number features):¹¹

- 1 (19) Giorgio non era certo un romanziere, la prima virtù dei **quali** è
 2 quella di catturare l'interesse del lettore.
 3 G. was no novelist (sing.), the first virtue of whom (pl.) is that of
 4 catching the reader's interest (cf. (49) below)
 5

6 2.3.6 *Categorial Nature of the Head (DP vs. XP)*

7 *Il quale*- and *che/cui*-nonrestrictives also differ with respect to the categorial
 8 nature of the antecedent that they can take. While *che/cui*-nonrestrictives
 9 (and restrictives) only take nominal antecedents, *il quale*-nonrestrictives
 10 can take a larger class of antecedents, as shown in (20):
 11

- 12 (20) a. Carlo lavora troppo poco. **La qual cosa** verrà certamente notata. (CP)
 13 C. works too little. Which thing will certainly be noticed.
 14 (Cinque 1988, 467)¹²
 15
 16 b. Carlo lavora troppo poco. ***Che** verrà certamente notato.
 17 C. works too little. That will certainly be observed.
 18
 19 c. Carlo lavora troppo poco. ***Di cui** si è reso conto anche il suo
 20 principale.¹³
 21 C. works too little. Which even his boss realized.
 22
 23 (21) a. Maria è suscettibile. **La qual cosa** sua sorella di certo non è. (AP)
 24 M. is touchy. Which thing her sister certainly is not.
 25
 26 b. Maria è suscettibile. ***Che** sua sorella di certo non è.
 27 M. is touchy. That her sister surely is not.
 28
 29 c. Maria è suscettibile. ***Di cui** non si era resa conto neanche sua madre.
 30 M. is touchy. Which not even her mother realized.

31 2.3.7 *Preposability (of the Sentential Relative)*

32 Cinque (1988, 467) notes that one exception to the impossibility of *che* in
 33 nonrestrictives with a sentential antecedent like (20)b is given by contexts
 34 where *che* is subject of a nominal predicate. See (22)a-b:
 35

- 36 (22) a. Mi sono messo a giocare a carte: **che** è sempre una distrazione.
 37 I started playing cards: that is always a distracting thing.
 38 (Cinque 1988, 467)
 39
 40 b. Mi sembra di capire che tua madre ora stia bene, **che** è la cosa più
 41 importante.
 42 I understand that your mother is now better, that is the most
 43 important thing. (Del Gobbo 2006a, fn. 5)

44 Even this use of *che* differs nonetheless from *la qual cosa* (and *il che, cosa*
 45 *che, ciò che*) in not being preposable to the “antecedent”. See the contrast
 46

- between (23)a and b (on a requirement such preposing must meet, see Del Gobbo 2006b, fn. 2):
- (23) a. *?Da quando, **che** è sempre una distrazione, mi son messo a giocare a carte, . . .
 Since, that is always a distracting thing, I started playing cards, . . .
- b. Da quando, **la qual cosa** è sempre una distrazione, mi son messo a giocare a carte, . . .
 Since, which is always a distracting thing, I started playing cards, . . .
- 2.3.8 *Parasitic Gaps*
- Parasitic gaps, which can appear within restrictives (see (24)c), can also marginally appear (for some speakers) within *che/cui*-nonrestrictives, but not within *il quale*-nonrestrictives. See the contrast between (24)a and b:
- (24) a. ?La sola persona che i Rossi, **che** conoscono bene, hanno sempre ammirato è Gianni.
 The only person that the Rossis, who (lit. that) know well, have always admired is G.
- b. *La sola persona che i Rossi, **i quali** conoscono bene, hanno sempre ammirato è Gianni.
 The only person who the Rossis, who know well, have always admired is G.
- c. (?)La sola persona che quelli **che** conoscono bene non possono non ammirare è Gianni. (restrictive)
 The only person that those that know well cannot but admire is G.
- 2.3.9 *Temporal DPs as Heads*
- Che/cui*-nonrestrictives ((25)a) (and restrictives—(25)c), but not *il quale*-nonrestrictives ((25)b) can have a temporal adverbial DP as Head (cf. Cinque 1988, 464):
- (25) a. La settimana prossima, **che** sono in ferie, ti vengo a trovare.
 Next week, (lit.) that I am on holidays, I will come and visit you.
- b. *La settimana prossima, **la quale** sono in ferie, ti vengo a trovare.
 Next week, which I am on holidays, I will come and visit you.
 (ok: La settimana prossima, **nella quale** sono in ferie, . . . ‘Next week, in which I am on holidays, . . .’)
- c. La settimana **che** sono in ferie ti vengo a trovare. (restrictive)
 The week that I am on holidays I will come and visit you.

2.3.10 *Coordination of the wh-pronoun with Another DP*

Che/cui-nonrestrictives ((26)a-(27)a) (and restrictive—(26)c-(27)c)) also differ from *il quale*-nonrestrictives ((26)b-(27)b) in not allowing coordination with another DP:

- (26) a. *Gianni e Mario, le rispettive consorti e **che** non si erano mai potuti soffrire, . . .
G. and M., the respective wives and whom (lit. that) had never been able to stand each other, . . .
- b. ?Gianni e Mario, le rispettive consorti e **i quali** non si erano mai potuti soffrire, . . .
G. and M., the respective wives and whom had never been able to stand each other, . . .
- c. *Gli unici le rispettive consorti e **che** non si erano mai potuti soffrire erano loro. (restrictive)
The only ones the respective wives and whom (lit. that) had never been able to stand each other were them.
- (27) a. *Gianni e Mario, fra le rispettive consorti e **cui** non c'era mai stato un grande affiatamento, . . .
G. and M., between their respective wives and whom there never was a real understanding, . . .
- b. ?Gianni e Mario, fra le rispettive consorti e **i quali** non c'era mai stato un grande affiatamento, . . .
G. and M., between their respective wives and whom there never was a real understanding, . . .
- c. *Gli unici fra le rispettive consorti e **cui** non c'era mai stato un grande affiatamento erano loro. (restrictive)
The only ones between their respective wives and whom there never was a real understanding were them.

3 SOME PROPERTIES WITH RESPECT TO WHICH *CHE/CUI*-AND *IL QUALE*-NONRESTRICTIVES DO NOT DIFFER

3.1 Speech Act Adverbs and Performative Verbs

Speech act adverbs like *frankly*, *honestly*, etc., and performative verbs used performatively, have been claimed to occur only in nonrestrictive relatives (Thorne 1972, 552f; Vergnaud 1985, 335; Emonds 1979, 238f; Lehmann 1984, 271; Cornilescu 1996, 215; and references cited there), and thus to be able to discriminate between nonrestrictives and restrictives. One might wonder whether the two types of nonrestrictives differ with respect to this property. They don't. See (28)a-b:

- (28) a. Giorgio, **che** francamente non si sarebbe mai dovuto comportare
così, . . . 1
G., who (lit. that) frankly should never have behaved like that, . . . 2
3
4
a'. Giorgio, **che** ti prometto non metterà mai più piede da noi, . . . 5
G, **who** (lit. that) I promise you will never set foot again in our
house, . . . 6
7
8
b. Giorgio, **il quale** francamente non si sarebbe mai dovuto compor-
tare così, . . . 9
G., who frankly should never have behaved like that, . . . 10
11
b'. Giorgio, **il quale** ti prometto non metterà mai più piede da noi, . . . 12
G., who I promise you will never set foot again in our house, . . . 13
14
- I should point out that in (my) Italian such adverbs and verbs also occur 15
unproblematically in another construction, referred to in Benincà and 16
Cinque (2012) as “kind-defining”, which shares properties of restrictive 17
and nonrestrictives. See (29): 18
- (29) a. La sola persona **che** francamente mi sentirei di assumere è Giorgio. 19
The only person that frankly I would consider employing is G. 20
21
b. La sola persona **che** ti prometto di non rivedere mai più è Giorgio 22
The only person that I promise you not to see any more is G. 23
24
- ### 3.2 Weak Crossover 25
- While restrictive relatives give rise to Weak Crossover effects (see (30), and 26
Safir 1986, section 2.2), both *che/cui-* and *il quale*-nonrestrictives appear 27
to be immune from it (see (31)a-b): 28
29
- (30) *?L'uomo_i **che** sua_i moglie pensa sia disonesto si è in realtà dimostrato 30
una brava persona. 31
the man that his wife thinks is dishonest turned out in fact to be a 32
good guy. 33
(cf. L'uomo_i **che** è amato da sua_i moglie ha una diversa visione della 34
vita 'the man that is loved by his wife has a different view of life') 35
36
- (31) a. Giorgio, **che** anche sua_i moglie pensa sia disonesto, si è dimostrato 37
un vero impostore. 38
G., who (lit. that) even his wife thinks is dishonest, turned out to 39
be a real impostor. 40
41
b. Giorgio, **il quale** anche sua_i moglie pensa sia disonesto, si è 42
dimostrato un vero impostore. 43
G., who even his wife thinks is dishonest, turned out to be a real 44
impostor. 45
46

3.3 *Pronominalization*

As observed in McCawley (1981) a proform can resume a nominal Head plus a restrictive relative (see (32)c), but not a Head plus a nonrestrictive relative. Both *che/cui-* and *il quale*-nonrestrictives behave in this respect exactly the same. See (32)a and b:

- (32) a. Gianni ha un bellissimo appartamento, **che** da' sul Central Park, e adesso ne vuole un altro. (= bellissimo appartamento; \neq bellissimo appartamento, che da' sul Central Park)
G. has a beautiful apartment, which (lit.that) overlooks the Central Park, and now he wants another.
- b. Gianni ha un bellissimo appartamento, **il quale** da' sul Central Park, e adesso ne vuole un altro. (= bellissimo appartamento; \neq bellissimo appartamento, il quale da' sul Central Park)
G. has a beautiful apartment, which overlooks the Central Park, and now he wants another.
- c. Gianni ha un bellissimo appartamento **che** da' sul Central Park, e adesso ne vuole un altro. (= bellissimo appartamento; or =bellissimo appartamento che da' sul Central Park) (restrictive)
G. has a beautiful apartment which overlooks the Central Park, and now he wants another.

4 ENGLISH

As the data in the following sections will show, English appears to lack the equivalent of the Italian *che/cui*-nonrestrictive construction. Its nonrestrictives pattern with Italian *il quale*-nonrestrictives. First, they, like Italian *il quale*-nonrestrictives (see section 2.2) obligatorily retain *wh*-pronouns in subject, object (and, in the presence of preposition stranding, oblique object) positions. See (34).¹⁴ They also retain them with the (more formal) pied-piping of a preposition. See (35). In fact, just like *il quale*-nonrestrictives, they display generalized pied-piping. See (36).¹⁵

- (34) a. John, who/*that/* \emptyset got the offer, will probably refuse.
b. John, who/*that/* \emptyset we all know, would not have done that.
c. John, who/*that/* \emptyset we are all proud of, will soon be part of the President's staff.
- (35) John, [_{pp} to whom] we talked yesterday, said he strongly opposed the decision.
- (36) a. That woman, [_{ip} compared to whom] Attila the Hun was an angel, is unfortunately my husband's favourite aunt.
(Nanni and Stillings 1978, 311)

- b. . . . delicious entertainments, [_{CP} to be admitted to one of which] was a privilege, (Jespersen 1949, 194) 1
2
- c. . . . certain steps against his treacherous brother, [_{AdvP} as to the precise nature of which] they could not be further enlightened. (Jespersen 1949, 194) 3
4
5
6

In addition to the similarities just reviewed, in all of the contrasts between *che/cui-* and *il quale-*nonrestrictives discussed in section 2.3 above, English nonrestrictives side with Italian *il quale-*nonrestrictives. Compare sections 2.3.1–10 with sections 4.1–10. 7
8
9
10

4.1 Illocutionary Independence 11 12

As with *il quale-*nonrestrictives (and differently from *che/cui-*nonrestrictives) in Italian (cf. (10)-(11) above), English nonrestrictives can also be nondeclarative. See (37), where the nonrestrictives are interrogative, and (38), where they are imperative ((38)a-b), or optative ((38)c):¹⁶ 13
14
15
16
17
18

- (37) a. There is then our father, by whom will we ever be forgiven for what we have done? 19
20
- b. It may clear up, in which case would you mind hanging the washing out? (= (10ii) of Huddleston and Pullum 2002, 1061) 21
22
- c. She may have her parents with her, in which case where am I going to sleep? (= (10iii) of Huddleston and Pullum 2002, 1061) 23
24
- d. I want to talk to that man, who who the hell is he anyway? 25
(Andrews 1975, 28) 26
27
- (38) a. Please accept my check for \$3.69, which find enclosed! 28
(Martin 1972, 5) 29
- b. He said he'd show a few slides towards the end of his talk, at which point please remember to dim the lights! 30
(= (10i) of Huddleston and Pullum 2002, 1061) 31
32
- c. My friend, who God forbid you should ever meet, . . . 33
(John Lyons, reported in Werth 1974, fn. 4) 34
35
36
37

4.2 Nonadjacency (cf. (12) to (14) above) 38

Although nonadjacency to the Head is subject to restrictions, as noted earlier for Italian *il quale-*nonrestrictives (cf. fn. 9), various examples of nonadjacency are cited in works on English nonrestrictives.¹⁷ See: 39
40
41
42

- (39) a. **John** really bothered me at the party last night, **who**/*that, by the way, I'll never invite to a party again. (cf. Ziv and Cole 1974, 777)¹⁸ 43
44
- b. **John** is coming to stay, **who** we haven't seen for ages. 45
(Kempson 2003, 302, fn. 4) 46

- 1 c. Only **the flower** is used, **which** is not poisonous and is attached to
2 the plant with a very fine stem.

3 (= (23i) of Huddleston and Pullum 2002, 1066)

- 4 d. I was talking to **Howard** the other day, **who**/*that tells me that you
5 want to resign. (cf. Peterson 2004, 396)

6
7 As noted above with (formal) *il quale*-nonrestrictives, sentential *which* can
8 also begin a new sentence:

- 9
10 (40) She borrowed a history book. Which suggests that her teacher was
11 having some influence on her.

12 (Quirk, Greenbaum, Leech and Svartvik 1972, 702)

13 14 15 4.3 Split Antecedents

16 As was the case with Italian *il quale*- (but not *che/cui*-) nonrestrictives, Eng-
17 lish nonrestrictives also allow for split antecedents. See (41), from Arnold
18 (2007, 274):

- 19
20 (41) Kim likes muffins_i, but Sandy prefers scones_j, which_{i,j}/*that they eat
21 with jam.

22 According to Demirdache (1991, 118) another such case is Perlmutter and
23 Ross' (1970) celebrated split antecedent relative (42), although a restrictive
24 reading is also possible:¹⁹

- 25
26 (42) A man_i entered the room and a woman_j went out who_{i,j} were quite
27 similar.

28
29 which she compares to a case like (43), of anaphora across discourse:

- 30
31 (43) A man_i entered the room and a woman_j went out. They_{i,j} were quite
32 similar.

33 34 35 4.4 Retention of the 'Internal' Head

36 As with (formal) *il quale*- (but not *che/cui*-) nonrestrictives (cf. (17) above),
37 in (formal) English nonrestrictives the 'internal' Head can also be retained.
38 See (44):²⁰

- 39
40 (44) a. He rode twenty miles to see her picture in the house of a stranger,
41 which stranger politely insisted on his acceptance of it.

42 (Jespersen 1949, section 6.5, p. 126)

- 43 b. . . . a young woman with a wedding-ring and a baby, which baby
44 she carried about with her when serving at the table.

45 (Jespersen 1949, section 6.5, p. 126)

- c. The French procured allies, which allies proved of the utmost importance. (Poutsma 1916, chapter XXXIX, §4, p. 961)

4.5 Non Identity of the ‘External’ and ‘Internal’ Heads

The ‘internal’ Head which is retained can even be distinct from the ‘external’ one, as we saw above with *il quale*-nonrestrictives in Italian. Various examples are cited in the literature. See, e.g., (45) to (48) (and Jespersen 1949, pp.126–128):

- (45) a. Mark belongs to the Knights of Columbus, which organization has been condemned by the Jewish Defense League.
 (= (33a) of McCawley 1981, 118)
- b. *Mark belongs to a club which organization has been condemned by the Jewish Defense League. (restrictive)
 (= (33a’) of McCawley 1981, 118)
- (46) a. An accident on the road, in which accident several people were hurt, . . . (Browne 1986, 117)
- b. *The accident on the road in which accident several people were hurt. . (restrictive)
- (47) a. This book, which masterpiece I have read twice,
 (= (ii) of Kayne 1994, 165, fn. 73)
- b. *The book which masterpiece I have read twice. . . (restrictive)
- (48) a. There were only thirteen senators present, which number was too few for a quorum. (Arnold 2007, 289)
- b. *These are the only thirteen senators present which number we had forgotten. (restrictive)

As with *il quale*-relatives in Italian (see (19)) the ‘internal’ Head of an English nonrestrictive may display non identity in number with the ‘external’ Head, at least for some speakers. See for example (49), from Cantrall (1972, 22):

- (49) Since John is a lexicalist, all of whom are badly confused, I never listen to him.

4.6 Categorical Nature of the Antecedent (DP vs. XP)

As noted by many authors,²¹ nonrestrictives in English differ from restrictives in allowing a wider range of antecedents (as was the case with *il quale*-, but not with *chelcui*-, nonrestrictives in Italian). See (50):

- 1 (50) a. Sheila was beautiful, which was too bad. (Ross 1969, 357) (CP)
 2 b. She was fond of her boy, which Theobald never was.
 3 (Jespersen 1949, section 6.4, p.124) (AP)
 4 c. Joe debated in high school, which Chuck did too.
 5 (Thompson 1971, 84) (VP)
 6 d. Peter put it under the table, where I had put it earlier.
 7 (Fabb 1990, 60) (PP)²²
 8
 9

10 4.7 Preposability (of Sentential Relatives)

11 With *il quale*-nonrestrictives English nonrestrictives also share the possi-
 12 bility of preposing the relative clause to a sentential “antecedent”. See (51),
 13 from Huddleston and Pullum (2002, 1066) (also see the examples given in
 14 Poutsma 1916, chapter XXXIX, §13, p.972; Jespersen 1949, section 5.7;
 15 and Quirk et al. 1985, p. 1120):
 16

- 17 (51) The Net will open up opportunities to exploit tax differences and—
 18 which makes it even more of a headache than globalisation—it will
 19 make it possible to dodge taxes altogether.
 20
 21

22 4.8 Parasitic Gaps

23 As noted in Safir (1986), parasitic gaps, which can appear within English
 24 restrictives (see (52)a), cannot appear in English nonrestrictives (see (52)
 25 b), just as they cannot appear in *il quale*-nonrestrictives in Italian (see
 26 (24)b above)):
 27

- 28 (52) a. John is a man who everyone who knows admires. (Safir 1986, 673)
 29 b. *John is a man who Bill, who knows, admires. (Safir 1986, 673)
 30
 31

32 4.9 Temporal DPs as Heads

33 Certain temporal DPs can head a restrictive but not a nonrestrictive in
 34 English, just as we saw they cannot head an *il quale*-nonrestrictive
 35 in Italian:²³
 36

- 37 (53) *That day, which Clinton and I were born, . . . (cf. The day that
 38 Clinton and I were born. . .)
 39
 40

41 4.10 Coordination of the *wh*-pronoun with another DP

42 Once again, as with *il quale*-nonrestrictives (and differently from *che/cui*
 43 nonrestrictives) in Italian (see (26)b), *wh*-pronouns in English nonrestrict-
 44 tives can be coordinated with other DPs:
 45
 46

- (54) He recalled the name of the solicitor, between whom and himself
there had been occasional correspondence. (Jespersen 1949, 191)

5 AN ANALYSIS OF THE TWO TYPES OF NONRESTRICTIVES

5.1 The “Integrated” Nonrestrictive

The analysis of the integrated nonrestrictive that I am going to propose here is a natural extension of the analysis I presented in Cinque (2003/8) for restrictives (also see Cinque 2008b and in preparation). There I proposed that restrictive relatives are merged as IPs in the specifier of a prenominal functional projection above the specifiers which host attributive adjectives and numerals and below the projection hosting determiners and demonstratives (i.e., the position in which restrictive relatives overtly appear in many (rigid) OV languages—see Cinque 2003/8, and in preparation). Following Kayne (1999, 2000a, 2002), I also proposed there that their eventual postnominal position in almost all VO, and nonrigid OV, languages is due to the raising of IP to a higher licensing position, followed by merger of a (finite) complementizer which attracts the internal Head, followed in the “matching” variant by merger of another complementizer which attracts the external Head. In the “raising” variant, the external Head is not raised but “deleted” in situ under identity with the raised internal Head.

The “matching” derivation for a restrictive relative clause like *The two nice books that I read* is given in (55):²⁴

- (55) a. $[IP_{rel} [Num [A NP]]]$ (merge of $C_{(0)}$ and attraction of IP) →
 b. $IP_{relj} C_{(0)} [t_j [Num [A NP]]]$ (merge of $C_{(1)}$ (*that*) and attraction of the *wh*-pronoun/ ‘internal Head’) →
 c. wh_i- [*that* [$IP_{rel} \dots t_i$], $C_{(0)} [t_j [Num [A NP]]]$] (merge of $C_{(2)}$ and attraction of the ‘external Head’) →
 d. $[Num [A NP]]_k C_{(2)} wh_i-$ [*that* [$IP_{rel} t_i$], $C_{(0)} [t_j [t_k]]$] (merge of the determiner) →
 e. Det [$Num [A NP]]_k C_{(2)} wh_i-$ [*that* [$IP_{rel} t_i$], $C_{(0)} [t_j [t_k]]$]
 the two nice books that I read

“Integrated” nonrestrictives minimally differ in that the IP is merged in the specifier of a nominal projection dominating DP; i.e., outside the scope of the determiner and the demonstrative, as is generally assumed (Lehmann 1984, 261f; Kayne 1994, 112).²⁵

- (56) a. $[IP_{rel} [DP Dem [Num [A NP]]]]$ (merge of $C_{(0)}$ and attraction of IP) →
 b. $IP_{relj} C_{(0)} [t_j [DP Dem [Num [A NP]]]]$ (merge of $C_{(1)}$ and attraction of the *wh*-pronoun/ ‘internal Head’) →

- 1
2
3
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6
7
- c. wh_i- [$C_{(1)}$ [$_{IPrel}$ t_i] $]$ $C_{(0)}$ [t_j [$_{DP}$ Dem[Num[A NP]]]]] (merge of $C_{(2)}$
and attraction of the ‘external Head’) →
- d. [$_{DP}$ Dem [Num [A NP]]] $]$ $_k$ $C_{(2)}$ wh_i- [$C_{(1)}$ [$_{IPrel}$ t_i] $]$ $C_{(0)}$ [t_j [t_k]]
quei dieci bei gattini, che io amo
‘those ten nice kittens, which I love’

8 5.2 The “Nonintegrated” Nonrestrictive

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The analysis to be proposed for the “nonintegrated” nonrestrictive is more tentative. As mentioned at the outset, the construction appears to belong to what Williams (1977) calls Discourse Grammar, whose basic properties, distinguishing it from Sentence Grammar, are the ability to apply “across utterance boundaries”, and to be immune to island constraints (Williams 1977, 101f).

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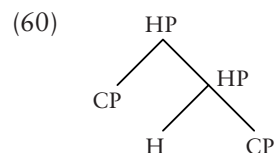
We have already seen that *il quale*-nonrestrictives in Italian and *which/who*-nonrestrictives in English can relate to an antecedent across discourse. They also appear to be able to do so across islands. So, for example, in such pied-piping cases as (57) and (58) the pronoun can relate to its antecedent (the relation called R-binding in Safir 1986) in spite of the adjunct, sentential subject, or complex NP, island boundary between them:²⁶

- 34
35
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- (57) a. Questa macchina, [per comprare la quale] Giorgio si è indebitato
fino al collo, . . .
This car, to buy which G. is up to his ears with debts, . . .
- b. Questa macchina, [comprare la quale] voleva dire per lui rinunciare a
tante altre cose, . . .
This car, to buy which meant for him to give up many other
things, . . .
- c. Giorgio, [le ragioni per non invitare il quale] erano davvero
tante, . . .
G., the reasons for not inviting whom were really many, . . .
- (58) a. The lecture [(in order) to attend which] Sally drove 50 miles, . . .
(Nanni and Stillings 1978, 312)
- b. . . . delicious entertainments, [to be admitted to one of which] was
a privilege, . . . (Jespersen 1949, 194)
- c. John, [the many reasons for not inviting whom] you are old enough to
understand. . . (adapted from Jespersen 1949, 194)

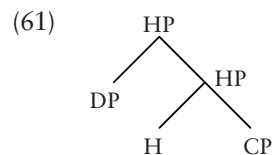
If we assume Kayne’s (1994) Linear Correspondence Axiom (LCA) to hold of Discourse Grammar as well (the null hypothesis), linear precedence in a discourse must also reflect asymmetric c-command. One way to achieve this is to merge the linearly preceding sentence in the specifier of an (empty)

head, which takes the following sentence as a complement. Concretely, the discourse fragment in (59) would have the structural representation in (60):

(59) John is no longer here. He left at noon.



Discourse fragments do not consist of just concatenations of CPs. Other categories can apparently be concatenated; for example, DPs and CPs (*A pink shirt? I will never wear any such thing in my life!*), which would yield the structural representation in (61):²⁷



I will take the configurations in (60) and (61) to underlie the “nonintegrated” nonrestrictive, (60) for the across discourse cases, and (61) for the cases in which the nonrestrictive is adjacent to its Head. In both cases, the movement internal to the “nonintegrated” nonrestrictive CP is likely to be different in target from that of “integrated” nonrestrictives (and restrictives). If the target were a CP initial TOP position, as occasionally suggested, one could perhaps make sense of certain properties typical of the “nonintegrated” construction, namely the fact that objects cannot easily be relativized with *il quale*-pronouns in Italian (cf. Cinque 1978, 3.7), except in those cases where no clitic is required in the corresponding topicalization case (Cinque 1978, fn. 71).²⁸

Differently from (English-type) Left Dislocation, and the (Romance) Hanging Topic construction, which are only possible at the Root, presumably due to the discourse head which concatenates DP with CP, “nonintegrated” nonrestrictives can be subordinate clauses. This can be obtained from the same structure if, in the nonrestrictive case, like in unbalanced coordination (Johannessen 1998), the features of the phrase in specifier position (here the categorial features of DP) are able to percolate up and determine the categorial features of the dominating category (rendering HP nondistinct from DP). Cf. Rebuschi (2005, §3.2).

In the spirit of Williams (1977), we must also assume that the ‘Discourse Grammar’ head H, as is the general rule for sentences in a discourse, blocks every ‘Sentence Grammar’ relation between its specifier and complement

(internal Merge, Agree, Binding, etc.), despite the asymmetric c-command relation existing between the two under the extension of the LCA to Discourse Grammar.

5.3 Deriving the Properties of the Two Types of Nonrestrictives

Let us start from the differences between the two types of constructions noted in 2.3.1 to 2.3.10, beginning with the “nonintegrated” type.

The fact that *il quale*- (but not *che/cui*-) nonrestrictives can have illocutionary independence (2.3.1), can be separated from the Head (also across discourse) (2.3.2), can have split antecedents (whereby at least one of the antecedents is non adjacent to the relative clause) (2.3.3), can have non-nominal antecedents (2.3.6), and cannot host a parasitic gap licensed by an operator binding a variable in the matrix (2.3.7), appears to directly depend on the nonrestrictive CP being, in both (60) and (61), an independent sentence at the Discourse level, connected to the antecedent by the same kind of (abstract) heads which concatenate discourse fragments.

The impossibility for *il quale*-nonrestrictives to have as Head a nominal temporal adverbial (2.3.9) may instead be attributed to the particular relation (Safir’s R-binding) that is established between the *wh*-pronoun and the Head. In the “nonintegrated” nonrestrictive with *il quale* the pronoun is a kind of E-type pronoun requiring coreference with some object(s) (Evans 1980, 340); hence requiring that the antecedent be independently capable of referring (something that nominal temporal adverbials are not).²⁹

Properties 2.3.4 (possible retention of the ‘internal’ Head), 2.3.5 (possible non identity of the ‘internal’ and ‘external’ Heads), 2.3.10 (the possibility for *il quale*-pronouns to be coordinated with other DPs), and the property of such pronouns to allow for generalized pied-piping (2.2), also appear related to the E-type character of *il quale*-pronouns. In that, they behave just like demonstratives, which can resume an antecedent across discourse, can be followed by an identical or nonidentical copy of the antecedent, can be coordinated with other like categories, and can be freely embedded in other phrases:³⁰

The non ‘deletability’ of *il quale* pronouns instead may possibly be related to the fact that their deletion is unrecoverable given that the pronoun cannot enter into any relation (except for the one characteristic of E-type anaphora) with its antecedent (cf. Cinque 1982, 260).³¹

On the other hand, the strictly complementary behavior of the *che/cui*-nonrestrictives appears related to their being an integral part of the DP containing their antecedent. As a consequence of that they lack illocutionary independence (2.3.1), they must be adjacent to the Head (except for the limited cases where extraposition is allowed) and cannot have split antecedents (2.3.2 and 2.3.3). Being merged within the DP that contains their Head (an extended projection of NP), they can take only a nominal antecedent (2.3.6), and are c-commanded by whatever c-commands their Head, thus

allowing a parasitic gap to be licensed (for some speakers) by an operator binding another variable in the matrix (2.3.8). Not being E-type pronouns, which require an autonomously referential antecedent (with the provisos of fn.29) they can also relativize nominal temporal adverbials (2.3.9).

The remaining properties (2.3.4, 2.3.5, 2.3.10) may instead be related to whatever properties force the *wh*-pronoun *cui* to ‘delete’ and be separated from the Head by at most one PP boundary. In Cinque (1978, 1982), I took these properties to follow from a principle of obligatory deletion up to recoverability and from the anaphoric status of *cui*, which imposes a strong locality condition on the distance between the Head and the *wh*-pronoun.

Today, I have nothing more interesting to contribute to this aspect of the syntax of *chelcui*-nonrestrictives (and restrictives), which still awaits to be properly understood.³²

As to the similarities between the two types of nonrestrictives reviewed in section 3, speech act adverbs and performative verbs, as noted, are possible (at least for me) with the kind-defining type of *chelcui*-relatives; hence unsurprisingly also with *chelcui*-nonrestrictives (as well as with *il quale*-nonrestrictives).

Concerning Weak Crossover, I noted that both types of nonrestrictives (as opposed to restrictives) are immune to it. This seems to be due to the fact that the Head of *il quale*-nonrestrictives necessarily has, and that of *chelcui*-nonrestrictives can have, independent reference, so that the possessive may directly relate to the Head rather than to the relative clause internal trace.

Finally the fact that a pronominal can resume a Head plus a restrictive relative but not the Head plus a nonrestrictive relative (whether of the *il quale*- or the *chelcui*-type) may be related to the level of attachment of the nonrestrictive, which is above DP/QP in the “integrated” option, and independent of the DP/QP in the “nonintegrated” one (differently in either case from the restrictive, which is below D/Q). If the pronominal is the (possibly elliptical) constituent following D/Q (*He wants to buy that one/ another (one)/ two___*), then only a restrictive can be included in that constituent.

6 SOME COMPARATIVE REMARKS

An in-depth typological study of nonrestrictives is not available. The few observations that are found in the literature are sketchy and not even always converging, as the following quotes illustrate:

- a. “The properties of nonrestrictive RC’s are quite different from those of restrictive RC’s across languages. Some languages apparently have no nonrestrictive RC’s; in others they are syntactically quite distinct; in others restrictive and nonrestrictive RC’s are syntactically indistinguishable” (Downing 1978, 380)

it is plausible that when they appear in the nonrestrictive construction, they instantiate the “integrated” type (while *wh*-pronouns presumably enter the “nonintegrated” one).³⁶

To judge from Sotiri (2006), Albanian (but not Arberesh, the Albanian spoken in Central and Southern Italy), also displays both types of nonrestrictives.³⁷

6.2 Languages with Only “Integrated” Nonrestrictives

As originally pointed out to me by Paola Benincà, Northern Italian dialects lack *il quale*-nonrestrictives altogether.³⁸ Hence, they plausibly have just the “integrated” construction.

The same is possibly true of Chinese. As shown in great detail in Del Gobbo (2001, 2003, 2004, 2005, 2006a and b, 2010), Chinese relatives receiving a “nonrestrictive” interpretation behave with respect to many of the properties reviewed above like English restrictives (and *che/cui*-nonrestrictives in Italian) rather than like English nonrestrictives (and *il quale*-nonrestrictives in Italian). For example, they can only have nominal antecedents, and allow a long-distance anaphor to be bound by an antecedent outside of the nonrestrictive.³⁹ All of this suggests that (possibly in addition to reduced relatives, which share properties of nonrestrictive adjectives—Del Gobbo 2004, 2005) the only type available in Chinese is the “integrated” nonrestrictive (see, in fact, the conclusion in Del Gobbo 2010).

To judge from Kuno (1973, 235), Andrews (1975, 48f), Emonds (1979, fn. 4), and Kameshima (1989, 4.3.3), Japanese nonrestrictives, which are identical syntactically to restrictives (pace Yuasa 2005), may also just be of the “integrated” type (for example, the language lacks sentential relatives, like Italian *che/cui*-nonrestrictives).⁴⁰

Similarly, Basque and Yoruba nonrestrictives (de Rijk 1972, 134; and Sadat-Tehrani 2004) cannot have a whole sentence as antecedent, again suggesting that those languages may have only nonrestrictives of the “integrated” type (de Rijk 1972 also notes that “Japanese, Tamil, and Turkish do not allow sentential relatives, either.” (p. 135), and connects it to the SOV character of all these languages). Following Kayne (1994, 174, fn. 71), I will rather take this to be related to the fact that all these languages have prenominal relative clauses, which as noted in fn.35 above lack *wh*-pronouns, which alone can enter the “nonintegrated” type of nonrestrictives, given their demonstrative-like character and related use as E-type pronouns.

6.3 Languages with Only “Nonintegrated” Nonrestrictives

As argued above, English has just the “nonintegrated” nonrestrictive construction. Another language that appears to be like English is (modern

1 standard) Romanian, whose nonrestrictives (and restrictives) only employ
 2 *wh*-pronouns of the *care* paradigm (also used in interrogatives), and never
 3 show the presence of the finite indicative complementizer *că* (Dobrovie-
 4 Sorin 1994, 213; Grosu 1994, 212):

- 5
 6 (62) *Ioana, *că* mi-au prezentat(-o) ieri, nu mi-a plăcut (cf. Grosu 1994, 212)
 7 I., that they introduced (her) to me yesterday, did not appeal to me
 8

9 Indeed, Romanian nonrestrictives display the typical properties of English
 10 nonrestrictives and of *il quale*-nonrestrictives of Italian.

11 They admit generalized pied-piping (see (63)), show illocutionary inde-
 12 pendence (see (64)), possible non adjacency to the Head (see (65)), split
 13 antecedents (see (66)), retention of the ‘internal’ Head (see (67)), which may
 14 also be non strictly identical to the ‘external’ Head (see (68)); furthermore
 15 they may take nonnominal antecedents (see (69)), and may be preposed to
 16 a sentential antecedent (see (70)):⁴¹

18 Pied-Piping of Phrases Other Than PPs

- 19
 20
 21 (63) a. D. maior E.B., **grație amabilității căruia** opera filantropică avusese
 22 concursul gratis, . . . (Caragiale, quoted in Nilsson 1969, 19)
 23 ‘D. maior E.B., thanks to the amiability of whom the philanthropic
 24 deeds had a free competition, . . .’

- 25
 26 b. **Îi cunosc bine pe frații tăi, cel mai înalt dintre care** e fără îndoială
 27 Ion.

28 I am acquainted with your brothers, the tallest of whom is
 29 undoubtedly Ion (Grosu 2005, §3.3.2.1)

- 30
 31 c. **Am făcut de curând cunoștința unui mare savant, a discuta în**
 32 **mod serios cu care** mi-ar cere cunoștințe pe care nu le am.
 33 (Grosu 2005, § 3.3.2.1)

34 I have recently made the acquaintance of a great scholar, to carry
 35 out serious discussions with whom would require knowledge I do
 36 not possess.

38 Illocutionary Independence

- 39
 40 (64) a. Ion, **pe care nu uita să-l inviți la nuntă!**, te-a căutat ieri.
 41 I., who do not forget to invite to the wedding!, looked for you
 42 yesterday. (Grosu 2005, §2.1)

- 43
 44 b. Ion, **pe care cine s-ar gândi să-l invite?**, . . .
 45 Ion, whom who would think of inviting?, . . .
 46 (Alexandra Cornilescu p.c.)

Nonadjacency	1
	2
(65) a. Întreba pe cei dimprejur:—Joci? Care la rândul lor răspundeau într-un glas:—Se poate.	3
(He) was asking those around :—Will you play ? Who in turn answered unanimously:—Maybe. (Nilsson 1969, 52)	4
	5
	6
b. Peste două ore vine trenul de Predeal— Care trece pe la Sinaia.	7
In two hours the Predeal train arrives—Which passes through Sinaia. (Nilsson 1969, 130)	8
	9
	10
	11
Split Antecedents	12
	13
(66) ?Dacă Ion _i n-o mai iubește pe Maria _j , care copii_{i+j} de altfel nu s-au iubit niciodată cu adevărat, . . .	14
If Ion is no longer in love with Maria, which young people in any event never really loved each other, . . .	15
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Retention of the ‘Internal’ Head	20
	21
(67) Guvernul a făcut o propunere cu ramificații multiple și complexe, care propunere fusese deja făcută de opoziție cu mulți ani în urmă.	22
The government made a proposal with multiple and complex rami- fications, which proposal had already been made by the opposition	23
many years ago. (Grosu 2005, §3.3.2.1)	24
	25
	26
	27
Non Identity of the ‘External’ and ‘Internal’ Heads	28
	29
(68) a. Un Micul, care nume îi trădează originea vlahă, . . .	30
A guy named M., which name betrays his valachian origin, . . .	31
(Nilsson 1969, 12)	32
	33
b. E posibil ca guvernul să demisioneze în curând, în care caz va urma o lungă perioadă de incertitudine politică.	34
It is possible for the government to fall soon, in which case a long period of political uncertainty will follow. (Grosu 2005, §3.3.2.1)	35
	36
	37
	38
Categorial Nature of the Antecedent (CP)	39
	40
(69) a. În patruzeci și nouă de lupte crâncene nu-și pierduse niciodată sângele rece, salvase situația de multe ori, drept care fusese de atâtea ori laudat, decorat, îmbrățișat (Nilsson 1969, 48) (CP)	41
In forty nine cruel fights he never lost his cold blood, he had saved the situation many times, in virtue of which he had been praised, decorated, embraced.	42
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7 CONCLUSION

On the basis of some comparative evidence I have argued for the existence of two distinct nonrestrictive relative constructions; one essentially identical to the ordinary restrictive construction (as such part of sentence grammar); the other distinct from the ordinary restrictive construction (with characteristics of the grammar of discourse). Italian and other Romance languages display both constructions; English and Romanian only the discourse grammar construction; Northern Italian dialects, Chinese, and other languages only the sentence grammar one; and other languages neither. It thus appears that earlier focus on English, which, as noted, possesses just the discourse grammar construction, has had the effect of biasing the theoretical analyses proposed in the literature for the nonrestrictive construction.

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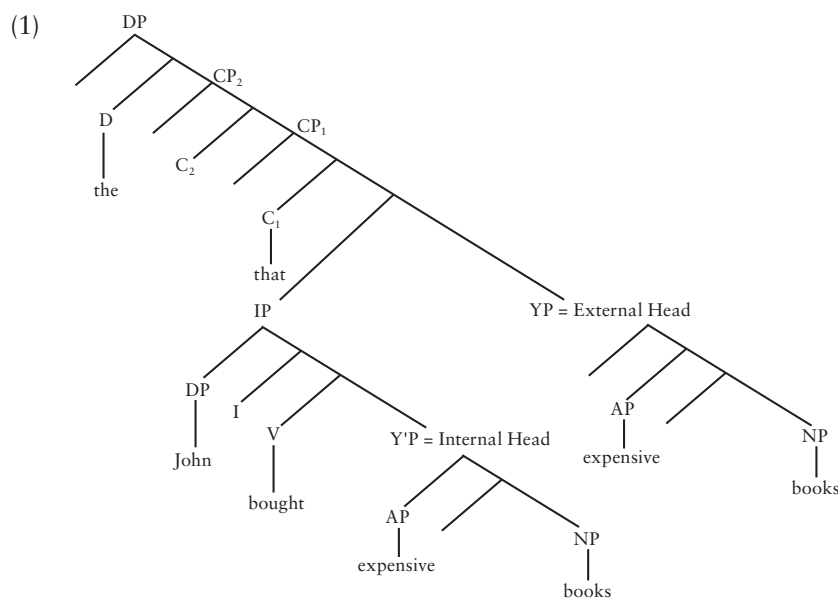
15 Five Notes on Correlatives¹

INTRODUCTION

In Cinque (in preparation) (see Cinque 2008b for a preliminary presentation) it is proposed that the different types of relative constructions found across languages (externally headed post-nominal, externally headed pre-nominal, internally headed, double-headed, ‘headless’ (or ‘free’), correlative, and ‘adjoined’ or extraposed) derive from one and the same structure, whether they involve a raising or a matching derivation.

This unique structure, in compliance with Antisymmetry (Kayne 1994), has the relative clause merged pre-nominally, in a specifier of the extended projection of the NP; more precisely between the position of numerals (and other weak determiners, in the sense of Milsark 1974), and that of demonstratives (and other strong determiners, like the definite article and universal quantifiers).²

See (1), which represents the (simplified) structure underlying the relative clause *the expensive books that John bought*.



The phrase directly modified by the relative clause (YP in (1)) is the *external Head* of the relative clause, which is matched inside the relative clause by an identical phrase (Y'P, the *internal Head*). 1
2
3

Whenever interpretive factors require reconstruction of the *overt Head* inside the relative clause (idiom chunks, pronominals within the Head bound inside the relative clause, etc.), it is the internal Head which raises to a position c-commanding the external Head (Spec,C₁), causing the latter to delete. Instead, when nothing forces reconstruction of the Head inside the relative clause, the *overt Head* is the external Head, which raises to a position c-commanding the internal Head (Spec,C₂), whether the latter moves or not, and deletes (or 'reduces') it. See Krapova (2010) for evidence to this effect from Bulgarian relatives. 4
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For present purposes it suffices to note that under this analysis all relative constructions, 'headless'/'free' relatives included, are double headed (they have both an external and an internal Head). For example, English 'headless'/'free' relative clauses would receive the following analysis, arguably with recoverable deletion (from the particular *wh*-phrase involved) of such functional nouns as THING, AMOUNT, PLACE, TIME, PERSON, . . .³ 13
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- (2) a. (I don't like) [_{DP}[_{CP} what THING_i you said t_i] (SUCH) THING] 21
 b. (He weighs) [_{DP}[_{CP} what AMOUNT_i I weigh t_i] (SUCH) AMOUNT] 22
 c. (Here is) [_{DP}[_{CP} where PLACE_i they slept t_i] THERE PLACE] 23
 d. (Come) [_{DP}[_{CP} when TIME_i you can t_i] THEN TIME] 24
 e. (He helps) [_{DP}[_{CP} whoever PERSON_i t_i needs it] (SUCH) PERSON] 25
 26

See Cinque (2008b, and in preparation) for discussion of such an analysis. 27
 If correct, this proposal prompts a reconsideration of certain aspects of the analysis of correlatives. 28
 29

NOTE 1: *Simple correlatives as 'left dislocated' DPs resumed IP-internally.*⁴ 31 32

Following a certain tradition, by 'simple correlatives' I mean those correlatives that contain a single *wh*-phrase, like that in (3): 34
 35

- (3) jo laRkii khaRii hai, vo (laRkii) lambii hai 37
 which girl standing be-PR, she/that (girl) tall be-PR 38
 'which girl is standing, she is tall' (Cf. Dayal 1996,160) 39
 40

An influential analysis of this construction takes the left peripheral relative to be a bare CP, adjoined to the matrix IP, which contains a pronominal (or demonstrative) bound by that CP: See Srivastav (1991), and Dayal (1996).⁵ 41
 42

This analysis is the only conceivable one if both simple correlatives and multiple correlatives (those containing more than one *wh*-phrase, like (4)) are taken to represent one and the same construction. 44
 45
 46

- 1 (4) jis laRkii-ne_i jis laRke-ke saath khelaa, us-ne_i us-ko_i
 2 which girl-ERG which boy with play.PAST, she-ERG he-ACC
 3 haraayaa
 4 defeated
 5 'which girl played with which boy, she defeated him'
 6 (Dayal 1996,197)

8 Clearly a DP analysis for such cases is out of the question since the correla-
 9 tive CP cannot have two external Heads (cf. Downing 1973,13; Dasgupta
 10 1980,291; Srivastav 1988,148; de Vries 2002,147; Bhatt 2005,9; Anderson
 11 2005,5fn3).⁶ Correlatives would thus seem to pose a problem for any uni-
 12 fied analysis of relative clauses that takes them to be embedded in a DP.

13 There is however evidence (discussed in Bhatt 2003, 2005) that multiple
 14 and simple correlatives do not constitute a homogeneous construction and
 15 thus should not be forced under one and the same analysis that "generalizes
 16 to the worst case" (that of multiple correlatives).

17 Some of this evidence will be recalled in NOTE 3 below, where multiple
 18 correlatives will actually be taken to be free adjunct clauses (in Izvorski's
 19 2000 sense), along the lines of Dayal's original analysis.⁷

20 Here suffice it to observe that simple correlatives like those in (3) contain
 21 a 'free' relative which may alternate with an externally headed postnominal
 22 relative. Compare (3) with (5):

- 23
 24 (5) vo laRkii jo khaRii hai, vo lambii hai
 25 that girl which standing be-PR, she/that tall be-PR
 26 'which girl is standing, she is tall' (cf. Dayal 1996, 152)

27
 28 Taking (3) and (5) together into consideration, and the double headed anal-
 29 ysis of 'headless'/'free' relatives given in (2), it becomes possible to interpret
 30 (3) as having a silent external Head, as in (7):⁸

- 31
 32 (7) [_{DP}VO LARKII [_{CP} jo laRkii khaRii hai]] vo laRkii
 33 THAT GIRL which girl standing be-PR, that GIRL
 34 lambii hai
 35 tall be-PR
 36 'the girl who is standing, that girl is tall'

37
 38 Veneeta Dayal (p.c.) tells me that she in fact marginally accepts (8), which
 39 shows the underlying structure of (3) and (5) on its sleeve, so to speak:⁹

- 40
 41 (8) vo laRkii jo laRkii khaRii hai, vo laRkii lambii hai
 42 that girl which girl standing be-PR, that girl tall be-PR
 43 'the girl who is standing, that girl is tall'

44
 45 The same full structure is apparently acceptable (under the appropriate
 46 conditions of emphasis) in two other Indo-Aryan languages: Bundeli ((9)

- a—Ruchi Jain, p.c.) and Maithili ((9)b, from Singh (1980), according to whom it is “cumbersome, though acceptable”(p.34):¹⁰
- (9) a. [ba moRii [jo moRii ThaRii hε]], ba moRii lambii hε
 that girl which girl standing is that girl tall is
 ‘The girl who is standing is tall’
- b. [(o) panc-sab [jaahⁱ panc-sab-kEⁿ ham niik jakaanⁿ janait
 (the) Panch which Panch-PL-OBJ I good way know.PART
 chalianhⁱ],_S]_{NP} o panc-sab..
 BE.PAST.AGR, the (same) Panch..
 ‘The Panch whom I knew very well, the same Panch. . .’
- The ‘left dislocated’ DP, containing the RC, is matched by a resumptive DP (often pronominal/demonstrative) in the clause. Depending on the language, the ‘left dislocated’ DP containing the correlative clause may apparently be either an English-type Left dislocation/Hanging Topic (Kashmiri), or a German-type Contrastive Left Dislocation (German, Bulgarian), or a Romance-type Clitic Left Dislocation (for the “correlatives” of Italian).
- As opposed to the other Indo-Aryan languages, Kashmiri is an (SOV) V-2 language. Its finite verb, in main (and complement) clauses, necessarily occupies the second position, following either the subject or a scene-setting adverb, or a focussed phrase or a *wh*-phrase (Hook and Koul 1996, and especially Bhatt 1999, chapter 4).¹¹ However, if a left dislocated/hanging topic is present, resumed by a demonstrative or pronominal inside the clause, the finite verb is found in *third* position, with a subject or a focussed/*wh*-phrase occupying the second position. In other words, the left dislocated/hanging topic phrase does not count as a filler for the “first position”.¹²
- Now, as Hook and Koul (1996, 98) show, a correlative clause too “does not count in the V-2 calculation, with the result that the finite verbal element comes in *third* position”. See (10)a, which contrasts minimally with (10)b, characterized by a topicalized Headed postnominal relative (not resumed by a correlative element):
- (10) a. [yus naphar raath aay] bi chus yatshaan temyis
 [which person yesterday came] I am wanting him.DAT
 samikh-un
 meet-INF
 ‘I want to meet the man who came here yesterday’
- b. [temyis naphras yus raath aav] chus bi yatshaan samikh-un
 [the person who yesterday came] am I wanting meet-INF
 ‘I want to meet the man who came here yesterday’
- Thus Kashmiri provides direct evidence that one type of correlative clause can occupy the position of left dislocated/hanging topics, preceding the CP

1 space which contains a fronted phrase (in first position) and the finite verb
2 (in second position).¹³

3 Hindi, possibly in addition to an English/Kashmiri-type left dislocation
4 construction (Dwivedi 1994a, section 2.2.2), appears to have a topicaliza-
5 tion construction involving movement, possibly similar to Romance Clitic
6 Left Dislocation, modulo the presence of a non clitic resumptive DP (either
7 a full DP, or a demonstrative pronoun) (Mahajan 1990; Srivastav 1991;
8 Dwivedi 1994a,b). See, in particular Mahajan (2000, fn.10) and Bhatt
9 (2003) for arguments that the correlative relative acquires its left adjoined
10 position by movement, and Bhatt (2003) for the idea that it starts out
11 together with the correlative pronoun (as seen from the possibility of their
12 making up a constituent), and optionally moves out to a left peripheral
13 position stranding the correlative DP.

14 We follow this analysis here except for the idea that the RC is internal
15 to a DP which together with the correlative DP forms a “big DP” ([[Head
16 RC] [correlative]], much like the “big DP” taken to underlie French Com-
17 plex Inversion (Kayne 1972) and Romance Clitic Left Dislocation ([_{DP} DP
18 [_D Clitic]]—Uriagereka 1995,81).

19 In Bulgarian, differently from Hindi (and other Indo-Aryan languages),
20 the left dislocated DP of the correlative construction is never found adjoined
21 to the resumptive element (Bhatt 2003, 529). Rather, it appears to be base
22 generated in situ and matched by a correlative element which obligatorily
23 moves to the front of the main clause (presumably to Spec,FocusP) (cf.
24 Izvorski 1996,12):

- 25
26 (11) [Kolkoto pari Maria_k iska], tolkova_i tja_k misli če
27 How much money M. wants, that much she thinks
28 šte j dam t_i
29 that will her I.give
30 ‘She thinks that I will give her as much money as Maria wants’
31

32 This is indicated by the fact that, differently from Hindi (Bhatt 2003, sec-
33 tion 3.3.1), the left dislocated DP (in (11)) does not reconstruct, as no Prin-
34 ciple C violation is to be observed there.

35 This appears parallel to the non-connectivity variant of German con-
36 trastive Left Dislocation:¹⁴

- 37
38 (12) [Wer das sagen wird] dem will ich vertrauen
39 who.NOM that say will that.DAT will I trust
40 ‘I will trust who(ever) says that’
41

42 In Italian, the element resuming the “correlative” relative is normally a
43 run-of-the-mill clitic, actually the usual resumptive clitic associated with
44 the Clitic Left Dislocated DP that contains the relative clause (though a
45 demonstrative, itself clitic left dislocated, can resume the correlative rela-
46 tive when this is a hanging topic, as in (13)c):

- (13) a. **Qualunque promessa** lui potrà farti, non
 whatever promise he will.be.able.to make to you, not
 prenderla sul serio
 take it seriously
 ‘Whatever promise he may make to you, do not take it seriously’
- b. **Chi fa cose del genere**, credo Ø non debba essere seguito
 who does such things, I.think not has to be followed
 ‘I do not think that one should follow someone who does such things’
- c. **Chi ti ha appena telefonato, quello lì**, proprio non
 Who to you has just telephoned,that there really not
 lo sopporto
 him I.can.stand
 ‘The one who just called you, that one really I cannot stand’

From this perspective, the impossibility of stacking correlatives (Srivastav 1996,175–77; McCawley 2004, section 5; Butt, King and Roth 2007, section 2) should be limited to those containing a left dislocated free relative (as free relatives are also known not to be able to stack—Carlson 1977).¹⁵ It should not extend to those correlatives that contain a left dislocated externally headed (pre- or post-nominal) relative clause, or an internally headed one whose Head has not moved, all of which are known to be able to stack.

In the next Note I am actually suggesting that all main types of relative clauses can be left dislocated, and thus enter the correlative construction. To reserve the term ‘correlative’ just to left dislocated free relatives seems, from this point of view, arbitrarily limiting.

NOTE 2: (Simple) Correlatives as a non independent relative clause type.

It is often assumed, in both the typological and generative literature, that correlatives are an entirely separate type of relative clause, but if they are DPs (containing a relative clause) in TopP, resumed by a coindexed resumptive phrase in the matrix IP, then one should expect them to be just a particular manifestation of externally headed postnominal, externally headed prenominal, internally headed, double-headed, and “headless” (or “free”) relative clauses, not an independent, sixth, type.

This indeed seems to be the case as the ‘left dislocated’ DP can contain, depending on the language, any of the other types of relatives. We have already seen that it can contain an externally headed postnominal relative clause (see (5)), or a “headless”/“free” relative clause (see (3) and the Bulgarian, German, and Italian examples in (11) through (13)). It can also contain an externally headed prenominal relative clause resumed by a coindexed phrase in the matrix IP, as shown by the Sinhala (Indo-Aryan) example in (14):¹⁶

- 1 (14) [ara [hitagena inna] gaenu lamaya], ee lamaya usa i
 2 that [standing being] woman child, that child tall is
 3 ‘That girl who is standing, that girl is tall.’
 4

5 Finally, the ‘left dislocated’ DP can also contain an Internally Headed rela-
 6 tive clause resumed by a coindexed phrase in the matrix IP, as in the Wappo
 7 example (15), or in the Bambara example (16), or a doubled-headed relative
 8 clause as in (8) and (9) above, or (17) of Chapter 17:¹⁷
 9

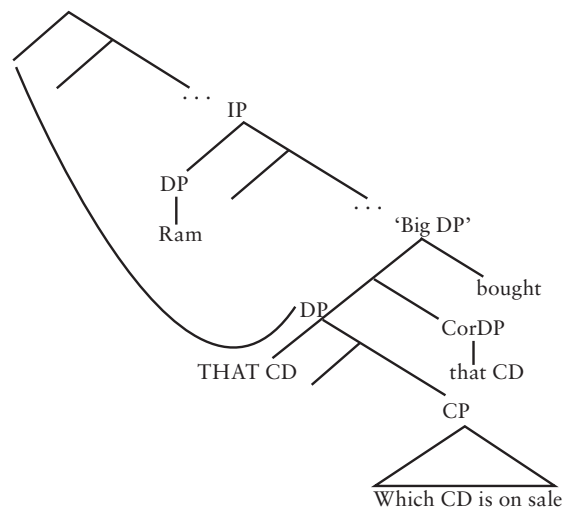
- 10 (15) [i čhuya t’um-ta] cephi šoy’i-khi?
 11 1SG house buy-PST:DEP 3SG:NOM burn-STAT
 12 lit. I house bought, that one burned down = ‘the house I bought
 13 burned down’ (Thompson, Park, and Li 2006,117)¹⁸
 14

- 15 (16) deni mi djolen file, o (deni) ka djan
 16 girl which is standing, that (girl) is tall
 17 ‘Which girl is standing, that (girl) is tall’ (Dayal 1996,215fn.15)¹⁹
 18

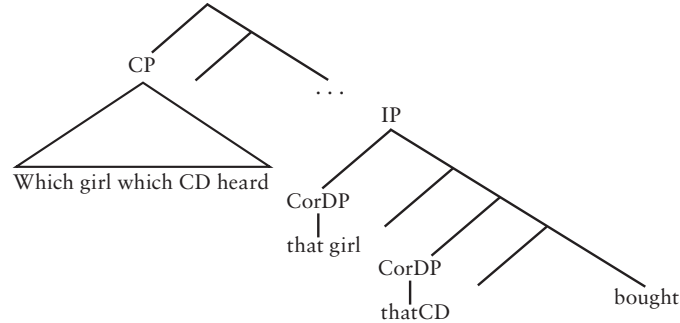
19 **NOTE 3: Multiple correlatives as non-relative, free adjunct, CPs.**

20 In addition to the possibility for simple, but not for multiple, correlatives
 21 to alternate with externally headed postnominal relatives, there is fur-
 22 ther evidence that one should distinguish between two separate construc-
 23 tions: one, a DP (containing a relative CP), adjoined to the resumptive
 24 correlative DP, which it can strand in its movement to the left-periphery
 25 of the matrix IP (as shown in (17)a); the other, a base-generated CP,
 26 containing one or more *wh*-phrases, paired in the matrix IP with corre-
 27 sponding correlative phrases, as in (17)b (cf. Izvorski 2000. I exemplify
 28 with English glosses only):
 29

- 30 (17) a. ‘Ram, which CD is on sale, that CD bought’
 31



b. ‘Which girl which CD heard, that girl that CD bought’



As shown most extensively in Bhatt (2003, 2005), this dual analysis receives support from the fact that in simple, but not in multiple, correlatives the relation between the relative clause and the correlative pronoun is sensitive to islands (Dayal 1996,183; Mahajan 2000, fn.10, and Bhatt 2005); and from the fact that in simple, but not in multiple, correlatives there is obligatory reconstruction of the fronted relative clause, as evidenced by pronominal binding facts and Principle C violations. For exemplification, see Bhatt (2003,section 3.3.3; 2005).²⁰

A further difference between multiple and simple correlatives is represented by the possibility of ‘deleting’ correlative pronouns when the relative phrases have overt Case. As noted in Bhatt (1997), who attributes the observation to Veneeta Dayal, this is possible in multiple correlatives ((18)) but not in simple correlatives ((19)) (also see Bhatt 2003, section 4):

- (18) [jis_i ne jo_j chahaa] (us ne vo_j) kiyaa
REL.obl ERG REL want.Pfv DEM.obl ERG DEM do.Pfv
‘Whoever whatever wanted, they did that’ (= (24) of Bhatt 1997,64)
- (19) [jis laRkii=ko Srini pasand hai] *(vo) khaRii hai
REL.obl girl=DAT S. like be.PRS DEM standing be.PRS
‘The girl who likes Srini is standing’ (= (9)b of Bhatt 1997,57)

That simple and multiple correlatives should not be treated as a homogeneous construction is also shown by the fact that not all languages having correlatives allow for multiple correlatives. This is the case of Bambara, as reported in Pollard and Sag (1994, 229, fn.10) and that of Basque, as reported in Rebuschi (1999, 59).

NOTE 4: Non-restrictive correlatives.

Dayal (1996), on the basis of the ungrammaticality of examples like (20) below, concludes that Hindi correlatives cannot be non-restrictive “since non-restrictives typically occur with proper names” (p.182).²¹

- 1 (20) *jo laRkii khaRii hai anu lambii hai
 2 which girl standing be-PR Anu tall is
 3 ‘Anu, who is standing, is tall’ (= ex. (43) of Dayal 1996,182)
 4

5 The question remains whether this is a property of Hindi or of correla-
 6 tives more generally. To judge from the fact that the closely related Indo-
 7 Aryan language Marathi can apparently form non-restrictive correlatives,
 8 one has to conclude that the impossibility of (20) in Hindi is not due to
 9 some inherent feature of the correlative construction, but is a property of
 10 the grammar of Hindi (to be understood). The possibility of non-restrictive
 11 correlatives in “rethorical speech and writing” in Marathi is noted in Gupte
 12 (1975,77), where such examples as (21)a-b are reported (also see Pandhari-
 13 pande 1997,82f):²²

- 14
 15 (21) a. jā-nni gāthā racali te tukārām mahārāj dehulā
 16 REL-INSTR Gatha composed that St.Tukaram Dehu-at
 17 janmale
 18 was born
 19 ‘St.Tukaram, who composed the Gatha, was born in Dehu’
 20
 21 b. gāndhī-nni jā-nnā guru mānale te gokhale mawāl hote
 22 Gandhi-INSTR REL-to teacher regarded that Gokhale moderate was
 23 ‘Gokhale, whom Gandhi regarded as (his) teacher, was a moderate’
 24

25 As a matter of fact, given the possibility of resuming a DP followed by a
 26 non-restrictive relative clause with a correlative phrase, as in (22) from Ban-
 27 gla, it should in principle be possible, if the language permits it, to ‘delete’
 28 the external Head like is possible with the external Head of restrictives (cf.
 29 (3) and (5) above):

- 30
 31 (22) bhoddrolok, Jini amar āttio, tini bōse achen
 32 Gentleman, who my relative, he sitting is
 33 ‘The gentleman, who is my relative, is sitting’ (Morshed 1986,38)
 34

35 Thus the possibility of non-restrictive correlatives may simply reduce to
 36 whether the language allows deletion of the external Head of non-restrict-
 37 tives (Marathi) or not (Hindi).

38 Interestingly, non-restrictive correlatives are also attested in other lan-
 39 guage families. See (23) from Jalonke (of the Central Mande branch of
 40 Niger-Congo), and the relative discussion in Lüpke (2005,131f):

- 41
 42 (23) N naaxan a fala-m’ i be jee, n saa-xi saar-ee ma
 43 1SG REL 3SG speak-IPFV 2SG FOR PART, 1SG lie-PF bed-DEF at
 44 (lit.) which I is speaking to you now, I lie in bed
 45 I, who am talking to you now, I am lying on the bed.’
 46

NOTE 5: Correlatives as a non exclusive relativization strategy.

To judge from the substantive lists of languages with correlatives given in de Vries (2002,388 and 412), Bhatt (2003,491), and Lipták (2009a,10f) it seems that there may be no single language for which correlatives are the only relativization strategy available. Correlatives invariably appear to co-occur either with embedded postnominal or extraposed relatives (most Indo-Aryan languages, Slavic languages, Warlpiri, etc.), or with prenominal non finite relatives (Dravidian languages, Sinhala, etc.), or with internally Headed relatives (Bambara, Wappo, etc.). From what I have been able to see in the literature on relative clauses, no language is described as having correlatives as its only type of relative clause.²³

This fact (assuming it to be a fact) should actually not be surprising if one thinks that simple correlatives (setting multiple correlatives aside, which are no relative clauses) are just left dislocated DPs containing a relative clause of one or another of the existing types (externally Headed postnominal, externally Headed prenominal, internally Headed, and Headless or free) resumed by a phrase in the main clause.

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16 On a Selective “Violation” of the Complex NP Constraint*

1 Violations of the Complex NP Constraint (CNPC, Ross 1967) are occa-
2 sionally reported in the literature. Although one perhaps would not expect
3 (the principles underlying) the constraint to be subject to cross-linguistic
4 variation, some authors have actually suggested that the CNPC may hold
5 in some languages but not others (see Allwood 1976, 1982; Maxwell 1979;
6 Hawkins 2007, §7.4.1, among others).

7 Setting aside arguably spurious cases (e.g., the CNPC violations originally
8 noted in Kuno 1973, 239f for Japanese (and similarly Korean), which Han
9 and Kim 2004 show to be only apparent, or the Akan cases discussed in Saah
10 and Goodluck 1995, which involve covert resumptive pronouns), in some lan-
11 guages there appear to be some genuine violations; for example, the extrac-
12 tions from complex NPs (CNPs) in Scandinavian documented in work of the
13 1970s and early 1980s (see Erteschik-Shir 1973, chapter 2, 1982, for Danish;
14 Andersson 1974, 1982, Engdahl 1980, 1982, Allwood 1976, 1982, for Swed-
15 ish; Engdahl 1980, Taraldsen 1978, note 6; Taraldsen 1981, 1982 for Norwe-
16 gian; and Engdahl 1997 for a more recent general discussion):¹

17
18 (1) a. Danish

19 Suppe kender jeg mange der kan lide
20 soup know I many who like
21 ‘Soup, I know many people who like’ (Erteschik-Shir 1973, 67)

22 b. Swedish

23 Johan känner jag ingen som tycker om
24 Johan know I no one that likes
25 ‘I do not know anyone who likes Johan’ (Engdahl 1980, 95)

26 c. Norwegian

27 Her er en bok som jeg ikke har møtt noen som har lest
28 here is a book that I not have met anybody that has read
29
30 (Taraldsen 1982, 205)

31
32 Such violations are apparently possible under rather stringent conditions:
33 the head of the relative clause must be indefinite and nonspecific; the verb
34 of which the head is an argument must be an existential verb, or a verb like

‘know’, ‘see’, ‘meet’, ‘look for’, ‘have’, etc.; and the position relativized in the relative clause from which a constituent is extracted must be the subject (cf. Erteschik 1973, chapter 2; Taraldsen 1978, note 6; Engdahl 1980, 95; 1997, *passim*; Kluender 1992, 243ff).²

While it is generally assumed in the literature that such violations are present in Scandinavian and absent from Romance and English (Engdahl 1997, §7), in the present chapter evidence is presented that they are also found, under comparable conditions, in these languages, thus raising the question whether the CNPC can really be the locus of independent parametric variation.³

Consider the following grammatical Italian sentences, similar to the Scandinavian examples in (1):⁴

- (2) a. Giorgio, al quale non conosco nessuno che sarebbe disposto ad affidare i propri risparmi, . . .
 ‘Giorgio, whom I don’t know anybody that would be ready to entrust with their savings, . . .’
 b. Ida, di cui non c’è nessuno che sia mai stato innamorato, . . .
 ‘Ida, whom there is nobody that was ever in love with, . . .’
 c. Gianni, al quale non c’è nessuno che sia in grado di resistere, . . .
 ‘Gianni, whom there is nobody that is able to resist, . . .’

These are bona fide cases of extractions as they involve PPs rather than DPs (which could also be base generated A-bar bound pro’s; cf. Cinque 1990, chapter 3). Their acceptability cannot simply be attributed to the possible extraposition of the relative CP, to the effect that extraction would then only cross a single bounding node (CP). Relative clauses relativizing an oblique argument can also be extraposed ((3)); yet, they resist extraction ((4)):

- (3) a. Niénte ha fatto finora di cui potersi vantare con i suoi superiori
 ‘Nothing he did so far about which to boast with his bosses.’
 b. Non conosco nessuno in questa città con cui potrei parlare di questi argomenti
 ‘I know nobody in this town with whom I could talk about these topics.’
 (4) a. *I suoi superiori, con i quali_k non ha fatto niente finora
 ‘His bosses, with whom he did nothing so far [di cui potersi vantare *t_k*], . . .
 about which to boast, . . .’
 b. *Sono argomenti di cui_k non conosco nessuno in questa città
 ‘These are topics about which I know nobody in this town [con cui potrei parlare *t_k*] with whom I could talk.’

1 Examples similar to (2) are also apparently possible in French ((5)) and in
 2 Spanish ((6)):⁵

- 3
 4 (5) a. Jean, à qui il n'y a personne qui puisse s'opposer, . . .
 5 'Jean, whom there is nobody that could oppose, . . .'
 6 b. ⁽²⁾C'est un endroit où il n'y a personne qui voudrait vivre.
 7 'It's a place where there is no one that would like to live.'
 8 c. ⁽²⁾Jean, à qui je ne connais personne qui soit prêt à
 9 'Jean, to whom I don't know anybody that would be ready
 10 confier ses secrets, . . .
 11 to confide their secrets, . . .'
 12
 13 (6) a. Ida, de quien no hay nadie que se haya enamorado alguna vez
 14 'Ida, whom there is nobody that was ever in love with, . . .'
 15 b. Juan, al que no hay nadie que sea capaz de soportar, . . .
 16 Juan, whom there is nobody that can stand, . . .'
 17 c. Ese es un sitio en el que no hay nadie que querría vivir.
 18 'This is a place where there is no one that would like to live.'

19
 20
 21 Although it is generally assumed that English disallows extractions from
 22 CNPs entirely, one finds that similar examples are acceptable (to varying
 23 degrees to at least some native speakers). See (7).⁶

- 24
 25 (7) a. Then you look at what happens in languages that you know and
 26 languages that you have a friend who knows
 27 (Charles Ferguson, lecture at the University of Chicago, May 1971;
 28 cited in Kuno 1976, 423)
 29 b. Isn't that the song that Paul and Stevie were the only ones who
 30 wanted to record (Chung and McCloskey 1983, 708)
 31 c. This is the kind of weather that there are many people who like
 32 (Erteschik-Shir 2007, 163)⁷
 33 d. This is the child who there is nobody who is willing to accept
 34 (cf. Kuno 1976, 423)
 35 e. This is a paper that we really need to find someone to intimidate
 36 with (Kluender 1992, 243)

37
 38 Comparable examples in German ((8), Josef Bayer, p.c.; Kvam 1983, 124
 39 note 34; Andersson and Kvam 1984, 46), and in Bulgarian ((9), Iliyana
 40 Krapova, p.c.) are on the other hand apparently ungrammatical.

- 41 (8) a. *Diese Schrift gibt es niemand, der gelesen hat.
 42 'This writing there is nobody who has read.'
 43 b. *Johann, dem es keinen Freund gibt, der helfen
 44 'Johann, whom (DAT) there is no friend who can
 45 kann, . . .
 46 help, . . .'

- c. *Dies habe ich nie jemand getroffen, der getan hat
 ‘This, I have never met anyone who has done’
- (9) a. *Ivan, na kojto njama nikoj, kojto/deto može da
 Ivan to whom there-isn’t nobody who/that can:3SG to
 mu kaže novinata.
 him:CL.DAT tell:3SG news-the
- b. *Ivan, na kojto njama nito edin prijatel, kojto/deto iska da
 Ivan to whom there-isn’t not one friend who/that wants to
 mu pomaga.
 him:CL.DAT help
- The languages that appear not to allow for the selective extraction from CNPs discussed here seem to involve relative clauses introduced by “ordinary” relative pronouns (*der*, etc. and *welcher*, etc., in German), or by either “ordinary” relative pronouns or an exclusively relative “complementizer” (*kojto*, etc., and *deto*, respectively, in Bulgarian).⁸ The languages that instead appear to allow for the selective extraction in question utilize a relative clause introducer which is also used in constructions other than “ordinary” relative clauses (*som/sem* in Scandinavian; *chelque* in Italian, French and Spanish).⁹ Putting this together with the fact that in English such extractions appear to be possible (or at least more acceptable) if the relative clause is introduced by *that* (or \emptyset in infinitival and reduced relatives) rather than by “ordinary” relative pronouns like *who*, it becomes tempting to think that extraction is really not out of an “ordinary” relative clause.¹⁰
- Thinking of languages/dialects that allow “ordinary” relative pronouns to co-occur with *that* or *chelque*, in the order relative pronoun > *that/chelque* (e.g., Middle English, and various Romance dialects), the fact that extraction is more readily available with *that/chelque* than with “ordinary” relative pronouns can perhaps be understood in terms of movement through the higher Spec of Comp; the one which hosts “ordinary” relative pronouns, and which is presumably not filled when the “weak” relative pronouns *that/chelque* are used.¹¹ The additional fact that extraction is available only in the presence of indefinite nonspecific relative clause heads may possibly be understood in terms of the absence of a DP initial (silent) demonstrative/operator that would independently block the extraction (cf. Kayne 2008a, end of §10). As arguments, but not adjuncts, can be extracted from these CNPs (see the contrast between (2) and (10a) in Italian, and that between (7b) and (10b) in English), such CNPs seem to qualify as weak islands:
- (10) a. *E’ un modo in cui non conosco nessuno che si sia mai
 ‘It’s a manner in which I don’t know anybody who ever
 comportato.
 behaved’
- b. *Isn’t that the color which Paul and Stevie were the only ones who
 painted their yacht? (Postal 1998,170)

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1 For a different idea (according to which such extractions are out of a com-
2 plement small clause rather than out of a CNP), see Kush, Omaki and
3 Hornstein (2009), which is otherwise quite similar in spirit to the present
4 analysis in doubting, for example, that the CNPC could be parameterized
5 differently in different languages.
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- 1 d. [[**kho** khumolei-n-o] **mogo**]. . .
 2 [[**man** die.3SG.NF-TR-CONN] **person**]
 3 ‘The man who died. . .’
 4
 5 e. [[**ai** fali-khano] **ro**] nagu-n-ay-a
 6 [[**pig** carry-go.3PL.NF] **thing**] our-TR-pig-PRED
 7 ‘The pig they took away is ours’
 8

9 Before concluding that these are genuine instances of double-headed RCs,
 10 an alternative analysis must be excluded: that of a relative-correlative con-
 11 struction, in which an internally headed RC is not followed by an external
 12 Head, but is left dislocated and resumed in the main clause by an ‘ana-
 13 phoric’ full DP, which may give the impression of being an additional,
 14 external, Head. Were that the case, (1)a would have the representation in
 15 (2) (on correlative relatives, see Cinque 2009 and references cited there):

- 16 (2) [_{CP}[_{DP}[_{RC} doü adiyano-no]] [_{IP} doü deyalukhe]]
 17 ‘the sago that they gave, (that) sago is finished’
 18

19 This may in fact be a more plausible analysis for the apparently double-
 20 headed RCs of other languages.

21 For example, in both Mauwake (Papuan—Berghäll 2010), which appears
 22 to have only internally headed RCs¹, and Kobon (Papuan—Davies 1981),
 23 which has both internally headed and pre-nominal externally headed RCs,
 24 the analysis of some of their RCs as double-headed looks dubious given that
 25 both the “internal” and the “external” Head can be followed by a demon-
 26 strative. See (3)a-b. They rather seem to instantiate a relative-correlative
 27 clause where the left dislocated relative is an internally headed RC:
 28

- 29 (3) a. [**fofa** ikiw-e-mik *nain*], **fofa** *nain* yo me paayar-e-m
 30 [**day** go-PA-1/3p *that*] **day** *that*1 1s.UNM not know-PA-1s
 31 ‘The day that they went, I do not know the day/date’
 32 (Mauwake—Berghäll 2010,319)
 33
 34 b. [Ñi **pai** (*u*) pak-öp] **pai** (*u*) au-ab
 35 [**boy** **girl** (*that*) strike-perf.3s] **girl** (*that*) come-pres.3s
 36 ‘The girl whom the boy hit is coming’
 37 (Kobon—Davies 1981,30)
 38

39 For Kombai, however, there seems to be positive evidence that the
 40 rightmost of the two NPs is the external Head of the RC, modified by
 41 the RC containing an internal Head. The evidence comes from the
 42 distribution of the connective marker-*o*. This marker is characteris-
 43 tically found between modifiers of a Noun(P) and that Noun(P). The
 44 fact that it also found between the RC and the NP following it (being
 45 obligatory with RCs modifying *rumu* ‘person’ and optional with RCs
 46

modifying *ro* ‘thing’—de Vries 1993,79), suggests that the rightmost NP is indeed the external Head of the DP modified by the RC, and not an ‘anaphoric’ DP resuming a left dislocated DP containing the RC, as in correlative relatives.

The limited goal of this article is to document seemingly bona-fide double-headed RCs in other languages and language families, even when they do not constitute the prevalent RC strategy (as is apparently the case for Kombai²), but only an alternative strategy, available in selected contexts.³

Some implications of double-headed RCs for the general theory of RCs will be briefly discussed in the concluding section.

I will for convenience group the languages displaying overtly double-headed RCs in the following three classes.

The first is represented by a number of OV languages, belonging to the Papuan, the Niger-Congo, the Tibeto-Burman, the Northwest Caucasian, and the Altaic families, whose basic RC type is of the *internally headed* one or of the *externally headed pre-nominal* one, or both.

The second is represented by VO and OV languages with *externally headed post-nominal* RCs belonging to the Papuan, the Austronesian, the Chadic, the Pama-Nyungan, the Zapotecan, and the Indo-European, families.

The third is represented by various child languages.

I take up each case in turn.

1 DOUBLE-HEADED RCs IN OV LANGUAGES WITH INTERNALLY HEADED OR EXTERNALLY HEADED PRE-NOMINAL RCs

1.1.

In addition to the (non-Austronesian) Papuan OV language Kombai, another (non-Austronesian) Papuan OV language which appears to document doubled-headed RCs is Yagaría⁴:

- (4) a. [[hemeti yo gi-ta su ho-d-u-pa’] yo]-se’
 [[today house build-1.PL finish-PAST-1.PL-PIV]house]-BEN
 ‘. . for the house which we finished building today . . ’

(Renck 1975, 174)

- b. [[ha eli-d-a-ma’] ha-mo] akoupa hi-da
 [[mushroom take-PAST-3.PL-PIV] mushroom-CON] sort out-3.PL
 b-ei-ma-to’ . . .
 live-3.PL-PIV-RC . . .

‘. . while they were sorting out the mushrooms they had gotten . . .’

(Renck 1975,220)⁵

- 1 c. [[legepa **abade** bogo p-agavei-na h-ei-ma'] **abade-mo**]
 2 [[big **girl** one them-lead-3.SG go.up-3.SG-PIV] **girl-CON**]
 3 ou'ha-e-ga-pi . . .
 4 sleep-3.SG-NI-they
 5 ' . . . one big girl which [sic] had taken them up, fell asleep, and they..'
 6 (Renck 1975,221)⁶
 7
 8 d. [[hemeti dete **ge** hu-d-u-ma'] **ge**]
 9 [[today morning **word** say-PAST-1.SG-PIV] **word**]
 10 'the word I spoke this morning' (Renck 1975,173)
 11

12 Another is possibly **Usan**. Reesink (1983, 230) states that Usan has both
 13 pre-nominal ((5)a) and replacive [internally headed] ((5)b) RCs, the latter
 14 being more frequent (also see Reesink 1987, §6.2):
 15

- 16 (5) a. [[iyau got-er] bur eng] wâ-râm-umei (Reesink 1983, 231)
 17 [[dog bite-3s.FP]pig the] 3s-hit-1s.NP
 18 'I hit the pig that bit the dog.'
 19
 20 b. [[munon qemi bau-or] eng] ye me ge-au . . .
 21 man bow take-3s.FP the I not see-NOM
 22 'I did not see the man who took the bow' or 'I did not see the bow
 23 which the man took . . .'
 24 (Reesink 1983, 230)
 25

26 And says (1983,230; 1987,220) that a way to disambiguate (5)b (in favour
 27 of the second reading) would be either to front the object followed by a
 28 determiner ((6)a) or to retain the antecedent NP ((6)b), which he gives as a
 29 double-headed RC:
 30

- 31 (6) a. [[qemi eng munon bau-or] eng] ye me ge-au . . .
 32 bow the man take-3s.FP the I not see-NOM
 33 'I did not see the bow which the man took'
 34
 35 b. [[munon **qemi** bau-or] **qemi** eng] ye me ge-au . . .
 36 [[man **bow** take-3s.FP] **bow** the I not see-NOM
 37 'I did not see the bow which the man took'

38 While (6)b could be analysed as a correlative, rather than a double-headed,
 39 RC, especially given the parallel existence of sentences like (7), which are
 40 clearly correlative
 41

- 42 (7) [[munon qemi bau-or] eng], qemi/munon eng ye me ge-au...
 43 man bow take-3s.FP the bow/man the I not see-NOM
 44 'Given that a man took a bow, the bow/man I didn't see'
 45 (= (31) of Reesink 1987, 220)
 46

some suggestive evidence exists that the RC in (6)b should be analysed as double-headed. Reesink states that “if the antecedent is retained, then the identical noun within the RC should not be marked with the determiner *eng*. Nor should the object in [(6)a], *qemi* ‘bow’, be fronted” (1987,220). Furthermore, he says that the verb of the RC in (6)b is “without final intonation and [...] there is no major pause between the RC and the HN [Head Noun] as is found in [(7)].” (1987, 220).⁷

1.2.

A second OV language family with internally headed RCs as its basic type which documents at least some double-headed RCs is the Dogon family (Niger-Congo). Double-headed RCs are attested in **Jamsay** (Heath 2008,§14.1.1), in **Najamba Dogon** (Bondu-So) (Heath 2009,§14.2.10), and in the Tabi dialect of **Toro Tegu Dogon** (Heath 2010,§14.1.12).

In Jamsay, whose basic RC is internally headed, “it is also possible to expand this core relative clause structure [...] by adding a copy of the head N (not the full head NP), as a special kind of **external head**.” (Heath 2008,479), usually preceded by the Possessive marker *mà*.⁸ See (8)a-g, from Heath 2008,481f):

- (8) a. [[wàkàtì kì-ká: ñɔ'wⁿɔ [ñú lè] tɛwɛ
 [time.L Rdp-grasshopper damage [millet in] inflict
 bɛrɛ-gó-Ø] mà wàkàtì fú:] kò:-ró
 be.able-Impf.Neg-Ppl.Nonh] Poss time all] be.Nonh-Neg
 ‘There is no time when grasshoppers can not inflict damage on
 the millet.’
- b. [[dà: ɲà-nɔ̃: ùrò mà bɛrɛ kùn-ó-Ø] mà
 [[water.jug house Poss in be.in-Neg-Ppl.Nonh] Poss
 úró] kò:-ró
 house] be.Nonh-Neg
 ‘There is no house that a water jug is not in.’
- c. [[dàná-m [dàná yá: mèyⁿ↑], [ɛ̀jù-n'ɔwⁿɔ' é:-jè-bà dɛ̀y],
 [[hunt-Ppl.Pl [hunt go and], [field-meat see-RecPf-3Pls if],
 [[ɛ̀jù-n'ɔwⁿɔ' kùⁿ] yò:ró mèyⁿ↑] tá:'-`m] mà
 [[field-bush Def] stalk and] shoot.Impf-Ppl.Pl Poss
 dàná-`m] yɔ'≡k`ɔ
 hunt.Ppl.Pl] exist≡be.Nonh
 ‘There are some hunters who, having gone hunting, if they have
 seen the wild animals, having stalked those animals, shoot (them).’
- d. [[dògùrù sâl kò:-ró-Ø kùⁿ] mà
 [[time.L prayer be.Nonh-Neg-Ppl.Nonh Def] Poss
 dógúru kùⁿ] lè
 time Def] in
 ‘(back) in the time when there was no praying (=before Islam)’

- 1 e. [[ijè è ijé bèrɛ:-Ø] mà ijé]
 2 [[**position.L** 2PlS.L stand can.Impf-Ppl.Nonh] Poss **position**]
 3 ‘the position (or: situation) where you-Pl stand’
 4
 5 f. [[ni-ŋirⁿè wó bè nárⁿ-Ø] ní-ŋirⁿé]
 6 [[**day** 3SgO 3PlS bear.Perf] **day**]
 7 ‘they day on which they have borne him (=on which he was born).’
 8
 9 g. [[ni-ŋirⁿè èné áyà mà úrò wò dô:-Ø kù] mà
 10 [[**day** ReflP husband Poss house.Loc 3sgS reach-Perf Def] Poss
 11 **ní-ŋirⁿé]**
 12 **day**]
 13 ‘The day on which she (=new bride) has arrived at her husband’s house’

14 Though rarer than in Jamsay, double-headed RCs are also attested in
 15 Najamba Dogon (see (9), from Heath 2009,315) and in the Tabi dialect
 16 of Toru Tegu Dogon, where they are mainly limited to “semantically light
 17 spatiotemporal nouns” (Heath 2010,282); cf. (10)a-c:

- 19 (9) [[kòŋgò ó dùmá-ŋgà kà] kòŋgò] òndú-Ø kóy
 20 [[**thing** 2SgS get-Fut.Ppl Top] **thing**] not.be-3SgS Emph
 21 ‘There is definitely nothing that you get.’
 22
 23 (10) a. [[này ànànsá:rà níngèy bé zóŋ’rò ŋ] này]
 24 [[**day.L** European beside 3PlS fight.Impf Rel] **day.L**]
 25 ‘at the time when they were fighting against the whites, . . .’
 26
 27 b. háli [[này ànànsá:rà ta á ùní’yⁿàrⁿà ŋ] này]
 28 until [[**day.L** European Tabi Impf go.up-Fut Rel] **day.L**]
 29 ‘until the day when the white was about to go up Tabi Mountain’
 30
 31 c. yá bé pás’s’e [[dèn] kà: dè kóy’kò
 32 there 3PlO leave-Perf2-3PlS [[**place.L** Rel DatKK Impf
 33 yrà a gà’r’è ŋ] dèn] dè
 34 say. Impf.3PlS Rel] **place.L**] Dat
 35 ‘They left them there, for (= at) the place (= village) that they call
 36 Koykoyra.’
 37
 38
 39

1.3

40 A third OV language family which documents at least some double-headed
 41 RCs in at least some of its languages is the Tibeto-Burman family. They
 42 are reported to exist (alongside externally headed pre-nominal, internally
 43 headed, and headless RCs) in **Ronghong Qiang**⁹ ((11)), and are apparently
 44 also attested in **Sherpa**, in **Tibetan** (see (12)a and b), and in **Byangsi** (cf.
 45 Sharma 2001, 287):
 46

1.5

Japanese (Altaic), which has both externally headed pre-nominal and internally headed RCs also seems to allow for certain types of double-headed RCs. See (14)a, from Kuno (1973, 237), and (14)b-c, from Inada (2009, 94f):¹⁰

- (14) a. [[watakusi ga **sono ito** no namae o
 [[I NOM **that person's** name ACC have
 wasurete-simatta] **okyaku-san**]
 forgotten] **guest**]
 'a guest whose name I have forgotten'
- b. [[[Taro-ga **aru gaku-o** kaseideruku] **sono**
 [[[Taro-NOM **a certain amount-ACC** earns] **that**
gaku]-no hanbun-o]
amount]-GEN half-ACC]
 'half of the amount (of money) that Taro earns'
- c. [[[Taro-ga **100man-yen(-o)** kaseidekuru] **sono**
 [[[Taro-NOM **million yen(-ACC)** earns] **that**
gaku]-no hanbun-o]
amount]-GEN half-ACC]
 'half of the million yen that Taro earns'

2 DOUBLE-HEADED RCs IN VO AND OV LANGUAGES WITH EXTERNALLY HEADED POST-NOMINAL RCs

Four Papuan (non-Austronesian) languages with externally headed post-nominal RCs which appear to have some cases of double-headed RCs are **Abun** (see (15)), **Angaataha** ((16)), **Bine** ((17)), and **Moskona** ((18)):

- (15) **Abun**
 An ndo-bot [su-git dik yo [to men ye bok ne git
 3sg ask-about [food one det.I [Rel 1pl people several anaph eat
 su-git ne]]
 food det]]
 'He asked about some (kind of) food, which all of us would eat'
 (SVO—Berry and Berry 1999,162)¹¹
- (16) **Angaataha**
 [nsih-urâ [asiha-t-i-s-ur-ûrâ]]
 [first-time [dark-be-do-IND-REL-time]]
 'in the early time when it was (morally) dark'
 (SOV—Huisman 1981b,5)¹²

- (17) **Bine** 1
 [Puga pui **cewe** tabe [lui **cewe** cabu a-tyaramt-Ø-i-ge]] 2
 [there that village [REL 3sg.s **village** at INTR-arrive-P2-i-3sg.s]] 3
 pui cewe cabu iyeta miji gwidape aletnena 4
 that village at all good things buying 5
 ‘That village at which he arrived, at that village there were all the 6
 good things to buy.’ (SOV—Fleischmann 1981,5)¹³ 7
 8
- (18) **Moskona** 9
 a. Esha ofa ebrekirk(a) em-eg [**mar** [noga ofon ekok odu 10
 from s/he stubborn IRR-hear [**thing** [REL 3SGPOS father tell 11
mar]] éra. 12
thing] NEG 13
 ‘The reason is [that] he is stubborn not hearing (obeying) what his 14
 father tells (him).’ (SVO—Gravelle-Karn 2010,§10.1.7)¹⁴ 15
- b. Ergog y-éysaha jig [**mod** [noga ejena Okuskuimi 16
 they.DU DU-reach LOC [**house** [REL woman Okuskuimi 17
 ofon **mod**]]. 18
 3SGPOS **house**]] 19
 ‘They (two) reached the house which the woman Okuskuimi 20
 owned.’ 21
 22
- Double headed RCs are apparently possible also in the Austronesian lan- 23
 guage **Kilivila** (cf. (19)a), in the Chadic language **Mina** (cf. (19)b), in the 24
 Pama-Nyungan language **Yidj** (cf. (20)) and in a number of Zapotecan 25
 (Oto-Manguan) languages¹⁵ (Cf. (21)a-b from **Yatzachi el Bajo Zapotec**); 26
 all of these languages have *externally-headed postnominal* RCs: 27
 28
- (19) a. a-meya kwinini pela [**tau** [m-to-na e-kato’ula]] 29
 I-bring pills for [**man** [this-man-this he-be ill]] 30
 ‘I bring some pills for the man who is ill’ 31
 (Kilivila—Senft 1986, 121)¹⁶ 32
- b. [**skən** [nàm dzán skən syì]] há diyà gáy kà 33
 [**thing** [1DU find **thing** COM]] 2sg put spoil POS 34
 ‘The thing we found, you are ruining it’ 35
 (Mina—Frajzyngier and Johnston 2005,433)¹⁷ 36
 37
- (20) a. ηaŋɖi binaŋaɭnu [**duŋur** [**duŋur** wuna-ɲunda]] 38
 we.SA hear.PAST [**noise.ABS** [**noise.ABS** lie-COMP]] 39
 ‘We heard a noise, which was lying [over the whole country]’ 40
 (Dixon 1977, 328)¹⁸ 41
 42
- b. ηayu [**bana**] bandi:liɲu [**bugun** bayil-ɲunda] 43
 I.SA **water.ABS** find.GOING.PAST [**spring.ABS** come out-COMP] 44
 ‘I went and found a spring coming out [of the ground]’ 45
 (Dixon 1977, 327) 46

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- 1 c. ṅayu wawa:l [bana gada-punda [gundu: yḍu
 2 I.SA see.PAST [water come-DAT SUBORD [brown snake-ERG
 3 bana mundal-punda]]
 4 water pull-COMP]]
 5 ‘I saw the water coming [into the creek], being drawn up by the
 6 brown snake’ (Dixon 1977, 325)
 7
 8 (21) a. to bidao? [bi?i b-sel E no?oll-en?]
 9 a child [child COM PL-send woman-the]
 10 ‘a child that the woman sent’
 11
 12 b. gwagwE [de?e j-yazXe]
 13 firewood [thing CONT-needed]
 14 ‘the firewood that is needed’

15
 16 Double headed RCs appear to be possible, under certain conditions, also in
 17 a number of Indo-European VO and OV languages with *externally headed*
 18 *post-nominal* RCs that have *wh*-pronouns moved to the front of the rela-
 19 tive clause.

20 In Cinque (1978,88f), examples like (22) for Italian were noted where
 21 the external head is matched by an identical phrase (preceded by the rela-
 22 tive adjective *art+qual-*) within the RC:¹⁹

- 23
 24 (22) Non hanno ancora trovato una **sostanza** [dalla quale **sostanza**
 25 ricavare un rimedio contro l’epilessia]
 26 ‘They have not found a substance from which substance to obtain a
 27 remedy against epilepsy’

28
 29 Keenan (1985,153) reports a comparable example from **Latin** (modulo the
 30 extraposition of the relative clause, stranding the external Head):²⁰

- 31 (23) **Loci** natura erat haec **quem locum** nostri delegerant
 32 Of the ground nature was this which ground our (men) chose
 33 ‘The nature of the ground which our men chose was this’
 34

35
 36 The same appears to be true in emphatic contexts in (some) Indo-Aryan
 37 languages, where a left dislocated externally headed post-nominal RC enter-
 38 ing the correlative construction can be double-headed, with the internal
 39 Head moved to the front of the relative clause. See the examples in (24), and
 40 Cinque (2009b, Chapter 15, here, Note 1) for their sources.

- 41 (24) a. [vo laRkii, [jo laRkii khaRii hai]], vo laRkii lambii
 42 [that girl [which girl standing be-PR]], that girl
 43 hai (Hindi)
 44 tall be-PR
 45 ‘the girl who is standing, that girl is tall’
 46

- b. [ba moRii [jo moRii ThaRii hɛ]], ba moRii lambii hɛ
 [that girl [which girl standing is]], that girl tall is
 ‘The girl who is standing is tall’ (Bundeli)
- c. [(o) panc-sab [jaahⁱ panc-sab-kEⁿ ham niik jakaanⁿjanait
 (the) Panch which Panch-PL-OBJ I good way know.PART
 chalianhⁱ]_{s,NP} o panc-sab..
 BE.PAST.AGR, the (same) Panch..
 ‘The Panch whom I knew very well, the same Panch...’ (Maithili)
- d. [Ti mulgi [ji mulgi ghari geli]] ti ithe rāhte
 [that girl [which girl home went]] that here lives
 ‘The girl who went home lives here’ (Marathi)

3 DOUBLE-HEADED RCs IN CHILD LANGUAGES

Full repetition of the external Head inside the RC is also reported to be cross-linguistically attested as one of the strategies employed by children in their early production of relative clauses (Armon-Lotem, Botwinik, and Birka 2005,1). See the examples from child Italian ((25)), child French ((26)), child Spanish ((27)), child Catalan (28), child English ((29)), child Jakarta Indonesian ((30)), child Hebrew ((31)), child Palestinian Arabic ((32)), child Chinese ((33)), child Turkish ((34)), and that of Hebrew speaking children with SLI ((35)) and Greek children with Down Syndrome ((36)):²¹

(25) Child Italian

- a. [la bambina [che il nonno bacia la bambina]] (G.,I)
 [the child [that the granddad kisses the child]]
 ‘the child that the granddad kisses..’ (Utzeri 2007, 293, 305)
- b. [la bambina [che la mamma asciuga la bambina]] (G.,I)
 [the child [that the mother dries up the child]]
 ‘The child that the mother dries up . .’

(26) Child French

- a. Sur [la balle [qu’i(l) lance la balle]]
 on [the ball [that he throws the ball]]
 ‘On the ball that he throws..’ (M 5;00) (Labelle 1990, 100)
 (Labelle 1990; also see Labelle 1996,73 and fn.6)
- b. Sur [la boîte [que la petite fille est debout sur la boîte]]
 on [the box [that the little girl is standing on the box]]
 ‘On the box on which the little girl is standing . .’
 (K 4;04) (Labelle 1990, 100)

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- c. L'ourse pousse [**la souris** [que la vache lave **la souris**]]
the bear pushes [**the mouse** [that the cow washes **the mouse**]]
'The bear pushes the mouse that the cow washes'
(child 5–7) (Pérez-Leroux 1995, 114)
- d. **la fille** que la maman couche **la fille**
the girl that the mom puts to bed the girl
'The girl that the mother puts to bed' (5;6) (Fragman 1977, 177)
- e. Celle_i que la maman a (=elle) rêve à **une maison_i**
The one that the mother she is dreaming of a house
'The house that the mother is dreaming of'
(V 3;11) (Labelle 1990, 100)
- (27) **Child Spanish**
el gato empuja a [**el perro** [que el conejo lava **al perro**]]
the cat pushes [**the dog** [that the rabbit washes **the dog**]]
'the cat pushes the dog that the rabbit washes' (child 5–6)
(Pérez-Leroux 1995, 114 citing Ferreiro et al. 1976)
- (28) **Child Catalan**
M'agradaria ser [**el nen** [que el veí pentina **el nen**]]
CL would-like to-be the boy that the neighbour combs the boy
'I would like to be the child that the neighbour combs.'
(Gavarró, Cunill, Muntané and Reguant 2010, §3.2)
- (29) **Child English**
a. The song about [**the airplane** [that we're riding in **an airplane**...]] (3;9)
b. There's [**a train worker** [that we saw **a switchman**]] (3;10)
c. [The **one** [that the mailman is holding **the baby**]] (Kara 4;11)
d. [The **one** [that the cowboy is pulling **the horse**]] (Callie 3;5)
(Pérez-Leroux 1995, 121f, citing Finer 1992)²²
- (30) **Child Jakarta Indonesian**
[orang [yang kucingnya lompatin **orang**]]
[**person** [COMP cat-3 jump-IN **person**]]
'the person that the cat is jumping over' (Tjung 2006, 180)
- (31) **Child Hebrew**
[**ha-ec** [she-ha-gamad tipes **al ha-ec**]]
[**the-tree** [that-the-dwarf climbed on **the-tree**]]
'the tree on which the dwarf climbed.'
(Armon-Lotem, Botwinik and Birka 2005, 1)

- (32) **Child Palestinian Arabic** 1
 [[iz-zalami [illi l-walad khaf min (iz-)zalami]] 2
 [the-man [that the-boy feared from (the-)man]] 3
 ‘the man who the boy feared..’ 4
 (Armon-Lotem, Botwinik and Birka 2005, 1) 5
 6
- (33) **Child Chinese** 7
 [[xiao-nühai zai kan dianshi de] na-ge dianshi] 8
 little-girl DUR watch TV DE that-CL TV 9
 ‘the TV which the little girl is watching’ 10
 (Hsu 2006, 286; Hsu, Hermon and Zukowski 2009, 343)²³ 11
 12
- (34) **Child Turkish** 13
 [[İneğ-in koyun-u it-tiğ-i] koyun] 14
 cow-GEN sheep-ACC push-DIK-3SG.POSS sheep 15
 ‘The sheep that the cow pushed’ 16
 (Özge, Marinis and Zeyrek 2010, §4) 17
 18
- (35) **Hebrew speaking children with SLI** 19
 a. ze [ha-yeled [she-ha-yeled roxec et ha-aba]] 20
 this the-child that-the-child washes ACC the dad 21
 ‘This is the child that washes the dad’ 22
 (Novogrodsky and Friedmann 2006, 369 and 370f)²⁴ 23
 24
 b. [ha-yeled [she-ha-saba menashek yeled exad]] 25
 [the-child [that-the-granddad kisses child one]] 26
 ‘the child that granddad kisses’ 27
 28
- (36) **Greek children with Down Syndrome** (Stathopoulou 2007, 117) 29
 [o pithikos [pu sprohni i alepu ton pithiko]] 30
 the-monkey-nom that push-3sg the fox-nom the monkey-acc 31
 ‘The monkey that the fox is pushing’ 32
 33
 34
- To conclude this section with Utzeri’s (2007) words, “the fact that ORCs 35
 [object relative clauses] with resumptive DPs are not admitted in the 36
 adult systems of the languages we analysed, on the one hand, and the 37
 fact that ORCs with resumptive DPs are found in the early grammar 38
 of different languages, on the other, strongly suggest that the use of 39
 resumptive DPs as a relativization strategy is a genuine grammatical 40
 option exploited in early grammars.” (p.306). As often noted, children 41
 do not employ options which are not found in some adult grammar, 42
 which may be different, as in these cases, from the one to which they 43
 are exposed. 44
 45
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4 SOME IMPLICATIONS FOR THE ANALYSIS OF RCs

The existence of structures in which the external Head is “doubled” by an internal Head seem to provide direct evidence that at least some RCs in some languages are double-headed, and that we should possibly generalize this structure to all languages and all RCs (whether they involve a “matching” or a “raising” derivation), as suggested in Cinque (2003/8, 2008b, in preparation).

While the copy theory of movement (Chomsky 1993) might offer a technical means to capture this fact even in an exclusively “raising” analysis (by the simultaneous spell out of the copies in the Merge and in the derived positions), it seems that this possibility should not be allowed too freely as no comparable spelling out is found in other clear movement cases (e.g. *wh*-movement in interrogatives, free relatives and focus movement—see below). This weakens the possibility, it seems, of adopting such solution just for relatives. While I do not have relevant data for most of the languages discussed above concerning the possible existence of copies in their other movement constructions, some suggestive evidence from Italian and child languages can be offered that makes a copy theory approach dubious. So, for example, whereas it is possible in literary styles of Italian to repeat the Head inside some RCs (see (22) above), no comparable repetition is permitted in *wh*-interrogatives, free relatives, and focus constructions.²⁵ See the sharp ungrammaticality of (37)a-c:

- (37) a. ***Quale sostanza** (dicono che) hanno ricavato
 which substance (they say that) they.can obtain
quale sostanza?
 which substance?
 ‘Which substance (do they say that) they have obtained?’
- b. ***Qualunque sostanza** (si dice che) possono ricavare
 whatever substance (they say that) they.have obtained
qualunque sostanza sarà pericolosa
 whatever substance will be dangerous
- c. ***Quésta sostanza** (non quélla) (dicono che) hanno ricavato
 this substance (not that one) (they say that) they.have obtained
questa sostanza
 this substance

A particularly noticeable feature of the double-headed RCs of many of the languages reviewed here is the fact that the two heads are often very general terms (functional nouns) referring to ‘thing’, ‘person’, ‘place’, ‘time’ (this is especially the case of the Dogon varieties discussed above, of Angaataha, Moskona, Mina, and Japanese), or the fact that the external Head represents a more general class of which the internal Head is a specific member

(again ‘thing’ for non human entities, and ‘person’ for human entities). This is the case in Kombai. The opposite is apparently true of the Zapotecan languages mentioned in fn.15 and of the Japanese case (14)a above, where it is the internal Head which is the more general term (‘person’) (but see (14)c). While (14)a might well be analysed as a case of resumption of the external Head by an epithet within the RC, a possible, more general, conclusion suggested by these facts is that a DP is always associated with a functional N classifying it ([_{FP} [_{DP} guest] person], [_{FP} [_{DP} table] thing], etc., much as we see with proper nouns and common nouns ([_{FP} [_{DP} New York] city], [_{FP} [_{DP} Mississippi] river], etc.).²⁶ The variation we observed would then be due to the conditions on the pronunciation of the different pieces of the internal and external Heads. Usually functional nouns are the first pieces which fail to be pronounced: instead of *New York city* one can simply have *New York*; instead of *The Mississippi river* one can have *The Mississippi* (presumably with a silent CITY and RIVER, respectively).²⁷

In most languages functional nouns are unpronounced in both the external and the internal Head positions (as is generally the case also for the associated nonfunctional noun in the internal Head position, or in the external one in “raising relatives”). But, as observed above, certain languages may retain the functional noun in the position of the external Head, while non pronouncing the associated nonfunctional noun.

The necessary presence of functional nouns like ‘thing’, ‘person’, ‘place’, ‘time’, generally unpronounced, generalizes to other functional nouns like ‘amount’, ‘number’, and ‘kind’, which seem semantically implicated in certain RCs. For example, the three-way ambiguity of (38) would then be made to depend on which of the three (unpronounced) functional nouns THING, NUMBER and KIND is associated with the common noun *libri* ‘books’:

- (38) Se fosse rimasto preside non avrebbe potuto pubblicare
 ‘If he had remained a Dean he could not have published
 i libri che ha pubblicato
 the books that he published’
 (= 1) the specific things/books that he published,
 (= 2) the number of books that he published,
 (= 3) the kind of books that he published.



Notes

NOTES TO THE INTRODUCTION

1. The appropriate level of abstraction may require decomposing a category into finer subcategories, or components, which possibly interact with other (sub) categories to yield the particular instantiations found in particular languages. Abandoning categories, and replacing them with semantic concepts does not seem the right way to go. To take one example, the semantic concept of negation depending on the particular category it takes in a certain language (particle, adverb, auxiliary verb, etc.) has a completely different syntactic and typological behavior (Dahl 1979 and Dryer 1992a, §3.4 and 4.2).
2. By movement I intend the displacement of constituents under specific syntactic conditions as in (i)b in relation to (i)a, and by deletion I intend the non-pronunciation of constituents under “identity” (or rather “non-distinctness”), as in (ii):
 - (i) a. You have seen *one of his children*
b. *Which one of his children* have you seen?
 - (ii) John is leaving but I am not ~~leaving~~
3. For a possible fourth type, with its own distinctive properties, see Benincà (2012), and Benincà and Cinque (2012), where it is referred to as “kind-defining.”
4. If Kayne (2008b) and Sportiche (2011) are right in claiming that relative clause invariant introducers (like English *that* and French *que*, which can also introduce embedded complement clauses) are (weak) relative pronouns rather than complementizers (also see van der Auwera 1985), then Downing’s and Keenan’s generalization must be qualified. The reason is that there are languages with prenominal relative clauses that can be introduced by initial “complementizers”; for example, Tigre (Palmer 1961, 27f), Galla (Oromo) (Mallinson and Blake 1981, 289) and Sílli Greek (Song 2001, 256) (see the examples (10)–(12) in Chapter 11 of this volume).
5. One of the diagnostics to distinguish nouns from classifiers is the ability of the former but not the latter to be modified by adjectives (Cheng and Sybesma 1999). Although Chinese apparently allows few adjectives to precede classifiers, Li (2008) shows that these do not modify directly the classifier.
6. For the original hierarchy, see Keenan and Comrie (1977, 1979), Comrie and Keenan (1979), as well as Keenan and Hawkins (1987). For evidence supporting Fox’s (1987) modification of the original formulation of the hierarchy along her Absolute Hypothesis, see Larsen and Norman (1979) on Mayan, Roberts (1994) on St’át’imcets, Liao (2000) on a number of ergative languages, Valenzuela (2002) on Shipibo-Konibo, and Hogbin and Song (2007) on Modern English.

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7. The original formulation of the Accessibility Hierarchy was: SU > DO > IO > OBL > GEN > OCOMP. The NP vs. non-NP generalization discussed in this chapter remains problematic also for subsequent reformulations of the hierarchy such as those in Fox (1987), Tallerman (1990), Comrie (1989, 156), and Comrie and Kuteva (2005, 494), where IO and OBL are conflated into one and the same category, explicitly said not to include temporals and possessors: SU > DO > OBL.
 8. For languages apparently conforming to the Accessibility Hierarchy and the constraints thereon, in addition to Keenan and Comrie's (1977, 1979), see Lawal (1987) and Vondrasek (1999).
 9. Cole (1976), Cole and Hermon (2005), Gerassimova and Sells (2008), and Falk (2010), on the basis of Indonesian, Tagalog and Hebrew data also conclude that the Accessibility Hierarchy is an epiphenomenon.

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NOTES TO CHAPTER 1

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- * I wish to thank the audiences of the workshop on "Theoretical Approaches to Disharmonic Word Orders" (Newcastle, May 30–June 1, 2009) and of the Département de linguistique of Paris VII (January 25, 2010), where versions of this chapter were presented. I also thank Theresa Biberauer, Richard Kayne, Luigi Rizzi, Michelle Sheehan and two anonymous reviewers for their comments to a previous draft.
1. Cf. Greenberg's (1963) *modifier > modified vs. modified > modifier tendency* (as well as his notion of *harmonic relations*) (p.100); Lehmann's (1973) *Fundamental Principle of Placement*; Vennemann's (1973) *Principle of natural serialization*; Sanders' (1975) *Invariant ordering hypothesis*; Antinucci's (1977, chapter 1) *Principle of left- vs. rightward linearization*; Keenan's (1978b, 188) *Serialization and Dissimilation Principles*; Hawkins' (1983) *Principle of Cross-Category Harmony*; Chomsky's (1964, 123, fn. 9; 1995, 35) and Dryer's (1992a) *left vs. right branching*; Dryer's (2007) and others' "*head-finality*" vs. "*head-initiality*".
 2. Greenberg's (1963) decision to resort to finer distinctions than VO vs. OV (such as VSO, SVO, rigid SOV and nonrigid SOV), and Hawkins' formulation of complex implicational statements (e.g., Postp ⊃ (NAdj ⊃ NGen), of the type of Greenberg's Universal 5) were attempts to achieve exceptionless universals by narrowing down the number of languages to be checked for conformity to some statement. These too, however, have turned out to have exceptions. See Dryer (2007, §9) for an exception to Greenberg's Universal 5, which was given as absolute, and Payne (1985), Campbell, Bubenik and Saxon (1988), Dryer (1997, 141) and LaPolla (2002, §2) for exceptions to Hawkins's (1983) absolute complex implicational universals. Despite their nonuniversality and their more restricted scope, such complex implicational universals may nonetheless provide important clues as to which harmonic properties are more stable, and which more prone to be relaxed.
 3. Also see the Konstanz Universals Archive, no. 55, Whitman (2008, 238), and references cited there. Postpositions are even attested in a number of VSO languages: Guajajara, Nomatsiguenga, and Yagua (Payne 1985, 465, Campbell, Bubenik and Saxon 1988, 212ff), Cora and Tepehuán (Pickett 1983, 549).
 4. To judge from Taylor (1952, 162) the order is V Aux O. Also see the Konstanz Universals Archive (<http://typo.uni-konstanz.de/archive/>), no. 501, where it is reported that "the only VO language in Dryer's sample from Australia-New Guinea area has V Aux order". Greenberg (1963, Appendix I and note 15) gives

- Guaraní as SVO and as having postverbal auxiliaries (although they may be particles, intervening between the V and the object—Tonhauser 2006, 273). 1
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5. (2) cannot be strengthened to a bidirectional correlation, by adding NRel 3
 \supset VO and $\text{OV} \supset \text{RelN}$, because OV languages distribute evenly between 4
 RelN and NRel (Dryer 2005a gives 111 languages as OV and RelN and 95 5
 languages as OV and NRel). Similarly, the implications in (i)a-b below 6
 concerning complement (and adverbial) clauses and subordinators cannot be 7
 strengthened to a bidirectional correlation by adding those in (ii)a-b as [IP 8
 C] V and V [C IP] are equally represented in OV languages (Dryer 1980; 9
 Hawkins 1990,225,256; Dryer 1992a, §§4.3 and 4.5,1992b; Diessel 2001; 10
 Kayne 2005a, 227):
 (i) a. $\text{VO} \supset \text{C IP}$ b. $\text{IP C} \supset \text{OV}$ 11
 (ii) a. $\text{C IP} \supset \text{VO}$ b. $\text{OV} \supset \text{IP C}$ 12
- Exceptions to (i) are mentioned below in note 31 and in section 7. 12
6. This perspective is closer to Vennemann's later (1976) interpretation of his 13
 Principle of Natural Serialization than to his earlier one (1973). For discussion 14
 of the evolution of Vennemann's thought, see Hawkins's (1983, §2.3 to §2.6). 15
7. “[. .] no language is tyrannically consistent. All grammars leak.” (Sapir 16
 1949², 40). 17
8. The word order types are indefinitely more numerous than the VO/OV 18
 types, depending on the number of properties and subproperties taken into 19
 consideration. For example, in Greenberg's (1963) larger sample of 142 lan- 20
 guages, the four word order properties chosen (VSO/SVO/SOV; Pr/Po; NG/ 21
 GN; NA/AN) yield as attested 11 VO types (with different proportions of 22
 languages). See his Appendix II. More VO types have in the meantime been 23
 documented (see, for example, Campbell, Bubenik and Saxon 1988), and 24
 undoubtedly many more types would have to be countenanced if the number 25
 of word order properties considered were to be augmented (Cf. Siewierska 26
 1988, 20 for discussion of this point). The SVO variant of VO differs in a 27
 number of respects from the V-initial variant of VO (i.e. VSO and VOS). But 28
 even the SVO type is not at all homogeneous. In addition to the different 29
 subtypes in Greenberg's (1963, 109) Appendix II, one finds extensive varia- 30
 tion in virtually every word order pair. For example, in the relatively minor 31
 word order pair of proper noun/common noun, Bulgarian, Chinese, English, 32
 Greek, Italian and Norwegian all differ in the way they linearize the various 33
 combinations of common nouns (“year”, “hour”, “month”, “title”, “street”, 34
 “island”, “mountain”, “river”, etc.) and proper nouns (with Bulgarian, Chi- 35
 nese, and Norwegian displaying more “head-final” orders than German). 36
 See Chapter 9 below. 37
- A comparable non homogeneity is found in the other orders: VSO 38
 (see Kaplan 1991, Lancioni 1995, Polinsky 1997, Tallerman 1998b,628, 39
 Broadwell 2005, Macaulay 2005, Otsuka 2005, Roberts 2005,157), VOS 40
 (see Polinsky 1997, Aldridge 2006, Holmer 2006,103, among others), and 41
 SOV (cf. Greenberg's 1963 five classes of SOV languages in his Appendix II). 42
 Given the different subtypes existing in each of these orders, and presumably 43
 in languages with OVS and OSV orders (see Campbell, Bubenik, and Saxon 44
 1988), to the limit one type for each language, unqualified reference to VO 45
 and OV is bound to lead to at most statistical tendencies, as noted. 46
- Such tendencies can be seen as intermediate levels of generalization 47
 between the abstract level of the “ideal” harmonic types and the level char- 48
 acterizing the typological properties of each single language. 49
9. To the effect that possibly no language will prove to be fully “harmonic”, 50
 or “consistent”. Cf. Sapir's comment in note 7, as well as Smith (1981, 40), 51
 Kroch (2001, 706), and Kayne (1994, xv; 2005a, 220). 52

10. It is not really important if samples larger than Hawkins's were to redress, or even subvert, some of the figures of table 1 (see for example the figures of these correlations in Dryer's 1988; 1992a, §3.1; 2005b). What matters here is the spirit of the approach suggested by Hawkins.
11. Even Japanese, one of the most "rigid" SOV languages, displays some non "head-final" characteristics. For example, one postnominal numeral classifier modification (see (i), and Tsunoda 1990, Choi 2005 for the same property in Korean), head-medial complex numbers (Bender 2002), and the arguably initial heads *wa* and *ga* (Kayne 1994, 143; Kayne 2005a, 220; Whitman 2001, §2):
- (i) Neko ni hiki wo kau
 cat two NUMCL ACC raise
 '(I) am raising two cats.' (Siegel and Bender 2004, §3.1.4)
- Japanese also has one *common noun* > *proper noun* order which is typical of "head-initial" languages (Cinque 2011): *number* > *name of number* instead of *name of number* > *number*: *bangoo roku* (number six) (example provided by Yoshio Endo, p.c.). Lehmann (1978b, 400) and Smith (1981, 40) mention additional non "head-final" characteristics of Japanese.
- A fairly rigid VOS language like Seediq (Formosan—Austronesian) also displays some non "head-initial" characteristics (among which a final subordinator: *ban* 'when/while'- Holmer 1996, 59f; see the example (42)b below).
12. This is one aspect of traditional word order typology which appears particularly wanting. Among the rare exceptions which consider more than just pairs of elements are, for the nominal phrase, Greenberg's (1963) Universals 18 and 20 on the order of demonstratives, numerals, adjectives and noun, Hetzron (1978), Plank (2006) and Lahiri and Plank (2009, §7.2) on the order of various classes of adjectives, and, for the clause, Boisson's (1981) discussion of the relative order of Manner, Location and Time adverbials. Needless to say, the elements to be taken into considerations for the clause and the other phrases are considerably more numerous.
13. See sections 1 and 2 of Rackowski and Travis (2000) on Malagasy (VOS) and Niuean (VSO), respectively: "there [.] seems to be a correlation between preverbal elements which appear in their hierarchical order and postverbal elements which are in the reverse order" (p.127).
- On what appears preverbally in "verb initial languages" see the first part of Greenberg's (1963) Universal 16: "In languages with dominant order VSO, an inflected auxiliary always precedes the main verb.", and Carnie and Guilfoyle's (2000b,10) claim that a trait of VSO languages is represented by "preverbal tense, mood/aspect, question, and negation particles". Also see the Konstanz Universals Archive, no. 501 and 1553, Dryer (1992a, §4.3 and §4.5) and Hendrick (2000). On the phrasal, rather than head, status of the verbal, adjectival, nominal, etc. predicate following the preverbal particles in a number of V-initial languages, see Massam (2000, §2), Lee (2000), Cole and Hermon (2008).
14. Malagasy (Austronesian, VOS, cf. Rackowski and Travis 2000, §1). Also see Koopman (2005a) on Maasai V adv S O.
15. On the order *article* > *N* in all VOS languages (except Toba Batak), in his sample, see Keenan's (1978a, G15, p.298) and Dryer (1989b). On the order *PL* > *N* in VO languages, see Dryer (1989a, 1992a, §4.7).
16. Yoruba postnominal modifiers are a mirror image of (English) prenominal ones: [N A_{color} A_{size} A_{value} Num Dem]. See Ajíbóyè (2005, 258).
17. A reviewer raised the question whether this is a departure from the position I took in Cinque (1999, chapter 6), where it was claimed that the order of functional projections is part of UG (narrow syntax) and cannot be simply reduced to semantics (understood as the conceptual-intentional interface).

- That the hierarchical arrangement of the functional heads of the extended projection of VP (the clause), of NP, AP, etc., is compatible with the relative scope of the elements involved was actually assumed in Cinque (1999) too, with one proviso. What should not be given up is the encoding of such heads and projections in narrow syntax, for the simple reason that many more things exist in our conceptual-intentional module than those that receive a grammatical expression in the languages of the world (in UG). As noted there (p.136), the rigid ordering of the functional projections of the clause can apparently be reversed only if one operates across two clauses. See Cinque (2006b, 6), Cinque and Rizzi (2010a, 65) and in particular Cinque (2012) for more detailed discussion.
18. Also see Barbiers (2000) and Kayne (2005a, 215). For quite rich ordered sequences of elements in the clause and in each of the other phrases. See, for example, Rizzi (1997), Benincà and Munaro (2010) on the sequencing of different types of complementizers, Cinque (1999, 2006b) on that of Mood, Modal, Tense, Aspect and Voice elements (heads and adverbial phrases) in the clause, and Scott (2002), Svenonius (2008), Cinque (2005b, 2010a) on the different functional (including adjectival) projections in the nominal phrase.
19. I mention here just one example from the distribution of attributive adjectives, for which, as noted, there is suggestive evidence that they enter a strict order (see in particular Scott 2002, 114; Cinque 2010a, Chapter 3). Again, to consider just a subset of these adjectives, the “head-final” order appears to be ‘other’ > quality > size > age > color > nationality > N, and the “head-initial” order its mirror image. Yet, many languages show mixed orders; for example, Welsh (in Willis’s 2006 description), shows the order N A_{size} A_{color} A_{nationality} A_{age} A_{quality} ‘other’, while Diuxi-Tilantongo Mixtec, to judge from Kuiper and Oram (1991, 277), shows the order N > color > size > shape, recalling the type of derivations discussed in Cinque (2005b).
20. For a possible motivation for such movements, see §5 below.
21. This kind of derivation allows the raising of verbal heads as phrases. This may be welcome for those languages (like Bulgarian) which can move an auxiliary over a higher one, in so called “Long Head Movement”, with no apparent violation of the Head Movement Constraint:
- (i) Bil_i sãm t_i kupil knigata
 been am bought the book
 ‘I have allegedly bought the book’
22. To judge from Schweikert (2005b) and Takamine (2010) circumstantial PPs are actually merged in specific points within the sequence of the adverbs (V(P) . . . DP_{manner} AdvP₃ . . . DP_{locative} AdvP₂ AdvP₁ DP_{temporal}).
23. In Cinque (2005b) I took the order Dem Num A N not to involve movement; but if the view taken here is correct that both the “head-initial” and the “head-final” orders are derived by movement from a common structure of Merge ([Dem [Num [A [N]]]]), then even Dem Num A N must involve raising of NP with pied-piping of the picture-of-*whom* type. This is in fact supported by the fact, noted in Svenonius (2008a, §2.5.1) for Norwegian, and in Myler (2009) for Quechua, that while the order of specifiers is Dem Num A N the N is followed by affixes (heads) marking plurality and definiteness. This would not be easily understandable if no movement were involved, given that these heads are interspersed among the Dem Num A specifiers, but it becomes understandable under the analysis adopted here, where the plural head and the determiner head are crossed over by the NP which pied-pipes all the specifiers in the picture-of-*whom* mode (Svenonius and Myler themselves develop very similar analyses).
24. Order preservation may ultimately be a consequence of Relativized Minimality. See the discussion in Krapova and Cinque (2008, §7) of the analogous

order preservation with multiple *wh*-phrases in Bulgarian, which develops certain suggestions of Chomsky's and Rizzi's.

25. The fact that Case morphology typically follows the DP (DP-K-P) rather than the P (DP-P-K) (Kayne 2005a, §9.4.4) can be made compatible with (26) if the DP is merged with Case morphology, which is then checked in Spec,K. The movement of DP from Spec,K to Spec,P is not in contrast with Kayne's (2005b, §5.6) ban on raising the complement of X to Spec,X. Here it is a subpart of the complement of X that raises.
26. In many V-initial Formosan languages some classes of "adverbs" precede the lexical V(P). But this may not be a deviation from the harmonic derivation for "head-initial" languages if they are actually (functional verbal) heads, as argued for in a number of works. See, for example, Holmer (1996, §3.3.3.3, 2006), Liu (2003), Tsai and Chang (2003), Hsiao (2004), Wu (2006), Chang (2006, 2009), Li (2007), and Yu (2008). For a similar situation in VSO Maasai, see Koopman 2005a.
27. Aspect and Tense auxiliaries can also raise on their own as (remnant) phrases, if the derivations sketched above prove correct (thus again mimicking head-movement). In this connection Holmer (1996, 111f) provides interesting evidence based on the syntax of clitics that a verbal head in VOS Seediq (inflected Vs, tense particles, negation) moves to CP if this is not filled by a complementizer (and no other higher verbal head is present). This evidence is compatible, as far as I can tell, with the verbal heads moving as remnant phrases. In other V-initial languages the verbal heads apparently do not raise to C. See Roberts (2005, §1.2) and references cited there.
28. Cf. Dryer (2007, 88). Other Uto-Aztecan VSO languages where the object of the adposition may precede it ('DP with'; 'DP from') are Papago (Tohono O'odham—Saxton 1982, 189), and Cora (Casad 1984, 238).

The same V DP P order is found in certain OV languages. See (i), from Wan (Mande—Nikitina 2009, §3.2):

- (i) ā zō [blè yā]_{pp} [kōŋ gó]_{pp}
 they came [quickness with] [village in]
 'They quickly came to the village'

Like Mande are some Nilo-Saharan languages (Ngitu—Kutsch Lojenga 1994, 304).

29. "It is possible to express the doer of the action by using a complex circumposition *ji aliyê*. *ve* in front of the helping verb. This is really only used in more formal styles of written Kurdish." (www.lingfil.uu.se/kurser/detaljschema/vt09/kuromanji_naetkurslesson_9.doc) "Certain prepositions, in particular the prepositions *ba* 'in, at,' *da* 'to, in, into' and *la* 'by, to, in, at' and 'from,' occur as circumpositions that envelop the complement" (Thackston 2006b, 20).

Also see the circumposition: *az* . . . *dä* "from" in Ardestani (an Iranian language, cited in [http://www.iranica.com/newsite/articles/v2f4/v2f4a027.html](http://www.iranica.com/newsite/index.isc?Article=http://www.iranica.com/newsite/articles/v2f4/v2f4a027.html)).

30. "No language with SVO or VSO basic order will have a clause final auxiliary". The cases reported in the literature mentioned above in §1 appear to have a postverbal, but not clause final, auxiliary.
31. See Dryer's (2009, 199) table (i), and the references in note 5 this chapter:

(i)	Africa	Eurasia	SEAsia&Oc	Aus-NewGui	NAmer	SAmer	Total	#Lgs
a. OV&FinalComp	2	5	3	1	2	1	14	27
b. OV&InitComp	6	4	1	3	0	0	14	22
c. VO&FinalComp	0	0	0	0	0	0	0	0
d. VO&InitComp	23	9	13	4	10	4	63	140

- One language apparently instantiating (i)c (i.e. (36)d) is however East !Xóõ (Khoisan). Güldemann (2004, 7), reports a sentence from Traill (1994, 17) which exemplifies this order (confirming in personal communication that the language indeed is an exception to the supposed universal SVO à initial complementizer):
- (ii) *n̄ n̄ bà ʔán s̄ān /nā-e !n̄ūle t̄e*
 1S ? ?IPFV wish:1S see-3 country.3 COMP
 ‘I want to see the country’
- Another language may be Ngitì. Kutsch Lojenga (1994,7) characterizes it as SVO (and SAuxOV) and reports (sections 9.7.2.2.1 and 9.7.2.2.2) that it has final complementizers and adverbial subordinators. See (iii) and (iv):
- (iii) *k̄m̄t̄ ma m̄r̄à d̄hu*
 3SG.know:PF.PR 1SG SC.AUX.come:NOM1 thing (=COMP)
 ‘he knows THAT I am coming’ (Kutsch Lojenga 1994,395)
- (iv) *ma m̄rà nȳ n̄ándà, k̄òbì ‘ǝ r̄ǝ míngo d̄hu dzid̄ǝ*
 1SG SC.AUX.go:NOM2 2SG RSM.see:NOM2 market in from
 SC:1SG.AUX.return:NOM2 thing (=COMP) after
 ‘I am going to see you, after I return from the market’
 (Kutsch Lojenga 1994,398)
32. Biberauer, Holmberg and Roberts (2008a,b,2009,2010) also propose deriving it from a constraint on the EPP features triggering movement.
33. For further discussion, and other problematic cases see Cinque (forthcoming).
34. I am not able to evaluate some recent work by a team of physicists, mathematicians and linguists claiming that “each language in the world fluctuates between these two structures [“head-initial” and “head-final”, G.C.] like the Ising model for finite lattice.” (Itoh and Ueda 2004,333). Also see Ueda and Itoh (2002) and Tsunoda, Ueda and Itoh (1995).
35. Also see the language numbers given in WALS:
 SOV SVO VSO VOS OVS OSV
 (i) 497 435 85 26 9 4
- This distribution of “head-final” and “head-initial” languages, close to fifty-fifty, makes it plausible to take the currently existing languages to be a fairly representative sample (for word order) of all possible languages (despite the often noted fact that the currently existing ones are a tiny fraction of all the languages that were and are no longer spoken, that will be spoken in the future, and that will never be spoken).
36. Recall that these orders are to a large extent reconstructed from the most polarized types (rigid SOV and rigid VOS languages), abstracting away from the exceptions noted in the literature.
37. Cf. Greenberg’s (1963) Universal 16.
38. Cf. Dryer (1992a, §2.5), and section 1 above.
39. Cf. Greenberg’s (1963) Universal 15, and Dryer (1992a, §2.6).
40. For the possible relevance of particles in word order generalizations, despite the problems noted in the literature, see the discussion in section 7 above.
41. Cf. Dryer (1989b, 1992a, §4.6, 2007, §5.7).
42. Cf. Dryer (1989a, 1992a, §4.7).
43. Cf. Dryer (1992a, §2.3; 2007, §5.2).
44. Cf. Greenberg’s (1963) Universal 13.
45. Cf. Greenberg’s (1963) Universals 3 and 4.
46. Cf. Dryer (1992a, §4.3; 2009, §5).
47. Cf. Greenberg’s (1963) Universal 9 (“With well more than chance frequency, when question particles or affixes are specified in position by reference to

the sentence as a whole, if initial, such elements are found in prepositional languages, and, if final, in postpositional”), and Dryer (1992a, §4.4). The same is presumably true of other illocutionary force markers (declarative, imperative, etc.). See the case of the initial declarative marker in Nluu (SVO Khoisan—Collins 2004), and the final declarative, interrogative, imperative and optative markers in Sheko (SOV Omotic—Hellenthal 2007).

48. Cf. Dryer (1992a, §4.5; 1992b), Diessel (2001).

49. Cf. Greenberg’s (1963) Universal 22.

50. Cf. Greenberg’s (1963) Universal 22, and Lehmann (1978a, 16f).

51. Cf. Greenberg’s (1963) Universal 21: “If some or all adverbs follow the adjective they modify, then the language is one in which the qualifying adjective follows the noun and the verb precedes its nominal object as the dominant order”.

This finds to some extent confirmation in the WALS database. Its interactive tool for combining features shows some preference for the “harmonic” correlations (A > degree word and VO: 102 languages; degree word > A and OV: 114 languages) in opposition to the “disharmonic” ones (degree word > A and VO: 81 languages; and A > degree word and OV: 63 languages).

52. Cf. Dryer (1992a, §2.1).

53. Recall the discussion at the end of section 4.2 above.

54. Cf. Greenberg (1963, 89), Lehmann (1978a, §1.3), Bennett (1979), and Cinque (2011).

55. Compare (i)-(ii) with (iii)-(iv):

- (i) a. The smith beat the metal flat cold.
b. *The smith beat the metal cold flat.

(Simpson 1983) (V > DP > resultat > ODepict)

- (ii) a. He_i ate the fish_i raw_i drunk_i
b. *He_i ate the fish_i drunk_i raw_i

(Haider 1997) ((V > DP > ODepict > SDepict)

- (iii) a. Er hat das Fleisch roh in Stücke geschnitten
he has the meat raw to pieces cut
'He has cut the meat to pieces raw'

(cf. Haider 1997,10) (DP > ODepict > resultat > V)

- b. *Er hat das Fleisch in Stücke roh geschnitten

- (iv) a. Daß manchmal einer betrunken Fisch roh ißt . .
That sometimes someone drunk fish raw eats . .
'That sometimes someone eats fish raw drunk . .'

(cf. Haider 1997, 29) (SDepict > DP > ODepict > V)

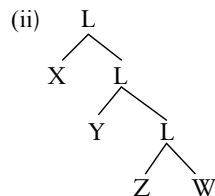
Also see Koizumi (1994) and Williams (2008).

56. Cf., among others, Bartsch and Vennemann (1972, §6.2), Boisson (1981), Subbarao (1984,18), Patnaik (1996), Haider (2000), Cinque (2002), Schweikert (2005a,b), Hinterhölzl (2009), Takamine (2010). All classes of adverbs precede the V in rigid SOV languages (cf. Greenberg’s 1963 Universal 7). Interestingly, in a corpus study of German adverbs and adverbial PPs, Dean (1974) finds that the VO order of these elements (V > Manner > Location > Time) is only possible (alongside the OV order: Time > Location > Manner > V) in main clauses where the finite verb is in second position and no participle, infinitive, or separable prefix is found in final position. Otherwise only the OV order is possible. This seems to me to suggest that the VO order (V > Manner > Location > Time) is a function of the movement (plus pied-piping of the *whose-picture* type) of the entire VP raising to second position.

57. See for example how the sequence of temporal phrases in the complex temporal phrase ‘At 8 o’clock pm of the fifteenth of January 2002’ is rendered in a “head-initial” language like Italian ((i)a) and in a “head-final” language like Hindi ((i)b) from Subbarao (1984, 18; 2008, 57) (as noted there, Japanese and Telugu pattern with Hindi):
- (i) a. alle (ore) 8 (di sera) del (giorno) quindici (del mese)
 at (hours) 8 (of evening) of the (day) 15 (of the month)
 di gennaio del (l’anno) 2002
 of January of (the year) 2002
- b. 2002 samvatsaram janawari nela lō padihēnō tārīkhu
 2002 year January month in fifteenth date
 rātri-ki enimidi ganṭala-ki
 night-to eight hours-dat
- A similar pattern is found with complex locative phrases. Compare Hindi (ii) with its English translation:
- (ii) banaaras me wiṣwanaat^h mandir ke dwaar par
 Benaras in Vishwanath temple of gate on
 ‘At the gate of the temple of Khasi Vishwanath in Benaras’
 (Subbarao 2008,58)
58. See the discussion around (2) above, Cinque (2005a), and references cited there.
59. Or, more accurately, [projections of N] > AP and AP > [projections of N]. Concerning their order with respect to N in relation to the basic word order of the language, the WALS interactive tool for combining features gives for VSO languages 56 languages (24 genera) with NA order vs. 16 languages (13 genera) with AN order (thus largely confirming Greenberg’s statistical Universal 17: “With overwhelmingly more than chance frequency, languages with dominant order VSO have the adjective after the noun”), and for VOS languages 14 languages (9 genera) with NA order vs. 7 languages (7 genera) with AN order. Thus “head-initial” languages predominantly have NA order, with certain well-known exceptions, like the Mayan languages (Campbell, Bubenik and Saxon 1988, 213). I take AN to be the abstract order for “head-final” languages despite the fact that SOV languages are predominantly NA (the WALS interactive tool gives for them 223 languages (113 genera) with NA order vs. 56 languages (25 genera) with AN order. Also see Dryer 1988a, 1992a, 2007). The reason for taking this counterevidential position is that clausal modifiers (adverbs) in “head-final” languages seem to systematically precede the head they modify. Needless to say, the high inconsistency of the adjective position in actual languages needs to be understood. Perhaps, the skewing for NA order even in “head-final” languages is tied to the existence of a relative clause source for adjectives, not always easily distinguishable from the purely attributive one (cf. Cinque’s 2010 discussion), for we know that virtually half of the SOV languages have postnominal relative clauses. Relevant in this connection may be Mallison and Blake’s (1981,383) observation that “[s]ome of the examples of NA among SOV languages may reflect the verbal origin of the ‘adjectives’”, and Greenberg’s (1963) Universal 19 (“When the general rule is that the descriptive adjective follows, there may be a minority of adjectives which usually precede, . . .”). But the whole question needs to be looked into more carefully.
60. The WALS interactive tool for combining features gives a clear predominance of Dem N for OV languages and N Dem for VO languages.
61. The WALS interactive tool for combining features give a predominance of NNum for VO languages, but it also gives a predominance of NNum for OV languages; a potential problem.

NOTES TO CHAPTER 2

1. I thank Paola Benincà, Richard Kayne, Ian Roberts and Maggie Tallerman for helpful comments.
2. For the notion of anomaly and its role in the change of scientific paradigms, see Kuhn (1962, chapter 6).
3. See Satyanarayana and Subbarao (1973), Kaufman (1974), Colarusso (1979).
4. This follows Kayne's (1984) earlier attempt to constrain the theory of phrase structure by excluding all but binary branching configurations, with the effect of reducing the possibilities made available by UG.
5. Strictly speaking, asymmetric c-command could translate into precedence or subsequence, but Kayne shows that it is precedence rather subsequence, due to the fundamental asymmetry of time (see his discussion in section 4.3).
6. That a head cannot be a specifier is also derived, albeit via a further assumption ("that the highest element of a chain of heads must have a specifier" (p. 31)). If a head, in order to be licensed, needs to project (and discharge its theta-role(s)), it follows that the source of a head in specifier position must be a lower head position. But then the possibility arises of excluding its moving to a specifier position as a violation of Relativized Minimality (Rizzi 1990; or 'Shortest Movement'—Chomsky 1995). A closer potential landing site (the head of the phrase it adjoins to) is skipped (this still does not prevent a head from becoming its own specifier).
7. Namely: "X c-commands Y iff x and y are categories and X excludes [footnote omitted, G. C.] Y and every category that dominates X dominates Y" (p. 16), where, as in Chomsky (1986, 9), "X excludes Y if no segment of X dominates Y".
8. Compare the AS definition of c-command given in the previous footnote with (i) below, where segment replaces the second mention of category:
 - (i) X c-commands Y iff X and Y are categories and X excludes Y and every SEGMENT that dominates X dominates Y.
 This change ensures that the second (higher) adjunct/specifier asymmetrically c-commands the first adjunct/specifier since every segment that dominates X in (ii) dominates Y, but not viceversa:



This alternative however loses property (4e) (see AS, 133f., fn.3), an empirically undesirable move.

9. Also see Greenberg's (1966) Universal 12:

'If a language has dominant order VSO in declarative sentences, it always puts interrogative words or phrases first in interrogative word questions; if it has dominant order SOV in declarative sentences, there is never such an invariant rule'.
10. As Kayne himself notes (p. 142, fn. 20), the prediction is actually more delicate in a theory allowing for more than one CP, and more work is clearly needed to sharpen the contours of the 'split COMP' space (see Rizzi 1997).

- But it seems that the tendency is robust enough to warrant the conclusion he draws. 1
11. An empirical argument, apparently supporting the SINGLE SPECIFIER theory over the MULTIPLE SPECIFIER theory, is presented in Cinque (1999), and is essentially based on evidence from Romance for the existence of a head position in between any two specifiers. 2
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12. Movement to the right to a C-COMMANDED position (lowering) is also excluded, by the general Proper Binding Condition (Fiengo 1977), whether this is a primitive, or derives from some other abstract principle(s). 6
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13. Hawkins' study is based on an expanded sample, with data from over 150 languages (compared with Greenberg's 30 language sample) for the word orders of demonstrative, numeral, adjective and noun (see Hawkins 1983, 9 and his Chapter 8). 9
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14. Evidence for locating demonstratives and adjectives in specifier positions within the extended projection of the N is discussed in Giusti (1992, 1993) and Cinque (1994), respectively (also see Brugè 1996). Additional evidence for Giusti's idea that demonstratives are in specifier position as opposed to determiners (articles)—which are in head position within the extended projection of the N—appears to come from certain typological findings of Dryer's. While, as Dryer (1989b) notes, article-N order correlates with V-0 order (as one would expect if the article is a head taking a projection of the N as its complement), no such correlation exists for the order demonstrative-N (Dryer 1992a, 96, 120ff.), as is also the case with other nominal modifier-head pairs (Adj-N, Numeral-N, Intensifier-Adj, etc.—Dryer 1988a, 1992a, 95, 97, 118ff.). 12
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15. For an analogous proposal concerning the position of the N with respect to different classes of adjectives in Romance vs. Germanic, see Cinque (1994, 2010a). 22
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16. On the basis of (9), we should also expect the existence of prepositional languages with one of the orders in (i), and the nonexistence of prepositional languages with the order in (ii): 25
26
- (i) a. NDem&NNum 27
b. DemN & NNum 28
c. DemN&NumN 29
- (ii) *NDem & NumN 30
- This word order is not explicitly discussed in Hawkins (1983). To judge from Greenberg's (1966) 30 language sample, it would seem to be largely observed (it is in 10 out of the 16 prepositional languages of the sample), although there are some counterexamples (Berber, Hebrew, Welsh, Zapotec), apparently instantiating (ii). These, however, may turn out to be spurious if demonstratives, rather than being base-generated in a Spec to the left of numerals as in (9a), are MOVED there from a lower position, and may/must remain in situ in certain languages. On the basis of Spanish, Brugè (1996), in fact argues that they are generated in a position between the rightmost AdjectiveP and the subject of the NP (compare *El libro viejo este suyo de syntaxis* 'the book old this his of syntax'), apparently the same position hosting *ci* of *ce*. . . *ci* 'this here' in French (*Ce livre rouge-ci de Marie sur la linguistique* 'this book red here of Marie on linguistics'), and *là* of *quello là* 'that there', in Italian. But see Chapter 4 here. 31
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- Interestingly, among the apparently problematic cases in Greenberg's sample, both Welsh and Hebrew have demonstratives only in situ, in this low position within the DP (*Y pump llyfr newydd HYN gan John or wleidyddiaeth* 'the five books new these of John on politics' = 'these five new books by John on politics'—M. Parry personal communication); and *Shloshet ha-yeladim* 42
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46

- 1 *ha-ktanim* HA-ELU ‘Three the-children the-small these’ = ‘these three small
2 children’—Ur Shlonsky and Tal Siloni personal communications). See now
3 Chapter 4 here for more recent discussion.
- 4 17. In the SYMMETRIC view, we would also expect the existence of postpositional
5 languages with the orders Adj > N > Num > Dem and Adj > Num > N > Dem
6 (with N raised to W and Y of (14), respectively). But none seem to exist given
7 the implication holding of postpositional (and prepositional) languages, that
8 NDem \supset NAdj (see Hawkins (1983, 81), already quoted). But see Chapter 4.
- 9 18. Whitman (1981) shows that the case of adjectives occasionally preceding
10 the demonstrative and the numeral in head-final languages does not con-
11 tradict Greenberg’s finding concerning the order of pre-N Dem Num Adj,
12 as pre-Dem adjectives can only be interpreted nonrestrictively in head-final
13 languages, just like pre-Dem relative clauses (which suggests that pre-Dem
14 adjectives are in fact reduced relatives).
- 15 19. These (successive) leftward movements of XPs are typical of postpositional
16 (OV) languages. See the AS discussion of agglutination and final complemen-
17 tizers in head-final languages (p. 52ff.).
- 18 20. It seems that step 2 (and 3) of (15) cannot apply unless step (1) has also applied.
19 Otherwise, the unattested order Adj N Num Dem (see fn. 17) would be derived.
20 The Num > N > Adj > Dem order found in Basque (Hawkins 1983, 119)
21 would seem to be derivable via steps (1) and (3) of (15), without the applica-
22 tion of the intermediate step (2), possibly a marked option. The same order in
23 prepositional languages (Welsh, Hebrew and the others cited in Rijkhoff 1990,
24 27) should instead be interpreted as seen in fn. 16 above, with the demonstrative
25 occurring in the lower BASE GENERATION position. It remains to be seen whether
26 the exceptions to Hawkins’ NDem \supset NAdj that Dryer (1988a, 208) found in his
27 sample are amenable to a similar account. For one case (Aghem), which appears
28 problematic from the present perspective, see Hawkins (1983, 119).
- 29 21. Although they are allowed by Greenberg’s (1966) ‘any or all’ clause in his Uni-
30 versal 20—see Hawkins (1983, 117ff.) for discussion. Dem > Num > N > Adj
31 is attested (in Romance), but as a function of the movement of the N alone, not
32 of NP, as shown by the impossibility of Dem > Num > [Gen N] > Adj.
33 That postpositional, but no prepositional, languages CAN move XP com-
34 plements of functional heads leftward (successively) seems to be at the basis
35 of two more left/right asymmetries between the two types of languages—see
36 Hawkins (1988), Dryer (1992a, 86, 102): (i) while, in postpositional languages,
37 complementizers may be either to the left of the clause (initial), or to its right
38 (final), in prepositional languages, they are invariably to its left (initial) (pace
39 Chinese, which has many features of postpositional languages, such as relative
40 clause-N, Standard-Adj, etc.); (ii) while postpositional languages have either
41 relative clauses preceding the N, or following it, prepositional languages only
42 have relative clauses following the N (again pace Chinese).
- 43 22. In this case, there would be no landing site for the wh-phrase higher than the
44 fronted IP, nor could the wh-phrase move to the WH COMP leaving its trace
45 unbound within the IP moved higher than the wh-phrase.
- 46 23. For a specific proposal in this direction, see Cinque (1999). At first sight, the
MULTIPLE SPECIFIER and the ONE HEAD/ONE SPECIFIER theories would seem to
be equivalent, at least if one were to introduce a functional specialization, and a
rigid relative order of the multiple specifiers. But the two theories can be empiri-
cally distinguished on other counts, and the facts seem to support the one head/
one specifier theory (see Cinque 1999, Chapter 2 for discussion).
24. I am restricting attention to proclitics. For enclitics, see AS, p. 139, fn. 19.
25. An argument of this type for V to C raising is discussed in relation to a
similar construction in Rizzi (1982, 83f.). Here we have additional evidence
that it is the verb that has raised over the subject (to C⁰), as the 2nd person

singular of the present subjunctive can not be a null personal pronominal, and can be a null expletive in construction with an inverted subject only marginally. See:

- (i) a. Credono che (io)/(tu)/(lui) mi/ti/si sia sbagliato.
 they-think that (I)/(you)/(he) was/were/was mistaken
 b. Credono che mi/ti/si sia sbagliato io??tu/lui.
 they-think that was/were/was mistaken I/you/he

The marginality of the variant of (ib) with *tu* thus contrasts with the perfect status (at a high stylistic level) of (21).

26. Under this view, the clitic, which we take to move as a head in the last step of its movement, after moving as a DP (see AS, p. 61), either adjoins to the relevant F^0 , if this is empty, or to the V which has adjoined to F^0 , in either case complying with the LCA.
 27. Alternatively, complex onsets could be treated as must complex codas, as the outcome of CV.CV. structures with empty nuclei. But this alternative would seem to lose the property that codas, but not onsets, contribute (moras) to the weight of the syllable.

NOTES TO CHAPTER 3

1. This text reproduces (with few additions and modifications) the handout of a paper presented at the “Workshop on the Antisymmetry of Syntax”, held in Cortona on May 15–17, 2000. I wish to thank Abdelkader Fassi Fehri for his judgments and comments on the original handout.
 2. Shlonsky (2000), on the basis of a rich array of Hebrew and dialectal Arabic facts, has arrived at virtually identical conclusions about the syntactic derivation of Semitic DPs, except for the analysis of the Construct State. A similar roll-up derivation is also proposed in Sichel (2000) to derive the inverse order of Adjective Phrases in Hebrew.
 3. But in Maltese APs can apparently also be prenominal (if preceded by a determiner). Cf. Fabri (1993, 54), cited in Duffield (1995, 302):
 (i) a. *is-sabiha omm Pawlu*
 the-beautiful mother Paul
 ‘Paul’s beautiful mother’
 b. *ix-xih missier Karla*
 the-old father Karla
 ‘Karla’s old father’
 4. When a Construct State Genitive is also present, demonstratives cannot be prenominal in Modern Standard Arabic (Fassi Fehri 1998a, 30). They can, however, in Maltese (Fabri 1996, 233), where APs can also precede the Construct State (see the previous footnote):
 (i) *Dik oht Pawlu*
 That (fsg) sister Paul
 ‘that sister of Paul’s’
 5. The examples in fn. 3, with their D-AP N DP_{GEN} order, exclude (at least for Maltese) that N raises to D (and, in our reinterpretation of the Construct State, that the Construct State phrase raises to (or above) Spec,DP).
 6. Another indication that the constituent preceding the Construct State Genitive is larger than a N comes from Bohas and Al-Qaadirii’s (1998) observation (reported in Kihm 1999; Benmamoun 2000, 165f) that what look like adjuncts to the head N can intervene between it and the genitive when the head N is a deverbal noun (this marked construction is however not accepted by everybody—Fassi Fehri p.c.):

- 1 (i) tarku yawman nafsi-ka . . .
 2 leaving one day self-your . .
 3 ‘Leaving yourself . . .’
- 4 7. Cf. (i)a vs. (i)b (cf. (35a–b) of Duffield 1995, 290):
 5 (i) a. guth laidir an tsagairt
 6 voice strong the priest-GEN
 7 ‘the priest’s powerful voice’
 8 b. *guth an tsagairt laidir
 9 voice the priest-GEN strong
 10 ‘the priest’s powerful voice’
- 11 8. Cf., for example:
 12 (i) a. cupan mor Sasanach
 13 cup big English
 14 ‘a big English cup’
 15 (Irish—Sproat and Shih 1991, 587)
 16 b. an seanchapall mor bui
 17 the oldhorse big yellow
 18 ‘the big yellow horse’
 19 (Irish—Duffield 1995, 296)
- 20 9. (i) cwpan mawr gwyrdd Sieineaidd
 21 cup big green chinese
 22 ‘a big green chinese cup’
 23 (Welsh—Rouveret 1994, 213)
- 24 But see Willis (2006) for a more complex situation.
- 25 10. The main parametric difference between Celtic/Romance and Semitic
 26 appears then to be whether the content of Spec,WP raises alone or pied-pipes
 27 WP (which recalls Koopman and Szabolcsi’s 2000 derivation of “inverted”
 28 and “English” orders of restructuring verbs in Hungarian).
- 29 11. The fact that when two Ns (cf.(18)b), or two adjectives (cf. (i) below), are
 30 coordinated both carry the definite article indicates that the article is a defi-
 31 niteness marker formed in the lexicon rather than picked up in the syntax (if
 32 that were the case it should appear only on the second of the two coordinated
 33 elements—but that is not the case):
 34 (i) Frumosul si marele portret al lui Ion
 35 Beautiful-the and big-the painting of J.
 36 ‘Ion’s beautiful and big painting’
- 37 12. At first sight, no such restriction holds in Arabic. See (i) from Fassi Fehri
 38 (1993, 249):
 39 (i) Saahad-tu surat-a zayd-in li-hind-in
 40 saw-I picture-ACC Zayd-gen of-Hind-gen
 41 ‘I saw Zayd’s picture of Hind’
 42 But in this language the preposition introducing the second genitive is non-
 43 distinct from Dative (cf. (ii), from Fassi Fehri 1993, 248). (i) thus instantiates
 44 the same case as Hebrew c) above in the text:
 45 (ii) baa a li-r-rajul-i kitaab-an
 46 sold-3.s.m to-the-man book-ACC
 ‘He sold a book to the man’

NOTES TO CHAPTER 4

- * I thank audiences at UCLA, NYU and at the Universities of Padua and Venice, where parts of this material were presented in 2003 and 2004; in particular, Paola Benincà, Laura Brugè, Giuliana Giusti, K.A. Jayaseelan,

Ed Keenan, Hilda Koopman, Anoop Mahajan, Cecilia Poletto, Dominique Sportiche, Tim Stowell, Michal Starke, Walter Schweikert and Anna Szabolcsi. I also thank Paola Benincà, Richard Kayne, Jan Rijkhoff and two anonymous reviewers for their comments on a previous draft of the article. A special thanks goes to Dominique Sportiche, who encouraged me to explore the implications of the analysis in a systematic fashion.

In line with much work in linguistic typology and generative grammar, I am assuming that all languages have demonstratives, numerals and adjectives as adnominal modifiers in their DP. This is by no means an innocent assumption, especially given the often-made claim that some languages have no distinct class of adjectives (or numerals), but use in their stead NPs (in PPs or appositions), or verbs (in relative clauses). See, for example, Schachter (1985, 13ff) and Rijkhoff (2002, 327ff). I would, nonetheless, like to keep to that assumption, also thinking of Baker (2003, chapter 4).

“Num” refers throughout to cardinal numerals, not to Number (singular, plural, etc.), nor to ordinal numerals.

1. “When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.” (p. 87).
 2. See for example Lu (1998, 165): “head-final NPs have D Q A N [=Dem Num A N] as the only basic order”. Croft and Deligianni (2001, 7) state that “If more than one modifier occurs before the noun, the order is always Dem < Num < Adj; the only exception to this generalization is an alternative word order in a language that otherwise conforms to the generalization (Alamblak), and other possible orders in Korean and Quechua. If more than one modifier occurs after the noun, however, virtually any order appears to be possible as the basic order of modifiers”. The alternative order Croft and Deligianni refer to is Dem A Num N, which is also reported as an alternative order in Mongolian by Whitman (1981, 414). This apparent exception should however be considered with caution. The four languages are OV and all have prenominal RCs, which characteristically appear between Dem and Num (or to the left of Dem). See Cinque (2003/8), and, for Alamblak, Bruce (1984, 106ff). So this alternative order might well involve adjectives in a relative clause rather than in attributive position (cf. Whitman 1981). The same analysis may extend to the special predemonstrative location of adjectives in Mandarin (Whitman 1981, Williams 1998). Perhaps, it is no accident that no language is reported as having Dem A Num N as its only order. This is possibly understandable if there are two sources for adjectives, an attributive one (below Num), and one from RCs (above Num) (cf. Cinque 2010a). A clear counterexample could only come from a language with this order and with no prenominal (full or reduced) RCs.
- The restricted A Dem Num N alternative order of Romanian appears instead to be derived from Dem Num A N via raising of only certain adjectives (Ungureanu 2003, 119). Cf. also the references in note 23 below. Problematic, however, remains the order Num Dem (det) N A of Michif (Rosen 2003, 40ff), if Num cannot be taken there to derive through the marked fronting discussed in the references of note 23.
3. This conclusion, as apparent from their quote in the preceding note, is also shared by Croft and Deligianni (2001).
 4. While the orders of Gabra, Luo, Logoli, Aghem and Noni seen above show that Greenberg’s original formulation is too restrictive (in forbidding their existence), the fact that Num N Dem A (which is admitted by Greenberg’s formulation) is unattested shows that his formulation may also be too permissive. While it is not impossible that such an order will be documented in some yet to be studied language, I will submit below that it is not attested for

1 principled reasons. Hawkins (1983,118f) claims that two other orders per-
 2 mitted by Greenberg's formulation (namely, Dem A N Num and Num A N
 3 Dem) are unattested in his expanded sample of 336 languages. Such orders,
 4 however, have since been documented. See (4) below.

5. For example, one could assume the two following symmetric base structures;
 the right branching (i)a, and the left branching (i)b:

- 6 (i) a. [Dem [Num [A [N]]]]
 7 b. [[[N] A] Num] Dem]

8 This would account for the mirror-image order of Dem Num A found to
 9 the right of the N. In order to account for the other postnominal order (the
 10 same as that found prenominal: N Dem Num A), one would either have to
 11 assume the left-branching structure [[[N] Dem] Num] A] (possibly at odds
 12 with the natural relative semantic scope of these elements), or admit the pos-
 13 sibility that N(P) raises to the left of Dem in the base-generated structure (i)a.
 14 In either case, though, it would not be clear how the unwanted order A Num
 15 Dem N could be excluded, as nothing principled in such a system would seem
 16 to prevent the symmetric right-branching structure [A [Num [Dem [N]]]]
 17 once [[[N] Dem] Num] A] is allowed, or, alternatively, the raising of N(P) to
 18 the right of Dem in the base-generated structure (i)b. To exclude them, spe-
 19 cific ad hoc principles would have to be introduced. The principled unavail-
 ability of such symmetric solutions is precisely one of the main consequences
 of Antisymmetry Theory (cf. Kayne 1994).

- 20 6. On their possible status as agreement projections see note 24 below, based
 21 on evidence discussed in Shlonsky (2004, section 6). Nothing crucial would
 22 change if demonstratives and numerals were to be heads rather than maxi-
 23 mal projections in specifier position (a question that remains to be clarified).
 24 In Cinque (1996,2000), to derive the order N Dem Num A, I actually posited
 25 N-movement, though the same order could be derived by moving the NP
 26 from Spec to Spec (without pied-piping). Here, because of such redundancy,
 27 and, more crucially, because N movement will prove unable to exclude the
 28 unattested orders, only phrasal movement (of NP—or of a larger XP includ-
 29 ing NP) will be assumed to be available.
- 30 7. Rijkhoff (1998, 357) states that the “order [dem num A N] is by far the most
 31 common both inside and (to a lesser extent) outside Europe”, listing on p.
 32 342f many languages of the Afro-Asiatic, Altaic, Caucasian, Indo-European
 33 and Uralic families. More languages with this order are listed in Hawkins
 34 (1983,119), Rijkhoff (1990, 32; 2002, 112, 270, fn.10, 310, 328, 330f), and
 35 Croft and Deligianni (2001, 7).
- 36 8. According to Rijkhoff (1998,357) “[t]he order [Dem Num N A] is [. .] rather
 37 frequent in Europe”. Outside Europe it is documented, among other languages,
 38 in Yao (Jones 1970); Burushaski and Guaraní (Rijkhoff 2002, 328); Abkhaz,
 39 Farsi, Kiowa and Mam (Croft and Deligianni 2001); Cape Verdian, Mauritian
 40 and Seychelles Creoles, Kristang, Kriyol and Tok Pisin (Haddican 2002).
- 41 9. This order is documented in Sampur and Camus (Heine 1981) (but see Rijk-
 42 hoff 2002, 274f), and in Maasai (Koopman 2005a). According to Croft and
 43 Deligianni (2001, 7), it is also a possible alternative order (of the Dem N A
 44 Num order) in Hualapai and Lahu.
- 45 10. Greenberg (1963, 87) states that the N Dem Num A is “[a] less popular alter-
 46 native” to N A Num Dem, citing Kikuyu as one example. Other languages
 that apparently display this order are: Turkana, Rendille (Heine 1981) Noni
 (Hyman 1981, 31), Nkore-Kiga (Lu 1998, 162 fn. 59,165), Abu' (Lynch
 1998, 171), Arbore (Hayward 1984, 212), Bai and Moro (Dryer 2007). It
 also appears as a possible alternative order in Romanian (Cornilescu 1992,
 212), but see Cinque (2004) for discussion.

11. It is found in Koiari (which also has the order N A Dem Num with most adjectives—Dutton 1996, 60ff), and in Bai (Wiersma 2003, 669—according to Dryer 2008, Bai also has N Dem Num A as an alternative order). [A N]-def Num is also an alternative order of the unmarked Dem Num A N order of Icelandic (Sigurðsson 1993, 194; Vangsnes 2004). The possibility of this order in Koiari and Bai (and of the order A N Num Dem in Gude and Sango—see below) indicates that the last sentence of Hawkins' (1983) revision of Greenberg's Universal 20, given in (1) above, may be too strong. Greenberg's (1963) Universal 18 was less categoric ("When the descriptive adjective precedes the noun, the demonstrative, and the numeral, with overwhelmingly more than chance frequency, do likewise"). This is because of the existence, noted by Greenberg, of "a small number of instances (e.g., Efik) in which the demonstrative follows while the adjective precedes" (p.86). Cf. also Dryer (2008). 1
12. It is found in Lalo (Björverud 1998, 116ff), Lisu (Bradley 2003, 228f), Akha (Hansson 2003, 241), Aghem (Hyman 1979, 27), Port Sandwich (Crowley 2002, 653), Koiari, which also has the order A N Dem Num with certain adjectives (Dutton 1996, 60ff), Lingala (Haddican 2002), Hocank, which also has the alternative order N A Num Dem (Helmbrecht 2004, 13). Croft and Deligianni (2001) also assign to this order Babungo and, more tentatively, Woleaian. 2
13. According to Hawkins (1983, 119), Lu (1998, 165), and Rijkhoff (1998, 358; 2002, 331), this order is not attested. However, Kölver (1978, 285) documents it in Newari (also see Dryer's (2008) example (79)), LaPolla (2003, 676) in Dulong, Mazaudon (2003, 297) in Tamang, Gair and Paolillo (1997, 29f) in Sinhala, and Valenzuela (2002, 28f) in Shipibo-Konibo. Bhattacharya (1998) and Croft and Deligianni (2001) give it as an alternative order for the Dem Num A N order in, respectively, Bangla (where it leads to a specific interpretation of the DP) and Syrian Arabic. 3
14. Among the languages that instantiate this order are Kabardian and Warao (Hawkins 1983, 119; Colarusso 1992, 63), Burmese, Lolo, Maru, Rāwang (Jones 1970), Manange (Genetti and Hildebrandt 2004, 75), Ladakhi (Koshal 1979, 108), Epena Pedee (Harms 1994, chapter 4), Gambian Mandinka (Rijkhoff 1998, 356), Cuna (Quesada 1999, 232), Kaki Ae (Clifton 1995, 46), Pech (Holt 1999, 62ff), Tunen (Mous 1997, 124). It is an alternative order of N A Num Dem in Kunama (Bender 1996, 41), and of Dem N Num A in Hualapai and Lahu (Croft and Deligianni 2001, 7). 4
15. According to Hawkins (1983, 119) and Lu (1998, 165), this order is not attested. However, Rijkhoff (2002, 328) reports Berbice Dutch Creole as instantiating it. Haddican (2002) documents the same order for the Creole languages Sranan and Bislama. Lynch (2002, 769f, 781, 809) gives it as the order of Xârâcùù, Iaa and Puluwatense. To judge from Siewierska and Uhlířová (1997, 132f), Polish and Russian also have this order as an alternative order to Dem Num A N. 5
16. This order appears documented in a number of Mon-Khmer languages (Dryer 2001), in Basque (Rijkhoff 2002, 328), in Celtic, Hebrew, Hmong, Indonesian, Jacalteco, Miao, Rapanui (cf. Hawkins 1983, 119, Lu 1998, 162; Harriehausen 1990, 144), in Vietnamese (Nguyen 2004), in Sisiqa (Ross 2002b, 459f), in Wolof (Sy 2003), and in a number of Creoles (Haddican 2002). It is also displayed by the Australian language Watjarri (Douglas 1981, 241). 6
17. According to Lu (1998, 162) this order is not attested. However, Heine (1981), as noted, documents it in three languages: Gabra, Logoli and Luo (on Luo, also see Chiao 1998). Noonan (1992, 154) documents it in Lango. Ross 7

- 1 (2002a, 132) and Tryon (2002, 576) give it as the order of Kele, and Buma,
 2 respectively. Croft and Deligianni (2001) give it as an alternative order of
 3 Manam.
- 4 18. According to Hawkins (1983, 119) and Lu (1998, 165), this order is not
 5 attested. However, Thornell (1997, 71) and Haddican (2002) give it as the
 6 order of Sango, and Rijkhoff (1998, 356, 358; 2002, 332, fn.19) mentions
 7 (dubitably) the possible existence of two other languages with this order:
 8 Gude and Zande.
- 9 19. This order is found in Cambodian, Javanese, Karen, Khmu, Palaung, Shan,
 10 Thai (Rijkhoff 1990,32), Enga (Lynch 1998,171), Dagaare (Bodomo 1993),
 11 Ewe (Essegbey 1993), Gungbe (Aboh 1996, 2004), Labu and Ponapean
 12 (Lynch 1998, 121), Mao Naga (Giridhar 1994, 452) Selepet, Yoruba (Hawk-
 13 ins 1983, 119), West Greenlandic (which also has N A Dem Num as an alter-
 14 native order) (Rijkhoff 2002, 326); Amele, Igbo, Kusaiean, Manam (Croft
 15 and Deligianni 2001), Fa d'Ambu, Nubi (Haddican 2002), Kugu Nganhcara
 16 (Smith and Johnson 2000, 388), Cabécar (Quesada 1999,232), Kunama
 17 (Bender 1996, 41), Māori (Pearce 2002).
- 18 20. Although I assume Move (when it takes place) to be interspersed with Merge,
 19 in accord with the Extension Condition (Chomsky 1995, 327f), in (5)a I have
 20 just indicated the applications of Merge, for simplicity.
- 21 21. Namely movement of [NP [XP]].
- 22 22. Namely movement of [XP [NP]]. This option corresponds to Shlonsky's
 23 (2004) notion of "Freezing".
- 24 23. On the possible, marked, preposing of APs to DP initial position (for focusing
 25 purposes), see among others Corbett (1979), Giusti (1996), Rijkhoff (1998,
 26 352f; 2002, 267, 272), and Demeke (2001, 211 and fn.18).
 27 One additional parameter is the obligatory vs. optional application of
 28 movement. For example, the alternative orders Q Dem Num N A, Q Dem N
 29 A Num, Q N A Num Dem, N A Num Dem Q of Standard Arabic (cf. Fassi
 30 Fehri 1999, Cinque 2000, Shlonsky 2004) point to the obligatory character
 31 of movement of the NP around the adjectives followed by optional move-
 32 ments (plus pied-piping of the *whose picture*-type) around numerals, demon-
 33 stratives and universal quantifiers.
- 34 24. For example, in Zazaki the NP raises around the adjective(s) with pied-pip-
 35 ing of the *whose picture*-type as the order of the adjectives, to judge from
 36 Sandonato (1994 ,128), is the mirror-image of the English order. As antici-
 37 pated above, I assume the NP to raise to the Spec of a functional projection
 38 merged in between YP and Num of (5a), with similar functional projections
 39 available in the position of the other dots of (5a). (See below for further dis-
 40 cussion.) In the trees above, these functional projections were labeled AgrPs
 41 as some actual agreement process takes place, in some languages, when the
 42 NP (with or without pied-piped material) raises to their Spec. See, e.g., the
 43 cases discussed in Shlonsky (2004, sections 5 and 6) of demonstrative agree-
 44 ment in Moroccan Arabic (*had lə wlad* 'this the boys' vs. *lə wlad hadu* 'the
 45 boys these'), and of cardinal numeral agreement (in postnominal, though not
 46 in prenominal, position) in the Syrian dialect spoken in Palmyre.
25. But see the problematic case of Michif mentioned in fn. 2 above.
26. There is another potential derivation, from an order of merge like A Num
 Dem N, with NP raising around Dem and with [N Dem] subsequently pied-
 piping Num ([Num [N Dem]]) around A. But this is again a wrong order of
 merge of the modifiers.
27. From the literature only three languages seem to be attested with this order,
 Pitjantjatjara (Bowe 1990, 111), Noni, which has (4)d (N Dem Num A) as
 its primary order (Rijkhoff 2002, 273), and Nkore-Kiga (Dryer 2003, 43),

- which also has (4)d as an alternative order (Lu 1998, 162fn59, 165). It is possible, thinking of its prevailing status as an alternative order, that this order is actually spurious (with A there a reduced relative clause—cf. note 2 above), and that such subextractions should be ruled out entirely. 1
28. Although its derivation involves one marked option, the order is in fact manifested by very few languages. One of three languages instantiating this order (Gude) has, as an alternative order, (4)m. The two orders minimally differ derivationally, it seems, in that the raising of [A N] around Num pied-pipes Num around Dem in (4)y, but fails to do so in (4)m. Quite generally, the study of alternative orders within one and the same language should provide interesting insights into the question of which parametric choices cooccur. See, for example, the orders in Koiari mentioned in note 11 and note 12 (A N Dem Num (with few adjectives) and N A Dem Num (with most adjectives)), a situation which recalls Romance and Celtic, if we ignore the further raising around Dem and Num. The orders of Bai (N Dem Num A—note 10—and A N Dem Num—note 11) appear to involve either raising of the NP without pied-piping or raising of NP and A with pied-piping of the picture of *who*-type. Also see the alternative orders of Hualapai and Lahu (Dem N Num A and Dem N A Num—note 9—differing in terms of pied-piping); those of Kunama (Dem N A Num and N A Num Dem—note 14—differing in terms of partial vs. total “roll-up”); those of West Greenlandic (N A Num Dem and N A Dem Num—note 19); those of Bangla and Syrian Arabic (Dem Num A N and Dem A N Num—note 13); those of Manam (N Num A Dem and N A Num Dem—note 17 and note 19); and those of Polish and Russian (Dem Num A N and Num A N Dem—note 15). Polish, apparently alone among the Slavic languages, also has the order Dem Num N A (only with classificatory adjectives). Cf. Sussex (1975), Willim (2000), and references cited there. 2
29. If the universal order of merge is . . . Num CLF . . . N, as suggested in den Dikken (2003b, 6f) (cf. also Simpson 2005), the fact that Thai and other Southeast Asian languages have N A Num CLF Dem, and the adjectives are the mirror-image of the Chinese/English order (Sproat and Shih 1991, Dikken and Singhapreecha 2004), the NP, which moves with pied-piping of the *whose picture*-type, must skip the head between Num and CLF. According to Albro (1998, 3), Nawdm, which is N A Num Dem with the demonstrative ‘this’, and Dem N A Num with the demonstrative ‘that’, has the adjectives in the English, not the reverse, order. This would seem to imply movement of the NP around the As without pied-piping followed by movement plus pied-piping around Num (and Dem, in the case of ‘this’) (cf. Albro 1998). 3
30. Allowing for both N movement and movement of NP, and especially for remnant movement of phrases not containing the NP (or containing only its trace) would wrongly permit the derivation of most of the unattested orders. See below for a constraint on remnant movement, proposed in Kayne (2005b), which actually appears to ban such possibilities. 4
31. The orders derived with pied-piping of the *whose picture*-type ((4)b, (4)q, and (4)z) are represented by many languages, as opposed to the orders derived without pied-piping ((4)c and (4)d). A possible basis for the markedness of movement of the NP without pied-piping is discussed below in connection with the trigger of movement of the NP. 5
32. Indeed, it appears that those orders which involve pied-piping of the picture of *who*-type ((4)m, (4)p, (4)t, and (4)y) are represented by very few languages, fewer than those derived without pied-piping (i.e., (4)c and (4)d), or those derived only partially by pied-piping of the *whose picture*-type ((4)n). 6

1 A possible exception may be represented by (4)u, which apparently incor-
 2 porates pied-piping of the picture of *who*-type as one step of the derivation,
 3 and yet seems to be instantiated by a fair number of languages (see note 16).

4 As noted, partial movements seem to be more marked than those moving
 5 the NP all the way up (whence perhaps the fewer number of languages that
 6 instantiate the order in (4)c as opposed to that in (4)d, and that in (4)b as
 7 opposed to that in (4)a).

- 8 33. Strictly speaking, to capture the fact that the (few) languages which move the
 9 NP alone do not also avail themselves of the pied-piping option, one would
 10 also have to introduce a clause having [_{NP}N] count as closer to Agr₁ than
 11 Agr₂P (this might be achieved by exploiting the fact that [_{NP}N] c-commands,
 12 and is not c-commanded by, Agr₂P according to Kayne's (1994) definition of
 13 c-command).
- 14 34. Complements require at least a brief discussion. They do not seem to be part
 15 of the NP that raises. So, for example, in Semitic, except for Construct State
 16 genitives, which are found between the initial N and its modifiers, preposi-
 17 tional complements are apparently "stranded" at the end of the DP (are not
 18 dragged along by the NP in its "roll-up" movements—cf. Cinque 2000,
 19 Shlonsky 2004, and references cited there). Similarly, in Romance, the NP
 20 can raise across (certain classes of) adjectives "stranding" its PP complements
 21 (cf. Cinque 2010a). This non-adjacency of complements follows from Kayne's
 22 analysis of the (overt and covert) prepositions that introduce them. In Kayne
 23 (2000a, 2002, 2004b) prepositions are argued to be heads merged higher up in
 24 the extended projection of the NP (or outside of the DP altogether) attracting
 25 their "complements", and forcing (in VO languages) the remnant to raise to
 26 their left thus making them final in the DP. Interestingly, complements of the
 27 N in OV languages are generally DP initial, before Dem. This is for example
 28 the case in Turkish (Jaklin Kornfilt, p.c.), in Hindi (Anoop Mahajan, p.c., who
 29 notes that, more markedly, they can also occur after the N), and in Malayalam
 30 (K.A. Jayaseelan, p.c., though, as he points out, they are introduced as predi-
 31 cates of relative clauses). In other words, they seem to involve attraction to the
 32 left of P, but no movement of the remnant.
- 33 35. As shown by the prenominal order Q Dem Num A N of several Indo-European
 34 languages (*all those four new jobs*) and the exact mirror-image order N A Num
 35 Dem Q, possible in several Semitic languages (Cinque 2000, Shlonsky 2004),
 36 Mao Naga (Tibeto-Burman—Giridhar 1994,452), and other languages. There
 37 may also be a position of universal quantification below Dem (possibly with dis-
 38 tributive meaning). See, for example, the case of Korean discussed by Szabolcsi
 39 (1994, sect.6): *ilku motun salan* '(Lit.) this/the every person'.
- 40 36. As in the IP space (cf. Cinque 1999), certain modifiers may occupy more than
 41 one position, giving the impression of a flexible word order across languages.
 42 This may be true of possessors, for example (see various contributions in
 43 Alexiadou and Wilder 1998), and relative clauses, attracted to complementiz-
 44 ers possible merged (like Ps) in different positions (cf. Kayne 2000a, 2002).

45 NOTES TO CHAPTER 5

- 46 * An earlier version of this chapter, which I dedicate here to Tarald with
 friendship, was presented at the 3rd Annual Meeting of the Left Periphery in
 Aphasia (LPIA), Venice, April 2006. I wish to thank the participants of that
 event, in particular Federico Damonte and Richard Kayne, for their helpful
 suggestions.

1. As the term ‘mood’ is used in the literature to refer to different grammatical notions, corresponding to functional heads differently ordered with respect to Tense (cf. Cinque 1999, 55ff, and Chapter 4), I will reserve it here to speech act mood, which traditionally ranges over such values as declarative, interrogative, imperative, etc., and which is unquestionably higher than Tense.
2. Prenominal, the only order is Dem Num A, while postnominally the predominant order is A Num Dem (Greenberg 1963, 87; Hawkins 1983, 119).
3. Actually Bybee considers it a tendency rather than a rigid principle.
4. Baker’s (1985; 1988) original Mirror Principle was in fact limited to argument (or valency) changing morphemes. It established a strict correspondence between the order in which syntactic processes affecting a verb take place and the order in which morphemes marking those processes are added to the verb. Under this view, different orders of morphemes are expected to correspond to different orders of application of the corresponding syntactic processes, and, characteristically, to different meanings. The principle was later generalized to tense and agreement inflectional morphemes (Belletti 1990) and to mood, modal, aspectual, voice, etc. morphemes (Pollock 1989, Cinque 1999, Baker 2002, 326, Julien 2002b, 54f, and references cited there), and acquired the status of a rigid principle governing the relation between the order of attachment of morphemes to a verb and the order (and hierarchy) of the free functional heads corresponding to those morphemes. On the possibility that even (circumstantial) argument changing morphemes are rigidly ordered underlyingly, see Damonte (2007).
5. Violations of the (generalized) Mirror Principle have repeatedly been reported in the literature, though some, those involving subject and object agreement, may be spurious, if agreement projections can appear in more than one position (See Cinque 1999, chapter 5). For genuine violations, see, more recently, Bartos (2000), Koopman (2005b, 2006) and Buell and Sy (2005, 2006). Koopman, Buell and Sy actually propose accounting for (some of) them through phrasal rather than head movement, as we also suggest here.
6. Many languages display more than one order, depending on the particular tense, or (more often) aspect, involved. See for example the alternative orders (V-Asp-Tns and V-Tns-Asp) displayed by Gidabul, or Gidabal, (Pama-Nyungan) (for a list of abbreviations see the Appendix below):
- (i) nyula-yu kangka-le-hn-i yaraman, yaraman
 he-actor call-CONT-PAST-when horse, horse
 yangkiwa-hn-du
 come-PAST-HAB
 ‘When he called the horse repeatedly, the horse used to come’
 (Geytenbeek 1964, 106)
- Also note that to the extent that it is clear whether a certain morpheme is a tense, aspect, or mood, morpheme, the question of exact cross-linguistic correspondences (whether what is called durative in the grammatical description of one language should be identified with what is called durative in another or with what is called there progressive) does not affect the main point being made here.
7. Nama also instantiates the orders (II)b and (II)c with the perfect particle in place of the progressive particle. See (i) and (ii), also drawn from <http://instruct1.cit.cornell.edu/courses/ling700/nama.htm>:
- (i) ‘áop ke kè !úu hàà ‘íí
 man+cl DECL REMPAST go PERF PARTICLE
 ‘the man had gone’

- 1 (ii) ‘áop ke lúu tama kè hàà ‘ii
 2 man+cl DECL go Neg RemPAST PERF neg.cop.
 3 ‘the man was not going’ or ‘the man had not gone’
- 4 8. In Apinajé, the Question particle precedes the Realis/Hearsay (evidential)
 5 particles, which precede the Past Tense particle, which in turn precedes
 6 Aspect particles. See Cunha de Oliveira (2003, 255f, 265).
- 7 9. The order of prefixes given in Foris (1993, 156) includes Hortatory illocu-
 8 tionary force > Tense > Continuous aspect.
- 9 10. Good (1989) gives examples from another Austronesian language, Kosraean
 10 (Kusaican), with a preverbal future particle and a Perfect aspect suffix, say-
 11 ing that yes/no interrogative sentences can be introduced by a question par-
 12 ticle (with the overall order Mood Tns V Asp).
- 13 11. The interrogative particle can also occur postverbally (followed by modal
 14 particles). See (i):
- 15 (i) Nwg nug saib kuv tuaj puav tau
 16 3sg ask COMP 1sg come Q MOD
 17 ‘he asked if I can come’ (Harriehausen 1990, 227)
- 18 Continuative aspect, differently from completive aspect, precedes the verb
 19 (Harriehausen 1990, 57).
- 20 12. The order V Tns Asp (which could either belong here or to (II)v) is also found
 21 in the Australian languages Duungidjawan, Muruwari, and Wunambal (see
 22 Dixon 1976, 107, 346, 634), as well as in Anfillo, an Omotic language of
 23 Ethiopia. See: (*to*) yorro *uts-ate yagi* (lit. (I) water drink-PAST PERF.aux) ‘I had
 24 drunk water’ (Yigezu and Yehualashet 1995, 110).
- 25 13. Kharia also has Mood V-Asp-Tns with Perfect aspect (see Biligiri 1965, 71).
- 26 14. The order is instead Mood V Asp Tns with Habitual, Durative, Continuative,
 27 and Completive aspects. The question particle *ha* “virtually always occurs in
 28 second position in the sentence” (Dayley 1989, 324).
- 29 15. Other Salishan languages appear instead to instantiate the order Asp V
 30 Mood Tns (see under (II)m below).
- 31 16. The interrogative suffix ‘-a’ can also be suffixed to a clause initial determiner,
 32 or interrogative particle (Watanabe 2003, 91) or can follow the Past tense
 33 suffix (Harris 1977, 136; Watanabe 2003, 41, 91, 515), which can also fol-
 34 low the Perfect aspect suffix on the verb (Watanabe 2003, 112), thus giving
 35 V-Asp-Tns-Mood as an alternative order (see (II)z).
- 36 17. It is however unclear whether the suffix which Aikhenvald (2006) refers to
 37 as Declarative-assertive, and which precedes (Present and Past) Tense, is a
 38 genuine speech act marker or an affirmative/emphatic marker (see Aikhen-
 39 vald 2003, section 16.9).
- 40 18. Frequentative, progressive, and perfect aspect also precede the verb in Tinrin
 41 (see Osumi 1995, 184, 187f). Future tense precedes the aspect particles and
 42 the verb (Osumi 1995, 191, 204f, 228), thus giving Tns Asp V Mood as an
 43 alternative to the Asp V Mood Tns order. If Future is lower than Past (see
 44 Cinque 1999, 72f), the above orders are not really alternative. Both would
 45 be derivable by moving the constituent containing the Future head (and all
 46 lower heads) above the Past Tense and (speech act) mood heads: [(FUT) HAB
 47 $\text{FREQ PERF PROG ITER V}]_{\text{K}} \text{Q PAST } t_{\text{K}}$.
- 48 19. To judge from Lynch (2002a, 774), who gives (i) as an alternative to (14)d in
 49 the text, with the interrogative particle following the tense particle, Xârâcùù
 50 instantiates also the order Asp V Tns Mood:
- 51 (i) è wa na amû kae
 52 3sg rain PAST yesterday Q
 53 ‘Was it yesterday that it rained?’

- Again, to judge from the different translations given by Lynch, these may not really be alternative orders. Rather, it seems that the interrogative head attracts to its specifier whatever falls directly under its scope (the VP in (14)c-d, and the adverb in (i), with further raising of the backgrounded material).
20. Montler (n.d., section 2.6.1.1) says that $k^w\text{f}$ is an aspectual particle closely corresponding to English ‘already’.
21. Efrat (1969) does not explain what “contemporary” aspect is, but she explicitly states that aspectual particles precede the predicate (p.38ff), while interrogative and tense particles follow the predicate, in that order (p.188f).
22. Progressive aspect is also expressed by reduplication of the root (Bacelar 2004, 223). The order with Future Tense is instead V-Asp-Tns Mood. Once again the Future Tense head behaves differently from the Past Tense head. Similarly to the Tinrin case seen in fn.18 the two orders suggest the presence of a roll-up movement of V around the aspect and the Future Tense heads, followed by movement of [V Asp Fut] above the Past Tense and (speech act) Mood heads.
23. ‘lə’ appears to be either Past or Anterior Tense, as it can also follow alethic modals of possibility:
- (i) a. $x\text{c}\dot{\text{i}}\text{t}-\text{ə}-\text{q}-\text{l}\text{ə}-\text{s}\text{x}^w$
 know-Q-POSSIBILITY-PAST(ANTERIOR?)-you
 ‘Could you have known it?’ (Steele 1981, 60)
24. Given their second position clitic nature, the Mood and Tense morphemes can also precede (in that order) the main V if some constituent other than the verb is in first position:
- (i) a. $\lambda\text{e}l-\text{ə}-\text{s}\text{ə}-\text{s}\text{ə}\text{n} \quad \text{?u?} \quad x\text{c}\dot{\text{i}}\text{t} \quad \text{c}\text{ə} \quad \text{sw}\text{əy?}\text{q}\text{ə?}$
 also-Q-FUTURE-I connective particle know the man
 ‘Will I know the man too?’ (Steele 1981,63)
- b. $\text{m}\text{ə}k^w=\text{ə}=\text{l}\text{ə}=\text{s}\text{x}^w \quad \text{’əw’} \quad \text{ŋa-t-}\emptyset$
 All=Q=PAST=Nom2s Link eat-C:Trans-Abs3
 ‘Did you eat it up completely/eat all of them?’
 (Jelinek 2000,225)
- Also see the V-MOOD-TNS of Klallam, another Salishan language, in (ii):
- (ii) $\text{?}\dot{\text{i}}\text{tt}_u\text{_ya?} \quad \text{c}\text{ə} \quad \text{n}\text{ə}\text{s}\check{\text{c}}\text{á?}\check{\text{c}}\text{a?}$
 sleep_Q_PAST det my friend
 ‘Did my friend sleep?’ (Montler 2004, 304)
25. Another non mirror-image order of postverbal markers in Lotha appears to be provided by the cocurrence of Past and Future tenses in that order (which is the direct order found preverbally—see Cinque 1999, 72f):
- (i) $\text{ā-nā} \quad \text{ótsi} \quad \text{tsō-t}^h\text{āk-c}^h\text{ò-v}$
 I-NOM rice eat-PERF-PAST-FUT
 ‘I should have eaten rice’ (Acharya 1983, 138)
26. The Nevome example glossed by Julien (2002a, 219), after Shaul (1986), as 3sg-Perf-Fut V is possibly to be thought of as 3sg-Asp_{perf}-Asp_{prospective}. See the discussion in footnotes 41 and 54 below.
27. Rice (1989, 1003) explicitly says that “[q]uestion complementizers [...] are sentence-initial”, pointing to the overall order Mood > Asp > V > Tns.
28. The order of the evidential and tense/aspect suffixes in Northern Pomo would appear not to conform to the Mirror Principle, if the former suffixes correspond to a head higher than Tense and Aspect (Cinque 1999, chapter 3, section 3.6). See O’Connor (1992, 51), where it is explicitly noted that “evidentials may be followed by the past/perfect marker”, and where examples such as (i) are given:

- 1 (i) mo:w duhú-**do-y**
 2 3sm.A leave-**EVID-PERF**
 3 'He left, I heard tell'
- 4 29. It is also instantiated with free morphemes (the preverbal Exhortative particle
 5 *pa*, the postverbal Progressive particle *me*, and the Past and Future auxiliaries
 6 ((*a*)*yi*) and ((*a*)*tu*)) in Maranungku (Northern Australia—Tryon 1970, 44ff).
- 7 30. The first position (separated by “#” from the prefixes) is a proclitic position,
 8 which can host over one hundred clitics, among which tense, aspect, and
 9 mood ones (Melnar 2004, 57ff). This may give rise to apparent violations of
 10 the Mood > Tense > Aspect order. See section 2 for discussion of such cases.
- 11 31. Hoan (Khoisan) seems to be another case (see (i)a-b, from the grammatical
 12 sketch found in the Cornell University Khoisan web-site <http://instruct1.cit.cornell.edu/courses/ling700/hoan.htm>):
- 13 (i) a. Ma i !hon ku @koa
 14 1sg **PAST** kill.sg sheep two
 15 'I killed two sheep'
- 16 b. U 'a-'am //ka"e ya
 17 2sg **PROG**-eat meat Q
 18 'Are you eating meat?'
- 19 32. Osborne (1974) glosses the prefix *untin* as Durative Aspect, but his char-
 20 acterization of it (on p.42) appears to fit the characterization of Progressive
 21 Aspect more closely. Judging from his translations, also the prefix glossed
 22 'future' may correspond to a lower Prospective Aspect head, rather than to
 23 Future Tense. See fn. 54 below.
- 24 33. Ross (2002i) explicitly says that tense particles are preverbal (p. 211), that
 25 aspectual distinctions are as a rule expressed by postverbal particles (p. 211),
 26 and that the negative imperative particle *sabin* occurs at the end of the clause
 27 (p. 214). Longgu might be another case of Tns V Asp Mood if the particle *ho*,
 28 which Hill (2002) calls irrealis, is in fact Future Tense, as the glosses seem to
 29 suggest.
- 30 34. Urak Lawoi' also has Asp V Tns Mood as an alternative order. See fn. 43
 31 below.
- 32 35. On p. 30, he states that the order of verb, modality, tense, aspect, and person
 33 agreement suffixes is: Root + Modality + Tense + Aspect + Person, adding
 34 on p.44 that the interrogative suffix is “after the closing ‘personal ending’
 35 morpheme”.
- 36 36. As Will (1989) notes, “the perfective aspect is possible only with verbs in the
 37 past or in the imperative mood” (p. 142). In both cases it follows (see (i) and (ii)).
 38 Will (1989, 146) also notes that questions are formed by “adding the suffix-(*k*)
 39 *o* or *-wo* to the end of the sentence”, thus giving with (i) the order V-Tns-Asp-
 40 Mood. (i) and (ii) might also suggest the order V-Mood-(Tns)-Asp.
- 41 (i) a. nen ak-**aa-boy**
 42 he hit-**PAST-PERF**
 43 'he has hit'
- 44 b. nen ak-**aa nor-boy**
 45 he hit-**PAST** elephant-**PERF**
 46 'he has hit the elephant'
- (ii) ir-**a-boy**
 drink-**IMP**(sg)-**PERF**
 'Drink (it)—and make sure you finish it!'
37. Soukka (2000, 175) refers to this aspect as “punctual”, and glosses it on p.
 185 “for a moment”, saying that with Past Tense it is also used to form the

- pluperfect (p. 184f). Other aspects that follow the verb are the Habitual, and the Perfect. The Progressive aspect particle instead precedes the verb. 1
38. With Iterative aspect it is instead V Asp Tns Mood. See Quintero (2004, 279). 2
39. The order of suffixation given by Irwin (1974, 11, 19–22) is V-Neg-Tense-subject-Aspect-(speech act) Mood. 3
40. With phasal aspects (Completive and Inceptive) the order is instead: V-Asp-Tns Mood. See (i)a-b: 4
- (i) a. mó ó mi bi-ja-**ne** 5
 he beer ACC give-**ASP_{COMPLETIVE}**-**PAST** 6
 ‘He completed the giving of beer’ 7
 (Apatani—Abraham 1985, 96) 8
- b. lu-ri-**ne** 9
 tell-**ASP_{INCEPTIVE}**-**PAST** 10
 ‘began to tell’ (Apatani—Abraham 1985, 96) 11
41. Mishmi (Tibeto-Burman—Devi Prasada Sastry 1984, 129ff) might also display this order, with bound morphemes (but, given the lack of information about the position of Mood morphemes, it could also be an instance of the orders (II)c, or (II)d). See (i) and (ii): 12
- (i) thá-so-biri 13
 eat-**PAST-PROG** 14
 ‘was/were eating’ (Mishmi—Devi Prasada Sastry 1984, 130) 15
- (ii) thá-**ne**-biri 16
 eat-**FUT-PROG** 17
 ‘(I) shall be eating’ (Mishmi—Devi Prasada Sastry 1984, 129) 18
- In the same language, one finds other non ‘mirror-image’ orders such as V-HAB-CAUS (see (i)), where a high aspect suffix (Habitual) is closer to the verb than the low causative suffix: 19
- (i) ajiindyabya páhwākyā kēstiyā khí-à-bo 20
 queen-Nom frog-Loc case-Acc reach-**HAB-CAUS** 21
 ‘The queen brought the case on the frog’ 22
 (Mishmi—Devi Prasada Sastry 1984, 181) 23
- To judge from Björverud’s (1998, 126) gloss of the sentence (ii) below, another Tibeto-Burman language displaying the order V Fut Impf (or Prog) would seem to be Lalo; but one should be cautious given that Future Tense morphemes are often identical to Prospective Aspect morphemes, which are located lower than Imperfective/Progressive Aspect morphemes (see Cinque 1999, 209fn.63). In fact the translation given by Björverud makes one think of Prospective Aspect rather than Future Tense (thus making the order of functional morphemes in Lalo the mirror image of the order of the corresponding preverbal ones): 24
- (ii) thùdz tjhə ku dí à tjhígə tjhə ku bìq pə 25
 pine tree one CLF on Top suimi-rice one CLF throw stick on 26
 wu à 27
FUT IMPF [PROSP PROG] 28
 ‘[She] was going to throw some suimi-rice onto some pine trees’ 29
42. Other (non-Austronesian) Papuan languages of New Guinea display instead the order V Asp Tns Mood. See under (II)z. 30
43. Hogan (1999) mentions the existence of a Continuative Aspect particle preceding the V (p.7f), of a postverbal particle expressing Past Tense (p.8), and of an interrogative particle “which occurs at the end of a yes/no question” (p.19). 31

- 1 44. Giridhar (1994) gives the order V Prog Fut (p. 295) and the order V Fut Inter-
 2 rogative (p. 398).
 3 45. Richardsen Westergaard (1988) gives the orders V Past Interrogative (p. 23)
 4 and V Prog Past (p. 25).
 5 46. *soT-khu-ba* (stay-HAB-NONPAST ‘would stay’ p. 101) and *je-ba ki co:ch* (give-
 6 NONPAST Q ‘will you give?’ p. 86)
 7 47. Enç (2004), even if converging on the order (Past) Tense > Aspect > V, claims
 8 that Turkish provides evidence against the rigid ordering of functional cat-
 9 egories suggested in Cinque (2001b). Her arguments however do not seem to
 10 me cogent. Although she adds interesting observations on further readings
 11 available in the presence of the auxiliary verb *ol-* ‘become’, she does not
 12 consider the possibility that negation may occur in more than one position,
 13 and that the suffix *-ecek* may be ambiguous in Turkish between Future Tense
 14 (‘will’) and Prospective Aspect (‘be about to’). For critical remarks on Enç
 15 (2004) also see Bayırlı (2011).
 16 48. With the Prohibitive Mood marker, the order is however Mood V Asp-Tns:
 17 (i) **o aiwawi asi ro-we**
 18 PROH this.way load DUR-PAST
 19 ‘Don’t load the canoe in that way!’
 20 (Sanio-Hiowe—Lewis 1972, 13)
 21 49. Ross (2002c, 239ff) gives evidence for the following order of postverbal
 22 enclitic particles: V > Durative > Future > Interrogative.
 23 50. Although I assume Move (when it takes place) to be interspersed with Merge,
 24 in accord with the Extension Condition (Chomsky 1995, 327f), in (47)a I
 25 have just indicated the applications of Merge, for simplicity.
 26 51. Namely movement of [VP [XP]].
 27 52. Namely movement of [XP [VP]].
 28 53. For which see Section 2. It remains to be seen whether V (head) raising can
 29 be dispensed with entirely in favour of VP or [_{XP}..VP..] raising. Perhaps not,
 30 if English-type Subject Auxiliary Inversion (‘Will he like the book?’), or the
 31 incorporation (left-adjunction) of a lower particle to a higher one in lan-
 32 guages like So (see fn.57 below) are to be analysed as movements of a (func-
 33 tional) head.
 34 54. See for example the order Aspect (progressive) > Tense (future) > V in van
 35 Minde’s (1997) description of (Ambonese) Malay, in Osborne’s (1974, 42)
 36 description of Tiwi, mentioned in fn. 32 above, and in Tarpent’s (1987)
 37 description of Nisgha (Tsimshianic). As is apparent from the way the
 38 authors translate the relevant sentences, what they gloss as Future is plaus-
 39 ibly to be analysed as Prospective aspect (‘be about to/on the verge of’); an
 40 aspect which is ordered below Progressive aspect (and obligatorily cooc-
 41 curs with it in many languages). See Cinque (1999, chapter 4, section 4.22,
 42 and p.209, fn. 63).
 43 (i) a. **Be ada mo nae**
 44 1s PROG FUT climb
 45 ‘I’m about to go into the interior’ (Minde 1997, 173)
 46 b. **Iyo, beta ada mo pi**
 Yes, 1s Prog Fut go
 ‘Yes, I’m about to go’ (Minde 1997,231)
 (ii) **yùk^w=ł tim yò?okswé:ntk^w-y**
 PROG=NC FUT brush.o’s.teeth-part
 ‘I am about to brush my teeth’ (Tarpent 1987, 205)
 The same may apply to Palancar’s (2004, 58) gloss of the Otomi (Oto-
 manguean) sentence in (iii)

- (iii) **ma gà kàde(-Ø)** 1
PROG FUT put.something.on.below.the.waist(-3obj) 2
 ‘I’m going to put it on (i.e., a skirt)’ 3
55. The first of the two cases can be in fact be seen as a special case of the 4
 second. 5
56. The Declarative case (49)b may be analysed similarly, as the Declarative marker 6
 apparently also has focussing usages in Mbili (see Ayuninjam 1998, 260). 7
57. A possible variant of such limited reversals is represented by the existence, 8
 in certain languages, of complex functional morphemes which encode two 9
 such elements in the unexpected order. So, for example, Samoan (Austro- 10
 nesian) has a particle (*’olo’ua’olo’o ’ua*) combining the progressive (*’olo’o*) 11
 and the perfect (*’ua*) particles, which “[a]ccording to the meaning of *’olo’o* 12
 expresses that the event is simultaneous with the moment of utterance or 13
 some other point of reference given by the context [and] [a]ccording to the 14
 meaning of *’ua* it indicates that this event is something new resulting from 15
 a change of the situation” (Mosel and Hovdhaugen 1992, 354). 16
 While the expected order is Perfect Aspect > Progressive Aspect > V (cf. 17
 Cinque 1999, 67 and 193fn42 for evidence to that effect), it could be that 18
 what is referred to as Perfect Aspect is actually a Perfect of result, which is 19
 lower than Progressive (see Cinque 2001b, 51 for this apparent possibility 20
 in Turkish). 21
 A similar situation is found in So (Africa, of uncertain classification), 22
 where the Progressive Aspect prefix precedes the Perfective aspect prefix (see 23
 (i)a). Even though Carlin (1993, 54) says that the prefix “also has a perfect of 24
 result reading”, examples like (i)b seem to suggest an incorporation analysis, 25
 as the progressive aspect prefix also comes to precede the (negative) past 26
 tense prefix: 27
- (i) a. **mut-i-baa-k-as** 28
PROG-PERFV-tell-IMPERSONAL-1sg 29
 ‘I was told’ (Carlin 1993, 54) 30
- b. **mu-laan-ab-dēs** **ratan** 31
PROG-NEG.PAST-warm-INGR stone 32
 ‘The stone didn’t get warm’ (Carlin 1993, 57) 33
- In such cases, one could perhaps hypothesize the incorporation (left adjunc- 34
 tion) of the Progressive Aspect head to the Perfect Aspect head. 35
58. Secondary aspect (here simply Aspect) “includes markers for aspectual ele- 36
 ments such as seriative, terminative and inceptive” (Potter 1996, 292), some 37
 of which may (also) be lower than (Im)perfective and Progressive Aspects 38
 (Cinque 2001a, 153). 39

NOTES TO CHAPTER 6

- * I wish to thank Laura Brugè, Richard Kayne and Luigi Rizzi for very helpful 40
 comments on a previous draft of this article. 41
1. See, for example, Šarič and Reindl (2001), Ayano (2001), Cuyckens, de Mulder, 42
 and Mortelmans (2005), Levinson and Wilkins (2006), Saint-Dizier (2006), 43
 Svenonius and Pantcheva (2006), Bašić et al. (2007), Ameka and Levinson 44
 (2007), Kurzon and Adler (2008), Asbury et al. (2008), Cuyckens et al. (forth- 45
 coming), and many of the contributions in Bloom et al. (1996), Senft (1997), 46
 Haumann and Schierholz (1997), Bennardo (2002), Feigenbaum and Kurzon 47
 (2002), Cuyckens and Radden (2002), Shay and Seibert (2003), van der Zee and 48
 Slack (2003), Hickmann and Robert (2006), and Djenar (2007). 49

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2. In the description of certain languages the latter are also called ‘nominal prepositions’, ‘spatial nominals’ (see Ameka 2003, 47), ‘locative nouns’, or ‘relator/relational nouns’, for reasons that will be clearer later.
 3. Ameka (2003, section 3.1) reports the existence of a similar pattern in Hausa (Chadic). Also see the case of Tidore (Papuan) in van Staden (2007, section 5). Although stranding is possible in English with both types of prepositions and in Gbe only with the first type (stative and directional Ps) (see Ameka 2003, section 4.1; Aboh 2010, section 2), both English and Gbe distinguish between the two types of prepositions. See Svenonius (2010) and Aboh (2010).
 4. The difference between the presence of *a* and its absence when both options are available is related in Tortora (2008) to the cross-linguistically frequent opposition between reference to a vague (or ‘extended’) place vs. reference to a precise (or ‘nonextended’) place. For the relevance of such a distinction for spatial deictic adverbs in Italian and Bantu, see Cinque (1971) and Denny (1978), respectively.
 5. Muriungi (2006, 26, 45) explicitly argues that ‘complex prepositions’ in Kĩitharaka are phrasal. Also see Abraham’s (2010, section 1.2) arguments against categorizing them as (intransitive) prepositions.

In certain languages, the head noun PLACE is actually pronounced. See (i) from Ainu (a language isolate of Japan), (ii) from Tairora (Papuan), and (iii) from the Tucanoan language Barasano:

(i) cise or ta ahun
house place at enter
‘he entered the house’ (Tamura 2000, 27)

(ii) a. naabu-qi-ra bai-ro
house-in-place is-he
‘He is in the house (in the house place)’ (Vincent 1973, 540)

b. bi-ra-qi-ra-ini bi-ro
there-place-in-place-to go-he
‘He went to in there (to the ‘there in’ place)’
(Vincent 1973, 540)

(iii) sũ be-ri-hata-ro hubea-hu yā-a-ha ti
green-PTCPL-box-S inside-place be-PRES-3 3INAN
‘It is inside the green box’ (Jones and Jones 1991, 110)

Bresnan (1994), Kayne (2004a, 258n10), Rizzi and Shlonsky (2006, section 5) also suggest that the ‘subject’ PP of cases such as *Under the stars is a nice place to sleep* is part of a DP with a silent head PLACE. This case may, however, represent a different structure if, as Luigi Rizzi (personal communication) has observed, even “simple” prepositions can occur in this construction (*A casa non è il posto migliore per fumare* ‘At home is not the best place to smoke’). Here the silent PLACE head must be identified by a DP predicate that necessarily contains an overt instance of the noun ‘place’ ([PLACE (at home)] *is not the best place to smoke*/**is always pleasant*) (cf. also Collins 2007, 28n24).

The way in which the axes (front/back, left/right, etc.) are pragmatically determined depends, as often noted (Miller and Johnson-Laird 1976, Levinson 1996, Jackendoff 1996, section 1.8), on the particular frame of reference adopted, which may in part be culture specific. In Muna (Austronesian—van den Berg 1997, 211; Palmer 2002, 110n6), nails, peanuts, leaves, and eggs have an “intrinsic” front and back, whereas in other languages only animals and a limited number of inanimate objects have one. In addition to this “intrinsic” frame of reference, other common frames of reference are the “relative” one (with regard to an observer) and the “absolute” one (geographical [north/south, east/west] or other). See in particular Levinson

- (1996), where it is also pointed out that the frames of reference are independent from the possible presence of a deictic center (*the dog was in front of the tree* whether with regard to Bill or me). See further discussion later. 1
6. For an interesting recent analysis that addresses some complications, see Rooryck and Vanden Wyngaerd (2007) and the discussion in Svenonius (2008, section 6.2) 2
7. Svenonius makes a further difference between “axial parts” (*front of in front of*) and “places” (*above/behind*, etc.), but I ignore this difference here. 3
8. The structure in (8) is actually only a fragment of the overall structure (see later refinements and references). To be part, as modifiers, of a DP headed by PLACE/‘place’ is plausibly what has induced many authors to characterize them as nouns. As modifiers of a noun they may themselves be nominal but need not be nouns. For arguments that (the analogues of) ‘front’, ‘top’, and so on in Amharic, Zina Kotoko, and Gungbe are not ordinary nouns when they are part of a ‘complex preposition’ despite their homophony with nouns, see Tremblay and Kabbaj (1990, section 2.1), Holmberg (2002, section 2), and Aboh (2010, section 2.2.4). For an argument to the same effect based on cross-linguistic evidence, see Svenonius (2006b). 4
9. That the “simple” preposition in (9) is a high stative preposition rather than a lower functional preposition pied-piped by NP_{place} in its movement to the left of AxPartP is suggested by the fact that the other high directional prepositions (‘to’ and ‘from’) are also found in that position. Other languages with the same word order as Gungbe (in addition to other Gbe languages, to Amharic, Supyire, Songhay, and Likpe—Ameka 2003, 2007) are Tidore (Papuan—van Staden 2007), Chinese, and Saramaccan (Zhang 2002, 53). 5
- If the phrase final complex prepositions ‘under’, ‘beside’, and so on of Gungbe and other such languages are not P heads but phrasal modifiers of a silent head PLACE, then their exceptionality with regard to Greenberg’s observation that postpositional languages are not verb initial disappears (cf. Kayne 2005b, 51). 6
10. See Aboh (2010, section 3.1). In Zina Kotoko the order is possessum > possessor, while for Gungbe, Aboh analyzes cases like (9) as reflecting the order possessor > possessum (see his sections 2.2.1 and 3.1). Also see Zwart (2005): “Many languages express spatio-temporal relations in a possessive construction where the relational concept is expressed by a (grammaticalized) noun, such that for example in the house is rendered as (the) inside (of) the house. The relational noun may either precede or follow its complement, depending on the organization of possessive constructions” (692). Beyond Chadic (Holmberg 2002, Pawlak 2003, 246), the order seen in (10) is apparently also found in Nilo-Saharan (see Ameka 2003, 42, on Maa), Mayan (see Brown 2006, 243, on Tzeltal; Bohmeyer and Stolz 2006, 286, on Yukatek Maya), and Austronesian (see Topping 1973, 116–19, on Chamorro; Zhang 2002, 54, on Indonesian; Boutin 2004, 6, on Bonggi). 7
11. Cf. Kayne (2004a, section 4.4). On the “light” preposition following complex prepositions in Greek and Hebrew see Terzi (2008 and 2010), Botwinik-Rotem (2008), and Botwinik-Rotem and Terzi (2008). 8
12. Also see Kayne (2004a, section 4.2.2) and Collins (2007), who argues that nonpronunciation of the preposition is contingent on movement of overt material to its Spec. An interesting argument for the presence of a covert directional preposition TO in English (when none is overt) is discussed in Stringer (2006, 64). He notes that if “as an empty category, it must be locally licensed by strict adjacency to the verb,” it is understandable that, under clefting, the directional interpretation of *Zidane ran on the pitch* is lost (cf. *It was on the pitch that Zidane ran*). 9

In general, across languages, only the unmarked stative and directional Ps ‘at’ and ‘to’, not the marked source directional preposition ‘from’, can fail to be pronounced (He put it TO under the bed vs. He lifted it *(from) under the bed) (cf. Caponigro and Pearl 2008, 383f), though some languages also pronounce the goal directional preposition ‘to’. See the case of Tokelauan (Austronesian) in (i) and that of Palula (Indo-Aryan) in (ii):

(i) hau ki loto fale
 come(sing.) to inside house
 ‘Come inside’ (Sharples 1976, 71)

(ii) [ɖukur-á šii̯ti the] ghin-í gíia hín-a
 hut-OBL inside to take-CONV go.PFV.PL be.PRS-MASC.PL
 ‘They took him inside the hut’ (Liljegren 2008, 173)

Later I provide some evidence that suggests that directional prepositions actually co-occur with stative, axial, and functional case-assigning prepositions (He put it TO AT under P the bed / He lifted it from AT under P the bed).

13. Also see the case of Palula in note 12 and that of Trumai (isolate, Brazil—Guirardello-Damian 2007).

14. In *right from there*, *right* possibly modifies a nonpronounced *away*. See the contrast between *Chico raced right away from Mrs. Claypool* and **Chico raced away right from Mrs. Claypool*, noted in Hendrick (1976, 99). Similar considerations seem to hold for directional *to*: *Zeppo went (right) up (*right) to the attic* (Rooryck 1996, 230).

15. For simplicity, I abstract here and later on from complexities of the derivation. If the functional P licensing *the table* in (14) is actually merged above it after this has raised higher (or even outside of PP_{Dir}), attracting [from AT under] to its left (cf. Kayne 2002, 2004), the structure would be somewhat different (but in ways that do not affect the points I am making here).

16. Unattested, apparently, is P_{Stat} P_{Dir} NP (with free morphemes). If English into is P_{Stat}—P_{Dir} -N (but see Noonan 2010), the reversal of the (bound) morphemes might be due to incorporation.

17. The presence in goal direction contexts of a single preposition (*Ion merge la magazin*, *Ion va al negozio* ‘Ion is going to [the] store’), identical to the stative preposition (*Ion este la magazin*, *Ion è al negozio* ‘Ion is at [the] store’), can be taken to mean that the goal direction preposition is unpronounced (cf. Svenonius’s idea mentioned in the main text preceding note 12, as well as Collins 2007). As we see in (15) through (19) or in (i)–(iii) in this note from three Austronesian languages, the goal direction preposition is often found to obligatorily co-occur with the stative preposition.

(i) baroesa lôn=jak u=bak=rumoh=gopnyan
 the other day I=go to=at=house=he
 ‘The other day I went to his house’
 (Acehnese—Durie 1985, 172)

(ii) Sia m-i-uhad [-in—əm-uhad] ti-di Kudat
 3s.NOM ACY-REALIS-move from-at Kudat
 ‘She moved from Kudat.’ (Bonggi—Boutin 2004, 13)

(iii) mai he motu ko Tonga
 from Loc island Pred Tonga
 ‘from Tonga’ (Niuean—Massam 2006, 8)

18. Both Givón (1980, 45) and Oberly (2004, section 5.6) analyze *-vee* and *-tuk* as postpositions. Yanesha’ (Arawakan—Adelaar 2004, 428) and Shuar (Jivaroan—Adelaar 2004, 440) have N-LOC-ABL and N-LOC-ALL; various Australian languages have N-LOC-ABL (Blake 1977, 55; Kracht 2002, 183). Jero (Tibeto-Burman—Opgenort 2005, 92) has N-LOC-SOURCE. In

- Korean, as Son (2006, 195n21) points out, when the object DP is animate, the stative morphemes (-*eykey* and -*hanthey*) must co-occur in directed motion contexts with the directional adposition-(u)lo (see *John-eykey-lo* [lit., 'John-at-to (toward John)']).
19. Also see Brugè and Suñer (2009) for the corresponding complex temporal prepositions 'before' and 'after'. Apparently inconsistent with the hierarchy in (20) is a case like *two inches from the table*. The inconsistency, however, may be only apparent. *From* appears to be ambiguous between a directional preposition (merged under P Dir) and a vague axial part (projecting vectors in some unspecified direction from the ground and as such merged under AxPartP). Evidence for this is the fact that the two instances of *from* may actually co-occur (sandwiching the measure phrase: *The cable will be laid down from two inches from the table to the window*) and the fact that the *from* that appears after the measure phrase cannot co-occur with an axial part (*It is two inches from under the table).
20. Thinking of Kayne (2004a), DeicticP could in fact be more complex, with another instance of PLACE and an unpronounced demonstrative: . . . [_{DeicticP} [[there PLACE]_i THAT t_i] . Overt evidence for such silent pieces are possibly the example (ii)b of note 5 above, from Tairora, and the following Korean example (i), cited in Svenonius (2010), where a (distal) demonstrative preceding the axial part is interpreted as 'there':
- (i) Ku sangca-nun oscang ce mit-ey twu-ess-ta
 the box-TOP chest DIST bottom-LOC place-PAST-DECL
 'I put the box over there under the chest'
- In Grebo (Kru, Niger-Congo), if no postposition is present, the use of deictic *ke* 'there' is obligatory (de Melo 2005, 42f):
- (i) Ne yi-da no ne ke London vs. (ii) Ne yi-da no ne (ke) kae ye
 I see-PAST him AFFIRM I see-PAST him AFFIRM
 there London (there) house in-front-of
 'I saw him in London' 'I saw him in front of the house'
21. Svenonius (2007) notes that the deictic adverb can follow but not precede ModeDirP and Svenonius (2010, section 2.4) observes, following Kayne (2005c, 75), that the possibility for it to follow an axial part 'preposition' (*under here*) is due to the raising of the axial preposition (plus the empty ground DP) across the deictic adverb (with the effect that the meaning is "here, under something" rather than "under this place").
22. Certain dialects of the Valtellina (northern Italy) also allow for the co-occurrence of the same two relative viewpoints seen in (25)b ('up/down' and 'in/out') in an order (with the deictic particle) that appears to be the mirror image of the English order. See *lafösù*, literally, 'there out up' (Prandi 2007, section 3). The fact that *lafösù* is spelled as a single word may suggest a derivation from an (English) order (*sù fò la*) through successive incorporations (of *la* to *fò* and of *lafö* to *sù*). Italian *laggiù fuori* (*dietro il fienile*), literally, 'there+down out (behind the barn)', may instead be thought of as deriving from the same (English) order through incorporation of *là* to *giù* crossing over *fuori*.
- Dialects of the Valtellina also show that indication of the 'up/down' (relative) viewpoint is obligatory in all directional contexts: *Sum 'ndàc' *(s')a sùràna* 'I have gone *(up) to Surana'.
- Similar facts are found in Ladin, Sursilvan, Monnese, and other dialects of the Alps, with interesting extensions of the 'in/out' relative point of view.

See Pescarini (2004). To judge from Abraham (2010), Noonan (2010) and Van Riemsdijk (2007), German “doubling or echo PPs” seem to conflate the relative viewpoint projections and the deictic projection (toward/away from the speaker):

- (i) Die Schnecke kroch auf das Dach hinauf/hinab/hinüber
 The snail crept on the roof up/down/across (away from the speaker)
 ‘The snail crept up/down/across the roof’

(Van Riemsdijk 2007, 267)

23. In Nêlêmwa, *up/down* can also have a different topographic reference (‘up,’ meaning ‘inland’; ‘down,’ meaning ‘seaward’). Also see the case of Tzeltal (Mayan), where the opposition ‘uphill’/‘downhill’ provides an absolute system of coordinates (Brown and Levinson 1993).
24. In (27) we abstracted from the projection dominating PP_{dir}, which introduces modifiers such as *right (away)* (see note 14) and from the projections hosting the movement of particles in certain languages (see Koopman 2010 and Den Dikken 2010). A question that we did not address is what combinations of elements are possible in each language. For relevant preliminary observations on English and German, see Kayne (2005a, 68) and Svenonius (2010) and Noonan (2010). The variation appears extensive.
 The kinds of extractions that such structure allows in each language (e.g., standard preposition stranding) are another potential source of variation that remains to be investigated. Some observations appear in Hornstein and Weinberg (1981, 60n9), Kayne (2005a, 68) and in Noonan (2010) and Den Dikken (2010).
25. As usual in analyses that strive to map out in detail the extended projection of a certain head, the question arises as to whether the entire structure is always projected, even when only part of it finds overt expression. Given the evidence from semantic interpretation seen earlier for the presence of certain unpronounced heads (and phrases) of the extended projection of spatial P_s, it is tempting to assume that the entire sequence of functional projections is indeed present, with default or unspecified values when unpronounced. For further general discussion of this controversial question, see Cinque (1999, chapter 6).
26. Also see the order Source prefix > Goal prefix in Chickasaw, cited by Nam (2004a, section 2.2), after Munro (2000).
27. One can perhaps express an infinite number of configurations (e.g., ‘at the upper left corner of the table’, ‘on the tip of the mountain’, ‘in the first part of the train’), but these are run-of-the-mill P+DP constructions, not complex prepositions. Interestingly, Froud’s patient consistently made a distinction between phrases such as ‘in front of the house’ (impaired) and ‘in the front of the house’ (unimpaired) (see Froud 2001, appendix A). Also see Lonzi, Luzzatti and Vitolo (2006, section 5).

NOTES TO CHAPTER 7

- * I wish to thank two anonymous reviewers, and Matthew Dryer, for their comments.
1. This is in fact a simplification, which however does not affect the thrust of the argument. While the prenominal order is Dem > Num > Adj without exceptions (or virtually so), more possibilities than the two Dem > Num > Adj and Adj > Num > Dem are actually attested postnominally (see (17) below, and Cinque 2005b for an illustration of how they can be derived by different leftward movements).

2. While the relative order of postnominal adjectives of Size, Color, and Nationality in Welsh is the same as the order of the same adjectives in prenominal position in English (cf. Sproat and Shih 1991, Rouveret 1994, Plank 2006), other adjectives (among which quality, age, the functional adjective ‘other’ and demonstratives) show a (postnominal) order which is the mirror image of the English order (see Willis 2006): N A_{size} A_{color} $A_{\text{nationality}}$ A_{age} A_{quality} ‘other’ Dem. 1–6
- If movement of the NP (or phrases containing the NP) rather than head movement is responsible for DP internal orders (Cinque 2005b and 2010a), this mixture of direct and mirror-image orders of nominal modifiers can be reconciled (pace Willis 2006) with a unique, universal, base structure. 7–8
3. On the interference of focus on the canonical order of circumstantial PPs and possible diagnostics for the canonical order, see Cinque (2002), Schweikert (2005a) and Takamine (2010). 9–11
4. See Cinque (2010b), where the other two possible orders of the three elements P_{Dir} P_{Loc} NP are also documented: $P_{\text{Dir}} > NP > P_{\text{Loc}}$ in Taba (Austronesian—Bowden n.d. *ap-po bbuk li* ‘(lit.) to-down book at’ (onto the book)), and $P_{\text{Loc}} > NP > P_{\text{Dir}}$ in Zina Kotoko (Chadic—Tourneux 2003, 294 ‘à jì kàskú kí’ ‘LOC inside market toward’ (toward the market)). 12–16
5. In certain languages, (at most) one of these elements, if it bears a focus feature, can apparently move to an initial focus position—see note 21 of this chapter for relevant references. 17–18
6. The references in the footnotes that follow are those given in Cinque (2005b), with some additions. 19–20
7. Rijkhoff (1998, 357) states that the “order [Dem Num A N] is by far the most common both inside and (to a lesser extent) outside Europe”, listing on p. 342f many languages of the Afro-Asiatic, Altaic, Caucasian, Indo-European, and Uralic families. More languages with this order are listed in Hawkins (1983, 119), Rijkhoff (1990, 32; 2002, 112, 270, fn.10, 310, 328, 330f), and Croft and Deligianni (2001, 7). It is also found in American Indian (e.g., Comox—Harris 1977, 129) and Australian (e.g. Tiwi—Osborne 1974, 73) languages. 21–26
8. According to Rijkhoff (1998, 357) “[t]he order [Dem Num N A] is [...] rather frequent in Europe”. Outside Europe it is documented, among other languages, in Yao (Jones 1970), Khasi (Nagaraja 1985, 14ff), Madak (Lee 1994, §1.1), Burushaski, Guaraní (Rijkhoff 2002, 328), Abkhaz, Farsi, Kiowa, Mam (Croft and Deligianni 2001), Kristang, Kriyol, Tok Pisin and Cape Verdian, Mauritian, and Seychelles Creoles (Haddican 2002). 27–31
9. This order is documented in Sampur and Camus (Heine 1981) (but see Rijkhoff 2002, 274f), in Maasai (Koopman 2005a), and in Wappo (Thompson, Park and Li 2006, 8). According to Croft and Deligianni (2001, 7), it is also a possible alternative order (of the Dem N A Num order) in Hualapai and Lahu. 32–34
10. Greenberg (1963, 87) states that the N Dem Num A is “[a] less popular alternative” to N A Num Dem, citing Kikuyu as one example. Other languages displaying this order are: Elmolo (Heine 1980), Turkana, Rendille (Heine 1981) Noni (or Noòni—Hyman 1981, 31; Lux and Lux 1996, 10), Nkore-Kiga (Lu 1998, 162, fn59, 165), Nomaándé (Wilkendorf 2001, 11), Abu’ (Lynch 1998, 171), Arbore (Hayward 1984, 212), Bai and Moro (Dryer 2007), and the Kuliak (Nilo-Saharan) languages Ik and So (Serzisko 1989, 391). This is also the order given by Lawton (1993, 150) for Kiriwina (Kiliwila). 35–41
11. It is found in Koiari (which also has the order N A Dem Num with most adjectives—Dutton 1996, 60ff), and in Bai (Wiersma 2003, 669). According to Dryer (2000, 20), Bai also has N Dem Num A as an alternative order. [A N]-def Num is also an alternative order of the unmarked Dem Num A N order of Icelandic (Sigurðsson 1993, 194; Vangsnes 2004). The possibility of this order in Koiari, and Bai (and of the order A N Num Dem in 42–48

Gude and Sango—see below) indicates that the last sentence of Hawkins' (1983,119–120) revision of Greenberg's Universal 20 ("In no case does the adjective precede the head when the demonstrative or numeral follow.") may be too strong. Greenberg's (1963) Universal 18 was less categorical ("When the descriptive adjective precedes the noun, the demonstrative, and the numeral, with overwhelmingly more than chance frequency, do likewise"). This was because of the existence, noted by Greenberg, of "a small number of instances (e.g., Efik) in which the demonstrative follows while the adjective precedes" (p.86). Cf. also Dryer (2008).

12. This order is found in Lalo (Björverud 1998, 116ff), Lisu (Bradley 2003, 228f), Akha (Hansson 2003, 241), Aghem (Hyman 1979, 27), Maranunggu (Tryon 1974, 154), Kenyang (Ramirez 1998, 28), Port Sandwich (Crowley 2002, 653), Koiari (Dutton 1996, 60ff), which also has the order A N Dem Num with certain adjectives, Lingala (Haddican 2002), Hocank, which also has the alternative order N A Num Dem (Helmbrecht 2004, 13). Croft and Deligianni (2001) also assign to this order Babungo and, more tentatively, Woleaian.
13. A potential counterexample, pointed out to me by Matthew Dryer (p.c.), is provided by Dhivehi (Maldivian), for which Cain (2000, 78), and Cain and Gair (2000, 33) give Dem A Num N as the canonical order. Whether this exception is a real counterexample or can be explained away by assuming that Dhivehi lacks direct modification (i.e., non relative clause derived) adjectives entirely, and exploits the possibility of introducing them as the predicate of a (prenominal) reduced relative clause (like possibly in (17)r) will be left open here.
14. According to Hawkins (1983, 119), Lu (1998,165), and Rijkhoff (1998, 358; 2002, 331), this order is not attested. However, Kölver (1978, 285) documents it in Newari (also see Dryer's (2000, 39) example (79)), LaPolla (2003, 676) in Dulong, Mazaudon (2003, 297) in Tamang, Gair and Paolillo (1997, 29f) in Sinhala, and Valenzuela (2002, 28f) in Shipibo-Konibo. Bhattacharya (1998) and Croft and Deligianni (2001) give it as an alternative order for the Dem Num A N order in, respectively, Bangla (where it leads to a specific interpretation of the DP) and Syrian Arabic.
15. Among the languages that instantiate this order are Kabardian and Warao (Hawkins 1983, 119; Colarusso 1992, 63), Burmese, Lolo, Maru, Rāwang (Jones 1970), Manange (Genetti and Hildebrandt 2004, 75), Ladakhi (Koshal 1979, 108), Epena Pedee (Harms 1994, chapter 4), Miya (Schuh 1998, 277), Gambian Mandinka (Rijkhoff 1998,356), Cuna (Quesada 1999, 232), Kaki Ae (Clifton 1995, 46), Pech (Holt 1999, 62ff), Tunen (Mous 1997, 124). It is an alternative order of N A Num Dem in Kunama (Bender 1996, 41), and of Dem N Num A in Hualapai and Lahu (Croft and Deligianni 2001, 7).
16. According to Hawkins (1983, 119) and Lu (1998, 165) this order is not attested. However, Rijkhoff (2002, 328) reports Berbice Dutch Creole as instantiating it. Haddican (2002) documents the same order for the Creole language Bislama. Lynch (2002, 769f, 781, 809) gives it as the order of Xârâcùù, Iaaï, and Puluwatese. To judge from Siewierska and Uhlířová (1997, 132f), Polish and Russian also have this order as an alternative order to Dem Num A N.
17. This order appears documented in a number of Mon-Khmer languages (Dryer 2001), in Basque (Rijkhoff 2002,328), Celtic, Rapanui, Hebrew, Indonesian, Hmong, Jacalteco, Miao (cf. Hawkins 1983, 119, Lu 1998, 162; Harriehausen 1990, 144), in Nung (Saul and Freiburger Wilson 1980, 14), in Vietnamese (Nguyen 2004) in Wolof (Sy 2003), in Sisiqa (Ross 2002b, 459f); and in a number of Creoles (Haddican 2002). It is also displayed by the Australian language Watjarri (Douglas 1981, 241).

18. According to Lu (1998, 162) this order is not attested. However, Heine (1981), as noted, documents it in three languages: Gabra, Logoli and Luo (on Luo, also see Chiao 1998). Noonan (1992, 154) documents it in Lango. Ross (2002a, 132) and Tryon (2002, 576) give it as the order of Kele, and Buma, respectively. Croft and Deligianni (2001) give it as an alternative order in Manam. 1
19. According to Hawkins (1983, 119) and Lu (1998, 165), this order is not attested. However, Thornell (1997, 71) and Haddican (2002) give it as the order of Sango, and Rijkhoff (1998, 356, 358; 2002, 332, fn.19) mentions (dubitably) the possible existence of two other languages with this order: Gude and Zande. 2
20. This order is found in Cambodian, Javanese, Karen, Khmu, Palaung, Shan, Thai (Rijkhoff 1990, 32), Enga (Lynch 1998, 171), Dagaare (Bodomo 1993), Ewe (Essegbey 1993), Gungbe (Aboh 2004), Labu and Ponapean (Lynch 1998, 121), Mao Naga (Giridhar 1994, 452) Selepet, Yoruba (Hawkins 1983, 119), West Greenlandic (which also has N A Dem Num as an alternative order) (Rijkhoff 2002, 326); Amele, Igbo, Kusaiean, Manam (Croft and Deligianni 2001), Fa d'Ambu, Nubi (Haddican 2002), Kugu Nganhcara (Smith and Johnson 2000, 388), Cabécar (Quesada 1999, 232), Kunama (Bender 1996, 41), Māori (Pearce 2002). 3
21. On the possible, marked, preposing of APs to DP initial position (often for focusing purposes), see Corbett (1979), Giusti (1996), and Rijkhoff (1998, 352f; 2002, 267, 272). 4
- One additional parameter is the obligatory vs. optional application of movement. For example, the alternative orders Q Dem Num N A, Q Dem N A Num, Q N A Num Dem, N A Num Dem Q of Standard Arabic (cf. Fassi Fehri 1999) point to the obligatory character of movement of the NP around the adjectives followed by optional movements (plus pied-piping of the whose picture-type) around numerals, demonstratives and universal quantifiers. 5
22. Sources documenting the attested orders are given in the footnotes that follow. See Cinque (2006c, Chapter 5 here) for examples illustrating the various orders, and discussion of some apparent exceptions. 6
23. This order is attested in Khoisan (e.g., Nama: <http://instruct1.cit.cornell.edu/courses/ling700/nama.htm>, and /Xam <http://instruct1.cit.cornell.edu/courses/ling700/xam.htm>); in a number of Oceanic (Austronesian) languages ('Ala'ala—Ross 2002d, 353, 359; Nabukelevu—Pawley and Sayaba 1982, 68, 85; Samoan—Cinque 1999, 160); in Yoruba (Niger-Congo—Oládiípò Ajíbóyè, p.c.); and in some South American Indian languages (Apinajé (Macro-Jê)—Cunha de Oliveira 2003, 255f, 265), and Canela—Crahô (Cariban—cf. Cinque 1999, 162 and references cited there). 7
24. In addition to Nama (which also instantiates the order in (22)a), and Nluu (Khoisan—Collins 2004, 188), other languages instantiating this order are Easter Island (Austronesian—Chapin 1978, 153, 168), Hmong Njua (Sino-Hmong-Mien—Harriehausen 1990, 57, 226); and Nabukelevu (with post-verbal progressive aspect markers—Pawley and Sayaba 1982, 53ff). 8
25. This order is found in, among other languages, Kharia (Munda—Biligiri 1965, 59, 98), Ngarinjin (Kimberley, North Western Australia—Coate and Coate 1970, 43, 75), and Tümpisa Shoshone (Uto-Aztecan—Dayley 1989, 325, 348). 9
26. This order appears instantiated in Comox (Central Coast Salish—Harris 1977, 139), and, to judge from Aikhenvald (2006, 179, 190) (at least for some combinations of Mood, Tense and Aspect) in Tariana (North Arawak). 10
27. St'át'imcets (Matthewson 2003, 69) apparently shows the order imperfect > interrogative > past > V, but the interrogative particle is a second position 11

- 1 particle, with the imperfect particle possibly moved to first position from a
 2 lower one (see the discussion in Cinque 2007).
 3 28. This order appears to be instantiated in Xârâcùù (Moyses-Faurie 1995, 117,
 4 157), and Tinrin (Osuni 1995, 188, 204), two Melanesian (Austronesian) lan-
 5 guages of New Caledonia, and in Sooke (Coast Salish—Efrat 1969, 43, 189).
 6 29. This order is instantiated in Kanoê (a language isolate of Brazil) with Past
 7 tense (Bacelar 2004, 222, 226), in Lummi (Coast Salish—Steele 1981, 60;
 8 and Jelinek and Demers 1997, 310f), and in Lotha (Tibeto-Burman—Acha-
 9 rya 1983, 158).
 10 30. This order is documented in Gunwinggu, a North Australian language of
 11 Arnhem Land (Oates 1964, 49, 53, 82), and in Nevome (Uto-Aztecan—Shaul
 12 1986, 25, 85). It also appears to be instantiated in Slave (Athapaskan—Rice
 13 1989, 420, 588, 1003).
 14 31. This order is documented in, among other languages, Santali (Munda—Gosh
 15 1994, 106, 152), Northern Pomo (Hokan—O’Connor 1992, 47, 269), Iatmul
 16 (Papuan—Staalsen 1972, 49–50, 57), and in the Australian languages Gida-
 17 bal (Geytenbeek and Geytenbeek 1971, 45) and Pitjantjatjara (Glass and
 18 Hackett 1970, 32, 74).
 19 32. This order appears to be instantiated in a number of Austronesian lan-
 20 guages, among which Loni (Hamel 1994, 149) and Tigak (Beaumont 1979,
 21 35, 78ff). It is also displayed by Kom (Benue-Congo—Chia 1976), Black-
 22 foot (Algonquian—Frantz 1991), Sm’algyax (Penutian—Mulder 1994, 80,
 23 178), and Cogtse Gyarong (Tibeto-Burman—Nagano 2003, 476f).
 24 33. This order appears to be instantiated in a number of Oceanic (Austrone-
 25 sian) languages, among which Kairiru (Ross 2002i, 211, 214), Kaulong (Ross
 26 2002f, 400, 409), and Urak Lawoi’ (Hogan 1999, 38, 40).
 27 34. Fernandez (1967, 30, 44) explicitly claims that this is the order of tense,
 28 aspect, and interrogative mood suffixes in Remo (Munda-Khmer). The same
 29 order is apparently attested in the Niger-Congo languages Mundang (Adama-
 30 wa—Elders 2000, 387, 389) and Noon (West Atlantic—Soukka 2000, 181,
 31 200), and in Creek (Muskogean—Martin 2000, 388). It is also documented
 32 in a number of Tibeto-Burman languages (e.g., Limbu—van Driem (1987,
 33 90); and Apatani—Abraham 1985, 95, 103).
 34 35. This order is instantiated in a number of (non-Austronesian) Papuan lan-
 35 guages of New Guinea: Amanab (Minch 1991, 10, 17ff, 60), Namia (Feld-
 36 pausch and Feldpausch 1992, 55), Nend (Harris 1990, 139, 154), Yagaria
 37 (Renck 1975, 101); in the Austronesian language Urak Lawoi’ (Hogan
 38 1999, 7f, 19), in Diegueño (Hokan—Langdon 1970, 147 and 186), in Slave
 39 (Athapaskan—Rice 1989, 1114, 1131). This order is also found with free mor-
 40 phemes in Tondi Songway Kiini (Nilo-Saharan—Heath 2005, 175, 182), and
 41 Mina (Chadic—Frajzyngier and Johnston 2005, 183, 200).
 42 36. This is by far the most frequent order. It is typical of Altaic, Caucasian, Dravid-
 43 ian, Eskimo-Aleut, Manchu-Tungusic, Tibeto-Burman, and Papuan languages,
 44 and it is also found in many Amerindian, and Indo-European languages.

NOTES TO CHAPTER 8

- 45 * This chapter was originally prepared for a private birthday book in honour
 46 of Bernard Comrie. I thank Richard Kayne for helpful comments.
1. This is true of many Tai-Kadai, Sino-Tibetan, Mon-Khmer and Austronesian languages (see, e.g., Thomas 1971, 137; Manley 1972, 126; Goral 1978, 10, 28, 29–30; Kruspe 2004, 209).
 2. Also see Simpson (2005, section 7), who suggests that cases like (2) involve raising of the N to CL.

3. The same is true of Bulgarian, which apart from the existence of three (or four) genuine numeral classifiers (Greenberg 1972, fn. 5; Cinque and Krapova 2007) is essentially a ‘nonnumeral classifier’ language. 1
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4. Although (6)a and b are felt as awkward by some speakers, Richard Kayne tells me that for him they are not completely impossible. The Bulgarian examples in (7) are from Cinque and Krapova (2007). 4
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5. Perhaps, in the adverbial classifier usage of these nouns, the noun itself raises to the classifier head, as Simpson (2005) suggested for Thai. 6
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6. See Kayne (2003b), who argues for the existence of a non pronounced numeral classifier ‘year’ in English (in expressions like *I am seven*, *at the age of seven*, etc.), and Kayne (2005b), more generally, on the role of non pronounced functional elements in the languages of the world. 8
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NOTES TO CHAPTER 9 11
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1. Here and below the proper noun > common noun orders typical of OV languages are given in bold. Interestingly, VO Chinese, Norwegian, Bulgarian and English display more head-final pairs in the proper noun/common noun order than OV German. Cf. (3)a and b and (4)a-b with *Im Jahre 1950, Um 8 Uhr, (Im Mai Monat)/Im Monat Mai, Maximilianstrasse, In der Stadt Berlin, Der Cervino Berg /der Berg Cervino, Die Insel Rügen, Der Fluss Rhein, Ein rot farbiges Auto*, Buchstabe “k”. 14
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2. For the Chinese data, I am indebted to Candice Chi Hang Cheung, Francesca del Gobbo and Chi Fung Lam. 20
21
3. To judge from Tsunoda (1992), closely related Swedish may conform more to the common noun > proper noun order of head-initial languages. 22
23
4. Cf. Irwin (2007). 24
5. See Kayne (2003b). Also see the perfectly corresponding case in Modern Greek (Arhonto Terzi, p.c.), where the first plural article becomes understandable if there is a silent ORES ‘hours’: 25
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- (i) 1s-tis [okto i ora] 27
at-the (fem.pl.acc.) [eight the (fem.sing.nom) hour (fem.sing.nom)] 28
ORES 29
HOURS (fem.pl.acc.) 30
- When ‘street’ is missing, Bulgarian has the name of the street in the feminine, presumably inheriting the feminine from a silent *ulitsa* (fem.) ‘street’: *v ulitsa Rakovski* (in Rakovski street) vs. *v Rakovska* (Iliyana Krapova, p.c.). 31
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NOTES TO CHAPTER 10 34
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- * I wish to thank an anonymous referee and Richard Kayne for their helpful observations. The material presented here is a reelaboration of part of section 1 of Cinque (1978). An earlier version has appeared in the *Wiener Linguistische Gazette* n. 18 (1978). 37
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1. The “structure dependence” of syntactic rules is a traditional assumption of the transformational research program since its beginnings (see Chomsky 1955, 1965). For more recent discussion, see Chomsky (1975). On the other hand, the “function dependence” of syntactic rules is implicit in many traditional grammar accounts and has in more recent times been explicitly maintained by works in so-called “Relational Grammar” and occasionally by some transformational linguists (cf. Bresnan 1978). In the version of “Relational Grammar” advocated by Perlmutter, Postal, Johnson, and others, 40
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- wh-movements are not considered function dependent. See, for example, Postal and Pullum (1978).
2. It may not be fair to assume that Keenan and Comrie's proposal was meant to represent a true alternative to transformational analyses of relativization systems in individual languages. Their study might be regarded as offering an overall (and necessarily imprecise) descriptive survey of surface phenomena in the relativization systems of a sample of languages of the world. This article, then, would merely count against interpreting their proposal in the former way.
 3. A third (invariable) form introducing relative clauses is *che*, which is homophonous with the complementizer *che* and which traditional grammars of Italian invariably classify as a relative pronoun. This form will be discussed below.
 4. See Kayne (1976, fn. 7) for a similar suggestion.
 5. See, for example, Fornaciari (1881, 115–120). Note that no (simplex) preposition stranding is allowed in Italian. The preposition is always carried along with its object NP. Here I will simply assume that some relevant principle is available which ensures just this effect. Cf. Van Riemsdijk (1978), Hornstein and Weinberg (1981) for relevant discussion. In colloquial nonaccurate Italian, a partially different system is used. Here we will not be concerned with such a system.
 6. These (and other) facts closely resemble the situation studied in detail for French in Kayne (1976).
 7. Chomsky (1980) relativizes the obligatoriness of the deletion to the context “_____ infinitive complement”. For Italian (and French), we assume this interpretation to extend to finite complements. This has a number of different consequences for the two languages (cf., for example, the contrast between *The boy that/who/ is speaking* and *Il ragazzo che/*il quale parla*; for further discussion, see Cinque (1978)). Kayne's (1976) interpretation of the obligatoriness of the relative NP deletion in COMP is rather different from Chomsky's. In essence, the difference lies in the fact that for Kayne deletion is obligatory even when it leads to a violation of recoverability. This interpretation was essentially motivated by the following French facts:
 - (i) *L'homme lequél est sorti . . .
'The man who went out . . .'
 - (ii) L'homme auquel Marie pense . . .
'The man Marie is thinking of . . .'
 - (iii) *L'homme la femme duquel tu as insultée . . .
'The man whose wife you insulted . . .'
 - (iv) L'homme à la femme duquel je pensais . . .
'The man whose wife I was thinking of . . .'
 (i) and (iii) are considered to be unacceptable for the same reason: namely, nonapplication of obligatory deletion of the relative NP in COMP. Under the extension of Chomsky's interpretation to finite complements as well, the ungrammaticality of (iii) is left unexplained. No deletion would be possible there since it would lead to a violation of recoverability (or of the principle that excludes stranded prepositions in French). So the sentence should be grammatical. For an argument that the ungrammaticality of (iii) may indeed be due to an external factor, and for a full generalization of Chomsky's interpretation (of deletion in COMP) to finite complements, even to English, see Cinque (1982).
 8. See section 2.2 below for a concrete proposal which will be seen to have the interesting consequence of constraining the (syntactically) unconstrained rule Move α .
 9. For convenience, we repeat here their filter (178):

- (i) * $[_a \text{ NP tense VP}]$ unless $\alpha \neq \text{NP}$ and is adjacent to and in the domain of $[+F]$, *that*, or NP (“+F”—a subfeature of $[+V]$ —represents the class of “verbs and adjectives that permit the structure resulting from the deletion of *that*”.) Cf. fn. 12 below for a first approximation to the form the related filter of Italian should take. Filter (53) is repeated below as (10). 1
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10. Recall that the feature *wh*, being transformationally inserted, is “noninherent” and, thus, does not count in the evaluation of (non)distinctness. See Chomsky (1965, 177–182) and Kayne (1976, 272). For cases where the general rule Move α moves a constituent to COMP which is distinct from the head NP, see below. 6
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11. In this connection, it should be observed that in older stages of Italian such forms as (5a,b) were grammatical. Cf., among others, Noordhof (1937, 12). 10
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12. The very few exceptions seem to have roughly the following properties: (a) the subordinate clause is a complement to a V or Adj; (b) the mood of the clause is subjunctive. Compare (6a–d) with (ia–c): 12
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- (i) a. Non sapevo fosse malato. 15
‘I did not know he was (subjunctive) ill.’
b. Credo sia arrivato Piero. 16
‘I think Piero has (subjunctive) arrived.’ 17
c. *E’ una disgrazia sia così basso. 18
‘It is a pity he is (subjunctive) so short.’ 19
- A first statement of these restrictions might take the form of the following filter (cf. Chomsky and Lasnik (1977, 486)): 20
21
- (ii) * $[_a \text{ NP tense VP}]$ unless $\alpha \neq \text{NP}$ and is adjacent to and in the domain of $[+F]$ or $[_{\text{COMP}} \text{ X}]$ (where X represents phonological material: either *che* or a *wh*-phrase) 22
23
- The feature “+F” may be seen as a convenient way to represent the class of verbs and adjectives that govern subjunctive in their complements, the only class of predicates that permit deletion of *che*. Strictly speaking, it may be incorrect to posit a feature “+F”, shared only by those predicates that select a subjunctive, since selection of a subjunctive is not always a lexical property (contrast (iii) with (iv), where it is the presence of *non* ‘not’ that makes the difference): 24
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- (iii) *Sapevo che tu fossi malato. 30
‘I knew you were (subjunctive) ill.’ 31
- (iv) Non sapevo (che) tu fossi malato. 32
‘I didn’t know you were ill.’ 33
- α must be distinct from NP, since structures such as (v) are ill-formed: 34
35
- (v) *Volevo $[_{\text{NP}} \text{ una ragazza } [_{\text{S}} \text{ sapevo cucinare}]]$.
I wanted a girl could (subj.) cook 36
- Notice also that no reference to NP is made in the “unless” condition of the filter for Italian (in contrast to the related English filter, (i) of fn. 9). This is because no sentences such as *La proposta [Gianni ha fatto] è assurda* are grammatical in Italian (in contrast with the English equivalent *The proposal Gianni made is absurd*, which is grammatical). That is, the filter must be operative in Italian even if $[_a \text{ NP tense VP}]$ is adjacent to and in the domain of NP. For the case of root sentences, see the discussion in Chomsky and Lasnik (1977, 486–487). 37
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- Finally, for those who detect a clear contrast between (ia,b) and (vi), 42
- (vi) a. *?Non sapevo $[_{\text{S}} \text{ Giorgio fosse malato}]$. 43
‘I didn’t know Giorgio was ill.’ 44
b. *?Credo $[_{\text{S}} \text{ Piero sia arrivato}]$. 45
‘I think Piero has arrived.’ 46

a further clause is needed in the “unless” condition of (ii): perhaps to the effect that the NP should not be lexical (but only trace or null). There is a certain amount of variation, and problems remain which deserve much closer attention than we can devote to them here.

13. Middle English did not possess it and the dialects spoken today in the Veneto district does not seem to possess it either (cf. *el posto dove che semo ndai geri* ‘the place where that we went yesterday’).

14. We are assuming here a “nonabsolute” interpretation of the A-over-A Principle as discussed in Chomsky (1973) (for a different interpretation, see Van Riemsdijk 1974, Kayne 1975). Notice that, given this interpretation, the grammaticality of such sentences as (ia,b) in English is not a difficulty for our analysis of (12)–(13).

(i) a. [_{NP1} they] expected [_S that [_{NP2} pictures of [_{NP3} each other]] would be on sale]

b. [_{NP1} they] expected [_S [_{NP2} pictures of [_{NP3} each other]] to be on sale]

The contrast in fact follows if we consider the crucial difference between (i) and (12)–(13) to reside in the different statement of the two construal rules involved: (1) “Coindex *each other*” (with a plural NP) and (2) “Coindex (NP)”. In (i), the construal rule is not blocked by the A-over-A Principle since it specifically mentions the form of the “anaphor” *each other*. That is, it does not mention an NP in picking out NP₃, in (i). The rule involved in (12)–(13), on the other hand, makes specific reference to an NP; so, when applied, it will pick out the more comprehensive NP, NP₂, not NP₃, with the consequence of leaving the latter without an index—a status not admitted in LF. Notice also that the contrast between (i) and (ii),

(ii) *it is a nuisance (for us) [_S for [_{NP} pictures of [_{NP} e]] to be on sale]

noted by Chomsky (1980) and left unexplained there, follows under this approach. The rule operative in (ii) is Coindex, just as in (12)–(13).

15. In a more marked style of Italian, the (b) examples become marginally acceptable, in contrast to the (a) examples, and can in fact be improved by replacing the indicative form with a subjunctive or an infinitival form. In Cinque (1978), I argue that this has to do with the double status of (art. +) *qual-*, in the appositive construction, as either an “anaphoric” or a “lexical” element (whereas *cui* is always an “anaphor”). What is important here, in any event, is that the less deviant status of the (b) examples vs. the (a) examples, as restrictives, seems to be best analyzed as a derivative phenomenon (cf. Cinque (1978)), and thus need not affect our analysis of (12)–(13) in terms of the A-over-A Principle. We would analyze such French cases as (iv) of note 7 in a similar way (see Cinque 1982).

16. In this connection, consider interesting minimal pairs such as (ia,b):

(i) a. Il fiume lungo cui spingeva la sua barca, . . .

‘The river along which he pushed his boat, . . .’

b. *Il fiume correndo lungo cui puoi ancora incontrare dei bei paesaggi, . . .

‘The river running along which you can still find nice landscapes, . . .’

Substituting *cui* with (art. +) *qual-* in (ib) (and (14)–(16)) will lead to an improvement in grammaticality (within the marked style alluded to above) for the reasons hinted at in note 15.

17. In this connection, a possible problem for the analysis proposed here (originally pointed out to me by R. Kayne) is the existence, in a more formal style of Italian, of relative clauses introduced by a prepositionless (dative) *cui*, as in (i):

- (i) La legge cui ho fatto riferimento, . . . 1
 ‘The law which I have referred (to) . . .’ 2

The analysis we have developed here appears to lead us to expect (incorrectly) that, in sentences like (i), *cui*, being prepositionless (and thus nondistinct from the head, under ordinary assumptions) should delete, giving such sentences as (ii), rather than (i): 3
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- (ii) *La legge che ho fatto riferimento . . . 6

We do not have space here to deal with this problem in any detail. For possible solutions, which remain yet rather speculative, we refer the reader to Kayne (1980) and Cinque (1978). 7
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18. Some people find that even (27a) may have this latter interpretation, although the other is the preferred one for them too. This has no effect on the argument that follows. In this case, we should expect the same judgments to carry over to the corresponding relativization with P plus a relative pronoun. 10
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K & C postulate for –case RCs in individual languages are determined by the points in those languages at which preposition stranding ceases to be grammatical. As the referee in fact notes, however, the AH so modified would lose much of its intrinsic interest. In fact, it seems to us that it would essentially become a notational variant of the analysis discussed above in terms of EST.

NOTES TO CHAPTER 11

* I wish to thank for their comments Josef Bayer, Christian Lehmann and Jan Rijkhoff.

1. Cf. Downing (1977, 164; 1978, 383, 391f), Keenan (1985, 143f). Hawkins (1990, 256) explicitly states: “If a language has VO, then it has NRel” (but see fn.4 below).

The original figures from Greenberg’s (1963) 30-language sample are given here, adapted from his table 10, p.90. In fn.20, p.106, he lists the languages (both these and the numbers in the table add up to 29, though):

	VSO	SVO	SOV
RelN	0	0	7
NRel	6	12	2
Both RelN and NRel	0	1	1

2. The numbers here refer to genera, not languages. Also see Dryer (2007) for similar figures within a somewhat expanded sample.
3. Cf. also Hawkins (1990, 241) where it is said that “44% of verb-final languages have postnominal relatives in the sample of Hawkins (1983)”.
4. Rijkhoff (2002, 307) also states that, for his sample, “the correlation is stronger in the group of VO-languages than in the OV-languages. Thirteen OV-languages have RelN order and eight have NRel order; in the group of VO-languages, on the other hand, eleven languages have NRel order, whereas only two have RelN order: Ngiti and Tsou.” However, Ngiti is a somewhat unusual SVO language (the SVO order systematically alternates with SAuxOV; it has postpositions; the genitive precedes the N—Kutsch Lojenga 1994). Kutsch Lojenga (1987/2003), in fact, explicitly argues for the verb final character of the language.

Dryer (2008) states that “This RELN order is extremely unusual among VO languages. In fact, the only VO languages in my database in which RELN is attested as the dominant order are Bai, the Chinese languages, and Amis[.]” (p.22). Mallinson and Blake (1981, 285) in their 150-language sample found only one other VO language with exclusively prenominal RCs, Palauan (Malayo-Polynesian—Austronesian). For VO languages that have both pre- and postnominal RCs, see Mallinson and Blake (1981, 285), Comrie (1981, 141), and Keenan (1985, 144), among others.

5. Each of the 150 languages of table 4 (“Word Order and Head/RC Order”) appears in the following format (taking Turkish, an SOV language, with both pre- and (in the more literary register) postnominal RCs, as an example):

Language	Word Order	RC-Head	Head-RC
139. Turkish	SOV	x	x

6. Greenberg’s (1963) 30-language sample also showed (albeit in a weaker form) that OV languages are compatible with both RelN and NRel (cf. fn.1).
7. While Schwartz (1971, 141), Gragg (1972, 159) and Hawkins (1983, 320; 1994, 316) classify Amharic as only having prenominal RCs (see also Givón 1975, 97–98), Mallinson and Blake (1981, 276, 288) actually classify it as

- having both pre- and postnominal RCs. Girma Demeke, however, confirms to me that RCs are exclusively prenominal in Modern Amharic (and, incidentally, that complement clauses are also strictly preverbal, which will be relevant for the proposal below). Also see Tremblay and Kabbaj (1990, 167f) and Demeke (2001). The source of the inconsistency may be the fact that Amharic “until fairly recently, apparently had VSO word-order and post-nominal relatives” (Downing 1978, 393, based on Hudson 1972).
8. Greenberg (1963) puts Turkish in the “rigid” subtype of SOV languages (namely those “in which the verb is always at the end”, p.79), noting however that it exceptionally allows certain phrases to follow the verb (see his fn.10). Limited exceptions to absolute verb-finality are also found in other languages often categorized as “rigid” SOV languages (e.g., the Dravidian—see fn.10, below). To judge from his Universal 7, “non rigid” SOV languages are for Greenberg those that allow adverbial modifiers to follow the verb (presumably, adverbial PPs and clauses). Close to Greenberg’s original sense, here we take the term “rigid SOV languages” to refer to those languages where nothing can follow the V (except perhaps as an afterthought), and the term “nonrigid SOV languages” to refer to those languages where various things but lexical NP objects can follow the V (complement and adverbial PPs, complement and adverbial subordinate clauses).
9. Later in the chapter (p. 299), Mallinson and Blake hint themselves at this possible generalization: “SOV languages are only clearcut RC-Head languages if they are rigidly SOV (Korean, Mongolian and Japanese are strong examples of this), whereas languages which are not rigidly SOV may also allow the order Head-RC”. See the Appendix for further evidence in favour of this generalization, which we will try to relate to a property of the subordinator introducing both relative and complement/adverbial clauses.
10. Except as afterthoughts (or deaccented, backgrounded, information). Cf., e.g., Kuno (1978) for Japanese, Herring (1994) for Tamil, Veld (1993, §7.4) for Turkish, and Peterson (2003, 420) for Hakha Lai.
11. Dryer (1992a, 87), despite the observed skewed preference for NRel across VO and OV languages, suggests that the pair N and relative clause is after all still a correlation pair with V/O order, proposing that what ties the V/O order to the N/RC order is his Branching Direction Theory, whereby “verb patterners are nonphrasal (nonbranching, lexical) categories and object patterners are phrasal (branching) categories” (p. 89). This requires one to ignore the phrasal (branching) character of the relative clause Head overtly visible in such cases as *the [interesting book about Gandhi] that we read* (cf. Kayne 1994, 154, fn. 13). That the RC Head is the whole branching constituent *[interesting book [about [Gandhi]]]* is indicated by the fact that the missing object within the relative clause is understood as “(an) interesting book about Gandhi”. This may generalize to all “verb-patterners”, including “verbs”, which also appear to be “branching” in certain cases (e.g. in their relation to adpositions [[V O] PP] vs. [PP [O V]]), as Dryer himself notes. Perhaps the relevant notion of Head is not head in the X-bar sense (an X^o), but an (extended) projection of the lexical head (N,V,etc.) of a phrase (DP, VP, etc.).
12. These are robust tendencies rather than absolute rules. Although it is generally stated that there are no languages with prenominal RCs that have an initial finite complementizer (e.g., Andrews 1975, 44; Downing 1978, 394), some in fact exist. See below the cases of Galla (Oromo) in (10), Sílli Greek in (11), and Tigre in (12). Though rare, the counterpart with preverbal complement clauses ($(I_{\text{clause}} \text{ COMP. . . . } V)$) also exists. See, e.g., (i), from Oromo (Owens 1985, 146, cited in Julien 2001, 55):

- 1 (i) joollée [akka I-tt hin-séenne] d'ólk-i
 2 children that it-to Neg-enter prevent-IPR
 3 'Prevent the children from entering it'

4 One also finds the converse (postverbal and postnominal finite clauses with
 5 final complementizers: ([V/N [_{clause} COMP]]). Postverbal finite comple-
 6 ment clauses with final complementizers are found, among others, in Lakota
 7 (Siouan—Dryer 1980,132), Ngiti (Nilo-Saharan—Kutsch Lojenga 1994, 395),
 8 Telugu and Malayalam (Dravidian—Bayer 2001, fn. 11), Dhivehi (Indo-Aryan—
 9 Cain and Gair 2000, 37), Santali (Munda—see Appendix II) and East
 10 !Xóõ (note 31 of Chapter 1). Postverbal adverbial clauses with final subordi-
 11 nators are found, among others, in Yagua (Peba-Yaguan—Dryer 1992b, 62),
 12 Malayalam (deaccented, Jayaseelan p.c.) and Gapapaiwa, Nama, Teribe and
 13 Tol (see Appendix II). Postnominal RCs with final complementizers are found,
 14 among others, in Slave (Athapaskan—Rice 1989, chapter 47; Dryer 2007);
 15 Lendu (Nilo-Saharan—Kutsch Lojenga (1987/2003, 9); Teribe (Chibchan—
 16 see Appendix II).

- 17 13. An identical situation is found in Uzbek (Turkic), where the quotative comple-
 18 mentizer *deb* (lit. 'saying') is necessarily clause final (in preverbal position),
 19 as opposed to the necessarily clause initial complementizer *ki* (in postverbal
 20 position). See (i) and (ii), from Noonan (1985, 85):

- 21 (i) Men bilamen ki u odam joja-ni oğirladi
 22 I know-1sg comp this man chicken-obj stole-3sg
 23 'I know that this man stole the chicken'

24 (Extraposition obligatory with this sort of clausal complement)

- 25 (ii) Xotin bu odam joja-ni oğirladi deb dedi
 26 woman this man chicken-obj stole-3sg saying said
 27 'The woman said that this man stole the chicken'

28 (Extraposition not possible with this sort of s-like complement)

- 29 14. This nominal correlate can be either a simple pronoun, or a demonstrative,
 30 or a general DP like "this talk, story, etc." (Bayer 1999, fn. 51; 2001, 21).
 31 15. Bayer (2001, 21) also notes that the Bengali complementizer *je*, which is
 32 homophonous to the relative pronoun, cannot be missing in the presence of
 33 an overt correlate.
 34 16. Kayne (2003a, sections 4.6, 4.7) makes the suggestion that (most) finite
 35 clausal complements of verbs need to be nominalized to be licensed as argu-
 36 ments of a verb.
 37 17. There are, however, (limited) cases of mismatch. So, for example, Slave
 38 (Athapaskan) has preverbal subordinate clauses (Rice 1989, chapt.42), but
 39 postnominal RCs (Rice 1989, chapt. 47; Dryer 2007). Conversely, Lendu and
 40 Ngiti (Nilo-Saharan) have postverbal finite complement clauses (Ngiti with
 41 a final complementizer), yet only prenominal RCs (Lendu with a final invari-
 42 able relative complementizer). See Kutsch Lojenga (1987/2003, 9; 1994,
 43 395). Even some Dravidian "rigid" OV languages (Telugu and Malayalam)
 44 appear to allow deaccented postverbal complement and adverbial clauses
 45 (with a final complementizer) (Bayer 2001, fn. 11; and Jayaseelan, p.c.), yet,
 46 only have preverbal (participial) RCs. Lezgian (Nakho-Daghestanian) also
 has (some) postverbal finite complement clauses, arguably of Persian origin
 (Haspelmath 1993, chapter 20, §7), yet only prenominal participial RCs
 (chapter 19). Dhivehi (OV; Indo-Aryan—Cain and Gair 2000) also appears
 (cf. their ex. (110), p. 37) to have postverbal complement clauses (with a final
 complementizer), but only prenominal, participial, relative clauses ("perhaps
 as a result of Dravidian influence", p. 35).

If its few apparently postnominal RCs are actually free relatives in apposition
 (cf. Lehmann 1984, 61; Rebuschi 2001, fn.9, who refers to Oyharçabal

- 1987), Basque, which has postverbal complement clauses (Lehmann 1984, 59), would be another case in point. 1
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- Rigid SOV Korean appears to allow (albeit only rarely) also postnominal RCs (cf. Rijkhoff 2002,209). 3
18. I.e., to the specifier of a higher functional head (indicated with C in (7)), much like direct object DPs move to their licensing position of Case (from a position adjacent to the verb to a position which can be separated from it by adjuncts less closely related to the verb): *Er hat wen zum Mittagessen t eingeladen* ‘he has invited someone for lunch’. 4
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19. In line with Bayer (1996, 1999, 2001), and Kayne (2003a) (cf. also Stowell 1981), I will assume that the object argument IP, except perhaps for the IP complement of verbs of saying, is in fact an adjunct to an overt, or covert, nominal head. 9
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20. This attraction may well be obligatory even in German, despite the fact that a sentence like *Weil Hans daß er Maria kennt nicht glaubt . . .* is also possible. As Josef Bayer pointed out to me (p.c.), such a sentence and *Weil Hans nicht glaubt daß er Maria kennt . . .* do not mean the same. In the former *glauben* denotes a belief, whereas in the latter it is a plain propositional attitude verb, like *meinen* (which in fact can only enter the latter structure). 11
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21. The Head (*expensive book*) may be preceded by an unpronounced SUCH, the counterpart of *which*. “Head” here should be taken as in fn. 11, not in its X-bar sense (nonphrasal category). In fact, as noted there, also the verbal “Head” preceding subordinate clauses appears to be phrasal (it can be accompanied by various other complements and adjuncts, which also precede the subordinate clause. Cf. *I [convinced Bill] that he should try*). As implicit in (9), we take the RC to be base-generated in prenominal position (for which see Cinque 2003/8, in preparation), though nothing crucial depends on that assumption. In (9), the “matching”, rather than the “raising”, option is illustrated. 16
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- Also note that in a relative clause given that part of the “complement” is attracted to the left of *that* (i.e., the constituent which matches the Head), the further attraction of the Head must be effected by an abstract head merged higher, with the same attraction properties (what we indicate as X in (9)). It remains to be seen if the derivation of complement clauses is not in fact closer still to that of a relative clause, in that it is an instance of hidden relativization (something like: *Hans doesn’t believe* ([THE STORY [ACCORDING TO WHICH STORY [*that Fritz knows Maria*]]]). For alternatives see Kayne (2008a,b) and Krapova and Cinque (2012). 24
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22. Merge of C and X of (3) above VP yields relative clause extraposition (cf. Kayne 2000a,318f). As Kayne notes, this may turn out to be the only option available. 31
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23. Galla (Oromo) and Tigre also allow postnominal RCs. 34
24. Cited from Dryer (1992b, 59). 35
25. On the apparent relative paucity of finite clauses preceding the complementizer in OV languages, see the discussion in Kayne (2003a, sect.4.7). 36
26. Recall that some OV languages may have either an initial or a final complementizer (depending on the type of complement clause). See the text above (6) for the case of Bangla, and fn.13 for the case of Uzbek. 37
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27. Cited from Dryer (2007). 39
28. Other languages displaying the same property are mentioned in fn.12 above. Also see Santali, Canela-Crahô, Kuku Yalanji, and Pech of the Appendix II, below. 40
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29. Note that the final complementizers of Yaqui and (Lhasa) Tibetan in (21) are enclitic. Another case of (almost) circumpositioned complementizers is the Bangla example in (27) below. 43
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- I take those cases where a finite (complement, adjunct or relative) clause appears in pre-head position without any overt complementizer/subordinator 45
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- 1 to involve nonpronounced Cs that fail to attract the remnant. Where a finite
 2 (complement, adjunct or relative) clause appears in post-head position with-
 3 out any overt complementizer/subordinator, I will instead assume that the
 4 higher (covert) C has the property of attracting the remnant to its Spec.
 5 30. A similar derivation is proposed by Kayne (2000b,49f) for Amharic ‘if’-
 6 clauses. For the comparable case of Amharic argument clauses, see (i), from
 7 Demeke (2001,196):
 8 (i) [e [Saba worq-u-n yä-[[šäT-äčč-*iw*] yi-mäsl-all]]]
 9 S. gold-def-acc COMP-sell_{perf}-1s-3ms 3ms-seem-Aux_{pres(ent)}
 ‘It seems that Saba sold the gold’
 10 31. The complementizer can be internal to the RC also in Georgian, modulo the
 11 further raising of the RC Head (presumably to the Spec of a still higher Comp).
 12 See (i), from Harris (1994,132), and Georgian in Appendix II below.
 13 (i) [xalxi [C [[kareb-tan axlos ro [t idga] [C [aq’aq’anda]]]]]]
 14 people doors-at close that he-sit he-clap
 ‘the people who sat close by the doors began to clap’
 15 32. See the cases of mismatch mentioned in note 17 above. If its few apparently
 16 postnominal RCs are actually free relatives in apposition (cf. Lehmann 1984,
 17 61; Rebuschi 2001, fn.9, who refers to Oyharçabal 1987), Basque, which has
 18 postverbal complement clauses (Lehmann 1984,59), would be another case
 19 in point.
 20 33. Although no lists, or numbers, of languages are cited, Lehmann (1984, 183)
 21 may also be relevant here.
 22 34. The author explicitly says that “modifiers, including subordinate clauses,
 23 precede the head” (p. 52), and gives only prenominal RCs and preverbal com-
 24 plement and adverbial clauses except for the following example of postverbal
 25 purpose clause:
 26 (i) pasung khata-ko raicha sung khom-si
 27 old_{man} go-NML report PRT wood cut-PURP
 ‘the old man went to cut firewood’
 28 35. As noted, Malayalam appears to allow postverbal deaccented complement
 29 and adverbial clauses. Cf. note 17 above.
 30 36. Giridhar (1994) gives only prenominal relative clauses and preverbal com-
 31 plement and adverbial clauses except for one postverbal indirect question
 32 complement clause (p. 465):
 33 (i) ai sü mo-e pfo vu ho vu le mono
 34 I know not he come or not come will whether
 ‘I don’t know whether he will come or not’
 35 37. Also see the case of the Mongolic languages Mangghuer (p. 317), Monghul
 36 (p. 303) and Ordos (p. 207) in Janhunen (2003).
 37 38. Givón (1984,215f), however, says that in Sherpa sentential complements may
 38 also follow the verb (though it is not clear from the text whether this option
 39 is only possible as an afterthought—cf. note 10).
 40 39. As noted (note 17), Telugu appears to allow for (deaccented) postverbal com-
 41 plement clauses. Cf. also note 10.
 42 40. One exception to the otherwise preverbal position of both complement and
 43 adverbial clauses (similar to that observed for Mao Naga in note 36) is given
 44 by Anderson and Harrison (1999, 78):
 45 (i) men bilbes men kaynaar baar men
 46 I know-Neg.Pres/Fut I to.where go-Pres/Fut I
 ‘I don’t know where to go’
 41. Of the OV languages which Mallinson and Blake (1981) characterize as hav-
 ing postnominal RCs, we could not find sufficient information concerning
 the position of complement and adverbial clauses for the following: Adyghe

- (Northwest Caucasian—M & B, 276), Fur (Nilo-Saharan—M & B, 278), Kanuri (Nilo-Saharan—M & B, 279) and Khamti (Tai-Kadai—M & B, 280), for which they give the postnominal order as the exclusive order of RCs, and Rashad (Kordofanian—M & B, 282), Nubian (Nilo-Saharan—M & B, 281), and Tigre (Ethio-Semitic—M & B, 283).
42. ‘Ala’ala also has prenominal relative clauses (Ross 2002d, 352).
43. Although in Gusain (2000) no examples of postverbal adverbial clauses are given, it is explicitly said that “Finite adverbial clauses may be placed in pre-sentential as well as post sentential position.” (p. 69).
44. As Bhatt (2003, 488) notes, most Indo-Aryan languages have postnominal RCs (besides correlatives, and prenominal participial relatives). Cf. the case of Hindi and Marathi below. Bhatt (2003) also mentions the fact that Southern Konkani, Saurashtri and Sinhalese neither have postnominal RCs (p. 488, fn. 4), nor correlatives (p. 491).
45. Bayer (1996 chapter 7, fn. 41), notes that the “slight awkwardness of the [postverbal variant] may have to do with a problem for tense linking”.
46. Nedjalkov (1997, 44) reports that “adverbial participles always precede the main clause. Converbial forms expressing time (except for posteriority), manner, condition and cause, as a rule, precede the main clause, whereas converbs of posteriority, purpose and result, as a rule follow the main clause. Conjunctive adverbial clauses [like the example given here, with indicative mood (G.C)] also, as a rule, follow the main clause.”
47. Comrie (1998, 79f) reports that in this language RCs may either precede or follow their Head. From the examples he gives it appears that they can also be “extraposed” to the right of the verb.
48. The example of postverbal complement clause is from Stroomer (1995, 127). As noted by Mallinson and Blake (1981, 289), Galla (Oromo) allows the finite relative clause introduced by the relative marker *kan* also to appear preminally. See (10) above (their (5.46)).
49. As noted above, there is also a gap variant of the postnominal RC employing just the complementizer *rom/ro* ‘that’, internal to the RC (Harris 1994, 132):
- (i) xalxi [kareb-tan axlos ro idga] aq’aq’anda
 people doors-at close that he-sit he-clap
 ‘the people who sat close by the doors began to clap’
- The RC types which Harris (1994,133) analyses as ‘gap’ prenominal (see (ii)) and ‘nonreduction’ prenominal (see (iii)) seem rather to be correlative constructions without a (*which* type) relative marker of the kind found in Bambara (Bird 1968), and, respectively, without and with an internal head:
- (ii) šen-gan ro miviyeβ, im pul-it me
 you-from that I.receive.it, that money-INST I.NOM
 gadavixdi val-s
 I.pay.it debt-DAT
 ‘I will pay off the debt with that money which I receive from you’
- (iii) minda, Betania-ši rom k’olmeurnoba-a, is vnaxo
 I.want.it Betania-in that collective-it.is, it.NOM I.see.it
 ‘I want to see the collective-farm that is in Betania’
- The relative nature of these Modern Georgian RCs may be indicated by the existence in Middle Georgian of clearer correlative cases like of the following, also given by Harris ((1994, 134):
- (iv) Durmišxan-s Alget-ze rom c’iskvili eč’ira, is c’iskvili. . .
 Durmišxan-DAT Alget-on that mill he.have.it, that mill. . .
 ‘the mill which Durmishxan had on Alget. . .’

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50. Although most types of adverbial clauses are preverbal, ‘because’ clauses, like the one given here, can be postverbal.
51. To judge from Heath (1972), many other (Sonoran and Shoshonean) Uto-Aztecan languages show a situation comparable to Hopi (and Pima Bajo, Southern Paiute, and Yaqui below).
52. Hopi also has internally headed RCs (Jacobsen 1998, 103).
53. Complement and adjunct clauses ordinarily precede the V and restrictive RCs ordinarily precede the N (Colarusso, 1992, 187ff). However, as shown in the text, restrictive RCs can also follow the N, just as certain subordinate clauses can follow the V. In both cases, the clause takes a (suffixed) complementizer (-*wa*), glossed “pred” by Colarusso. Nonrestrictive RCs are instead always postnominal (Colarusso 1992, 190). It is not clear whether Kabardian also allows for postverbal complement clauses (John Colarusso p.c.).
54. Ross (2002i, 215) states that clausal subordination is expressed by simple juxtaposition of clauses, which makes the correlation with relative clauses impossible to test.
55. Kugu Nganhcara (Paman) displays a similar pattern. See Smith and Johnson (2000, 429–433).
56. Latin also has correlative RCs (cf. Bianchi 1999, 86ff, and references cited there).
57. While nonfinite adverbial clauses and adverbial clauses followed by postpositions are preverbal, (temporal and ‘because’) adverbial clauses with initial subordinators are postverbal (cf. Pandharipande 1997, 105ff).
58. Mallinson and Blake (1981, 279) classify Nama (which they refer to as Hotentot) as SOV, and as having both pre- and postnominal RCs. Andrews (1975) also lists the language as having both pre- and post-nominal RCs. In addition to the example given in the text, Andrews (1975, 60) also gives a prenominal RC, saying that “[w]hen the clause follows the head it is introduced by a particle *hīal ia* [..], and when it precedes there is no introductory particle”:
- (i) *narí ta gye mū kho-b gye -/-gei te*
today I Perf see man-m.sg Perf call me
‘The man who I saw today called me.’
59. The same situation is found in Southern Paiute. Cf. Bunte (1986, 282, 295, 279).
60. Pima Bajo also seems to have Head Internal RCs ((i)a), and extraposed postnominal RCs ((i)b):
- (i) a. *takav sigaar in-niar-kIk aan dIIIn-im*
yesterday cigar 1s-buy-Rel 1s smoke-Cont
‘I am smoking the cigar I bought yesterday’
(Estrada Fernández 1996,36)
- b. *nui aan nIid ko daa*
buzzard 1s see(Perf) Sub.Prt fly(Perf)
‘I saw the buzzard that flew’ (Estrada Fernández 1996,36)
61. (Ancash) Quechua also has prenominal and internally headed RCs (cf. Lehmann 1984, 55–58, Cole 1987).
62. The Sandawe examples of complement and adverbial clauses were kindly provided by Helen Eaton of the Sandawe Project of SIL International, Dodoma (Tanzania), p.c. Also see the grammar sketch appearing in the Khoisan project website of the Department of Linguistics at Cornell University (<http://ling.cornell.edu/khoisan/index.htm>).
63. Santali’s adverbial clauses precede the main clause, except for purpose clauses employing a conjunction (*jemən*) borrowed from Indo-Aryan. Besides postnominal relative clauses, Santali has prenominal and correlative ones.
64. Also see the ‘because’-clause of the preceding example.

65. Normally RCs are nonfinite and precede the Head, except for the (more literary) finite RCs introduced by the complementizer *ki* (borrowed from Persian), also introducing postverbal finite complement clauses (and one type of adverbial clause). 1
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66. Veld (1993, §7.3.3) and Kural (1997, 505) give other cases of adverbial clauses in Turkish which can be postverbal (though, differently from those introduced by *ki*, need not be). 4
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67. The *ki* relative clause can also appear extraposed: 7
- (i) Ben-I unut-ma [ki san-a yardım et-ti-m] 8
I-Acc forget-Neg [that you-Dat help do-Past-1s] 9
“Don’t forget me, who helped you” (Lehmann 1984, 144) 10
68. Also see the double complementizer example (21)a above. 11

NOTES TO CHAPTER 12

1. Also see the brief discussion below of Bianchi’s (2004) implicational scale concerning optional resumptive pronouns in relative clauses. 14
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2. Exactly the same can be said of the principle that determines that Aspect is closer to the V than Tense, and Tense closer to the V than (speech act) Mood (see Cinque 2006c, and Chapter 5 here). This principle (which is a generalization of Bybee’s 1985 ‘principle of relevance’ governing the order of suffixes), also cannot be stated as an absolute principle at a superficial level because of languages instantiating the orders V TNS ASP, V MOOD TNS, and V MOOD TNS ASP. (Bybee, in fact, gives it as a mere tendency). It can however be stated as an absolute principle (whatever it ultimately follows from) if the latter orders are obtained via leftward movement of the V(P) from the unique universal hierarchy [Mood_{speech act} [Tense [Aspect [V]]]]. 16
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- As noted in Cinque (2006c, and Chapter 5 here), V TNS ASP is found in, among other languages, Kharia (Munda—Biligiri 1965, 59), Ngarinjin (Kimberley, N.W. Australia—Coate and Coate 1970, 43), Pagibete (Bantu—Reeder 1998, 42), Ute and Tümpisa Shoshone (Uto-Aztec—Givón 1980, 92, and Dayley 1989, 348) (and as an alternative order in Warlpiri—Simpson 1991, 111, 411); V MOOD TNS in Xârâcùù (Moysse-Faurie 1995, 157; Lynch 2002, 774), and Tinrin (Osuni 1995, 204), two Melanesian (Austronesian) languages of New Caledonia, and in the Salishan languages Klallam (Montler 2004, 304), Saanich (Montler n.d., section 2.6.2.1.1), and Sooke (Efrat 1969, 189); V MOOD TNS ASP, which seems to be rarer, in Comox (Central Coast Salish—Harris 1977, 139). 25
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3. See for example Miller and Chomsky (1963); Chomsky (1975, chapter 2); Chomsky and Lasnik (1977, §1.2). 34
4. As Benincà (1994, 7f) and Kayne (2005b, 8) point out, the study of closely related languages and dialects is the best approximation we have to a controlled experiment in linguistics. We cannot manipulate a phenomenon to see whether by changing one of its parts we cause changes in any other part of that phenomenon or of other phenomena of the language (which would point to the interdependence of those parts). However “by examining sets of very closely related languages, languages that differ from one another in only a relatively small number of syntactic ways, we can hope to achieve something of the same effect” (Kayne 2005b, 8). 35
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5. This also seems to be Chomsky’s assessment of the current situation (“No one familiar with the field has any illusion today that the horizons of inquiry are even visible, let alone at hand, in any domain” 2005, 8). 43
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6. As Carlson (1977) and Grosu and Landman (1998) observe, certain kinds of relatives are only of the amount (or maximalizing) type: relatives relativizing 45
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- 1 an idiom chunk (*The headway that Mel made was satisfactory*); relatives relativizing the predicate NP of a *there*-insertion context (*Every man there was on the life-raft died*); relatives relativizing a NP in a VP involving Antecedent Contained Deletion (*Marv put everything that he could in his pocket*); headless (or “free”) relatives (*I’ll eat what is in the fridge*); etc.
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6 7. If true, the implicational scale leads to the expectation that Yiddish should also have optional resumptive pronouns in both restrictive and nonrestrictive relatives (which seems to be the case—see Lowenstamm 1977 and Prince 1990).
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8 8. This is sometimes called Inverse (Case) Attraction to distinguish it from the case in which a relative pronoun bears the same Case borne by the external Head rather than the one which would be assigned to it within the relative clause (see e.g. Comrie 1981, 139; Bianchi 1999, 92ff).
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11 9. The same is true of Iranian Farsi, or Persian (Comrie 1981, §7.2.4; Payne 1982, fn4; Aghaei 2003, 2006), and of other Iranian languages (Payne 1982, 358). On the restrictions on Inverse Case Attraction in Dari (matching requirements, locality, etc.), see the detailed discussion in Houston (1974).
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14 10. In (10) I also take there to be an external Head, which remains in situ and is not pronounced (this is what capitalization indicates). Cf. Cinque (2008b, in preparation) for discussion.
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17 11. The same is true of Iranian Farsi (Persian). As noted in Aghaei (2003, 2006) Inverse Case Attraction in Iranian Farsi is optional ((i)a-b), blocks extraposition ((ii)a-b), and is only possible in restrictive relative clauses (compare (i)b and (iii)), the latter fact possibly suggesting that nonrestrictives do not involve a “raising” derivation):
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21 (i) a. zan-i [ke diruz did-i] ‘emruz ‘injā-st
22 woman-RES (NOM) that yesterday saw-2sg. today here-is3sg.
23 ‘The woman whom you saw yesterday is here today.’
24 (Aghaei 2006, 81)
- 25 b. zan-i ro [ke diruz did-i] ‘emruz ‘injā-st
26 woman-RES (ACC) that yesterday saw-2sg. today here-is3sg.
27 ‘The woman whom you saw yesterday is here today.’
28 (Aghaei 2006, 81)
- 29 (ii) a. zan-i ‘emruz ‘injā-st [ke diruz did-i]
30 woman-RES (NOM) today here-is that yesterday saw-2sg.
31 (Aghaei 2006, 85)
- 32 b. *zan-i ro ‘emruz ‘injā-st [ke diruz did-i]
33 woman-RES ACC today here-is that yesterday saw-2sg.
34 ‘The woman is here today who you saw yesterday.’
35 (Aghaei 2006, 85)
- 36 (iii) *‘an mard-e mosen ro [ke diruz did-am] ‘emruz
37 that man-EZ old ACC that yesterday saw-I today
38 raft
39 went-he
40 ‘That old man, who I saw yesterday, went today’
41 (Aghaei 2003, 2)

NOTES TO CHAPTER 13

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44 1. For the idea that the determiner takes scope over the Head and the relative
45 clause, see Stockwell, Schachter and Partee (1973), which also contains one
46 of the earliest proposals that the Head internal to the relative clause should
be taken to be (specific-)indefinite.

2. The word order in (1) arguably derives from a Merge order [Dem [RC [indef.det. [NP]]]], via successive roll-up movements (cf. Cinque 2005b, in preparation).
 Mooré (Gur) also allows the co-occurrence of an indefinite determiner (closer to the N) with the definite determiner. See (i), from Tellier (1989, 308):
- (i) m karma [sebr **ninga** wa] saame
 1sg read [book a (certain) the] yesterday
 ‘I read the certain book (that we already talked about) yesterday’
- All of this should not be taken to mean that indefinite determiners are necessarily lower than definite ones. Lakhota, to be discussed below, offers evidence for the presence of a lower indefinite determiner and a higher one, which possibly occupies the same position as definite determiners (see (14)a). For comparative evidence that one should assume more than one position for (definite) determiners within DP, see Kayne (2004c).
3. These cases are reminiscent of the contrast between (i)a and b, due to Noam Chomsky, mentioned in Browning (1987, 129):
- (i) a. *John had the question for the teacher
 b. The question that John had for the teacher
4. On the determinerless nature of the non modified counterpart of (2)a (*Ho fame, J’ai faim* ‘I am hungry (lit. I have hunger)’), see Kayne (2005b, 41f), and Săvescu (2008a,b). As apparent from (2)a, when modified, *fame* ‘hunger’ obligatorily takes an indefinite determiner.
5. We abstract away here from the question whether the Head is internal to the relative clause and raises in front of the relative clause, or is external, matched by an identical (indefinite) internal Head within the relative clause. See below for discussion.
6. Better *Vive in quel villaggio sconosciuto nel sud della Francia* ‘He lives in that unknown village of the South of France’, which only has the non-epistemic sense. On the fact that the epistemic sense is lost in Italian if the adjective appears preminally see the discussion in Cinque (2010a, chapter 2).
7. If a silent indefinite determiner is present in definite DPs containing a restrictive relative, recourse to a special accommodation mechanism (as in Heim 1982) to account for the fact that such definite DPs can be bound by a quantifier binding a pronominal inside them (Every man saw *the dog that barked at him*), while definite DPs ordinarily cannot (p. 245ff), may prove unnecessary. Interestingly, Heim explicitly says (p. 247) that the above sentence receives the same truth conditions as Every man saw *a dog that barked at him*.
8. Also Peterson (1974) took the obligatorily indefinite Head of the internally headed relative clauses of Mooré (Gur) to be evidence for the indefinite character of the Head of restrictive relatives, in an analysis that has some points of contact with the one I propose below.
9. The prenominal Merge of relative clauses renders a “matching” derivation possible in Kayne’s (1994) Antisymmetry theory. This may be a welcome result if both “raising” and “matching” derivations turn out to be necessary, as argued in Áfarli (1994), Sauerland (1998, 1999, 2003), Aoun and Li (2003), Szczegielniak (2005), Salzmann (2006), and Cinque (in preparation), among others.
10. I will ignore nonrestrictive relative clauses here. For discussion see Cinque (2008a, Chapter 14 here), and note 25, there, for evidence that they are merged above demonstratives (and universal quantifiers).
11. For simplicity, I am taking *that* to be a complementizer inserted under a C head, but see Kayne (2008a,b) (and Sportiche 2008, 2011, Koopman and Sportiche forthcoming on *quelqui* in French) for arguments that they are (weak) relative

pronouns/phrases, which would require merger into the specifier position of an additional C head.

12. Island effects are still detectable if, as we have assumed in the text, the Head internal to the relative clause raises, but here much variation exists. See below, and especially Cinque (in preparation) for illustration. Bulgarian offers interesting evidence that (if it moves) the Head internal to the relative clause indeed raises to a position lower than that to which the external Head raises. When the “raising” derivation is not forced, the *overt* Head (which is the external Head) can be separated from the complementizer/relative pronoun by topic or focus phrases, suggesting that it raises to a high position within the CP field. However, when the “raising” derivation is forced, the *overt* Head (which is the internal one) cannot be similarly separated from the complementizer/relative pronoun, suggesting that it raises to a position lower than that occupied by topic and focus phrases. See Krapova (2010) for discussion.
13. I abstract here from the further possibility of dp_1 raising above dp_2 and controlling its deletion before the raising of the IP remnant. Within Chinese, and in other languages with prenominal relatives, some variation exists also with respect to the position of $C(P)_1$ and $C(P)_2$, which either are or can be merged above the position of definite articles, demonstratives, and universal quantifiers. For more detailed discussion of both cases, see Cinque (in preparation). Also the problem raised by the violation of proper binding caused by movement of the remnant needs to be addressed.
14. Note that in the “matching” derivation of internally headed relative clauses ((23)), as well as in the “matching” derivation of externally headed prenominal relatives ((22)), neither Head c-commands the other from its in situ position, so that deletion of one by the other is not forced. As with VP deletion, which can take place either backward or forward in the same language, one should expect deletion here to freely apply either backward or forward, with the consequence that the language may give the impression of having two separate strategies of relative clause formation (external prenominal and internal) (cf. Cole’s observation that often externally headed prenominal relatives alternate with internally headed relatives within the same language). However, things are more complex (see Cinque in preparation for discussion).
15. The head internal relative clauses of the Gur languages Mooré (Peterson 1974, Tellier 1989) and Buli (Hiraiwa 2005, section 5.3.2) also show the indefiniteness restriction. However, the fact that the internally headed relatives of Buli show sensitivity to islands, and those of Mooré license parasitic gaps (Tellier 1989) suggests that the internal Head does move, though not as high as to cross over the strong determiners (which is what the “left-headed” variant of the same construction in (i) in Buli apparently does):

[ná:-m’o [āti núrú-wá s’á] lá]
cow-the COMP man-the own Dem

‘the cow that the man owns’ (Hiraiwa 2005,198)

16. In the “left-headed” internally headed relative clauses of the Gur languages discussed by Hiraiwa (2005) there is no additional raising of a phrase of the Remnant.
17. Lakhota lacks (internally headed) nonrestrictive relative clauses (see (i)), from Williamson 1987, 175):

(i) *[[Miye) makuže] ki/cha] wichawota ki ekta mnj kte
Iemph I-sick the/a feast the to I-go FUT
‘I, who am sick, will go to the feast’

Given the merger of nonrestrictives above demonstratives (and universal quantifiers) (see note 10 above), one could however expect there to be

- languages with internally headed nonrestrictive relatives. One such language appears to be Haida. See (ii), from Enrico (2003, 570):
- (ii) [tuut-ee-raa qung-ee 7ij-aa-n]-raaga 'la 7waa-gaa-n
[box-DF-in moon-DF be-EVID-PST-]for 3PERS do-EVID-PST
'He did it for the moon, which was in the box'
18. The possible further type of 'adjoined relatives' (Hale 1976) can be analyzed as a case of (obligatory?) relative clause 'extraposition'. See Keenan and Comrie (1977, 80f) and Cinque (in preparation).
 19. As in (some of the correlatives of) Marathi. See Cinque (2009b, in preparation) for discussion.
 20. As shown in Cinque (2009b) Downing's (1978, 400) statement that "[i]f a language has correlative relative constructions, it does not have prenominal ad-relative clauses." appears to be too strong.
 21. As in Wappo (a language isolate of California). See Li and Thompson (1978) and Thompson, Park and Li (2006, §6.2).
 22. I thank Gaby Hermon for raising these questions and for helpful discussion.
 23. As MacWhinney and Pléh (1988,100) put it, "[i]f the head noun plays the role of the object in the relative clause the verb is obligatorily indefinite even though the head of a relative is usually thought of as semantically definite (Kuno 1986) and this definiteness is even marked morphologically on the relative pronoun. If the head noun is the subject of the relative clause the conjugation varies according to the definiteness of the object in the relative clause."
 24. Resumptive pronouns are also obligatorily required in Lebanese Arabic (Aoun and Li 2003, §4.3).
 25. Examples (29) and (30)b were suggested by Iliyana Krapova.
 26. As proposed by Kayne (1972, §3) for Complex Inversion in French and Uriagereka (1995, 81) for Spanish. A movement derivation of Clitic Left Dislocation (cf. Cinque 1977) is compatible with the observations presented in Cinque (1990, chapter 2) if successive cyclic movement is for independent reasons unavailable.

NOTES TO CHAPTER 14

- * I thank Paola Benincà, Valentina Bianchi, Patricia Cabredo Hofherr, Francesca Del Gobbo, Alexander Grosu, Richard Kayne and Tong Wu for their comments. An earlier draft appeared under the title "Two types of Appositives" in 2006 in University of Venice Working Papers in Linguistics 16.7–56.
1. This distinction roughly corresponds to what Emonds (1979, 212) calls the Subordinate Clause Hypothesis and the Main Clause Hypothesis, respectively. I abstract away here from the different executions that these two hypotheses have received in the literature, and from those analyses, like Safir's (1986), Demirdache's (1991, chapter 3), and Del Gobbo's (2003, 2006b), which combine the two. For a recent overview, see de Vries (2006).
 2. This required considering the nonrestrictive construction with *il quale* as conflating two separate paradigms. See Cinque (1978, 1982) for detailed discussion. Smits (1989, 116) and Bianchi (1999, 151f) concede that that there is a residue of nonrestrictives that cannot be reduced to an "integrated" (matching or raising) analysis.
 3. For present purposes whether *che* is a complementizer or a weak relative pronoun (with *cui* its nonweak counterpart) is not really crucial. See Kayne (2008a,b) and Sportiche (2008) for recent relevant discussion.

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4. The relative pronoun *cui* is apparently possible even within some complex PPs (*accanto a cui* ‘next to whom/which’, *senza di cui* ‘(lit.) without of whom/which’), but not others (**prima di cui* ‘(lit.) before of whom/which’, **da dietro a cui* ‘(lit.) from behind to whom/which’). The former, but not the latter, also allow what looks like extraction of the embedded PP (*A chi eri seduto accanto?* ‘(lit.) To whom were you seated next?’, *Di chi potrete fare senza?* ‘(lit.) Of whom will you be able to do without?’ vs. **Di chi sei entrato prima?* ‘(lit.) Of whom did you enter before?’ **A chi veniva da dietro?* ‘(lit.) To whom was he coming behind?’—cf. Rizzi 1988, 524ff). This may suggest that the two types of complex PPs differ in structure, with the former not being truly complex.
5. Strictly speaking, the obligatoriness of the pronoun and the unavailability of the complementizer *che* in the *il quale*-nonrestrictive construction is not immediately obvious due to the parallel existence of the *che/cui*-nonrestrictive construction, which has *che* for subjects and objects. It is, however, apparent in those contexts, to be presented in section 2.3, where the *che/cui* nonrestrictive is disallowed. Relativization of objects with *il quale* is actually quite marginal, perhaps for the reason discussed in Cinque (1978, section 3.7). Also see section 5.2 below.
6. In sections 2.3.1 to 2.3.10 the c. examples contain *che/cui*-restrictives, which, as noted, pattern with the *che/cui*-nonrestrictives rather than with the *il quale*-nonrestrictives.
7. For similar cases in French, see Muller (2006, 328f). Note that the matrix need not be declarative when the nonrestrictive is nondeclarative. In (i) the matrix and the nonrestrictive are both interrogative:
- (i) (?) Sarebbe stato tuo padre, **al quale** potremo mai rivolgerci ora per aiuto?, ben disposto nei nostri confronti?
Would your father, to whom will we ever be able to refer now for help?, have been well disposed toward us?
- Also see the English example (38)a below, where the matrix and the nonrestrictive clauses constitute two distinct imperative sentences, even though not all speakers seem to like it.
8. Except for limited cases of extraposition of the type in (i) (nonrestrictives) and (ii) (restrictives):
- (i) a. Se hanno portato Carletto al mare, **che** comunque non c’era mai stato, una ragione c’è.
If they took C. to the seaside, who in any case had never been there, there is a motive.
b. Ho incontrato il dott. Setti ieri, **che** mi ha detto che non potrà intervenire.
I met dr. S. yesterday, who told me that he will not be able to come.
- (ii) a. Ho trovato un uomo ieri alla festa **che** ti assomigliava molto.
I met a man yesterday at the party that looked very much like you.
(cf. Cardinaletti 1987, 25)
b. . . . crede di non avere ostacoli davanti a sé **che** non possa abbattere o aggirare. (Cinque 1988, 472)
. . . (s)he thinks (s)he has no obstacles in front of himself/herself that (s)he cannot pull down or overcome.
- On the limited applicability of relative clause extraposition in Italian, see Valesio (1974), Cinque (1978, fn.65; 1988, section 1.1.10), Cardinaletti (1987).
9. Cf. Cinque (1978, 79f). For similar examples of nonadjacency in French with *lequel*, see Gross (1977, 136) and Fuchs and Milner (1979, 57), among others. This should not be taken to mean that non adjacency is always possible.

- In fact, there appear to be severe restrictions, reminiscent of those observed for English by Ziv (1973) and Ziv and Cole (1974), whose nature remains largely to be understood. Also see note 17 below.
10. It can, however, be retained in the very formal *il quale*-restrictive discussed in Cinque (1978, 84ff; 1982, section 1.5), which has many of the syntactic properties of *il quale*-nonrestrictives, although precisely how many and which ones remains to be investigated more systematically. Here I will not be concerned with this special restrictive construction.
- French *lequel*-nonrestrictives display the same property. They too can retain the ‘internal’ Head. See for example Sandfeld (1936, 179), Huot (1978, 119), Togeby (1982, 463), and Muller (2006, 325).
11. Cases of gender mismatch like (i) may only be apparent if the relative pronoun actually agrees with a non pronounced *città* (‘city’, feminine; cf. *la città del Cairo* ‘the city of Cairo’) taking *Il Cairo* as its specifier (on non pronunciation see Kayne 2005c):
- (i) *Il Cairo, la quale/*il quale è la capitale dell’Egitto, . . .*
 (Lit.) the (masc.) Cairo, the which (fem./masc.) is the capital of Egypt, . . .
12. In both (20) and (21) one can have, in addition to *la qual cosa* (lit.) ‘the which thing’, *il che* (lit.) ‘the that’, and the pseudo-free relatives *cosa che* ‘thing that’ and *ciò che* ‘that that’. Also see Bianchi (1999, 151).
13. *Cui*, when preceded by *per*, appears to be able to resume a CP (e.g. *Lei si è ammалata, per cui ha dovuto smettere di fumare* ‘She got ill, so that she had to quit smoking’). As this is the only preposition that seems to permit such a usage (see (20)c and the examples in (i)a-d), I tend to interpret it as a fixed expression. This is confirmed by the fact that *per cui* is not exactly synonymous with *per la qual cosa* ‘for which thing’. See (i)e:
- (i) a. *Se il governo vacilla, alla qual cosa/*a cui ho fatto riferimento anch’io,..*
 If the government is shaky, to which I too have referred, . . .
- b. *Da quando la società è sull’orlo del fallimento, con la qual cosa/*con cui dovremo fare i conti tutti,..*
 Since the company is going bankrupt, with which all of us will have to cope, . . .
- c. *Il prezzo del petrolio è sceso, dalla qual cosa/*da cui tutti hanno tratto benefici.*
 The oil price lowered, from which everybody benefitted.
- d. *Gianni un giorno si riprenderà, nella qual cosa/*in cui tutti confidano.*
 One day Gianni will recover, on which everyone is relying.
- e. *Se Gianni non ha pagato le tasse, per la qual cosa /= per cui dovrà pagare una multa salata,..*
 If Gianni did not pay his taxes, for which thing/so that he will have to pay an expensive fine, . . .
14. Nonrestrictives introduced by *that* are generally judged impossible in Modern English (Quirk and Greenbaum 1973, 383; Quirk, Greenbaum, Leech and Svartvik 1985, §17.22; Rodman (1976, 174); Jackendoff 1977, 171; Emonds 1979, §2.3; Sag 1997, fn37; De Vries 2002, 182; 2006, fn49), although they were possible in Middle English, and literary examples are attested into the nineteenth century (see Maling 1978, 723 and references cited there). They are possible in a number of modern British dialects (see, e.g., Beal and Corrigan 2002, 128; Peitsara 2002, 172; Van den Eynden Morpeth 2002, 188, and references cited there), and a few cases (with inanimate antecedents) are even attested in some registers of the modern standard. See, for example, (i)a–b, and for further

exemplification Jespersen (1949, chapter VIII), Jacobsson (1963, 1994), Hudson (1990, 396), and Huddleston and Pullum (2002, 1052).

- (i) a. She made me swear on the family bible, that my aunt's poodle chewed up, that I wouldn't buy French medicines . . . (Bache and Jakobsen 1980, 245)
- b. I hate my untrusting mind, that set Parks on the watch. (Cornilescu 1981, 43fn.2)

15. Cinque (1982) suggested that non “deletion” of subject and object *wh*-pronouns and generalized pied-piping go together. They are shared by Italian *il quale*-nonrestrictives and (formal) *il quale*-restrictives; by French *lequel*-nonrestrictives, and by English nonrestrictives and (formal) restrictives. Conversely, obligatory ‘deletion’ of subject and object (actually, bare DP) *wh*-pronouns (with the consequent appearance of a complementizer), and no pied-piping other than that of a PP also go together. They are displayed by *che/cui*-restrictives and nonrestrictives in Italian, and by English infinitival relatives (modulo the presence of PRO for the subject position and of an infinitival (*for* or \emptyset) complementizer in place of the finite complementizer *that*). See (i), and the discussion in Cinque (1982, 280ff), Pesetsky and Torrego (to appear), Sportiche (2008, section 3.2.2), and references cited there:

- (i) a. I found someone (*who(m)) PRO to invite.
- b. *I found someone (*whom) PRO to give the book to.
- c. I was looking for someone with whom to discuss such matters.
- d. *I was looking for someone with whose help to repair my bicycle.

For the marked status of nonbare DPs containing the *wh*-phrase in English, Italian, and French, infinitival relatives, see Green (1973, 18), Kayne (1976, fn. 22), Cinque (1982, end of section 2.2), Pesetsky (1998, 352, fn. 17), Sportiche (2008, section 3.2.2), Koopman and Sportiche (2008).

- 16. It thus appears that, differently from Emonds (1979, 241), Subject-Auxiliary Inversion can apply in English nonrestrictives. On the related question of why Verb Second is unavailable in Dutch and German nonrestrictives, see Emonds (1979, fn. 4). Although certain Verb Second relatives are actually possible in German, they are semantically restrictive only (see Gärtner 2001).
- 17. See Jespersen (1949, section 5.3, p.103): “Restrictive clauses are generally placed immediately after the antecedent, while nonrestrictive clauses may stand at some distance”. An instance of obligatory nonadjacency is represented by (48)a below (from Arnold 2007, 289).
- 18. Following Jespersen (1949 [1927], 85–115), Ziv and Cole (1974, 776) make a distinction between non sentence final nonrestrictives and sentence final “continuative” nonrestrictives (which often bear a causal or temporal relation to the matrix clause, and can be non adjacent to it). Here I take the two types to be two different manifestations of the same “nonintegrated” type of nonrestrictive (the non adjacent case being the most restricted).
- 19. Also see the examples given in Huddleston and Pullum (2002, 1066, fn. 13) and De Vries (2006, fn. 38). Indeed, according to my informants, replacing *who* with *that* renders such cases much worse.
- 20. Jespersen (1949, section 6.5, p. 126) says that such retention is possible “in a peculiar kind of nonrestrictive clause; very often the clause is at some distance from the antecedent, and some substantive is repeated so as to avoid any doubt as to what word is to be taken as the antecedent”.

21. See, for example, Jackendoff (1977, 171), Fabb (1990, 60), Demirdache (1991, 108), Borsley (1997, §5), De Vries (2002, 185), Arnold (2007, 274). 1
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22. On the fact that nonrestrictive *where*, but not restrictive *where*, can have the entire PP *under the table* as an antecedent, see the discussion in Fabb (1990, 60). 3
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23. In English this is true also of the manner DP *way*. 5
24. Here I ignore various complexities and alternatives and will not address the question of “raising” vs. “matching”. If relative clauses are merged prenominal, both derivations are in principle available within Antisymmetry. See Cinque (2003/8, and in preparation). 6
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- Different languages provide overt evidence for one or more of the three C heads postulated in (55) in addition to the *wh*-pronoun, with some displaying up to three such elements simultaneously. See, for example, (i), from Buli (Niger-Congo):
- kpàr^wà-wā:y_i [āli e_i tà nā:b lā]
farmer-REL C have cow(indef.) Subord.Particle
‘The farmer who has the cow’ (Hiraiwa 2003, 46)
25. So, for example, in languages in which restrictives remain inside the demonstrative, nonrestrictives are found outside. This is the case of Vietnamese (“When the RC precedes the demonstrative, the RC restricts the meaning of the noun; when the RC follows the demonstrative, the phrase has a nonrestrictive meaning” Nguyen 2004, 61f—see (i)), Indonesian (see (ii) “[ii](a) ist restriktiv, [ii](b) appositiv” Lehmann 1984, 282), Javanese (“the *séng* RC preceding a demonstrative are restrictive RC, whereas the *séng* RC following a demonstrative are non-restrictive RC”—Ishizuka 2007, section 2), and Louisiana Creole (see (iii), from Gadelii 1997, 128): 15
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- (i) a. Tôi thích cái đầm_{RC}[m cô ây chọn]_{Dem}[này]
I like CLF dress that aunt that choose this
‘I like this dress that the aunt has chosen’ (restrictive)
- b. Tôi thích cái đầm_{Dem}[này]_{RC}[mà cô ây chọn]
I like CLF dress this that aunt that choose
‘I like this dress, which the aunt has chosen’ (nonrestrictive)
- (ii) a. lelaki yang sedang tidur itu
man Rel Prog sleep that
‘That man that is sleeping . . .’ (restrictive)
- b. lelaki itu yang sedang tidur
man that Rel Prog sleep
‘That man, who is sleeping, . . .’ (nonrestrictive)
- (iii) a. sa ben zen zom katolik [ki Mari kôtâ] la pe vini
DEM PL young man catholic that M. loves DET PROG come
‘Those young catholic men that M. loves are coming’
- b. sa ben zen zom katolik la [ki Mari kôtâ] pe vini
DEM PL young man catholic DET that M. loves PROG come
‘Those young catholic men, who M. loves, are coming’ (nonrestrictive)
- According to Kim (1997, section 4.3) Korean relative clauses appearing between the demonstrative and the N also receive a restrictive interpretation, while those appearing outside the demonstrative receive a nonrestrictive interpretation. According to Kameshima (1989, section 4.3.3.1) and Ishizuka (2006, 2008), Japanese minimally differs from Korean in that relatives appearing inside a demonstrative have just a restrictive interpretation whereas those appearing outside demonstratives may receive either a restrictive or a nonrestrictive interpretation. All of this suggests that the Merge position of

nonrestrictives is outside the demonstrative and that of restrictives inside the demonstrative, even though restrictives, in languages like Japanese, can optionally raise past the demonstrative (cf. Kameshima 1989, 215), to a position lower than the Merge position of nonrestrictives (given that the fronted restrictive must follow the nonrestrictive—Kameshima 1989, 233ff).

The fact, also noted in Kameshima (1989, 210f), that Japanese relatives following the quantifier ‘all’ only receive a restrictive interpretation suggests that nonrestrictives are merged also higher than the position of universal quantifiers.

26. The more formal cases of “double dependence” in (i) (see Cinque 1988, 473, and references cited there) show the same thing. The *wh*-pronoun is fronted to the left edge of the island (possibly into the Spec of a TopicP above the subordinator, if any). Truswell (2011) reaches a similar conclusion.

- (i) a. (?)Una tale ipoteca, *della quale se voi vi liberaste sareste certamente più felici, non l’ho mai veduta.*
Such a mortgage, of which if you could get rid you would certainly be happier, I have never seen.
b. (?)Un circolo, *al quale essere ammessi a tali condizioni è senza dubbio un privilegio,..*
A club, to which to be admitted under such conditions is certainly a privilege, . .
c. (?)Un impegno, *dal quale chi mai riuscirà a liberarsi si sentirà di sicuro più leggero, . .*
A commitment, from which whoever will manage to free himself will certainly feel lighter, . .

Also see the quite formal English cases in (ii) from Jespersen (1949, 183f):

- (ii) a. Until the divinity of Jesus became a dogma, which to dispute was death, which to doubt was infamy. . . (Jespersen 1949, 183)
b. The most piteous tale [...] which in recounting this grief grew puissant. . . (Jespersen 1949, 184)
c. . . to understand a little more of the thoughts of others, which so soon as you try to do honestly, you will discover. . . (Jespersen 1949, 202)

That the *wh*-pronouns are still within the island is indicated by the ungrammaticality of the corresponding cases in which the *wh*-pronoun is extracted (is no longer contiguous to the island).

The “double-dependence” construction was apparently quite common in Latin (see Maurel 1989 and references cited there). One example is also given in Ehrenkranz and Hirschland (1972, 26). See (i), which they take (unnecessarily, if we are right) to violate the Complex NP Constraint:

- (i) non politus iis artibus quas qui tenent eruditi appellantur
not polished in those arts the possessors of which (lit. which those who have) are called erudite (Cic. Fin. 1, 7, 26)

27. The configuration in (61) possibly also underlies English-type Left Dislocation, and the Romance Hanging Topic construction, where the relation between the left dislocated phrase and the following CP appears to be one of Discourse Grammar (root character, no island sensitivity, no reconstruction, etc.; see Cinque 1990, chapter 2).
28. Given that “nonintegrated” nonrestrictives can also be adjacent to a Head internal to an island (*The Ferrari which Pietro, who Sofia adores, bought from me cost him a bundle*—Ross 1967, 174), an analysis in terms of extraction (from the island) followed by remnant movement does not seem a plausible alternative.

- The present analysis is reminiscent of the “ColonP” analysis advanced in Koster (2000) for both restrictive and nonrestrictive relatives, to the ParatacticP analysis which Gärtner (2001, §2) suggests for V2 relatives in German, and to the analyses proposed in Rebuschi (2005) and Frascarelli and Puglielli (2005) (except that we would limit their relevance here to the “nonintegrated” nonrestrictive). De Vries (2002; 2006) proposes modifying Koster’s analysis to one of balanced coordination of the Head with a Headless false (or light) free relative in apposition to the Head ([_{&P} Anni [& [_{DP} she_i [t_i who t_i is our manager]]]]—De Vries 2006, 248), even though he also has to admit the availability of unbalanced coordination for the cases of nonnominal antecedents (De Vries 2006, fn. 25 and K of section 5.2). This modification however implies, contrary to fact, that *il quale*-pronouns in Italian should be found in false (or light) free relatives, which are taken to be a necessary component of nonrestrictives. See **Quella/una la quale è di là è mia sorella* ‘(Lit.) That/one which is in the other room is my sister’, **Ciò il quale mi hanno detto è falso* ‘that which they told me is false’ (a comparable problem is raised by French *lequel*). For further critical remarks concerning De Vries’s analysis, see Del Gobbo (2003, §4.4.1) and Citko (2008).
29. The notion of reference appropriate for E-type pronouns should be somewhat qualified given the possibility for such pronouns to have indefinite antecedents under the scope of a quantifier ((i)a), and even a negative quantifier if certain pragmatic conditions hold ((i)b) (for discussion see Authier and Reed 2005, 641 and references cited there):
- (i) a. Every guest will bring a bottle. It/Which will almost certainly be a bottle of wine.
 b. The professor saw no students in class Thursday. They/who had all gone to the beach instead
30. Cf. Jackendoff (1977, 175): “relative pronouns in nonrestrictives can be anaphoric to the same constituents as ordinary demonstrative pronouns can.”
31. In Cinque (1982, 275, fn. 43) I also conjectured that nonanaphoric *wh*-pronouns must have independent uses in the language (e.g., as interrogative pronouns).
32. For interesting recent alternatives to the deletion analysis, see Pesetsky and Torrego (to appear), Sportiche (2008), and Koopman and Sportiche (2008).
33. Also see Mallinson and Blake (1981, section 5.5), Andrews (1995, 27f; 2007, 207), and De Vries (2005, chapter 6).
34. Aboh (p.c.) points out that Gungbe (perhaps all Gbe) resorts to overt or covert coordination instead, as does Bunun (Jeng 1977, 195). Another strategy, utilized in Yoruba (Sadat-Tehrani 2004, §5), as well as in a number of Mixtecan languages (see Bradley and Hollenbach 1992), consists in inserting a generic noun like ‘person’ in apposition, followed by a restrictive clause (‘John, a person that no woman would like to marry, . . .’ possibly a sort of false or light free relative).
35. Also see De Vries (2005, 10f; 2006, 266). His, as well as Citko’s (2008), and others’ claim that prenominal and internally headed relatives cannot be nonrestrictive may be correct for the “nonintegrated” construction (apparently, languages with exclusively prenominal nonrestrictive relatives cannot relativize a sentence, which is something that only “nonintegrated” nonrestrictives can do—see section 6.2 below). It may, however, be wrong for the “integrated” construction. And in fact prenominal and internally headed nonrestrictive relatives are documented in the literature. Setting aside those languages where prenominal nonrestrictives are of the reduced (participial) type, possibly comparable to English *the recently arrived newspapers* (e.g. the Marathi ones according to Pandharipande’s 1977, 80f description), some

genuine cases of full finite prenominal nonrestrictives seem to exist. This is apparently the case of Basque (De Rijk 1972, 134), of Korean and Japanese (Tagashira 1972, 217; Kuno 1973, 235; Krause 2001a, chapt. IV, §7 and b, §6; Yuasa 2005, §6.3; and references cited there) and of Amharic, Quechua and Turkish (Wu 2008, section 2.2.2.1; this possibility for Turkish, pace Aygen 2003, was confirmed to me by Jaklin Kornfilt). De Vries's (2006, 265) second way to reinterpret "prenominal nonrestrictives", namely as "(definite) free relatives followed by an apposition" ('(the one) who I love, Jean, lives in Paris') also appears dubious if Downing (1978, 392) and Keenan (1985, 149) are right in claiming that no language with prenominal relative clauses displays genuine (initial) *wh*-pronouns. One of the two classes of internally headed relatives isolated in Basilico (1996) and Grosu and Landman (1998) (those that do not display an indefinite restriction) can also apparently be nonrestrictive. See (i):

- (i) a. Taroo-wa [0 rooka-o isoide aruitekita] Hanako-ni deatta
 T.-To corridor-Acc hurriedly walked H.-Dat met
 'Taro happened to meet Hanako, who was hurriedly walking
 through the corridor' (Japanese—Itô 1986, 109)
- b. [Kim-ssi-ka pang-eyse naonun kes]-lul manasse
 K.-Mr.-Nom room-from coming.out kes-Acc met
 'I met Mr.Kim, who was coming out of the room'
 (Korean—Jung 1995, 241)
- c. (ded) Edwin wayazaka ki he (ded) thi
 (here) E. 3rd sg.sick the that (here) house
 'Edwin, who is sick, lives here' (Dakota—Alboiu 1997, 267)
- d. [tuut-ee-raa qung-ee 7ij-aa-n]-raaga 'la 7waa-gaa-n
 box-DF-in moon-DF be-EVID-PST-for 3PERS do-EVID-PST
 'He did it for the moon, which was in the box'
 (Haida—Enrico 2003, 570)

Jung (1995, section 3) argues in fact that Korean internally headed relatives can only be nonrestrictive (though see Kim 2004, 273f); Prost (1969), cited in Culy (1990, 251), claims the same thing for Togo Kã. On nonrestrictive internally headed relatives, see the discussion in Culy (1990, chapter 5, §2.4).

36. This implies that a restrictive relative like *Ich kenne nicht den Mann der da ist* 'I do not know the man who is there' involves some kind of doubling. Both the Head (*den Mann*) and the *d*-pronoun raise to (two adjacent) COMP(s), possibly as in the so-called Contrastive Left Dislocation construction (*Den Mann, den kenne ich nicht* 'the man, him I do not know'), except that in the former case one has to assume that the Case assigned to the Head within the relative clause is overridden by the Case assigned to the big DP from outside (cf. Kayne 1994, 155, fn. 15). Alternatively, the *d*-pronoun is actually an agreeing complementizer, much as Pesetsky and Torrego (to appear) argue for the corresponding *d*-pronouns of Dutch.
37. Like Italian, Albanian can utilize either the finite complementizer (*që*) or a *wh*-pronoun (*cil-in* 'which-the'). See Kallulli (2000, 359f) and Sotiri (2006).
38. In fact, they utilize no *wh*-pronoun (except for *dove* 'where'), but just the complementizer of finite complement clauses and either a gap or a pronominal (clitic, where possible) within the relative clause, depending on the complement position being relativized.
39. Tong Wu also tells me that they can only be declarative, cannot have split antecedents, have to be strictly adjacent to the Head, and never show full retention of the internal Head.

40. Andrews (1975, 49 and 62), Emonds (1979, fn. 4), and Fukui (1986, 235) take the fact that nonrestrictives can stack in Japanese and Korean (while they cannot in English) as further indication that nonrestrictives in these languages are like restrictives. More generally Andrews claims (p. 63) that languages with exclusively prenominal relatives do not mark the restrictive/nonrestrictive distinction; i.e. have only “integrated” nonrestrictives, in our terms (also see Kuno 1973, 235; Keenan 1985, 169; and Kayne 1994, 111).
41. Coordination of the *wh*-pronoun with another DP, however, was not accepted by my informants.

NOTES TO CHAPTER 15

1. Parts of this article were presented at the 7th Glow in Asia (Hyderabad, February 25–27, 2009), and the 4th Lissim Summer School (Kausani, Uttarakhand, June 10–30, 2009). I wish to thank the audiences of the two events, in particular R. Amritavalli, Tanmoy Bhattacharya, Probal Dasgupta, Veneeta Dayal, K.A. Jayaseelan, and Alice Davison, Richard Kayne, Ghanshyam Sharma, and Alessandro Zucchi for discussing specific points of the analysis with me.
2. An independent conceptual argument for the prenominal origin of relative clauses appears to come from the pervasive left-right asymmetry of natural languages discussed in Cinque (2009a). I take this asymmetry to suggest that the complements, modifiers, and functional heads associated with a lexical head (N, V, etc.) should be merged exclusively to the left of the lexical head, their possible surface location to its right being a function of the raising of a projection of the lexical head to their left. See Cinque (2009a) for an elaboration of this point.
3. For discussion of some of the other contexts in which the presence of such silent functional nouns can be postulated, see Kayne (2004a, 2005b, 2007a).
4. See Rebuschi (1999, 68) for the similar idea that the correlative clause may just be “la partie visible d’une véritable relative libre topicalisée.”, and especially Gupta (1986, chapter 5), who concludes: “Thus, internal [correlative] and postnominal relative constructions display characteristics of “left dislocated” NPs. These same traits are not evident in extranominal [extraposed] relative sentences” (p.91). Also see Lipták (2004), Dasgupta (2006), Butt, King and Roth (2007, §4.3), and Rebuschi (2009, §3.3). As we see below, the term ‘left dislocated DP’ corresponds in different languages to different types of ‘left dislocation’ constructions, while the element resuming the relative in the matrix IP may be represented either by a full DP (see for example (i) below, from Marathi—Renuka Ozarkar, p.c.—which incidentally redresses McCawley’s 2004, 300 generalization), or by a demonstrative (possibly followed by a head noun), as shown in (3), or by an anaphoric pronoun, which can also be silent, depending on the Case it bears, and the particular language involved.
- (i) [jyaa aattaa-c aalyaa aahet] Tyaa laal Dres
 which now-emph come-PAST.FEM be-PRES.PL those red dress
 ghaat-le-lyaa don Chotyaa mulii. . .
 wear-PAST.PART-FEM two small/young girls. . .
 ‘Those two small girls wearing a red dress who have just arrived. . .’
- In languages that have both demonstratives and special anaphoric correlative pronouns, the two may have different semantic consequences. See Bagchi’s (1994) discussion on Bangla.
- Sometime the phrase in the matrix IP which resumes the left peripheral relative is considered as the (external) Head of the relative clause. But this is

- misleading if the correlative pronoun (phrase) is nothing other than a phrase resuming a 'left dislocated' DP (for multiple correlatives, see NOTE 3 below).
5. Also see Andrews (1975) and Hale (1976). Among the works that essentially adopt this analysis are Bagchi (1994), Bianchi (1999, chapter 3, section 4.1), de Vries (2002, chapter 5, section 6), Cecchetto, Geraci and Zucchi (2006), Leung (2007c), and various contributions in Lipták (2009b). Differently from Srivastav (1991) and Dayal (1996), Bhatt (2003, 2005) argues that the CP is not base-generated as an adjunct to the matrix IP, but is moved there from a position inside the matrix IP adjoined to the correlative pronoun or demonstrative (Mahajan 2000, fn.10 also proposes a movement derivation of the left peripheral relative). In this way, the fact that the relation between the CP and the correlative pronoun or demonstrative in the matrix IP is sensitive to islands can be made to follow. A similar analysis is actually adumbrated in de Vries (2002, 149, fn.49), and Dayal herself (1996, chapter 6, section 2.4) admits that the CP can in certain cases be adjoined to the DP containing the correlative pronoun or demonstrative, and also mentions elsewhere (p. 183) that the relation between the two, when they are separated, is subject to island constraints.
6. In addition to (simple and multiple) correlatives, Hindi has externally headed embedded ((i)a) and extraposed ((i)b) postnominal relative clauses, which share properties setting them apart from (simple and multiple) correlatives (see, among others, Srivastav 1991, Mahajan 2000, McCawley 2004, Leung 2007a,b, Butt, King and Roth 2007, §3). Here I will not be concerned with these other types of relative clauses.

- (i) a. vo laRkii jo khaRii hai lambii hai
that girl which standing is tall is
(Srivastav 1991, 642)
- b. vo laRkii lambii hai jo khaRii hai
that girl tall is which standing is
'The girl who is standing is tall' (Srivastav 1991, 642)

7. Butt, King and Roth (2007, section 5) also give a non relative clause analysis for multiple correlatives (adjunction to IP) distinct from that for simple correlatives (generation in a specifier of the correlative DP).
8. Gupta (1986,36fn2) explicitly proposes that a Hindi correlative like (i) derives from an externally headed RC like (ii), with deletion of the external Head (also see Mahajan 2000,215):

- (i) jo laRka: la:l kami:j pahne hai wo mera: bha:i: hai
which boy red shirt wearing is that/he I.gen brother is
'The boy who is wearing a red shirt is my brother'
- (ii) [[wo laRka:] [jo laRka: la:l kami:j pahne hai]] wo
That boy which boy red shirt wearing is that/he
mera: bha:i: hai
I.gen brother is

Junghare (1973) also proposes to derive the Marathi correlative forms in (iii) from a structure essentially like (iv), which however is not acceptable for her. Also see Wali (1982):

- (iii) a. to manus [jo Ø ithð kam kðrto] to manus ajari ahe
b. to Ø [jo Ø ithð kam kðrto] to Ø ajari ahe
c. to Ø [jo Ø ithð kam kðrto] to manus ajari ahe
d. Ø Ø [jo manus ithð kam kðrto] to Ø ajari ahe
e. Ø Ø [jo Ø ithð kam kðrto] to manus ajari ahe
f. Ø Ø [Ø Ø ithð kam kðrto] to manus ajari ahe
(that)(man)(which)(man) here work does that (man) sick is
'the man who works here is sick'

- (iv) **to manus** [jo manus ithə kam kərtə] **to manus** ajari ahe (*) 1
9. Alice Davison tells me that (8) was accepted by many speakers she con- 2
sulted. Wali (2006,289) claims that in Marathi too the left dislocated DP 3
may sometimes surface unreduced. See (v) (Renuka Ozarkar tells me that 4
this is indeed possible if one wants to emphasize ‘that particular girl’, 5
stressing ‘ti’ at the beginning of the main clause. Otherwise, it is slightly 6
odd (?’):
- (v) **Ti mulgi** [ji mulgi ghari geli] ti ithe rāhte 7
That girl which girl home went that here lives 8
‘The girl who went home lives here’ 9
10. The same full structure is instead not readily acceptable in Nepali (Samar 10
Sinha, p.c.) 11
11. As Richard Kayne reminds me, Kashmiri, as opposed to Germanic V-2 lan- 12
guages, allows multiple *wh*-fronting, with the consequence that the verb may 13
end up not being in strict second position. It also ends up in third position 14
after a Hanging Topic (see the text and the next note), or in the presence of a 15
sentence initial yes/no question marker (Koul 2003, §6.2.1.4). Also see Bhatt 16
(1999, §4.1.2.2). 17
12. See for example (i)a-b, from Bhatt (1999,103): 17
- (i) a. Tem dop ki, coon kalam, shiilaayi tshooND su 18
he said that, your pen, Sheila found that 19
‘He said that as for your pen, it is Sheila who found it’ 20
- b. Coon kalam, su goyi me garyi mashith 21
your pen, that gone I home-at forget 22
‘As for your pen, that (is what) I forgot at home’ 22
- Bhatt (1999,103f) gives two arguments for the extra-clausal nature of left 23
dislocated/hanging topics in Kashmiri. The first is that it is possible to insert 24
a parenthetical after them, and the second is that they are “always in the 25
nominative case”, whereas the co-referential pronoun in the following clause 26
is in the appropriate Case. 27
13. If the left dislocated phrase containing the relative clause in Kashmiri is 28
base generated in the left peripheral position rather than moved there, no 29
reconstruction of the left dislocated DP should be possible, nor should its 30
relation with the correlative element be subject to island constraints. This 31
remains to be checked. 32
- Hungarian correlatives, which, as Lipták (2004) shows, do not recon- 33
struct inside the main clause to a position adjoined to the correlative 34
element, nor display sensitivity to islands, also appear (pace her own con- 35
clusion) to be Hanging Topics. The two putative differences which accord- 36
ing to Lipták (2004, 302) distinguish Hanging Topics from Hungarian 37
correlatives may turn out not to be real. Both correlatives and Hanging 38
Topics seem to be root phenomena and indeed, just as with correlatives, 39
there is in general no more than one Hanging Topic per clause (cf. Postal 40
1971, 136, fn.17; Cinque 1990,58; although some speakers marginally 41
accept more than one). 42
14. Namely to (i)a, where no Case connectivity is present, vs. (i)b: 40
- (i) a. Der Karl, dem will ich vertrauen 41
The(Nom) Karl, him(Dat) will I trust 42
- b. Dem Karl, dem will ich vertrauen 43
The(Dat) Karl, him(Dat) will I trust 44
15. Stacking of correlatives is claimed to be possible in other Indo-Aryan lan- 45
guages: Konkani (Almeida 1989,304—see (i)), and Bhojpuri (Shukla 1981, 46
chapter 19, section 4, p.206—see (ii)):

(i) jo a:j aila, ja-ka g^hor na, jace poise sādlyat, tya
 who today come, who-dat house not, whose money lost, that
 mons-ak pedru adar dita
 man-dat Peter help gives
 ‘Peter helps the man who has come today, who has no home and whose
 money is lost’

(ii) ham jaon p^hal pa:k-i:, jaon tu: bec-ba: taon
 I which fruit ripe-3sg.m.fut, which you sell-2sg.m.fut that
 k^ha:-b
 eat-1sg.fut

‘I will eat that fruit, which will ripen, which you will sell’

Also see Davison (2009, section 2.2.5) for the apparent possibility of stacking in Sanskrit correlatives. However, given that the impossibility of stacking seems to be a general property of relatives involving raising of the internal Head (free relatives—cf. Carlson 1977; Grosu 2002—correlatives with a left peripheral free relative, etc.–), one should determine whether such cases truly involve stacking rather than simple asyndetic coordination (cf. McCawley 2004,306).

16. I owe this example to Lalith Ananda (p.c.). The phonetic transcription follows the one utilized in Ananda (2008).

Sinhala is generally reported (Bhatt 2003,491; Leung 2007c; Lipták 2009a,10) as not having correlatives (as it does not have embedded postnominal relative clauses with relative pronouns, nor their free relative variant). But, if correlatives are not limited to left dislocated free relatives, this is strictly speaking not true.

Languages with both correlatives and prenominal relative clauses have been claimed (Downing 1978,400) not to exist. But, in addition to the case of Sinhala, Dravidian languages and the language isolate Burushaski also have both correlatives and prenominal relative clauses, even though, differently from Sinhala, for correlatives they utilize a free relative (containing an interrogative adjective/pronoun) resumed by a correlative proform (cf. Lakshmi Bai 1985 for Dravidian, and Tiffou and Patry 1995 for Burushaski).

17. Cf. Keenan (1985,165). Other languages optionally displaying a left dislocated DP with an Internally Headed relative clause resumed by a phrase in the matrix IP are Arizona Tewa (Gorbet 1977, 272), and, possibly, Italian Sign Language (Branchini and Donati 2009), which also appears to have externally Headed postnominal relative clauses (also entering a correlative construction). See Bertone (2006), and Brunelli (2006).

18. Wappo (a Californian language whose genetic affiliation is unclear—Thompson, Park and Li 2006, xi) also has free relatives resumed by a demonstrative correlative pronoun:

(i) [te ita čo?-me] cew ah te-k’a čo:-si?
 3SG where go-DUR:DEP there 1SG:NOM 3SG-COM go-FUT
 ‘I’ll go wherever s/he goes’

(Thompson, Park and Li 2006,123)

Thompson, Park and Li (2006) say that “[t]he demonstrative pronoun seems to be required when it is *cephi*, the nominative form, but optional when it is *ce*, the accusative form” (p.116).

19. Bambara (of the Mande branch of Niger-Congo) has both left peripheral Internally Headed relative clauses resumed by an anaphoric phrase/pronoun ((16)), or Internally Headed relative clauses in argument position, as in (i), below (in both cases the internal Head is marked by a following modifier,

mi(n)). In some varieties it also has externally headed postnominal and extraposed relative clauses (Bird 1968, Zribi-Hertz and Hanne 1995, and references cited there).

- (i) Tye` ` be n ye so min ye dyo
 man the PRES [I PAST house *wh-* see] erect
 ‘The man is building the house that I saw’ (Bird 1968,46)

20. Anderson (2005) makes the interesting observation that Nepali shows a semantic distinction between the two structures (17)a and b. The former is associated with a restrictive (specific) interpretation, the latter with an indefinite (free choice) interpretation. The evidence for this comes from the fact that when the correlative is in absolute initial position both interpretations are available while only one, the restrictive (specific) interpretation, is possible when the correlative is adjacent to the correlative pronoun. See (i)a and b:

- (i) a. jun manche-lai bhok lag-eko cha, ma us-lai
 REL man-DAT hunger attach-PFPT 3SG.PR, 1SG.NOM 3SG.DAT
 khana din-chu
 food give-1SG.PR
 either: ‘I will give food to the man who is hungry’ (specific man—
 restrictive relative)
 or: ‘I will give food to any man who is hungry’ (any hungry man—
 free relative)

(= Anderson’s 2005, ex. (15))

- b. ma jun manche-lai bhok lag-eko cha,
 1SG.NOM REL man-DAT hunger attach-PFPT 3SG.PR,
 tyo manche-lai khana din-chu
 DEM man-DAT food give-1SG.PR

‘I will give food to the man who is hungry’ (specific man)

(= Anderson’s 2005, ex. (16))

This makes sense, according to Anderson (2005), if the initial position can either be filled by movement of the correlative relative from the internal position adjacent to the correlative DP (which gives the restrictive, specific, interpretation) or by base generating the simple correlative CP (like multiple correlatives) in initial position (which gives the free choice interpretation). It remains to be seen whether this holds of other Indo-Aryan languages as well.

Dayal (1996, chapter 6, section 2) suggests that multiple correlatives in Hindi have a functional reading, which apparently “can also be used to refer to a unique pair of individuals in the contextual domain.” (p.204).

Additionally, it should be observed that if simple correlatives can also access the base generated structure of multiple correlatives, they would be expected to show no necessary island sensitivity nor obligatory reconstruction. The facts here are contradictory. While Mahajan (2000,227fn10) and Bhatt (2003, 2005) claim that the correlative pronoun cannot be found within an island (see (ii)), McCawley (2004) gives one case of a correlative pronoun within a relative clause complex NP island judged possible by his informants (his orthography has been uniformized to the one used here). See (iii):

- (ii) *[jo si:ta-ko acha: lagta: hε] mε [DP yah ba:t [CP ki vo
 who Sita-DAT nice seem be-PRES I this fact that that
 a:dmi: pa:gal hε]]
 man crazy be-PRES know be-PRES

‘I know the fact that the man who Sita likes is crazy’

(= (ii) of fn.10 of Mahajan 2000)

(iii) jo laRkii vaha khaRii hai], ram ne vo paRha, jo
 Which girl there standing is, Ram read the letter that
 us ne likha
 she wrote

Further investigation is needed here, also in relation to the apparent possibility of extracting from correlatives (and ‘if’ clauses) vs. the impossibility of extracting from embedded postnominal and extraposed relatives reported in Dwivedi (1994a,b). Perhaps extraction is possible from the adjunct CP correlative but not from the DP correlative.

21. Also see Gupta (1986, 34). The same is claimed by Butt, King and Roth (2007, section 4.2) for the Urdu variant of Hindi/Urdu, and by Bhatia (1993, 55) for Punjabi.
22. The existence of nonrestrictive correlatives in Marathi was independently pointed out to me by Avinash Pandey and Renuka Ozarkar. Renuka Ozarkar gave me the following additional example of a nonrestrictive correlative in Marathi:

i) ji-ne maajhyaa-saaThii kaSTa ghet-l-e,
 REL.fem-ERG me-for efforts take-PERF-3P.PLURAL,
 tii maajhii aaii aataa jiwanta naahii.
 that my-FEM mother now alive not-PRES
 ‘My mother, who took efforts for me, is not alive anymore.’

Nonrestrictive correlatives were apparently also possible in Sanskrit. See Davison (2009, 227).

23. Actually, Creissels (2009, 43) states that “[I]e malinké n’a pas de relatives adnominales: les seules relatives du malinké sont les relatives correlatives [. . .]”, but, as he makes clear, the correlatives of Malinké are left dislocated Internally Headed relatives, which in contrast to the closely related languages Bambara (cf. fn.19 above) and Mandingo (Bokamba and Dramé 1978), appear not to be able to occur in argument position (Creissels 2009,51). This, if true, remains to be understood.

NOTES TO CHAPTER 16

* To Jan Koster, for his inspiring work on the theory of locality. Thanks to Richard Kayne for helpful comments on a previous draft.

1. Although Maling and Zaenen (1982, 232) say that “in Icelandic such extractions seem to be impossible”, they also add that one of their informants accepted an example like (i) (see their fn.6):

(i) Kaffi þekki ég engan á íslandi, sem ekki drekkur
 Coffee know I no one in Iceland that not drinks
 ‘Coffee, I know no one in Iceland who doesn’t drink’

Engdahl (1997, fn.28) also reports that her informants found at least some of the corresponding extractions from CNPs in Icelandic and Faroese acceptable.

2. But see Engdahl (1997, §2) for one example from Norwegian where the subject is extracted from a (free) relative clause on the object, and (i) of note 4 below. Engdahl (1980) argues that cases such as (1) involve movement rather than base generation of a pro, and that their acceptability is not due to the fact that they comply with subjacency because extraction occurs from an extraposed clause. The Italian cases discussed below show it even more clearly.

3. Some minor differences remain among the languages having to do with what type of extraction gives the best result (Topicalization, Clitic Left Dislocation, *wh*-relative or interrogative movement) and with what counts as the best nonspecific indefinite relative clause head (bare negative quantifiers like ‘nobody’, ‘nothing’, nonnegative quantified phrase, like ‘some’, ‘many’ XP, etc.), but hopefully these differences will turn out to be related to independent differences among the languages in question. For relevant observations, see Engdahl (1997, §7). Allwood (1982, 32) also mentions the existence of dialect differences in Swedish to the effect that “eastern dialects are more restrictive than western ones” in their extractions from CNPs. 1
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3
4
5
6
7
8
9
4. Extraction from (at least some) relative clauses that relativize the direct object is also possible in Italian: 10
- (i) Gianni, a cui_k non c’è proprio niente che_j potremmo far avere t_j t_k
in giornata, . . . 11
‘Gianni, whom there is really nothing that we could provide him
within one day, . . .’ 12
I thank Paola Benincà and Alessio Muro for checking my judgments on (i) 13
and (ii) of this note and the sentences in (2). 14
Given that Clitic Left Dislocation also shows sensitivity to the CNPC 15
(Cinque 1977, 1990, chapter 2), the sentences in (ii) are even closer ana- 16
logues to some of the Swedish *satsflätor* discussed in the literature on 17
Scandinavian: 18
(ii) a. **A** **Giorgio**, non c’è niente che gli interessi 19
to Giorgio, not there is nothing that to-him interest 20
veramente. 21
really 22
‘Giorgio, there is nothing that really interests him.’ 23
b. **Di questo argomento**, conosco/ci sono molte persone 24
of this topic, I know/there are many people 25
che **ne** saprebbero parlare molto meglio di me. 26
that of-it could talk much better than me 27
‘This topic, I know / there are many people who could speak 28
about much better than me.’ 29
5. I thank Vincent Homer, Marie Claude Paris and Dominique Sportiche for 30
the French data and María Martínez Atienza for the Spanish data. 31
6. Thanks to David Pesetsky, Megan Rae and Peter Svenonius for sharing their 32
judgments with me. Even though examples such as those in (7) and (i) are given 33
as possible in the literature, some of my informants found them either ungram- 34
matical or highly marginal, saying that they become better if *that* replaces *who*.
Also relevant in this connection are Kayne’s (2008a) notes 30 and 38. 35
- (i) a. Violence is something that there are many Americans who 36
condone. 37
(McCawley 1981, 108) 38
b. This is the one that Bob Wall was the only person who hadn’t 39
read. 40
(McCawley 1981, 108) 41
c. That’s one trick that I’ve known a lot of people who’ve been 42
taken in by. 43
(Chung and McCloskey 1983, 708) 44
d. This is a paper that we really need to find someone who 45
understands. 46
(Noam Chomsky, cited in Koster 1986, 169)

- 1 7. The example is originally from Erteschik-Shir and Lappin (1979).
 2 8. For evidence that the *deto* which introduces emotive factive clauses is the
 3 same *deto* which introduces relative clauses (in that the former are in fact
 4 hidden relative clauses), see Krapova (2010).
 5 9. If English *that* and French *que* are a variety of relative pronouns (Kayne 2008a,
 6 Kayne 2008b and Sportiche 2008), then the distinction should be thought of in
 7 terms of different types of relative pronouns (see the text below).
 8 10. Goodluck, Foley and Sedivy (1992, 191, note 11) report a similar contrast
 9 in Swedish clauses introduced by *som* and by *vilken* (example provided by
 Christer Platzack):

(i) Blommor känner jag till en affär som/²³vilken säljer
 flowers know I PRT a shop that/which sells

The same contrast is found in Italian

(ii) Il premier, a cui/al quale non sono molti i giornalisti che/²³i quali
 oserebbero porre una simile domanda . . .
 ‘The prime minister to whom the journalists that/who would dare
 put such a question are not many, . . .’
 (cf. *Non sono molti i giornalisti i quali oserebbero porre una simile
 domanda al premier* ‘the journalists who would dare put such a
 question to the prime minister are not many’, possible in the marked
 restrictive construction discussed in Cinque 1995, §1.5).

Those English speakers that do not make a difference between *who* and *that*
 in (7) and (i) of note 6 perhaps allow *who* to be in the same class as that.

11. If “ordinary” and “weak” relative pronouns are featurally distinct, and a
 “weak” relative pronoun is allowed to pass through the Spec of the higher
 COMP acquiring its features, then no relativized minimality (Rizzi 2004)
 violation should be triggered. The fact that *deto* in Bulgarian (perhaps also a
 “weak” relative pronoun) blocks extraction perhaps indicates the necessary
 presence of an operator filling the Spec of the higher COMP.

A potential counterexample to the idea that extraction is blocked out of
 CNPs introduced by “ordinary” relative pronouns is represented by Roma-
 nian, which apparently allows extractions from CNPs introduced by the
 relative pronoun *care* (‘who, which’). See the examples in (i), kindly provided
 by Alexandra Cornilescu and Iulia Zegrean:

(i) a. Ion, pe care nu cunosc pe nimeni care să-l aprecieze pentru ceea
 ce a făcut, . . .
 ‘Ion, who (ACC) I do not know anybody who appreciates him for
 what he did, . . .’

b. Ion, căruia nu este nimeni care poate să-i reziste, . . .
 ‘Ion, who (DAT) there is nobody who can resist, . . .’

There is however evidence that *care* in colloquial Romanian has (also) been rean-
 alyzed as a “complementizer” (or “weak” relative pronoun) (see Grosu 1994,
 212). This is clearly shown by examples such as (ii), from Gheorghe (2004, 279):

(ii) A venit la noi un elvețian, care proiectul lui l-a interesat pe director
 ‘A Swiss came to us, who his project interested the director’

NOTES TO CHAPTER 17

1. Pace Berghäll (2010), where such examples as (3a) are analysed as double-
 headed, with the comment: “It is possible to retain the ANTNP, in which
 case the relative clause is not replacive [internally headed] but pre-nominal.

- In Mauwake this is not common; it is used when the noun phrase that is relativised is given extra emphasis.” (p.319). 1
2. de Vries (1993) states that most RCs, in addition to the internal head, have either *ro* ‘thing’ (for nonhuman entities) or *rumu* ‘person’ (for human entities) as external heads (when the external head does not repeat the internal head, as in (1)a). He dubs them as ‘grammatical heads’ (drawn from a limited set of functional nouns), but also adds that in his data there are also examples “where there is no grammatical head noun”, as in (i), where there is apparently just an internally headed RC: 2
- (i) [baju rakhumade] emukhe 3
 [shirt buy.1SG.NF] lost 4
 ‘The shirt I bought is lost’ 5
- To judge from his example (325), headless, or ‘free’, RCs appear to involve the same grammatical heads: 6
- (iii) [[khe-lu khakhe-n-o] rumu], . . . 7
 [[his-word listen.3SG.NF-TR-CONN] person] 8
 ‘Whoever listens to him, . . .’ 9
3. The evidence is based on the description found in grammars or articles dealing with specific languages and would need to be corroborated by further investigation on such languages. 10
4. In addition to double-headed RCs (which constitute a significant number of Renck’s 1975 examples of RCs), Yagaria appears to have internally headed ((i)a), pre-nominal externally headed ((i)b), and headless ((i)c), RCs (see Renck 1975, §3.2.2.15) (PIV= pivotal marker; QD= qualitative derivative): 11
- (i) a. yo’ ne-k-i-ma’ 12
 house PROG-build-3.PL-PIV 13
 ‘the house they are building’ or ‘they who are building a house’ 14
 (Renck 1975, 207) 15
- b. ega fili-te’ yale 16
 yesterday die-QD people 17
 ‘the people who died yesterday . . .’ (Renck 1975, 208) 18
- c. Huva-gayagati’ e-d-a-ma’ 19
 Lufa-ABL come-PAST-3.PL-PIV 20
 ‘they who came from Lufa.’ (Renck 1975, 207) 21
5. Renck indicates the entire sequence [*ha eli-d-a-ma’ ha-mo*] as the object of the following predicate. 22
6. Renck indicates the entire sequence [*legepa abade bogo p-agavei-na h-ei-ma’ abade-mo*] as the subject of the following predicate. 23
7. Reesink (1987) mentions another (non-Austronesian) Papuan language, **Gahaku**, as one that “allows the fully expressed NPs to occur simultaneously, if the speaker needs to emphasize the, clearly topical, head noun (Deibler, pers. comm.)” (p.218), giving (i) as an example: 24
- (i) [[vegana lamana keza mihuka hora ale] vegana nene] . . . 25
 people good they garden work do people the 26
 ‘The good people who worked in the garden . . .’ 27
 (Reesink 1987, 218) 28
- But more work is needed to establish this as a fact. 29
- To judge from Oguri (1976), and Minch (1991,1992) two more (non-Austronesian) Papuan languages possibly allowing for double-headed RCs are **Isirawa** (“In Isirawa only true verbal qualification has an overt relative clause marker *-pā*. In this relative clause, any referent which is obvious to the listeners can be deleted though no referent (even the referent which is coreferential 30

- (i) [[ami-h-ò angi -mat-i-im-pipihi] s-ápihi] 1
 [[my.uncle-eu-n.cl house-build-IND-REL-place] this-place] 2
 ‘this place where my uncle built a house’ 3
13. The sentence appears to involve a double-headed left dislocated RC resumed by a full DP in the main clause; namely a correlative construction, much like the Indo-Aryan cases to be seen below. As apparent from (17), Bine, like the Canariense variety of Spanish, Latin and Bulgarian (see Brucart 1992,7; Bianchi 2000,71; and Krapova 2010,§4.2, respectively) allows phrases belonging to the RC to be fronted between the external Head and the complementizer/(weak) relative pronoun. 4-8
14. Gravelle-Karn (2010) says “[o]ccasionally the noun itself is repeated in the RC, as in [(18)a.] where the relativized object noun *mar* is repeated, or in [(18)b.] in which the relativized possessed noun *mod* is repeated” (p.326). 9-11
15. The Zapotecan languages that Marlett (1985, Appendix J) reports as optionally having double-headed RCs with generic nouns filling the internal Head position are Choapan Zapotec, Mixtepec Zapotec, Tabaá Zapotec, Texmelucan Zapotec, Yalalag Zapotec, Yatzachi el Bajo Zapotec and Zoogocho Zapotec. 12-14
16. According to Malinowski (1920, 58f) *tau*, *to*, *to-tau* are actually classifiers for humans. 15-16
17. Frajzyngier and Johnston (2005) explicitly say that “[t]he relativized object may be coded twice, once at the beginning of the clause as the head of the relative clause, and the second time after the verb, in the position of object.” (p.432f). Mina has both pre- and post-nominal RCs. 17-19
18. Dixon explicitly says that (21)a “features two occurrences of the common noun” (p.328), saying that there are also instances “in which at least part of the common NP occurs twice”, appearing once as “a generic noun” and once as “a specific noun” (p.327) (in Dixon 2009, 335f the “generic noun” is called “classifier”). The latter case is exemplified in (21)b. This implies that in (21)c both the external and the internal Heads are possibly just classifiers. What I glossed as COMP in (21), a general subordinating suffix, is glossed as “Dative Subordinate” in Dixon (1977) and as “Relative” in Dixon (2009). 20-26
19. As Diego Pescarini (p.c.) observed, this possibility appears to be restricted to Benincà’s (2012) *relative definitorie* (kind-defining relatives), a class of relatives which though usually lumped together with restrictive relatives display a number of properties that set them apart from ordinary restrictive relatives, which in fact do not seem to allow for the spelling out of the two Heads (also see Benincà and Cinque 2012): 27-31
- (i) *Il libro dal quale libro sono rimasti affascinati è questo 32
 The book by which book they were fascinated is this one 33
20. It is possible that such cases as (i), also cited by Keenan, and similar cases in other European languages (see (ii) from English and other such cases cited in Cinque 2008a), which involve a *wb*-phrase resuming the external Head ad sensum, are more like the ‘relatifs de liaison’ typical of nonrestrictive relative clauses: 34-37
- (i) roman o ratu, koje delo prevodim 38
 novel about war which work I am translating 38
 ‘A novel about war, which work I am translating, . . .’ 39
 (Keenan 1985,153) 40
- (ii) This book, **which masterpiece** I have read twice, . . . (Kayne 1994, 165fn73) 41
21. Guasti and Shlonsky (2005,§9) (also see Utzeri 2007 and Friedmann, Novogrodsky, Szterman, and Preminger [forthcoming] for analogous claims, the latter based on the production of RCs in Hebrew by children with hearing impairment—cf. note 23) claim that the repetition of the internal Head in Romance is best understood as a case of expletive replacement in a raising derivation of the relative clause internal Head (apparent evidence being the 42-48

fact that no repetition of the Head is found when the internal Head is a subject, plausibly owing to the ECP). This account however is silent about the Hebrew case in (35)a and the apparent lack of copying in other types of *wh*-movement (interrogatives, topicalization, etc.) in Italian, French, Spanish and Jakarta Indonesian child language. See Labelle (1990,104; 1996,73) for a similar observation.

22. On the existence of full resumptive NPs in the relative clauses of English speaking children, also see McKee and McDaniel (2001, 126–128). Resumptive NPs are also reported to exist in Serbo-Croatian relative clauses in Stojanović and Goodluck (1995, 619).
23. Hsu, Hermon and Zukowski (2009) say that “[r]esumptive NPs are ungrammatical in Chinese, yet this was found to be the most commonly produced error in our data.” (p.343).
24. In a study of relative clause production by children with hearing impairment Friedmann, Novogrodsky, Szterman, and Preminger (forthcoming) report that out of 12 ungrammatical sentences (from the viewpoint of the adult grammar) 9 contained doubling of the relative Head in object position, as in (i), and 1 doubling of the relative Head in subject position.

- (i) zo [ha-yalda [she-ha-safta mesareket et ha-yalda]]
 this [the-girl [that-the-grandma combs ACC the-girl]]
 ‘This is the girl that grandma combs . . .’

25. Labelle makes a similar point concerning child French (see end of note 21 above).
26. This is the conclusion also reached by Inada (2009, fn.15) for such cases as (14)b-c (“..the amount expression *100man yen* ‘a million yen’ in [(14)c] contains the semi-lexical expression *gaku* [‘amount’] ([*gaku* [*100man yen*]]) as a so-called “big DP”. In this case, only the amount expression *gaku* is relativized and it also yields the A[mount]R[relative] reading, with the copy of *gaku* unpronounced in the base position.”).

The order proper noun > common noun is typical of head-final languages, and the order common noun > proper noun of head-initial languages (though there are inconsistencies). See Cinque (2011) and references cited there.

27. See the case of feminine agreement with the otherwise masculine proper noun Il Cairo (lit. ‘The (masc.) Cairo’) in (i), no doubt controlled by an unpronounced classifier CITTA’ (‘city’ (fem.)) and the feminine plural and singular agreement in (ii), plausibly controlled by two unpronounced instances of the classifier HOUR (on nonpronunciation of functional material, see several chapters in Kayne 2005c):

- (i) Il Cairo è sempre stata il centro più importante del mondo islamico
 (Cinque (2008a, fn.11))
 The (masc.sing.) Cairo has always been (fem.sing.) the most
 important center of the Islamic world
- (ii) Sono le una
 They. are the.fem.pl. one.fem.sg.
 (=sono le ORE una ORA)
 (they. are the.fem.pl hours.fem.pl. one.fem.sg. hour.fem.sg)
 ‘It’s one o’clock’

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