

Edited by Timothy Shopen

Language Typology

and Syntactic Description

**Volume II:
Complex Constructions**

SECOND EDITION

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Language Typology and Syntactic Description

Second edition

Volume II: Complex Constructions

This unique three-volume survey brings together a team of leading scholars to explore the syntactic and morphological structures of the world's languages. Clearly organized and broad-ranging, it covers topics such as parts of speech, passives, complementation, relative clauses, adverbial clauses, inflectional morphology, tense, aspect, mood, and deixis. The contributors look at the major ways that these notions are realized, and provide informative sketches of them at work in a range of languages. Each volume is accessibly written and clearly explains each new concept introduced. Although the volumes can be read independently, together they provide an indispensable reference work for all linguists and field workers interested in cross-linguistic generalizations. Most of the chapters in the second edition are substantially revised or completely new – some on topics not covered by the first edition. Volume II covers co-ordination, complementation, noun phrase structure, relative clauses, adverbial clauses, discourse structure, and sentences as combinations of clauses.

Timothy Shopen (1936–2005) was Senior Lecturer in Linguistics at the Australian National University. He had over forty years' experience of teaching and researching a variety of the world's languages, and also held posts at Indiana University and the Center for Applied Linguistics in Arlington, Virginia. In addition to *Language Typology*, he was editor of *Standards and Dialects in English* (1980), *Standards and Variables in English* (1981), *Languages and their Speakers* (1987), and *Languages and their Status* (1987).

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Timothy Shopen[†]



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Language typology studies what the languages of the world are like. When people ask ‘What is linguistics?’, from my point of view one of the best answers is ‘the study of what the languages of the world are like’. I am honoured to have been joined by some excellent linguists in the achievement of this second edition of *Language Typology and Syntactic Description* for Cambridge University Press.

I am especially grateful to Matthew Dryer for coming in as co-editor when my health began to fail. Many thanks also to Lea Brown, for the invaluable help she gave Matthew in preparing the manuscript.

The Australian National University has always been generous in its support of my work. Except for the two and a half years I lived in Cairns, 2001 to 2003, it has been my base since I moved to Australia in 1975. I recognize the support I received from James Cook University during my time in Cairns.

I came up with the idea used to organize the first edition at a conference on field work questionnaires held at the Center for Applied Linguistics, Washington, DC. I said the best way to prepare for field work is to gain a good idea of what to look for. People thought this was right so I was asked to do the organizing. There have been surveys in the past but I believe none with this scope. The first edition has served as a reference manual and a textbook around the world and I have no doubt the second edition will as well. I have been pleased by the number of good linguists who have told me they have referred to our survey while doing field work valuable to us all.

Interest in the question of what the languages of the world are like is a longstanding one but in the modern era Joseph Greenberg is an outstanding scholar who did important early work himself and was a model for others to do the same.

In an obituary for Joseph Greenberg by Steve Miller the distinction is made between taxonomists who are lumpers and splitters. Steve Miller says:

It is fitting that it was Darwin who first thought of the distinction between lumpers and splitters; the OED gives him the first citation of the words as applied to taxonomists. Lumpers gloss over or explain differences in pursuit of hidden unities; splitters do the opposite, stressing diversity.

Joseph Greenberg was a linguistic lumper and his dream of recreating the ur-language of humanity must stand as one of the greatest lumping dreams of all time. He dreamed of deep unity, and he spent an extremely long career pursuing evidence for it. He was still publishing highly technical evidence when he died, at age 85.

It is sad that he never published a manifesto, but he was a scientist and his inductive sensibility was not prone to making sweeping statements unsupported by minute attention to evidence. The nearest he came was in his conclusion to the controversial 1987 *Language in the Americas*, a book that grouped all languages in the western hemisphere into three families: 'The ultimate goal is a comprehensive classification of what is very likely a single language family. The implications of such a classification for the origin and history of our species would, of course, be very great.' Very great, as in, language was invented once and we might even have some ideas about what that language sounded like.

I was with Joseph Greenberg at Stanford University when he was doing his work, scouring through the part of the library that had grammars, making his counts: if you find construction x in a language you will always find, or you will be likely to find, construction y. This kind of commonality intrigued him. More from Steve Miller:

The splitters of linguistics have this problem: they're just not as interesting as the lumpers. The splitters' story is that the origins of language are irretrievable, so we should value every language for its expressive ability, but not for its place in the grand drama of linguistic diffusion. Greenberg, and the Nostraticists, and others who have tried to talk about language as a unity, dreamed something that may never be provable, but will continue to inspire us as a story that unites the human race as part of an ongoing story.

We give aid to both the lumpers and the splitters but I believe most of all to the lumpers. Languages differ from each other but only to a certain degree. Humankind is united in its use of language. This is an important message for us all as we go about our pursuits and combine with others to deal with the world.

TIMOTHY SHOPEN

Canberra, Australia
September 2004

Abbreviations and symbols

The following are abbreviations for grammatical terms used frequently in the glosses for examples. Other abbreviations are explained as they are presented.

1SUBJ	first person subject
A	subject of transitive clause
ABE	abessive case
ABL	ablative
ABS	absolute
ABS	absolutive
ABSOL	absolute
ACC	accusative
ADE	adessive
ADJ	adjective
ALL	allative
ANDAT	andative
ANIM	animate
ANTIP	antipassive
APPOS	appositional
ART	article
ASP	aspect
ASS.PL	associative plural
ASSOC	associative
ATT	attributive particle
AUX	auxiliary
BEN	benefactive
CAUS	causative
CAUSE	causative
CF	counterfactual
CL	classifier
CLASS	noun class marker
CLI	clitic
CLSFR	classifier

COM	comitative
COMM	common (noun)
COMMON.CORE	common noun in core argument
COMMON.OBL	common noun in oblique NP
COMP	complementizer
COMPL	completed
COND	conditional
CONJ	conjunction
CONN	connector/connective
CONTIN	continuous
CONV	converb
COP	copula
CORE	core argument
CTP	complement-taking predicate
CU	clause union
DAT	dative
DECL	declarative
DECLAR	declarative
DEF	definite
DEM	demonstrative
DIFF.SUBJ	different subject
DIMIN	diminutive
DIR	direct (in Chapter 4)
DIR	directional
DIR.REL	direct relative
DO	direct object
DS	different subject
DTR	determined time reference
DU	dual
DUR	durative
ELA	elative
EMPH	emphatic
EQUI	equi-NP-deletion
ERG	ergative
ESS	essive case
EX	exemplary conjunction
EXCL	exclusive
EZ	ezafe
F	feminine
FEM	feminine
FO	factitive object
FOC	focus

FP	final particle
FUT	future
GEN	genitive
HABIT	habitual
ILL	illative
IMAG	imaginative
IMP	imperative
IMPERF	imperfect / imperfective
IMPRS	impersonal
INAN	inanimate
INCEP	inceptive
INCOMPL	incompletive
INCONS	inconsequential
IND	indicative
IND	indirect (in Chapter 4)
IND	indefinite (in Chapter 6)
IND.REL	indirect relative
INDEF	indefinite
INDIC	indicative
INE	inessive
INF	infinitive
INST	instrumental
INSTR	instrumental
INTRANS	intransitive
IO	indirect object
ITR	independent time reference
KAK	knowledge and acquisition of knowledge (predicates)
LIG	ligature
LINK	linker
LK	nominal linking particle
LNK	linker
LOC	locative
LU	lexical union
M	masculine
MASC	masculine
MLOC	middle (voice) locative
MOD	modifying ending
MSC	masculine
N	nominalizer
NC	noun class marker
NEG	negative
NEUT	neuter

NOM	nominative
NOMIN	nominalization
NONFUT	nonfuture
NONSG	nonsingular
NONSPEC	nonspecific
NONVOL	nonvolitional prefix
NP	noun phrase
NUM	number marker
NZN	nominalization
NZR	nominalizer
O	direct object
OBJ	object
OBJREL	object relative clause marker
OBL	oblique
OO	oblique object
ORD	ordinal
P	object of transitive clause
PASS	passive
PCL	particle
PERF	perfect / perfective
PERS	passive person ending
PF	perfect
PFV	perfective
PL	plural
PL1	first person plural ending
PL2	second person plural ending
PL3	third person plural ending
PLUR	plural
POSS	possessive
POSS`D	possessed
POT	potential
PP	prepositional phrase
PREP	preposition
PRES	present
PRO	pronoun
PROG	progressive
PROPER.CORE	proper name as core argument
PRS	presumptive
PRT	particle
PTCPL	participle
PTV	partitive
PURP	purposive

Q	question marker
QUOT	quotative
REFL	reflexive
REL	relative clause marker
REP	representative
REPET	repetitive
RPRO	relative pronoun
S	subject of intransitive clause
SBJV	subjective
SCR	simple clause reduction
SEQ	sequence (in Chapter 5)
SEQ	sequential (in Chapter 7)
SEQ	sequential converb
SER	series-sentence marker
SFX	final suffix
SG	singular
SG1	first person singular ending
SG2	second person singular ending
SG3	third person singular ending
SIM	simultaneous
SJNCT	subjunctive
SOV	subject-object-verb
SPEC	specific
SS	same subject
ST	sequential thesis
STAT	stative
SUB	subordinator
SUBJ	subject
SUBJREL	subject relative clause marker
SUBORD	subordinate
SVO	subject-verb-object
TL	title marker
TNS	tense
TOP	topic
TRANS	transitive
TRANSL	translative case
VABL	verbal ablative
VN	verbal noun
VOC	vocative
VSO	verb-subject-object
WH	interrogative/relative pronoun
1	first person

2	second person
3	third person
1sg	first person singular
3pl	third person plural (etc.)
∅	zero marking
-	affix boundary
=	clitic boundary
??	only marginally grammatical

Roman numerals are used for noun classes.

Symbols used in Chapter 6

.	falling intonation
,	level intonation
?	rising intonation
?,	slightly rising intonation
↑	rise in pitch
<u>word</u>	emphasis is indicated with underlining
:	lengthening of the sound
#	talk surrounded by #-signs is said with a creaky voice
< >	talk inside is done with a slower pace than the surrounding talk
> <	talk inside is done with a faster pace than the surrounding talk
<	an arrowhead pointing left indicates that the preceding word is finished a little bit abruptly, but it is not done as a clear cut-off; glottal stops are indicated in this way, e.g. <i>I saw it<</i>
h	the letter <i>h</i> (or several of them) indicates an audible aspiration
.h	a period + the letter <i>h</i> (or several of them) indicates an audible inhalation
(0.5)	silences timed in tenths of a second
(.)	a micropause less than two-tenths of a second
=	no silence between two adjacent utterances
[utterances starting simultaneously
]	point where overlapping speech stops
()	item in doubt
(())	comment on transcription or translation

1 Coordination

Martin Haspelmath

0 Introduction

The term *coordination* refers to syntactic constructions in which two or more units of the same type are combined into a larger unit and still have the same semantic relations with other surrounding elements. The units may be words (e.g. verbs (1a)), phrases (e.g. noun phrases (1b)), subordinate clauses (e.g. (1c)) or full sentences (e.g. (1d)).

- (1) a. My husband supports **and** adores Juventus Turin
- b. My uncle **or** your in-laws **or** the neighbours will come to visit us
- c. I realize that you were right **and** that I was mistaken
- d. The Pope dissolved the Jesuit order, **and** all the Indian missions were abandoned

All languages appear to possess coordination constructions (or *coordinate constructions*) of some kind, but there is a lot of cross-linguistic variation. Individual languages may possess a wealth of different coordinate constructions that relate to each other in complex ways. It is the purpose of this chapter to introduce and discuss a wide range of conceptual distinctions that are useful for describing the cross-linguistic and language-internal variation. This entails the use of a large number of technical terms (printed in boldface on first occurrence), each of which is explained and illustrated as it is introduced. Terminological issues are discussed further in an appendix.

The particle or affix that serves to link the units of a coordinate construction is called the **coordinator**. In (1) and in the other numbered examples in this chapter, the coordinator is printed in boldface. By far the most frequently occurring coordinator is ‘and’ (i.e. English *and* and its equivalents in other languages), but coordinate constructions can also involve various other semantic types of linkers, such as ‘or’, ‘but’ and ‘for’. ‘And’-coordination is also called **conjunctive coordination** (or **conjunction**), ‘or’-coordination is also called **disjunctive**

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coordination (or **disjunction**), ‘but’-coordination is called **adversative coordination**, and ‘for’-coordination is called **causal coordination**. Examples of each of these four types are given in (2).

- (2)
- | | |
|-------------------------------|---|
| a. (conjunction) | Snow White ate and drank |
| b. (disjunction) | She was a countess or a princess |
| c. (adversative coordination) | The dwarfs were ugly but kind |
| d. (causal coordination) | She died, for the apple was poisoned |

The units combined in a conjunctive coordination are called **conjuncts**, and, more generally, the units of any coordination will be called **coordinands** here. Adversative coordination is always **binary**, i.e. it must consist of two coordinands. Ternary or other multiple coordinations are impossible here. This is illustrated in (3).

- (3)
- | | |
|----|---|
| a. | *The queen tried to kill Snow White but Snow White escaped but she went through much hardship |
| b. | *The mountain climbers were tired but happy but bankrupt |

By contrast, conjunctions and disjunctions can consist of an indefinite number of coordinands. The examples in (4) show six coordinands each.

- (4)
- | | |
|----|---|
| a. | You can vote for Baranov or Wagner or Lefèvre or McGarrigle or Ramírez or Abdurrasul |
| b. | Cameroon, Nigeria, Niger, Libya, Sudan and the Central African Republic have a common border with Chad |

Languages differ with respect to the number and the position of the coordinators used in coordinate constructions. For instance, while English generally shows the pattern **A co-B** (where **co** stands for *coordinator*), Kannada (a Dravidian language of southern India) shows the pattern **A-co B-co**:

- (5) Narahariy-**u**: So:maše:kharan-**u**: pe:ṭe-ge ho:-d-aru
 Narahari-and Somashekhara-and market-DAT go-PAST-3PL
 ‘Narahari and Somashekhara went to the market’

(Sridhar 1990:106)

The patterns of coordinator placement and the types of linkers are discussed further in Section 1.

Many languages have several alternative patterns for a given semantic type of coordination, as illustrated in the English examples (6a,b). Coordination with the two-part coordinator *both . . . and* describes the coordinands as contrasting in some way: (6a) is appropriate, for instance, if the hearer expects only one of them to make the trip. This construction will be called **emphatic coordination** in this chapter.

- (6) a. **Both** Franz **and** Sisi will travel to Trieste
 b. Franz **and** Sisi will travel to Trieste

Moreover, many languages have special coordinators for negative contexts, as in the English example (7a). This sentence is roughly equivalent semantically with (7b), but again it has a more emphatic flavour. The construction in (7a) will be called **emphatic negative coordination**.

- (7) a. **Neither** Brahms **nor** Bruckner reached Beethoven's fame
 b. Brahms **and** Bruckner did **not** reach Beethoven's fame

Emphatic and negative coordinate constructions are discussed further in Section 2.

We saw in (1) above that a coordinate construction can consist of different types of coordinands: words, phrases, clauses or sentences. But as the definition of coordination says, each coordinand must be of the same type within a coordinate construction. Thus, (8b) and (9b) are ungrammatical, because the coordinands are syntactically different (NP vs PP in 8b) or at least semantically different (manner vs comitative in 9b).

- (8) a. Guglielmo wrote to his bishop **and** to the Pope
 b. *Guglielmo wrote a letter of protest **and** to the Pope
- (9) a. Guglielmo spoke with the abbot **and** with the cardinal
 b. *Guglielmo spoke with eloquence **and** with the cardinal

Different languages may require different coordinators depending on the syntactic type of the coordinands. For example, Yapese (an Austronesian language of Micronesia) has *ngea* 'and' for NP conjunction (10a), but *ma* 'and' for sentential conjunction (10b) (Jensen (1977:311–12)):

- (10) a. Tamag **ngea** Tinag ea nga raanow
 Tamag and Tinag CONN INCEP go.DU
 'Tamag and Tinag will go'
- b. Gu raa yaen nga Donguch, **ma** Tamag ea raa
 I FUT go to Donguch and Tamag CONN FUT
 yaen nga Nimgil
 go to Nimgil
 'I will go to Donguch, and Tamag will go to Nimgil'

Types of coordinands and their relevance for the structure of coordination are discussed further in Section 3.

In addition to the major semantic distinctions that we saw in (2), numerous more fine-grained distinctions can be made. For example, many languages distinguish between two types of disjunction: interrogative disjunction and

standard disjunction. Mandarin Chinese uses two different coordinators for these two cases, *háishi* and *huòzhe* (both translate as ‘or’) (Li and Thompson (1981:654)):

- (11) a. Nǐ yào wǒ bāng nǐ **háishi** yào zìjǐ zuò
 you want I help you or want self do
 ‘Do you want me to help you, or do you want to do it yourself?’
 b. Wǒmen zài zhèlǐ chī **huòzhe** chī fāndiàn dōu xíng
 we at here eat or eat restaurant all OK
 ‘We can either eat here or eat out’

More fine-grained semantic distinctions such as these are discussed further in Section 4.

Next, I discuss some special types of conjunction. Since conjunction is the most frequent kind of coordination, it exhibits the greatest formal diversity, and some of these patterns are examined in Section 5. The most prominent ‘special type’ of conjunction involves the use of a **comitative** marker (i.e. a marker expressing accompaniment), as in Hausa, where *da* means both ‘with’ (12a) and ‘and’ (12b) (Schwartz (1989:32, 36)):

- (12) a. Na je kasuwa **da** Audu
 I.PFV go market with Audu
 ‘I went to the market with Audu’
 b. Dauda **da** Audu sun je kasuwa
 Dauda and Audu they.PFV go market
 ‘Dauda and Audu went to the market’

In addition to coordinations in which each coordinand is a regular syntactic constituent (e.g. an NP, a VP, or a clause), many languages allow **non-constituent coordination**, as illustrated in (13). For the sake of clarity, the coordinands are enclosed in square brackets in these examples.

- (13) a. [Robert cooked the first course] and [Maria the dessert]
 b. Ahmed [sent a letter to Zaynab] or [a postcard to Fatima]
 c. [Martin adores], but [Tom hates Hollywood movies]

In (13a) and (13b), the first coordinand is an ordinary constituent (a sentence and a VP, respectively), but the second coordinand is not. In (13c), only the second coordinand is an ordinary constituent. In order to assimilate non-constituent coordinations to patterns found elsewhere in the grammar, linguists have often described them in terms of **ellipsis** (or **coordination reduction**). That is, abstract underlying structures such as those in (14a–c) are posited,

which show ordinary constituent coordination. In a second step, a rule of ellipsis of identical elements deletes the words underlined in (14), resulting in the surface patterns in (13).

- (14) a. Robert cooked the first course and Maria cooked the dessert
 b. Ahmed sent a letter to Zaynab or sent a postcard to Fatima
 c. Martin adores Hollywood movies, but Tom hates Hollywood movies

Non-constituent coordination and ellipsis are discussed further in Section 6.

Finally, in Section 7 I discuss ways of distinguishing coordination from less grammaticalized constructions and, perhaps most importantly, from **subordination** and **dependency**. The latter two notions will be discussed briefly here. The primary contrast is that between coordination and dependency. In a coordination structure of the type *A(-link-)B*, *A* and *B* are structurally symmetrical in some sense, whereas in a dependency structure of the type *X(-link-)Y*, *X* and *Y* are not symmetrical, but either *X* or *Y* is the head and the other element is a dependent. When the dependent element is a clause, it is called **subordinate clause**.

Although the distinction between coordination and dependency is, of course, fundamental, it is sometimes not evident whether a construction exhibits a coordination relation or a dependency relation. The best-known distinctive property of coordinate structures is that they obey the **coordinate structure constraint** (J. R. Ross (1986)), which prohibits the application of certain rules, such as extraction of interrogative words from coordinate structures. This is illustrated in (15–16), where the (i) sentences show the basic structure, and the (ii) sentences show fronting of *who*. As the examples make clear, only the dependency structures allow extraction (15a(ii) and 16a(ii)).¹

- (15) a. dependency (subordination)
 (i) (basic sentence) You talked to someone before Joan arrived
 (ii) (*who* extraction) Who did you talk to _ before Joan arrived?
 b. coordination
 (i) (basic sentence) You talked to someone **and** then Joan arrived
 (ii) (*who* extraction) *Who did you talk to _ **and** then Joan arrived?

¹ Not all dependency/subordination structures allow extraction. For instance, extraction from relative clauses is blocked in many languages (see (a)), while extraction from complement clauses is typically possible (see (b)).

(a) You think Joan saw someone. / Who do you think Joan saw _?

(b) You know a woman who admires someone. / *Whom do you know a woman who admires _?

Thus, the possibility of extraction is only a sufficient, not a necessary, condition for a dependency relation.

- (16) a. dependency
 (i) (basic sentence) You saw Marvin with someone
 (ii) (*who* extraction) Who did you see Marvin with _?
 b. coordination
 (i) (basic sentence) You saw Marvin **and** someone
 (ii) (*who* extraction) *Who did you see Marvin **and** _?

Obeying the coordinate structure constraint is a formal property of constructions that is sometimes taken as the decisive criterion for coordinate status. In this chapter, by contrast, I will work with a primarily semantic definition of coordination, as given at the beginning of this section. The reason for this is that only semantically based notions can be applied cross-linguistically – formal criteria are generally too language-particular (for instance, not all languages have extraction constructions that would show the effect of the coordinate structure constraint).

1 Types and positions of coordinators

Coordinate constructions may lack an overt coordinator (**asyndetic coordination**) or have some overt linking device (**syndetic coordination**). So far in this chapter, all examples have shown syndetic coordination. If we restrict ourselves for the moment to binary coordinations, syndetic coordinations may have either a single coordinator (**monosyndetic**) or two coordinators (**bisyndetic**). Monosyndetic coordination is illustrated by *Franz and Sisi* (cf. (6b)), and bisyndetic coordination is illustrated by *both Franz and Sisi* (cf. (6a)). Coordinators may be **prepositive** (preceding the coordinand) or **postpositive** (following the coordinand). In English, all coordinators are prepositive, but we saw an example of the postpositive coordinator *-u:* in Kannada earlier (example (5)).

The logical possibilities for binary coordination are shown schematically in (17) (the two coordinands are represented as **A** and **B**, and the coordinator is represented as **co**).

- (17) a. (asyndetic) **A B**
 b. (monosyndetic) **A co-B** (prepositive, on second coordinand)
 A-co B (postpositive, on first coordinand)
 A B-co (postpositive, on second coordinand)
 co-A B (prepositive, on first coordinand)
 c. (bisyndetic) **co-A co-B** (prepositive)
 A-co B-co (postpositive)
 A-co co-B (mixed)
 co-A B-co (mixed)

it until recently) often lack indigenous coordinators and now use coordinators borrowed from prestige languages such as Spanish, English, Arabic, and Russian. Asyndesis is often preferred in natural conjunction, i.e. when the two conjuncts habitually go together and form some kind of conceptual unit (see Section 4.1 below).

1.2 Monosyndetic coordination

There are three occurring patterns of monosyndetic coordination: **A co-B**, **A-co B**, and **A B-co**, which are illustrated in (20–22). The logically possible type **co-A B** is unattested (this fact will be explained below).

- (20) **A co-B** (Lango, a Nilotic language of Uganda; Noonan (1992:163))
 Òkélò òmàtò cây kèdè càk
 Okelo 3SG.drink.PFV tea and milk
 ‘Okelo drank tea and milk’
- (21) **A-co B** (Classical Tibetan; Beyer (1992:240))
 Blama-s bgegs-**daŋ** ndre btul
 lama-ERG demon-and spirit tamed
 ‘The lama tamed demons and spirits’
- (22) **A B-co** (Latin)
 senatus populus-**que**
 ‘the senate and the people’

The two types **A co-B** (medial prepositive) and **A-co B** (medial postpositive) can be distinguished on the basis of evidence for different constituency divisions: [A] [co B] vs [A co] [B]. Relevant constituency tests include:

- (i) Intonation: in certain cases, English *and* forms an intonation group with the following phrase, not with the preceding phrase (*Joan, and Marvin, and their baby*, not **Joan and, Marvin and, their baby*; here commas represent intonation breaks). Of course, this test does not apply in the simplest cases: a construction such as *Joan and Marvin* forms a single intonation group.
- (ii) Pauses: in English, it is much more natural to pause before *and* (*Joan . . . and Marvin*) than after *and* (*??Joan and . . . Marvin*).
- (iii) Discontinuous order: in special circumstances, the coordinands may be separated by other material, as when a coordinand is added as an afterthought. In English, the coordinator must be next to the second coordinand (e.g. *My uncle will come tomorrow, or my aunt*, not **My uncle or will come tomorrow, my aunt*).
- (iv) (Morpho)phonological alternations: when the coordinator or one of the coordinands undergoes (morpho)phonological alternations in the

construction, this is evidence that they form a constituent together. For instance, in Biblical Hebrew the coordinator *wə* ‘and’ has the alternant *ū* when the first syllable of the following phrase has a schwa vowel (e.g. *wə-ðæræx* ‘and (a) way’, *ū-ðærâx-îm* ‘and ways’). In Latin, the element *-que* and the preceding conjunct form a single domain for stress assignment (e.g. *pópulus* ‘the people’, *populús-que* ‘and the people’).

In principle, one could imagine cases in which none of these criteria yields a clear asymmetry, so that one would have a symmetrical pattern **A-co-B** in addition to prepositive **A co-B** and postpositive **A-co B**. But no case of a language that requires such an analysis has come to my attention. Monosyndetic coordination seems to be universally asymmetric.

When the coordinator is linked by phonological processes to its coordinand (see (iv) above), it is generally regarded as a clitic or affix rather than an independent word. (Criteria for clitic or affix status are largely language-particular and cannot be discussed further here.)² Due to the universal preference for suffixation over prefixation, postpositive coordinators are typically suffixed and thus written as one word with the coordinand to which they are attached. Prepositive coordinators, by contrast, are rarely prefixed and written together with the coordinand. Thus, when a language has a coordinate construction of the form **A co B**, where **co** is not an affix on **A** or **B**, it is likely that constituency tests will show **co** to be a prepositive coordinator, like English *and*.

Postpositive coordinators may follow the complete phrase, or they may enclitically follow the first word of the coordinand. The latter is illustrated by Turkish postpositive *de* in (23).

- (23) Hasan ıstakoz-u pısır-di, Ali **de** balıĝ-ı
 Hasan lobster-ACC cook-PAST(3SG) Ali and fish-ACC
 ‘Hasan cooked the lobster, and Ali (cooked) the fish’
 (Kornfilt (1997:120))

As is noted in Stassen (2000), the order of the coordinator correlates with other word order patterns of the language, in particular verb–argument order: languages with a postpositive coordinator (such as Latin and Classical Tibetan) tend to have verb-final word order, whereas verb-initial languages tend to have a prepositive coordinator. However, Stassen’s generalizations are based exclusively on conjunctive coordinators. Disjunctive coordinators may conform to different ordering patterns. For instance, Kanuri (a verb-final Nilo-Saharan language of northern Nigeria) has (bisyndetic) postpositive conjunctive coordinators (*-a . . . -a*, see (24a)), but a (monosyndetic) prepositive disjunctive

² But note that coordinators apparently never show suppletion, i.e. totally different shapes depending on the lexical class or the phonological shape of their host. In this sense, they are universally closer to clitics than to affixes. (Such suppletion is not uncommon with affixes.)

coordinator *râ* ((see 24b)). A similar asymmetry is found, for instance, in Lezgian (a verb-final Daghestanian language; Haspelmath (1993:327, 331)).

- (24) a. *kâm ádə-a kámú túdú-a*
 man this-and woman that-and
 ‘this man and that woman’ (Cyffer (1991:70))
- b. *kitáwu ádə râ túdu raâm*
 book this or that you.like
 ‘Do you like this book or that one?’

As I noted above, the pattern **co-A B** is unattested and seems to be non-existent, at least for conjunction (see Stassen (2000), who examined a sample of 260 languages). This generalization can be explained diachronically if the two main diachronic sources of conjunction constructions are (i) a comitative modifying construction of the type ‘A with B’ (see Section 5.1), and (ii) a construction with an additive focus particle of the type ‘A, also B’. An example of a comitative-derived construction is Lango *cây kèdè càk* ‘tea and milk’ (cf. (20)), which comes from a dependency construction in which *kèdè càk* is a modifier meaning ‘with milk’ (in fact, the phrase can still have this meaning; Noonan (1992:163)). Since languages with modifier–noun order tend to have postpositions and languages with noun–modifier order tend to have prepositions (cf. Greenberg (1963); Dryer (1992)), the patterns **A-co B** and **A co-B** are the most expected ones from the comitative source. The focus-particle source of conjunction always has the marker on the second conjunct: ‘A, also B’, or ‘A, B too’. When the focus particle is postpositive (like *too*), this yields **A B-co**, and when the focus particle is prepositive (like *also*), this yields **A co-B**. There is thus apparently no common diachronic source for the pattern **co-A B**, whose non-existence or extreme rarity is thereby explained.

1.3 *Bisyndetic coordination*

When there are two coordinators in the binary coordination, there are again four logically possible patterns, but in this case, all four patterns are attested (see (25–28)). However, the mixed patterns (27–28) seem to be extremely rare. In the non-mixed patterns (**co-A co-B**, **A-co B-co**), both coordinators generally have the same shape, whereas this is not the case in the mixed patterns.

- (25) **co-A co-B** (Yoruba, a Kwa language of Nigeria; Rowlands (1969:201ff.))
àtí èmi àtí Kẹ̀hìndé
 and I and Kehinde
 ‘both I and Kehinde’

- (26) **A-co B-co** (Martuthunira, a Pama-Nyungan language of W. Australia)
 puliyanyja-ngara-**thurti** jantira-ngara-**thurti**
 old.man-PL-and old.woman-PL-and
 ‘old men and old women’
 (cf. also examples (5) and (24a)) (Dench 1995:98)
- (27) **A-co co-B** (Homeric Greek, cf. Dik (1968:44))
 Atreídēs **te kaì** Akhilleús
 Atreus’s.son and and Achilles
 ‘Atreus’s son and Achilles’
- (28) **co-A B-co** (Latin, cf. Dik (1968:44))
et singulis universis-**que**
 ‘both for individuals and for all together’

Stassen (2000) finds that, for conjunctive coordination, postpositive bisyndesis (**A-co B-co**) is fairly widely attested, especially in the Caucasus, north-eastern Africa, Australia, New Guinea and southern India. By contrast, prepositive bisyndesis (**co-A co-B**) is only found as an emphatic variant of prepositive monosyndesis. Thus, besides (25), Yoruba also has the non-emphatic monosyndetic pattern *èmi àti Kèhìndé* ‘I and Kehinde’, and several European languages have similar patterns (e.g. French (*et*) *Jean et Marie* ‘(both) Jean and Marie’, Russian (*i*) *Nina i Miša* ‘Nina and Misha’) (see further Section 2.1).

1.4 Multiple coordinands

So far we have only examined binary coordinations, but for conjunction and disjunction, all languages seem to allow an indefinite number of coordinands, i.e. multiple or n-ary coordination. This will be symbolized by a sequence of letters **A, B, C, . . . M, N**, where A, B, C stand for the initial coordinands, and M, N for the final coordinands.

The question now arises how the basic pattern that is used in binary coordination is applied to multiple coordination. In the bisyndetic types, this is straightforward: the type **A-co B-co** becomes **A-co B-co C-co . . .**, and the type **co-A co-B** becomes **co-A co-B co-C . . .**, i.e. each coordinand is associated with a single coordinator:

- (29) **A-co B-co C-co . . .** (Nivkh, an isolate of Sakhalin; Panfilov (1962:169))
 Ñi jozo-**ʏo** meʏtu-**ʏo** pos-**ko** ʏe-ɖ.
 I lock-and rifle-and cloth-and buy-FINITE
 ‘I bought a lock, a rifle and cloth’

- (30) **co-A co-B co-C . . .** (French)
 Le congrès sera tenu **ou** à Paris **ou** à Rome **ou** à Varsovie
 ‘The congress will be held either in Paris or in Rome or in Warsaw’

When the monosyndetic type occurs with multiple coordinands, there are two possibilities: a full pattern and a pattern with coordinator omission. In the full pattern, only one coordinand lacks its own coordinator, the same that lacks the coordinator in the binary construction. Thus, **A co-B** becomes **A co-B co-C . . .** (the first coordinand lacks a coordinator), **A-co B** becomes **A-co B-co . . . N** (the last coordinand lacks a coordinator), and **A B-co** becomes **A B-co C-co . . .** (again the first coordinand lacks a coordinator).

- (31) **A co-B co-C . . .** (Polish)
 Tomek **i** Jurek **i** Maciek przyjechali do Londynu
 ‘Tomek and Jurek and Maciek went to London’
- (32) **A-co B-co . . . N** (Lezgian; Haspelmath (1993:327))
 K’üd warz-**ni**, k’üd juğ-**ni**, k’üd deq’iq’a alat-na.
 nine month-and nine day-and nine minute pass-PAST
 ‘Nine months, nine days and nine minutes passed’
- (33) **A B-co C-co . . .** (West Greenlandic; Fortescue (1984:124))
 ini igavvil=**lu** qalia-ni=**lu** sinittarvi-it marluk
 room kitchen-and loft-LOC-and bedroom-PL two
 ‘a living room and a kitchen and two bedrooms in the loft’

But in many languages, coordinations with multiple coordinands allow (or even require) **coordinator omission**, by which, most commonly, all but the last coordinator are eliminated. Thus, English can reduce *A and B and C* to *A, B and C*, and French can reduce *A ou B ou C* to *A, B ou C*. In fact, coordinator omission is strongly favoured in English and other European languages. Keeping the coordinators on all coordinands has an emphatic value and is appropriate only under special circumstances.

Coordinator omission is found quite similarly in languages with postpositive coordinators:

- (34) West Greenlandic (basic pattern: *A B-co*): **A B . . . N-co**
 tulu-it qallunaa-t kalaall-il=**lu**
 Englishman-PL Dane-PL Greenlander-PL-and
 ‘Englishmen, Danes and Greenlanders’ (Fortescue (1984:127))
- (35) Amharic (basic pattern: *A-co B*): **A B . . . M-co N**
 čāw bārbāre-**na** qəbe amätta^wh
 salt pepper-and butter I.brought
 ‘I brought salt, pepper and butter’ (Leslau (1995:725))

Table 1.1 *Correspondences among coordination patterns*

basic/binary	multiple coordination	
	full pattern	with coordinator omission
A co-B	A co-B co-C . . .	A B . . . co N
A-co B	A-co B-co . . . N	A B . . . M-co N
A-co B-co	A-co B-co C-co . . .	A B . . . N-co
co-A co-B	co-A co-B co-C . . .	A B . . . co-N
A B-co	A B-co C-co . . .	A B . . . N-co

The correspondences among the major patterns of binary coordination, multiple coordination and coordinator omission (with omission of all but the last coordinator) are shown in Table 1.1.

However, these are not the only possibilities of coordinator omission. For instance, in Classical Tibetan and Amharic (both of which have a basic **A-co B** pattern), coordinator omission eliminates all but the *first* coordinator (**A-co B C . . .**):

- (36) a. Classical Tibetan (Beyer (1992:241))
 sa-**daŋ** tšhu me rluŋ
 earth-and fire water air
 ‘earth, fire, water and air’
- b. Amharic (Leslau (1995:725))
 čäw-**enna** bärbärrē qäbe amätta^wh
 salt-and pepper butter I.brought
 ‘I brought salt, pepper and butter’

Some languages can be even more radical in applying coordinator omission to multiple coordination: they can completely omit coordinators from multiple coordinands, even though a coordinator would be required or preferred for binary coordinations. This is reported, for instance, for Classical Tibetan (Beyer (1992:241)), Cantonese (Matthews and Yip (1994:289)) and Nkore-Kiga (a Bantu language of Uganda; Taylor (1985:57)).

However, not all languages allow coordinator omission. For example, in Ponapean (an Austronesian language of Micronesia; Rehg (1981:333)) the coordination in (37) cannot be reduced by deleting all but the last coordinator.

- (37)
 Soulik **oh** Ewalt **oh** Casiano **oh** Damian pahn doadoahk lakapw
 Soulik and Ewalt and Casiano and Damian FUT work tomorrow
 ‘Soulik, Ewalt, Casiano and Damian will work tomorrow’

For Yoruba, Rowlands (1969:36) cites examples with coordinator deletion such as *epo, eran, ata àti àlùbòsà* ‘palm-oil, meat, pepper and onions’ (coordinator *àti*, as in (25) above), but he notes that this is possibly a case of imitation of English usage.

1.5 *The scope of coordinators*

In English, the coordinators can be either within the scope of prepositions (e.g. (38a)), or outside their scope (e.g. (38b)). There is perhaps a slight semantic difference here: in (38a), it seems more likely that we are dealing with a joint present for a couple, whereas (38b) is preferred if two different presents for unrelated people are referred to:

- (38) a. I bought a present for [Joan **and** Marvin]
 b. I bought a present [for Joan] **and** [for Marvin]

The more strongly an adposition is grammaticalized, the more likely it is to be repeated in coordination (i.e. the more likely it is that the coordinator has scope over the adposition). For example, in French the preposition *à* can take the coordinator *et* ‘and’ in its scope if it has a spatial (allative) meaning (e.g. (39a)), but it must be inside the scope of the coordinator if it has the more grammaticalized ‘dative’ meaning ((39b), cf. Melis (1996:67)):

- (39) a. Je vais à [Turin **et** Venise]
 ‘I’m going to Turin and Venice’
 b. J’ai emprunté ce livre [à Jean] **et** [à Marie] (* . . . à Jean et Marie)
 ‘I borrowed this book from Jean and Marie’

Case affixes, which are even more grammaticalized, have a strong tendency to occur inside the scope of coordinators; and this can be the case with either monosyndetic or bisyndetic coordination.

- (40) a. Lezgian (a Daghestanian language of the eastern Caucasus)
 [Ali-din]-**ni** [Weli-din] buba
 Ali-GEN-and Weli-GEN father
 ‘Ali’s and Weli’s father’ (Haspelmath (1993:326))
 b. Kunuz Nubian (a Nilo-Saharan language of Egypt)
 [it-todon]-**go:n** [e:n-godon]-**go:n**
 man-COM-and woman-COM-and
 ‘with the man and with the woman’ (Abdel-Hafiz (1988:277))

However, in some languages, even case affixes can be outside the scope of the coordinator. In Classical Tibetan (e.g. (41a)) and in Turkish (e.g. (41b)), the wider scope of the case suffix can be seen in the absence of the case suffix on

the first coordinand (cf. Johannessen (1998:9–24) for further examples).

- (41) a. [ri-**daŋ** luŋpa]-la
 mountain-and valley-ALL
 ‘to mountain and valley’ (Beyer (1992:240))
- b. [ev-**le** sokağ]-a
 house-and street-DAT
 ‘to the house and the street’ (Underhill (1976:83))

In these languages, the coordinator (*-daŋ, -le*) comes from a former case-marker, so it is perhaps not so surprising that it should not co-occur with a case-marker in the same word. However, there are even some languages in which a case suffix follows the suffixed coordinator in the same word:

- (42)
- a. Djabugay (a Pama-Nyungan language of Australia; Patz (1991:292))
 yaba-nggu nyumbu-**djada**-nggu
 brother-ERG father-and-ERG
 ‘my brother and father’
- b. Tauya (Trans-New Guinea; MacDonald (1990:138))
 awa ya-pi-**sou** afe ya-pi-**sou**-ni me watamu ya-tu-i-?a
 father I-GEN-and mother I-GEN-and-ERG this thing me-give-3PL-IND
 ‘My father and my mother gave me this thing’

2 Emphatic coordination

2.1 Conjunction and disjunction

Many languages distinguish between normal coordination such as *A and B, X or Y*, and what might be called **emphatic coordination**: *both A and B, either X or Y*. The semantic difference is that in emphatic coordination it is emphasized that each coordinand belongs to the coordination, and each of them is considered separately. Thus, (43) is felicitous only if there was some doubt over one of the conjuncts, and (44) is impossible with emphatic coordination, because two things cannot be separately similar.

(43) Both Guatemala and Belize are in Central America

(44) (*Both) Spanish and Portuguese are similar

Likewise, *either X or Y* emphasizes the contrast between both coordinands and requires that they be considered separately.

In European languages, this distinction is well known, but it is far less often described for non-European languages. As a rule, European languages have monosyndetic **A co-B** for normal coordination and bisyndetic **co-A co-B** for

emphatic coordination. The two coordinators (*both . . . and*, *either . . . or*) are often called **correlative coordinators** in such emphatic constructions, because at least one of them does not occur without the other. (Note, however, that there are also languages where bisyndetic coordination is the normal, non-emphatic construction; in these languages, the coordinators are apparently always post-positive, and they always have the same shape – see Section 1.3.)

In emphatic coordination, it is not uncommon for both coordinators to have the same shape and to be identical to the single coordinator (45a; for the moment we again restrict ourselves to binary coordination). In other cases, only the second coordinator is identical to the single coordinator (e.g. (45b)), and, more rarely, the two coordinators are identical to each other, but not identical to the single coordinator (e.g. (45c)):

	correlative coordinators	single coordinator
(45) a. conjunction:		
Russian	<i>i . . . i</i>	<i>i</i>
Italian	<i>e . . . e</i>	<i>e</i>
Modern Greek	<i>ke . . . ke</i>	<i>ke</i>
Albanian	<i>edhe . . . edhe</i>	<i>edhe</i>
disjunction:		
Polish	<i>albo . . . albo</i>	<i>albo</i>
Dutch	<i>of . . . of</i>	<i>of</i>
Basque	<i>ala . . . ala</i>	<i>ala</i>
Somali	<i>ama . . . ama</i>	<i>ama</i>
b. conjunction:		
English	<i>both . . . and</i>	<i>and</i>
Irish	<i>idir . . . agus</i>	<i>agus</i>
disjunction:		
English	<i>either . . . or</i>	<i>or</i>
German	<i>entweder . . . oder</i>	<i>oder</i>
Finnish	<i>joko . . . tai</i>	<i>tai</i>
c. conjunction:		
Hungarian	<i>mind . . . mind</i>	<i>és</i>
Korean	<i>-to . . . -to</i>	<i>-hako</i>
disjunction:		
Lezgian	<i>ja . . . ja</i>	<i>waja</i>
d. conjunction:		
German	<i>sowohl . . . als auch</i>	<i>und</i>
Polish	<i>jak . . . tak (i)</i>	<i>i</i>
Finnish	<i>sekä . . . että</i>	<i>ja</i>
Indonesian	<i>baik . . . maupun</i>	<i>dan</i>

A final possibility, at least for conjunction, is that both correlative coordinators are different from the single coordinator and are not identical in shape either (e.g. (45d)). This latter case typically derives from a circumlocution of the semantic type ‘A as well as B’. For instance, Polish *jak A tak (i) B* literally means ‘as A, so (also) B’.

2.2 *Emphatic negative coordination*

Many languages also have special correlative coordinators that are restricted to the position in the scope of negation, such as English *neither . . . nor*. Again, such negative coordinators have mostly been described for European languages (cf. Bernini and Ramat (1996:100–6)), and it is unclear whether they are indeed a peculiarity of Europe or are simply insufficiently described for other languages.

Negative coordination of the type *We met neither Marvin nor Joan* could be described either as conjunction (because a possible paraphrase is ‘We didn’t meet Marvin, and we didn’t meet Joan either’), or as disjunction (because another possible paraphrase is ‘We didn’t meet either Marvin or Joan’).³ This is related to the well-known logical equivalence of disjunction with wide-scope negation and conjunction with narrow-scope negation (in the notation of symbolic logic: $\neg (p \vee q) \equiv \neg p \ \& \ \neg q$).⁴ Accordingly, some languages have emphatic negative coordinators that are related to disjunctive coordinators (e.g. (46a)), whereas other languages have emphatic negative coordinators that are related to conjunctive coordinators (e.g. (46b)). A third group of languages have negative correlatives that are not formally related at all to semantically related expressions (e.g. (46c)). In (46), the emphatic negative coordinators are shown in the left-hand column, and related elements are shown in the right-hand column.

- | | | | | |
|------|----|---------|----------------------------|--|
| (46) | a. | English | <i>neither . . . nor</i> | <i>either . . . or</i> |
| | | German | <i>weder . . . noch</i> | <i>entweder . . . oder</i> ‘either . . . or’ |
| | | Swedish | <i>varken . . . eller</i> | <i>antingen . . . eller</i> ‘either . . . or’ |
| | b. | Latin | <i>ne-que . . . ne-que</i> | <i>-que</i> ‘and’ |
| | c. | Italian | <i>né . . . né</i> | <i>e</i> ‘and’, <i>o</i> ‘or’, <i>non</i> ‘not’ |
| | | Dutch | <i>noch . . . noch</i> | <i>en</i> ‘and’, <i>of</i> ‘or’, <i>niet</i> ‘not’ |
| | | Maltese | <i>la . . . u lanqas</i> | <i>u</i> ‘and’, <i>jew</i> ‘or’, <i>ma</i> ‘not’ |

In quite a few languages (47), the emphatic negative coordinators are also used as scalar focus particles of the type ‘not even’ or ‘neither’, as in Polish (e.g. (48a,b))

³ J. R. Payne (1985) uses the term *rejection*, implying that negative coordination is neither a type of conjunction nor a type of disjunction.

⁴ In this notation, \neg means ‘not’, \vee means ‘or’, $\&$ means ‘and’, and \equiv means ‘is equivalent to’.

(47) Polish *ani . . . ani*, Russian *ni . . . ni*, Hungarian *sem . . . sem*,
Modern Greek *úte . . . úte*, Albanian *as . . . as*, Romanian *nici . . . nici*

- (48) a. **Ani** mnie, **ani** jemu się nie udało
neither I.DAT nor he.DAT REFL not succeeded
'Neither I, nor he succeeded'
b. Karliczek **ani** słówka mi nie powiedział
Karliczek not.even word me.DAT not said
'Karliczek didn't even say a word to me'

Languages without special negative coordinators can use their emphatic conjunctive coordinators (49a) or their emphatic disjunctive coordinators (49b) to express the same content.

- (49) a. Indonesian (Sneddon (1996:348); *baik A maupun B* 'both A and B')
Baik kepandaian **maupun** kecantikan tidak berguna
both ability and beauty not useful
untuk mencapai kebahagiaan
for achieve happiness
'Neither ability nor beauty is useful for achieving happiness'
b. Lezgian (Haspelmath (1993:334); *ja A ja B* 'either A or B')
I k'walaxda-l **ja** aburu-n ruš, **ja** gada razi tuš-ir
this job-OBL either they-GEN girl or boy satisfied be.NEG-PAST
'Neither their girl nor the boy was satisfied with this job'

Less wide-spread than correlative negative coordinators are special coordinators which do not occur in correlative pairs, but are restricted to positions in the scope of negation. This is the type (*not*) *A nor B*, which can be paraphrased by 'not A or B' or by 'not A and not B'.

- (50) a. His father wouldn't give the money **nor** would he lend it
b. (Italian) Giovanni non parla **né** si muove
'Giovanni does not talk nor move'

(Bernini and Ramat (1996:100))

In English, (50a) also has an emphatic counterpart with correlative coordinators (*His father would neither give nor lend the money*), but Italian (50b) has no such counterpart. When clauses are coordinated, Italian cannot use *né . . . né*, its negative correlative pair for NPS (cf. (46c)). Irish completely lacks emphatic negative coordinators and only has the single word *ná* 'nor'. The closest Irish equivalent to 'He has neither a son nor a daughter' is (51), where the first negative word is the ordinary sentence negation.

- (51) Níl mac ná iníon aige
 NEG.is son nor daughter at.him
 ‘He doesn’t have a son nor a daughter’

3 Types of coordinands

The definition of coordination at the beginning of this chapter contains the phrase ‘two or more units of the same type’. This can be seen as an automatic consequence of the required identity of semantic roles of the coordinands: if two expressions have different semantic roles (e.g. patient and location), it will not be possible to coordinate them (e.g. **We want to eat pizza or in a Thai restaurant*). It is sometimes said that the coordinands must belong to the same phrasal category; for instance, **[pizza]_{NP} or [in a Thai restaurant]_{PP}* is said to be ungrammatical because it consists of an NP and a PP. However, coordination of different phrasal categories is often possible when both have the same semantic role:

- (52) a. Mr Hasegawa is [a legal wizard]_{NP} **but** [expensive to hire]_{AP}
 b. She felt [quite happy]_{AP} **and** [at ease]_{PP} in her new office
 c. There will be typology conferences [in August]_{PP} **and** [next April]_{NP}
 d. [His kindness]_{NP} **and** [that he was willing to write letters to me]_S amazed me
- (53) a. Maltese (Borg and Azzopardi-Alexander (1997:81))
 Harbu [malajr]_{ADV}, [bil-mohbi]_{PP} **u** [malli setgħu]_S
 escape.PF.3PL quickly with-stealth and when can.PF.3PL
 ‘They escaped quickly, stealthily and as soon as they could’
 b. Italian (Scorretti (1988:246))
 La situazione [meteorologica]_{AP} **e** [del traffico]_{PP} è buona
 the situation meteorological and of.the traffic is good
 ‘The weather and traffic condition is good’

Conversely, if two expressions belong to the same phrasal category but have a different semantic role, coordination is generally not felicitous (see also (9b)). (Ill-formed structures such as (54) are often called *zeugma*.)

- (54) a. **Ms Poejosoedarmo bought a book [in Penang]_{PP} **and** [in the spring]_{PP}*
 b. **I still smoked [last year]_{NP} **and** [cigarettes]_{NP}*
 c. **[Go home!]_S **and** [are you hungry?]_S*

The examples in (52–54) seem to suggest that semantic factors alone determine whether two expressions can be coordinated. But there are also cases in

which two syntactically dissimilar phrases have the same semantic role but do not coordinate felicitously:

- (55) ***[Waterskiing]_{NP} and [to climb mountains]_{VP}** can be fun
(Grover 1994:764)

There is also some cross-linguistic variation. For instance, Italian allows coordinations like (56), whose direct counterparts are impossible in English.

- (56) Evitate gli accordi [poco chiari]_{AP}, **o** [che potrebbero danneggiarci gravemente]_S
(Scorretti (1988:246))
'*Avoid insufficiently clear agreements, or which could hurt us seriously'

In many languages, the semantic–syntactic type of the coordinands is relevant for the choice of the coordinators. The most widespread contrast for conjunction is that between NP conjunction and event conjunction (i.e. VP or clause conjunction). For instance, Korean has the suffix *-(k)wa* for NP conjunction (57a), but event coordination is expressed by a suffix *-ko* on the verb (57b). The Turkish contrast between *-la* and *-ip* (58a,b) is completely analogous.

- (57) a. *yenphil-kwa* *cong*
pencil-and paper
'pencil and paper' (Martin and Lee (1986:51))
- b. *Achim mek-ko hakkyo ka-ss-eyyo*
breakfast eat-and school go-PAST-IND
'I ate breakfast and went to school'
- (58) a. *Hasan-la* *Amine*
Hasan-and Amine
'Hasan and Amine'
- b. *Çocuk bir kaşık çorba al-ip iç-er*
child one spoon soup take-and eat
'The child takes a spoon of soup and eats'

In such cases, there is often some doubt over whether the event coordination really constitutes coordination, or perhaps rather some kind of subordination (or 'cosubordination', cf. Van Valin and LaPolla (1997:454)). Verb forms suffixed with such quasi-coordinating markers as Korean *-ko* and Turkish *-ip* are commonly called **converbs** (see Haspelmath and König (1995)), and the closest syntactic analogue of (57b) is perhaps the English participial construction *Having eaten breakfast, I went to school*. The issue of the coordinate or subordinate status of these constructions is discussed further in Section 7.1.

While the binary contrast between NP coordination and event coordination is certainly the most wide-spread in languages, we also find languages in which there are more contrasts. For example, Yoruba has *àti* for NPs (59a), *tí* for relative clauses (59b) and *sì* for main clauses (59c) (Rowlands (1969:201–3)):

- (59) a. *èmi àti Kẹ̀hìndé*
I and Kehinde
'Kehinde and I'
- b. *epo ni mo n-rà tí mo tún n-tà*
palm.-oil FOC I PROG-buy and I repeat PROG-sell
'It is palm-oil that I buy and in turn sell'
- c. *ó mú mi l' ára dá, èmi kì yíó sì gbàgbé*
he cause me in body well I NEG FUT and forget
'He caused me to get better, and I shall not forget'

Somali has *iyó* 'and' for NPs (60a), *oo* 'and' for VPs (60b) and the suffix *-na* 'and' for clauses (60c) (Berchem (1991:324–7)):

- (60) a. *rooti iyo khudrat*
bread and fruit
'bread and fruit' (p. 324)
- b. *Suuqa tag oo soo iibi rooti*
market go and ANDAT buy bread
'Go to the market and buy bread!' (p. 325)
- c. *Carrur-tu waxay joogaan dugsi-ga waxay-na*
children-ART 3PL.FOC be school-ART 3PL.FOC-and
bartaan Af-Soomaali
learn language-Somali
'The children are in school, and they learn Somali' (p. 327)

The use of different formal means for expressing NP conjunction and event conjunction is probably the majority pattern in the world's languages. Welmers (1973:305) says that he is not aware of any African language that expresses NP conjunction and sentence conjunction in the same way. This is in striking contrast to European languages, where the 'and' word is always used for both purposes. But the twofold use of 'and', both for NP conjunction and for event conjunction, is also found often outside of Europe, e.g. in Chukchi (Chukotka, eastern Siberia), Chalcatongo Mixtec (Mexico) and Samoan.

While conjunctive coordinators are thus often selective with respect to the syntactic–semantic type of the coordinands, this is much less true of disjunctive coordinators. Quite a few languages have different coordinators for NP and event conjunction, but one and the same coordinator for NP and event disjunction, e.g. the languages in (61):

(61)		NP	event	NP & event
		conjunction	conjunction	disjunction
	Maori (Polynesian)	<i>me</i>	<i>aa</i>	<i>raanei</i>
	Chamorro (Austronesian)	<i>yan</i>	<i>ya</i>	<i>pat</i>
	Yapese (Micronesian)	<i>ngea</i>	<i>ma</i>	<i>faa</i>
	Supyire (Gur, Mali)	<i>ná</i>	<i>kà/mà</i>	<i>làa</i>

J. R. Payne (1985:5) proposes an implicational sequence that constrains the possible ranges of coordinators: S – VP – AP – PP – NP.⁵ The prediction that this makes is that individual coordinators are restricted to cover contiguous categories, e.g. S and VP, or AP, PP and NP. There can be no coordinators, according to this hypothesis, that only link sentences and APs, but not VPs, or VPs and NPs, but not APs and PPs, and so on.

Sometimes languages are also selective with respect to which coordinand types they even allow to be coordinated. For instance, Koromfe (a Gur language of Burkina Faso) only allows event disjunction, and no NP disjunction, so that a sentence like ‘Do you want coffee or tea?’ must be rephrased as ‘Do you want coffee, or do you want tea?’ (Rennison (1997:93)). Somali does not allow the conjunction of predicative adjectives, so that a sentence like ‘That house was new and big’ must be rephrased as ‘That house was new and it was big’ (Berchem 1991:327)). Arabic does not permit conjunction of two verbs, so that ‘Ahmed ate and drank’ must be rephrased as ‘Ahmed ate and he drank’ (Harries-Delisle (1978:527)). Finally, Tinrin (an Austronesian language of New Caledonia) allows sentence coordination and NP coordination with *mê* ‘and’, but not VP coordination (Osumi (1995:258–9)) (note that this seems to contradict Payne’s implicational sequence). These are just a few random examples. Clear cross-linguistic patterns have yet to be discovered.

4 Semantic subtypes of coordination

The three main semantic types of coordination are conjunction, disjunction and adversative coordination. But languages can make more fine-grained semantic distinctions. We already saw the important difference between non-emphatic and emphatic coordination in Section 3. Some further semantic subtypes are discussed in this section (see also Section 5 below for other special kinds of conjunction).

⁵ Payne refers to this as an *implicational hierarchy*, but it is not a hierarchy in the usual sense (in which, for instance, the noun phrase accessibility hierarchy is a hierarchy). Rather, it is a special (one-dimensional) case of an *implicational map*. See Haspelmath (2003) for general discussion of implicational (or semantic) maps and the difference between maps and hierarchies.

- b. Ivan veče mož-eše da čet-e i piš-e
 Ivan already can-PAST.3SG SJUNCT read-3SG and write-3SG
 ‘Ivan could already read and write’ (natural conjunction)

In German (and to some extent also in English), the definite article may be omitted from both conjuncts, e.g. *Messer und Gabel* ‘knife and fork’, *Bleistift und Papier* ‘pencil and paper’ (Lambrech (1984)). Mparntwe Arrernte (Pama-Nyungan, Australia) has a special ‘binary-and’ construction (*A uthene B uthene*) that is used when the two conjuncts ‘are commonly thought of as occurring naturally together’ (Wilkins (1989:369)), e.g. *alkere uthene angkwelye uthene* ‘sky and clouds’, but not *??pwerte uthene angkwelye uthene* ‘rocks and clouds’. Yoruba has the special pattern *t-A-t-B* for natural conjunction, e.g. *t-òkò-t-aya* ‘husband and wife’, *t-òsan-t-òru* ‘night and day’ (Rowlands (1969:202)). There are probably quite a few further types of formal differences between natural and accidental conjunction in languages, but grammars rarely describe them in detail, perhaps because this conceptual and terminological distinction is not widely known among linguists. Often just a few examples of conjunction are given, and these are, of course, often examples of natural conjunction, because natural conjunction is so frequent.

A special type of conjunction can be called **representative conjunction**. In this construction, the conjuncts are taken as representative examples of a potentially larger class. In Koasati (a Muskogean language of Louisiana), the suffix *-o:t* is used to connect a number of categorically similar nouns (Kimball (1991:413)):

- (65) akkám-mi-t ow-i:sá-hci hahci-f-ó:t oktaspi-f-ó:t kám-mi-fa
 be.SO-CONN LOC-dwell.PL-PROG river-in-REP swamp-in-REP be.SO-in
 ‘So they live in rivers and in swamps and in suchlike places’

This suffix is not only a linker, because it can also be used on a single noun which is intended as a representative of a larger set of nouns (Kimball (1991:414)):⁶

- (66) asá:l-o:t talibo:li-t sco:pa-t
 basket-REP make-CONN sell-CONN
 ‘She made and sold things like baskets’

Japanese also has representative coordinators. According to Kuno (1973:114, 121), the linker *ya* or *yara* is used for giving examples:⁷

⁶ In this use, the suffix *-o:t* comes close to a plural marker of the type that is often called *associative plural* (e.g. Corbett and Mithun (1996); Corbett (2000)).

⁷ Kuno adds that ‘*yara* seems to be suitable only when the speaker is annoyed (or affected) by actions or states enumerated by the constructions’ (1973:121). This highly specific semantic feature of the construction shows how difficult it is to put constraints on possible coordinator meanings in languages.

- (67) John **yara** Mary (**yara**) ga yattekita
 John REP Mary REP NOM came
 ‘John and Mary (among others) came’

Another special type of conjunction involves the combination of several identical elements to express intensity of an action or a high degree of a property, as in *She ran and ran*, *The city grew bigger and bigger*, or in (68) from Syrian Arabic:

- (68) L-əmnnaqaše stamarret saaf-aat **u**-saaf-aat
 the-argument continued hour-PL and-hour-PL
 ‘The argument went on for hours and hours’ (Cowell (1964:394))

This type of conjunction can be called **augmentative conjunction**. Although it is semantically very distinctive, I am not aware of a language that uses a special kind of coding for augmentative conjunction.

4.2 *Semantic subtypes of disjunction*

The most important distinction in disjunction is the difference between interrogative disjunction and standard disjunction that has already been illustrated in (11) above. Another example comes from Finnish (coordinators *tai* and *vai*):

- (69) a. Anna-n sinu-lle kirja-n **tai** albumi-n
 give-1SG you-ALL book-ACC or album-ACC
 ‘I’ll give you a book or an album’
 b. Mene-t-kö teatteri-in **vai** lepo-puisto-on
 go-2SG-Q theatre-ILL or rest-garden-ILL
 ‘Are you going to a theatre or to a park?’

The distinction between standard and interrogative disjunction cannot be reduced to the occurrence in declarative vs interrogative clauses, because standard disjunction may occur in questions as well. This is illustrated by (70a,b) from Basque (Saltarelli (1988:84)).

- (70) a. Te-a **ala** kafe-a nahi duzu
 tea-ART or coffee-ART want you.it
 ‘Do you want tea, or coffee?’ (= ‘Do you want tea or do you want coffee?’)
 b. Te-a **edo** kafe-a nahi duzu?
 tea-ART or coffee-ART want you.it
 ‘Do you want tea or coffee?’ (= ‘Do you want either tea or coffee?’)

Interrogative disjunction occurs in an **alternative** (or **disjunctive**) **question**, i.e. a question by which the addressee is asked to specify one of the alternatives in her answer. This is the case in (70a), where the answer must be either 'tea' or 'coffee'. Example (70b), by contrast, shows standard disjunction which happens to occur in a question. This is not an alternative question, however, but a polar question that requires 'yes' or 'no' as its answer.⁸ The distinction between interrogative disjunction and standard disjunction is made in many of the world's languages. Even English can be said to make the distinction in some way: the emphatic disjunctive markers *either* . . . *or* only express standard disjunction (*Do you want either tea or coffee?* cannot be an alternative question). According to Moravcsik (1971:28), this is a more general property of emphatic disjunctive coordinators.

A semantic distinction that is well known (especially from the work of logicians) is that between **exclusive** and **inclusive disjunction**. These notions are defined in terms of truth values: an exclusive disjunction is true if only one but not both of the disjoined propositions are true, while an inclusive disjunction is true if either one or both disjoined propositions are true. Examples might be (71a–b):

- (71) a. exclusive disjunction
 Marvin died on Tuesday or Wednesday
- b. inclusive disjunction
 Mike is a psychologist or a linguist

It is often said that languages may distinguish between these two semantic types by using different disjunctive coordinators. Typically Latin *aut* 'or (excl.)' and *vel* 'or (incl.)' are cited as illustrating this distinction. However, this view seems to be erroneous (Dik (1968:274–6)). First, the logical distinction between exclusive and inclusive disjunction cannot be applied well to natural languages because many sentences with disjunction have no truth value (e.g. questions and commands). But, more importantly, the Latin distinction between *aut* and *vel* is evidently of a different nature,⁹ and no other good case of a language making precisely the exclusive/inclusive distinction is known. Modern technical and bureaucratic writing sometimes uses the artificial compound coordinator

⁸ An interesting formal description of the semantic difference between (70a) and (70b) is given in Dik (1997:206).

⁹ According to Kühner and Stegmann (1914:108), the difference between the two is that with *vel* the speaker does not decide between the two coordinands and leaves the choice between them open. Similarly, Dik (1968:275) proposes that with *vel*, the choice between the two coordinands 'is left to the interpreter, or is immaterial to the argument'. However, it is not clear whether one would want to say that in an *aut* disjunction, the speaker makes a choice between the two coordinands. Perhaps the difference is not so much a semantic one as a stylistic one: Kühner and Stegmann (1914:107) observe that *vel* is very rare in the classical language, and becomes much more common in late Latin.

and/or which can be said to express inclusive disjunction, but such coordinators are not found in ordinary speech. Ordinary disjunction always presents an alternative between A and B, and whether or not 'A and B' is compatible with the situation as well depends on the context. In (71a), the pragmatic context virtually excludes the inclusive reading, but if we change the verb (*Marvin left on Tuesday or Wednesday*) the two coordinands are no longer necessarily mutually exclusive. Marvin may of course have left on both days, and in this case the proposition would not be false. (See McCawley (1993:315–17) for arguments that no exclusive 'or' need be assumed, and that the exclusive sense arises from the pragmatic context.)

Another type of disjunction can be called **metalinguistic disjunction**, because here the alternative is merely between two names for the same thing. For instance, earlier in this subsection I used the expression *alternative (or disjunctive) question*. In many languages, the ordinary 'or' word can be used in this way. Italian has a special coordinator (*ovvero*) that is restricted to metalinguistic disjunction, and while the ordinary 'or' word (*o*) can also be used in this way, there is a stronger form of this (*oppure*) that cannot be used metalinguistically (Scorretti (1988:254)):

(72)

- a. I' Irlanda **o/ovvero/*oppure** I' isola verde
 the Ireland or the island green
 'Ireland, or the green island'
- b. Voglio comprare un dizionario **o/oppure/*ovvero** una grammatica
 I.want buy a dictionary or a grammar
 'I want to buy a dictionary or a grammar'

Finally, a type of disjunction-like coordination that is widely attested is **temporal alternation**. In this construction, several events are said to occur alternately at different times. In the example in (73), special correlative coordinators are used to express this relation (cf. also literary English *now . . . now*).

- (73) a. Zaza (an Iranian language of Turkey; Selcan (1998:667))
 Na řozu **gê** hewro, **gê** pakao
 these days now cloudy now clear
 'These days it is sometimes cloudy, sometimes the skies are clear'
- b. Russian
 Xolodnyj doždik **to** usilivalsja, **to** oslabeval
 cold rain now strengthened now weakened
 'The cold rain became now stronger, now weaker'

4.3 *Semantic subtypes of adversative coordination*

Adversative coordination is signalled by English *but* and its counterparts in other languages. While it is fairly common for languages to have a ‘but’ coordinator, other languages express the same idea exclusively by means of a concessive subordinate clause. In English, too, concessive clauses with *although* are often roughly equivalent to ‘but’ coordinations:

- (74) a. It is raining, **but** we are going for a walk
 b. Although it is raining, we are going for a walk

Here, *but* expresses the denial of an expectation: the fact that it is raining would lead one to expect that we would stay inside, and *but* cancels this expectation.

English *but* can also express a contrast between a negative and a positive expression, where the positive expression substitutes for the negative one. This could be called **substitutive adversative coordination**. In some languages, there is a special substitutive coordinator, e.g. German *sondern* (which contrasts with ordinary adversative *aber* ‘but’), shown in (75b):

- (75) a. I did not go to Mindanao, **but (rather)** to Cebu
 b. Ich bin nicht nach Mindanao gereist,
sondern nach Cebu/***aber** nach Cebu

Some languages have a special **oppositive** coordinator that is used when there is a contrast between the two coordinands, but no conflicting expectations. In many cases, English would translate such a coordinator as ‘and’. For instance, Ponapean (an Austronesian language of Micronesia; Rehg (1981:331–2)) has a contrast between ordinary conjunctive *oh* ‘and’ (76a) and oppositive *ah* ‘and, but’ (76b).

- (76) a. Soulik pahn mwenge **oh** e pahn meir
 Soulik FUT eat and he FUT sleep
 ‘Soulik will eat and he will sleep’
 b. I laid, **ah** e meir
 I fish but he sleep
 ‘I fished, and/but he slept’

A similar contrast between a concessive and an oppositive type of ‘but’ is well known from Polish (*ale/a*) and Russian (*no/a*).

5 **Some special strategies of conjunction**

As the most frequent type of coordination, conjunction exhibits the greatest diversity of formal patterns and has also been studied the most thoroughly. In this section, we look more closely at conjunction patterns in which the marker is

identical to the comitative marker (Section 5.1), as well as two other strategies which deviate to some extent from the standard pattern (Section 5.2–5.3).

5.1 *Comitative conjunction*

In many of the world's languages, the conjunctive coordinator for NPs is identical in shape with the marker for accompaniment, i.e. the comitative adposition or case-marker. Here I will call such cases **comitative conjunction**, exemplified in (77–8). The (a) example illustrates the comitative use of the marker, and the (b) example shows the use in conjunction.

- (77) Samoan (a Polynesian language; Mosel and Hovdhaugen (1992:148))
- a. Ia, alu atu Sina **ma** le ili-tea
 well go.SG DIR Sina with ART fan-white
 'Well, Sina went there with the white fan'
- b. 'Ua ō atu Sina **ma** Tigilau
 PERF go.PL DIR Sina and Tigilau
 'Sina and Tigilau left'
- (78) Retuarā (a Tucanoan language of Colombia; Strom (1992:64–5))
- a. Jūā-re turi-koʔo paki-**ka**
 Juan-CORE travel-PAST father-COM
 'Juan travelled with his father'
- b. Anita-**ka** Gloria-re wiʔi-ērā baa-yu
 Anita-and Gloria-CORE wet-PURP do-PRES
 'Anita and Gloria are going to get wet'

The extension of a comitative marker to express a conjunctive relationship is of course very natural: the meaning of (77b) is not very different from the comitative 'Sina left with Tigilau.' In fact, one might be tempted to argue that comitative conjunction does not constitute coordination at all: languages with supposed comitative 'conjunction' might simply lack a formal means of conjunction, and speakers might substitute the ordinary comitative construction when asked to translate a coordinate phrase such as 'Sina and Tigilau'. This may indeed be true in some cases, but for the majority of languages with (what I call here) comitative conjunction, there is evidence of various kinds that the construction is really a type of conjunction, a construction separate from the comitative construction.

One kind of evidence is semantic. While conjunction and accompaniment are often similar and difficult to distinguish, there are also cases where they clearly have different entailments. For instance, the sentence *Joan and Marvin ate* entails for both Joan and Marvin that they ate, while in *Joan ate with Marvin* it is possible (though perhaps unlikely) that Marvin did not eat. In many languages

with comitative conjunction, the meaning clearly shows that we are dealing with a conjunction construction, not just a comitative construction that happens to be the closest translation equivalent of English *and*. (With verbs of motion, as in (77–8), this test does not work well, because it is hardly possible to accompany a moving person without moving oneself.)

The morphosyntactic evidence for a special construction of comitative conjunction is often less subtle. Most strikingly, comitative-conjoined NPs often trigger plural agreement on the verb, as in (77b) and in (79) from Russian:

- (79) Maša s Kostej priš-l-i pozdno
 Masha with/and Kostya come-PAST-PL late
 ‘Masha and Kostya came late’

Comitative-conjoined NPs may also obey the coordinate structure constraint. Thus, in Russian, a comitative conjunct with *s* ‘with’ cannot be questioned (80c), just like an ordinary conjunct with *i* ‘and’ (80b), contrasting with non-conjunctive comitative phrases (80a) (Yakov Testelec (p.c.)):

(80)

- a. (comitative) Maša prišla s Kostej / Kto prišel s Kostej?
 ‘Masha came with Kostya / Who came with Kostya?’
- b. (*i*-conjunction) Maša i Kostja prišli / *Kto i Kostja prišli?
 ‘Masha and Kostya came’ / (lit.) ‘Who and Kostya came?’
- c. (*s*-conjunction) Maša s Kostej prišli / *Kto s Kostej prišli?
 (lit.) ‘Masha with Kostya came’ / ‘Who with Kostya came?’

That comitative-conjoined NPs are truly coordinate can also be seen when a modifier has scope over both conjuncts, as in (81) from Amele (a language of Papua New Guinea; Roberts (1987:109)):

- (81) ija na sigin sapol **ca**
 I of knife axe and/with
 ‘my knife and axe’ (i.e. ‘my knife and my axe’)

If (81) still meant ‘knife with axe’, one would not expect the possessive modifier *ija na* ‘my’ to have scope over both elements.

Another indication comes from word order. Thus, in Retuarã, comitative phrases typically follow the verb as in (78a), so that the comitative-marked NP *Anita-ka* in initial position, adjacent to *Gloria-re* (78b), must be the first conjunct of a coordinate construction. Similarly, Russian has a different word order in (80a) and (80c). But interestingly, the agreement criterion and the word order criterion need not coincide: languages may show plural agreement on the verb even if the two comitative conjuncts are not adjacent, as in (82).

- (82) Krongo (a Kadugli language of Sudan; Reh (1985:278))
 nk-áa bǎrákóorà ósúní úodà kúblé yá-ittón
 PL-be jackal INF.share meat down COM-rabbit
 ‘The jackal and the rabbit share the meat’
 (lit. ‘The jackal share(PL) the meat and (‘with’) the rabbit’)

Such patterns are synchronically unexpected, but they can be understood diachronically as erstwhile comitative constructions in which only the agreement pattern, but not the word order pattern, has been adapted to the new conjunctive sense.

Comitative-marked conjunctions may also involve more than two phrases, like other conjunctions, but unlike ordinary accompaniment constructions (cf. the strangeness of *Joan with Marvin with Esther*):

- (83) Krongo (Reh (1985:278))
 m-áa ádùkwà tìmyáaré yá-tùnkúlóbán yá-sàrí
 F-be INF.take log with-knife with-basket
 ‘And she takes the log, the knife and the basket’

Given the comitative origin of the construction, we would not necessarily expect that coordinator omission could occur in constructions with multiple conjuncts. Thus, Loniu (an Austronesian language of New Guinea) does not allow this in its comitative-derived conjunction pattern: *A ma B ma C* cannot be reduced to *A, B ma C* (‘A, B and C – *ma* ‘with, and’), although the synonymous coordinator *ε* ‘and’ normally shows the pattern *A, B ε C* (‘A, B and C’) (Hamel (1994:102)). Here, *ma* still seems to behave in accordance with its original comitative function. However, there are also languages which do exhibit (optional) coordinator omission in multiple comitative conjunction, e.g. Ndyuka (an English-based creole language of Surinam) (Huttar and Huttar (1994:237)):

- (84)
 baana, bakuba, angooki, kumukomu **anga** ala den soutu sani de
 plantain banana gherkin cucumber and all these sort thing there
 ‘plantains, bananas, gherkins, cucumbers, and all these kinds of things’

Clearly, such behaviour is only expected if the comitative marker has already become a coordinator.

Equally strikingly, there are many languages in which the original comitative marker occurs not just with one of the coordinands, but bisyndetically with each of them. For instance, in Tauya the comitative suffix *-sou* follows both conjuncts when it means ‘and’, so that we get the contrast in (85) (MacDonald (1990:137)):

- (85) a. Ya-ra Towe-**sou** yate-e-ʔa
 I-TOP Towe-COM go-1(SG)-IND
 ‘I went with Towe’
- b. Ya-**sou** Towe-**sou** yate-ene-ʔa
 I-and Towe-and go-1PL-IND
 ‘Towe and I went’

Similarly, alongside the pattern *A da B* (cf. 12b), Hausa also allows the prepositional bisyndetic pattern *da A da B*.

That the ‘ex-comitative’ coordinator no longer behaves like a true comitative is also clear when it takes a case-marked NP in its scope, as in (86), where *-wan* (otherwise a comitative case suffix) occurs outside the genitive case suffix *-pa*.

- (86) Huallaga Quechua (Weber (1989:350))
 Kampu-pa alwasir-nin-pa-**wan** ka-n mas huk-pis
 marshal-GEN alguacil-3SG-GEN-and be-3 more other-even
 kustumri-n rura-na-n-paq.
 custom-3 do-SUB-3PL-PURP
 ‘The marshal and his alguacil have another custom to do’

However, even when a comitative construction shows clear signs of marking conjunction, it may retain clear traces of its comitative origin. Thus, the Russian comitative conjunction (79) is restricted to animate conjuncts, and the two conjuncts are typically thought of as participating in the situation together (see McNally (1993) and Dalrymple, Hayrapetian, and King (1998) for detailed discussion of the meaning of this construction).

In all cases where we have some diachronic evidence, we see that comitative–conjunctive polysemy of particles and affixes goes back to a diachronic extension of the original comitative marker, which acquires the additional sense of coordinator and with it different syntactic properties. Theoretically, one could imagine the reverse diachronic process, from coordinator to comitative, also giving rise to the same synchronic polysemy, but this apparently never happens. The change from comitative to conjunctive coordinator is a commonly found path of grammaticalization (Stassen (2000)), and, like other grammaticalization processes, it is unidirectional (C. Lehmann (1995)). Stassen (2000), who looked at NP conjunction in a large sample of 260 languages worldwide, finds that languages with comitative conjunction (‘WITH-languages’) are particularly found in sub-Saharan Africa, East Asia, Southeast Asia and the Pacific Islands, as well as in northern North America and lowland South America. By contrast, languages lacking the comitative strategy (‘AND-languages’) are

concentrated in northern and western Eurasia (including all of Europe), India, northern Africa, New Guinea, Australia and Meso-America.

5.2 *Inclusory conjunction*

A semantically peculiar type of conjunction is what I call here **inclusory conjunction**. In the usual case, a conjunction of two set-denoting NPs refers to the *union* of the two sets. Schematically, we can say that ‘{A, B} and {C, D}’ yields the set {A, B, C, D}. However, there also exist conjunction constructions in which the result of the conjunction is not the union, but the *unification* of the sets. That is, if some members of the second conjunct set are already included in the first conjunct set, they are not added to the resulting set. Schematically, we can say that ‘{A, B, C} and {B}’ yields the set {A, B, C}. Some examples of inclusory conjunction are given in (87):

(87)

a. Russian

my **s** toboj
we with you.SG ‘you and I’

b. Chamorro (an Austronesian language of Guam; Topping (1973))

ham **yan** si Pedro
we with ART Pedro ‘I and Pedro’

c. Yapese (an Austronesian language of Micronesia; Jensen (1977:185))

gimeew Wag
you.PL Wag ‘you(sg) and Wag’

d. Tzotzil (a Mayan language of Mexico; Aissen (1989:524))

voʔoxuk **xchiʔuk** i jtzebe
you.PL with DEF my.daughter ‘you(sg) and my daughter’

e. Maori (a Polynesian language of New Zealand; Bauer (1993:374))

maaua **ko** te rata
we.two.EXCL SPEC the doctor ‘the doctor and I’

f. Tagalog (Philippines; P. Schachter and Otnes (1972:116))

silá **ni** Juan
they GEN.ART Juan ‘he/they and Juan’

g. Mparntwe Arrernte (central Australia; Wilkins (1989:409))

Margaret anwerne-ke
Margaret we.PL-DAT ‘to Margaret and us’

As the examples show, the inclusory conjunct (i.e., the one that denotes the total set) is generally a non-singular personal pronoun. The included conjunct

is often linked by means of a comitative marker (Russian, Chamorro, Tzotzil), but the marker may also be of a different kind (Maori, Tagalog), or the two conjuncts may simply be juxtaposed (Yapese, Mparntwe Arrernte). Inclusive conjunction is found widely throughout the Austronesian language family, but is also attested elsewhere in the world, e.g. in many dialects of northwestern France (*nous deux Jean* ‘Jean and I’; Tesnière (1951)). In most cases, the inclusory pronoun precedes the included conjunct, but (87g) shows that it may also follow it.

When the inclusory pronoun is plural, as in the Russian example, this construction can be translated into English in two ways: *my s toboj* can be ‘you and I’ (in this case the unification sets are {you, I} and {you}), or ‘we and you’ (in this case the unification sets are {you, I, X, . . .} and {you}). When the inclusory pronoun is dual, as in (87e) from Maori, there is only one translation into English: ‘the doctor and I’. When the language has both dual and plural pronouns, like Mparntwe Arrernte, again only one translation is possible. Example (87g) can only mean ‘to Margaret and us’ (‘to Margaret and me’ would require the dual pronoun).

Inclusory conjunction as in (87) is impossible when the non-inclusive conjunct outranks the inclusive conjunct on the person hierarchy ($1 < 2 < 3$), so **you(PL) with me* (‘you(sg) and I’) and **they with me* (‘he and I’) are excluded (Schwartz (1988b)). This follows straightforwardly from the fact that second person pronouns cannot include the speaker, and third person pronouns cannot include the speaker or hearer. For reasons that are not clear, there seems to be a general preference for first and second person pronouns over third person pronouns in inclusory conjunction. And so far I have found only a single language in which the inclusory word is not a non-singular pronoun, but a non-singular full noun: in Margi, a Chadic language of Nigeria, the construction in (88) is attested (Hoffmann (1963:57)).

- (88) Kàmbèràwázhá-’yàr àgá màlà góndà
 Kamburawazha-ASS.PL with wife of.him
 ‘Kamburawazha and his wife’

The inclusory noun in (88) is in the associative plural form (cf. *Bàshir-’yàr* ‘Bashir and his family’ – see note 6). The construction in (88) differs in no way from Margi’s more typical inclusory construction with an inclusory pronoun (e.g. *nà’y àgá Mádù* (we with Madu) ‘Madu and I’; Hoffmann (1963: 238)).

In addition to the construction in (87–88), where the inclusory conjunct and the included conjunct occur contiguously and form a **phrasal inclusory conjunction**, many languages also have a construction in which the inclusory pronominal element is a clitic pronoun or a coreference marker on the verb

(89a–d) or on the possessed noun (89e). This is called **split inclusory construction** because the inclusory conjunct and the included conjunct do not form a phrase (Lichtenberk (2000)).

- (89) a. Nkore-Kiga (a Bantu language of Uganda; Taylor (1985:99))
 tw-a-gyenda **na** Mugasho/
 IPL-PAST-go with Mugasho
 ‘I went with Mugasho / Mugasho and I went’
- b. Yapese (Jensen (1977:187))
 Ku gu waarow Tamag
 PERF 1EXCL go.DU Tamag
 ‘Tamag and I went’
- c. Turkish (Kornfilt (1997:298))
 Ahmet-**le** dün sinema-ya git-ti-k
 Ahmet-COM yesterday movies-DAT go-PAST-IPL
 ‘Yesterday Ahmet and I went to the movies’
- d. Hausa (Schwartz (1989:30))
 Audu yaa gan mù jiya **da** Binta
 Audu 3SG.M.PERF see us yesterday with Binta
 ‘Audu saw Binta and me yesterday’
- e. Toqabaqita (an Oceanic language of Vanuatu; Lichtenberk (2000:22))
 nuu-maroka tha Uluta
 picture-2DU.POSS ART Uluta
 ‘the picture of you and Uluta’

Some languages (apparently especially in Polynesia) use pronominal inclusory conjunction also for conjoining two NPs. The first conjunct precedes the inclusory pronoun, which is then followed by the other included conjunct(s) in the usual way.

- (90) a. Samoan (Mosel and Hovdhaugen (1992:680))
 Peni **laua ma** Ruta
 Peni they.DU with Ruta
 ‘Peni and Ruta’
- b. Maori (Bauer (1993:128))
 Tuu **raatou ko** Hine, **ko** Pau
 Tuu they.PL SPEC Hine SPEC Pau
 ‘Tuu, Hine and Pau’

Inclusory conjunction is discussed from a theoretical point of view in Schwartz (1988a, 1988b), Aissen (1989) and Lichtenberk (2000).

5.3 *Summary conjunction*

Summary conjunction is the term adopted here for a construction in which conjunction is signalled not by an element that links the conjuncts together in some way, but by a final numeral or quantifier that sums up the set of conjuncts and thereby indicates that they belong together and that the list is complete. Examples with numerals come from Mongolian (91a), Classical Tibetan (91b) and Huallaga Quechua (91c) (Weber (1989:351) calls this construction *list-and-count conjunction*).

- (91) a. bagš, Gombo **xojor**
 teacher Gombo two
 ‘the teacher and Gombo’ (Vietze (1988:41))
- b. lus ηag yid **gsum**
 body speech mind three
 ‘body, speech and mind’ (Beyer (1992:241))
- c. Pusha-ra-n Pedru-ta Jacobo-ta Hwan-ta **kimsa-n-ta**
 lead-PAST-3 Peter-ACC James-ACC John-ACC three-3-ACC
 ‘He led off Peter, James and John’ (Weber (1989:351))

The final quantifier may also be the word ‘all’, as in the following example from Cantonese (Matthews and Yip (1994:289)):

- (92) Yanfa seui, leuhtsī fai, gīnggēi yúng **dōu** yiu béi ge
 stamp duty lawyer fee agent commission all need pay PRT
 ‘You have to pay stamp duty, legal fees and commission’

More intriguingly, summary conjunction of two conjuncts may also be expressed by a dual affix on the second conjunct, which refers to the number of the whole construction (**dual conjunction**). Example (93a) comes from Wardaman (a Yangmanic language of northern Australia; Merlan (1994:90)) and (93b) from Khanty (a Finno-Ugrian language of western Siberia; Nikolaeva (1999:45)):

- (93) a. yibiyan yingawuyu-**wuya** yawud-janga-n
 man(ABS) wife-DU(ABS) 3NONSG-COME-PRES
 ‘The man and his wife are coming’
- b. a:śi jik-**ηən**
 father son-DU
 ‘father and son’

Khanty also allows the dual on both conjuncts (94a), and a similar kind of conjunction construction is attested in Vedic Sanskrit (94b). This construction

may be called **double-dual conjunction** (see Corbett (2000:228–31) for some discussion).¹⁰

- (94) a. a:še:-**ḡən** jik-**ḡən**
 father-DU son-DU
 ‘father and son’
- b. Mitr-**ā** Varuṇ-**ā**
 Mitra-DU Varuna-DU
 ‘Mitra and Varuna’

Mparntwe Arrernte (Australia) uses its numeral ‘two’ (*therre*) in this construction: *Sandy therre Wendy therre* ‘Sandy and Wendy’ (Wilkins (1989:371)). Dual conjunction seems to be restricted to natural conjunction wherever it occurs.

6 Ellipsis in coordination

In many languages there are some ellipsis phenomena that are specific to coordination constructions. This can be illustrated by the contrast between (95) and (96). The two ellipsis processes in (95) are possible both in coordinate (i) and in subordinate (ii) constructions, while the two ellipsis processes in (96) are possible only in coordinate (i) constructions, and ungrammatical in subordinate (ii) constructions. In the examples here and below, an ellipsis site is indicated by ‘[]’.

- (95) a. VP ellipsis (<write a novel>)
 (i) Joan wrote a novel, **and** Marvin did [], too
 (ii) Joan wrote a novel after Marvin did []
- b. N ellipsis (<poems>)
 (i) Zhangsan admires Lisi’s poems, **but** Lisi despises Zhangsan’s []
 (ii) Zhangsan admires Lisi’s poems, though Lisi despises Zhangsan’s []
- (96) a. V ellipsis (<cooked>)
 (i) Robert cooked the first course, **and** Marie [] the dessert
 (ii) *Robert cooked the first course, while Marie [] the dessert

¹⁰ A related construction is the *representative dual* (or *associative dual*, or *elliptic dual*), where just one of the conjuncts is used and the other one is inferred, e.g. Khanty a:še:-*ḡən* (father-DU) ‘father and son’, Vedic *Mitr-ā* (Mitra-DU) ‘Mitra and Varuna’, Classical Arabic *al-qamar-aani* (the-moon-DU) ‘sun and moon’, Mparntwe Arrernte *Romeo therre* (Romeo two) ‘Romeo and Juliet’. It is unclear what the exact relation between the representative dual and double-dual conjunction is: perhaps the former has been expanded into the latter (Delbrück (1893:138)), or perhaps the former is a reduction of the latter. The representative dual is reminiscent of representative plural (or *associative plural*) markers as exemplified in (66) above.

(99)

- a. Poland's national flag is white **and** red
(≠ Poland's national flag is white **and** Poland's national flag is red)
- b. Many people believe in God **and** do not go to church
(≠ Many people believe in God **and** many people do not go to church)
- c. Did you play football **or** go for a walk? (yes / no or alternative question)
(≠ Did you play football **or** did you go for a walk? (only alternative question))

Again, semantic considerations rule out a straightforward derivation from biclausal underlying structures. Sentences like (98) and (99) seem to require that languages (perhaps in contrast to logic) also have phrasal coordination, not only sentential coordination. Now, if this is the case, then the motivation for assuming coordination reduction in sentences like (97) disappears.¹¹ While coordination reduction was widely assumed by transformationalists a few decades ago, most linguists today would describe the sentences in (97–99) as phrasal coordination.

But ellipsis rules cannot easily be eliminated entirely from the domain of coordination, because some coordinate structures involve coordinands that are not constituents (**non-constituent coordination**). For instance, in (96a(i)) (*Robert cooked the first course, and Marie the dessert*), the second conjunct *Marie the dessert* cannot be described as an ordinary constituent, and it differs from the first conjunct (*Robert cooked the first course*) in that it lacks a verb. This situation is most conveniently described by a rule of ellipsis (or, in other words, deletion).

Ellipsis in coordination can be either **forward ellipsis** (or **analipsis**) (i.e. the ellipsis site is in the second coordinand), or **backward ellipsis** (or **catalipsis**) (i.e. the ellipsis site is in the first coordinand). The two types are exemplified in (100–101). Again, an ellipsis site is indicated by '[]', and the identical material in the other coordinand (the **antecedent** of the ellipsis) is enclosed in brackets.

- (100) Analipsis (= forward ellipsis)
- a. Hanif [loves] Khadija **and** Khadija [] Hanif
 - b. Mr Sing [wrote] his father a letter **and** [] his grandmother a postcard
 - c. Bergamo [is beautiful], **and** Lucca [], too
 - d. Bill's [story] about Sue **and** Kathy's [] about Max

¹¹ Another argument against coordination reduction is that many languages have different coordinators in sentential and phrasal coordination (cf. section 3). In these languages, one would have to assume a rule that changes the form of the coordinator in addition to reducing the coordinands.

- (101) Catalipsis (= backward ellipsis)
- a. Birds eat [], **and** flies avoid, [long-legged spiders]
 - b. I think that Joan [], **and** you think that Marvin, [will finish first]
 - c. Joan sells [], **and** Fred knows a man who repairs, [washing machines]

Analipsis and catalipsis have not been studied in great detail for many languages (but see Sanders (1977), Harries-Delisle (1978), Mallinson and Blake (1981) for cross-linguistic surveys). In English and similar European languages, the most common type of analipsis consists in the ellipsis of the verb, as in (100a). Since it generally leaves a gap between the remaining preverbal and postverbal constituents (*and Khadija [] Hanif*), it is called **gapping** (J. R. Ross (1979); Neijt (1979)). By contrast, the most common type of catalipsis consists in the ellipsis of elements at the right periphery of the first coordinand (e.g. the direct object in (101a)), and is called **right periphery ellipsis** (Höhle (1991)), or (in obsolete transformational terms) **right node raising** (Postal (1974)).

Gapping is illustrated in (100) by cases in which a single verb is ellipsed, but in fact more elements can be omitted together with the verb, such as adverbs (102a), objects and subjects (102b,c), and additional higher verbs (102d).

- (102)
- a. Simon [quietly dropped] the gold **and** Jack [] the diamonds
 - b. Fred [sent the president] a nasty letter, **and** Bernice [] a bomb
 - c. In China [they drive] on the right **and** in Japan [] on the left
 - d. John's father [managed to get him to read] the Bible **and** his mother [] the Communist manifesto

In English, gapping requires that exactly two remnant constituents are left after ellipsis, so that (103a) is impossible. In German, however, there is no such restriction (cf. 103b).

- (103)
- a. *Mr. Singh [sent] his father a postcard **and** Ms. Bannerjee [] her grandmother a fax
 - b. Herr Singh [schickte] seinem Vater eine Postkarte, **und** Frau Bannerjee [] ihrer Großmutter ein Fax

There also exist gapping-like types of analipsis in which the two remnant constituents are both postverbal (100b), or in which the ellipsed element is a noun (100d).

Gapping and right periphery ellipsis differ not only in that the former affects a medial constituent, and the latter a final element (Hudson (1976)). Some further differences are: first, in gapping only major phrasal categories (such as NP, PP, AdvP) are left as remnants, but in right periphery ellipsis (RPE) other elements may stay behind as remnants. Thus, in (104a), the remnant *the white* is not a major phrasal category, but it is allowed in (104b).

(104)

- a. (gapping) ?The black [horse] won **and** the white [] lost
 b. (RPE) Dirk chose the white [] **and** Bernd wanted the red [Volvo]

Second, in gapping the ellipted element need not be strictly identical inflectionally. The non-elliptical version of (105a) would have the verb form *like* rather than *likes in the second conjunct*. Such agreement differences cannot be ignored in right periphery ellipsis (cf. 105b). In the non-elliptical version, the first conjunct would have the object NP *herself*, so, because the two elements are not strictly identical, (105b) is ungrammatical.

- (105) a. (gapping) Julia [likes] Mendelssohn, **and** her parents [] the Rolling Stones
 b. (RPE) *Joan greatly admires [], **and** Marvin constantly criticizes, [himself]

Third, gapping primarily affects coordinate clauses, but right periphery ellipsis is quite productive at the noun phrase and PP level as well:

- (106) right periphery ellipsis
 a. **both** in front of the blue [] **and** behind the white [house]
 b. I read Dik's book [] **and** Ross's article [about coordination]

Finally, in English, many cases of right periphery ellipsis exhibit an intonation break (represented by a comma in writing) in front of the antecedent in the second coordinand (e.g. 96b(i), 101, 105b). Thus, gapping and right periphery ellipsis are specific rules with their unique characteristics and cannot be reduced to medial analysis and final catalipsis, respectively. Interestingly, gapping and right periphery ellipsis can occur together in the same coordination. In (107), antecedents and ellipsis sites are matched by subscripts.

- (107) Joan [visited]_i her youngest []_j **and** Marvin []_i his oldest [brother]_j

Equivalents of both gapping and right periphery ellipsis are attested in many European languages (see Wesche (1995), Wilder (1997) for extensive discussion of German compared to English). A few examples are:

- (108) a. French (gapping; Grevisse (1986:§260))
 Philippe [revient] des champs, **et** son fils []
 Philippe returns from.the fields and his son
 du chemin de fer
 from.the way of iron
 'Philippe comes back from the fields, and his son from the railway'

- b. Latvian (right periphery ellipsis; Mallinson and Blake (1981:223))
 Puika redzēja [], **un** meitene dzirdēja [suni]
 boy saw and girl heard dog
 ‘The boy saw and the girl heard the dog’
- c. Welsh (right periphery ellipsis; Mallinson and Blake (1981:256))
 Gwelodd Gwen [], **a** rhybuddiodd Ifor, [y dyn].
 saw Gwen and warned Ifor the man
 ‘Gwen saw, and Ifor warned, the man’

However, by no means all languages with *svo* basic order admit gapping of the verb. Gapping is impossible in Thai and Mandarin Chinese (Mallinson and Blake (1981:218)), and even in the southern European language Maltese (closely related to Arabic), the same verb occurring with a different subject and object is normally repeated.

- (109) Maltese (Borg and Azzopardi-Alexander (1997:82))
 Jien ħadt kafè **u** hu ħa luminata
 I took.1SG coffee and he took.3SG.M lemonade
 ‘I had coffee, and he (had) lemonade’

In languages with verb-final word order, catalipsis usually affects the verb, and we get examples like those in (110).

- (110) a. Basque (McCawley (1998:286))
 Linda-k ardau [] **eta** Ander-ek esnea [edaten dabez]
 Linda-ERG wine(ABS) and Ander-ERG milk(ABS) drink they.it
 ‘Linda will drink wine and Ander milk’
- b. Lezgian (northeastern Caucasus; Haspelmath (1993:339))
 Čaqal-di sa werč [], žanawur-di sa lapag [ğa-na]
 jackal-ERG one chicken wolf-ERG one sheep bring-PAST
 ‘The jackal brought a chicken, and the wolf a sheep’
- c. Marathi (Indo-Aryan; Pandharipande (1997:176))
 Sudha Mumbaī-lā [] **āni** mī Triwendram-lā [dzāin]
 Sudha Mumbai-ALL and I Trivendram-ALL went
 ‘Sudha went to Mumbai, and I to Trivendram’

If we want to apply the terminology that has become usual for English to these languages, we could either say that (110) shows right periphery ellipsis of the verb, or that it shows backward gapping. Thus, it is not clear how the terms *right periphery ellipsis* and *gapping* should be applied to languages with a basic word order other than *svo*. Here I will use the more neutral terms *analipsis* and *catalipsis* instead.

Besides the final catalipsis pattern of (110) (so[] + so[v]), some SOV languages such as Basque (111) and German (112) also allow final analipsis (so[v] + so[]) (cf. also example (23) above from Turkish):

- (111) Basque (McCawley (1998:286); cf. 110a)
 Linda-k arda[u] [edaten du], **eta** Ander-ek esnea []
 Linda-ERG wine(ABS) drink he.will and Ander-ERG milk(ABS)
 ‘Linda will drink wine and Ander milk’
- (112) German
 a. ... dass Georg Wein [] **und** Barbara Bier [trinkt]
 b. ... dass Georg Wein [trinkt] **und** Barbara Bier []
 ‘... that Georg drinks wine and Barbara beer’

But verb-final SOV languages often also allow medial analipsis (s[o]v + s[]v):

- (113) a. Turkish (Kornfilt (1997:120))
 Hasan [istakoz-u] pişir-di, Ali de [] ye-di
 Hasan lobster-ACC cook-PAST(3SG) Ali and eat-PAST(3SG)
 ‘Hasan cooked the lobster, and Ali ate it’
- b. Korean (Mallinson and Blake (1981:224))
 Sonyen-i [swuley-lul] kul-**ko** sonye-ka [] mile-ss-ta
 boy-NOM cart-ACC pull-and girl-NOM push-PAST-DECL
 ‘The boy pulled, and the girl pushed the cart’

So far we have considered only medial and final ellipsis. Initial ellipsis cannot be illustrated well from SVO languages like English, because a sentence like *Joan arrived and began immediately* would not be analysed as involving ellipsis (*[Joan] arrived and [] began immediately*), but rather as showing simple VP coordination (*Joan [[arrived] and [began immediately]]_{VP}*). But German has OVS patterns which allow initial analipsis ([o]vs + []vs) (Zifonun, Hoffmann, and Strecker (1997:574)):

- (114) [Das Buch] kaufte mein Vater **und** [] las meine Mutter
 the book bought my father and read my mother
 ‘The book was bought by my father and read by my mother’

In a verb-final language with relatively free order of subject and object, we may get the pattern [o]sv + []sv, as in Malayalam (a Dravidian language; Asher and Kumari (1997:151)):

- (115) [Pustakam] Raamu vaṅṅi **pakṣe** [] Kṛṣṇan vaayiccu
 book Ramu bought but Krishnan read
 ‘Ramu bought but Krishnan read the book’

Table 1.2 *The coordination ellipsis site in relation to clausal word order patterns*

		svo	sov	vso	osv/ovs
analipsis (= forward ellipsis)	medial:	s[v]o + s[]o (= gapping, 100a)	s[o]v + s[]v (113b)		
	final:		so[v] + so[] (111, 112b)		
	initial:			[v]so + []so (116)	[o]vs + []vs / [o]sv + []sv (114, 115)
catalipsis (= backward ellipsis)	final:	sv[] + sv[o] (= right periphery ellipsis, 101a)	so[] + so[v] (110a-c)	vs[] + vs[o] (108c)	

In German vso sentences, initial analipsis is possible, too ([v]so + []so):

- (116) [Liebt] Julia Romeo **und** [] Kleopatra Cäsar?
 loves Juliet Romeo and Cleopatra Caesar
 ‘Does Juliet love Romeo, and Cleopatra Caesar?’

The patterns that are more widely attested are summarized in table 1.2.

So far we have only looked at ellipsis patterns as they concern the major clause constituents subject, verb and object. Sanders (1977) presents an ambitious typology of ellipsis constructions, and he argues that what counts is not the grammatical function of the constituent in the ellipsis site, but only its position. Starting out from an abstract pattern ‘ABC & DEF’, there are thus six logically possible types of ellipsis (Sanders (1977:255)):

- (117) []BC & DEF A-ellipsis initial catalipsis
 A[]C & DEF B-ellipsis medial catalipsis
 AB[] & DEF C-ellipsis final catalipsis
 ABC & []EF D-ellipsis initial analipsis
 ABC & D[]F E-ellipsis medial analipsis
 ABC & DE[] F-ellipsis final analipsis

Table 1.2 already suggests that analipsis is generally more common than catalipsis, and that, of the three catalipsis types, final catalipsis is the most common one. Now Sanders examines the available evidence for a wide variety of languages and asks which ellipsis types are possible in each language.

For instance, English allows C-ellipsis (= final catalipsis, or right periphery ellipsis), D-ellipsis (e.g. [*Yesterday*] *Joan left* and [] *Marvin arrived*), and E-ellipsis (= gapping, or medial anaplasia), but not the other three types.

It turns out that no ellipsis type is universally impossible, but there are strong restrictions on which combinations of ellipsis types a language can have. Out of sixty-four logically possible combinations, only six are in fact attested, according to Sanders (1977:255–6). In (118), the permitted ellipsis sites are underlined.

(118)	Chinese	A B <u>C</u> <u>D</u> E F
	English, Japanese	A B <u>C</u> <u>D</u> E F
	Quechua	A B <u>C</u> <u>D</u> E F
	Russian	A B <u>C</u> <u>D</u> E F
	Hindi, Zapotec	A <u>B</u> <u>C</u> <u>D</u> E F
	Tojalabal	<u>A</u> <u>B</u> <u>C</u> <u>D</u> E F

This pattern is clearly not random and can be reformulated in the implicational hierarchy in (119):

(119) Accessibility hierarchy for ellipsis types

$$A > B > \left\{ \begin{array}{c} C \\ F > E \end{array} \right\} > D$$

This hierarchy should be read as follows: if a language allows any ellipsis type (i.e. if a position is accessible to ellipsis), then all types to the right on the hierarchy are also possible. Sanders argues that this state of affairs has a straightforward functional explanation: the less accessible ellipsis types are more difficult to decode. Decoding difficulty of an ellipsis construction depends on two factors. First, a purely temporal factor: catalipsis is more difficult than anaplasia because the antecedent of the ellipsis has not been processed at the time when the ellipsis site is encountered. Second, Sanders argues that decoding difficulty depends on the ‘memory prominence’ of the antecedent. Memory prominence is known to be determined by the ‘serial position effect’: beginnings and ends are learned faster and recollected more accurately than middles. Thus, A and F should be the best antecedents, and C and D should be the worst antecedents of ellipsis. This means that D and C should be the most favoured ellipsis sites, and A and F should be the least favoured ellipsis sites. The combination of the temporal factor and the prominence factor yields exactly the pattern in (118–119).

7 Delimiting coordination

In this final section, I will discuss ways in which coordinate constructions can be delimited against related constructions, in particular, dependency/

subordination constructions and less grammaticalized constructions. Finally, I ask whether coordination constructions are universal.

7.1 Coordination versus dependency/subordination

The formal symmetry of the terms **coordination** and **subordination** does not correspond to a similar conceptual symmetry. First of all, while *coordination* is applied to the combination of both phrases and clauses, *subordination* is generally restricted to clauses. For instance, in the sentence *If you see Pat, tell me immediately*, we would say that the clause *if you see Pat* is subordinate (to the main clause), but not that the direct objects *Pat* and *me* or the adverb *immediately* are subordinate (to the verb). Instead, the term **dependency** is used as a general term for both phrases and clauses.¹²

As I noted in Section 0, an important difference between coordination and dependency is that two coordinate elements A–B are symmetrical, whereas two elements X–Y in a dependency relation are asymmetrical, with X being the **head** and Y being the **dependent** (or vice versa). This is often thought of as a difference in the syntactic/structural relations of the elements: in head–dependent relations, we find asymmetrical formal phenomena such as person–number agreement of the head with the dependent (e.g. verbs agreeing with their arguments), or case–number agreement of the dependent with the head (e.g. adjectives agreeing with the nouns they modify), or government of the dependent properties by the head (e.g. verbs governing the case of their arguments). Such asymmetries are often absent from coordinate structures, and the coordinands are often structurally more on a par, thus mirroring their identical semantic roles.

But coordinate constructions may also show a fair amount of structural asymmetry, especially when they have their origin in comitative structures (which are, of course, dependency structures – see Section 5.1). Structural asymmetries are attested in non-comitative coordination as well, e.g. Norwegian *han og meg* (he.NOM and I.ACC) ‘he and I’ (Johannessen 1998:1). And, conversely, head–dependent relations are not always reflected in formal asymmetries, e.g. in languages that lack agreement and case-marking. Thus, it seems best to define both coordination and dependency in semantic terms,¹³ and to take as criterial the identity vs non-identity of the semantic roles that the connected elements play. Formal tests for subordination vs dependency, such as the coordinate structure constraint (Section 0), will largely yield the same results as the semantic

¹² Thus, a *subordinate clause* is more or less the same as a *dependent clause* (though Haspelmath (1995:26) makes a subtle distinction between them), and *subordination* is now more or less equivalent to *clausal dependency*.

¹³ See also Croft (1996, 2001) for a semantic definition of heads and dependents.

criterion, but, as we saw in Section 5.1, mismatches between the semantic criteria and the formal criteria, as well as among different formal criteria, are not uncommon.

When the coordination or dependency status of a sequence of two clauses is in question, i.e. when we are unsure whether we are dealing with coordination or subordination, the semantic criterion is often difficult to apply (see Cristofaro (2003) for some discussion). For instance, with converb constructions of the type illustrated above in Section 3, it is often unclear whether we should describe them as subordinate or coordinate. Example (57b) from Korean is repeated here for convenience:

- (57) b. Achim mek-**ko** hakkyo ka-ss-eyyo
 breakfast eat-and school go-PAST-IND
 ‘I ate breakfast and went to school /
 After eating breakfast, I went to school’

Both of the English translations given seem appropriate here, so one wonders whether there are formal criteria that would be of help in deciding the issue.

In Haspelmath (1995), I noted that, across languages, subordination structures generally have the following properties:

- (i) only subordinate clauses can be in internal position (i.e. with the subordinate clause inside the main clause): *At eight o’clock, after eating breakfast, I went to school.*
- (ii) only subordination constructions allow extraction of *wh*-pronouns (because of the coordinate structure constraint, Section 0): *Where did you go after eating breakfast?*
- (iii) only subordinate clauses can be focussed: *It was after eating breakfast that I went to school.*
- (iv) only subordinate clauses allow backwards anaphora: *After meeting her, again, I admired Joan, even more.*

But again, as in the case of comitative conjunction, mismatches occur. When we try to apply the criteria to the case of the Korean *-ko* converb used in (57b), the evidence is mixed (see Rudnitskaya (1998) for detailed discussion). When the verb shows tense (e.g. the past-tense suffix *-ass*), the converb clause cannot be in internal position, but must precede the finite clause (120a). When the verb lacks tense, it can be inside the finite clause (120b).

- (120) a. Swunmi-nun caki aphathu-lul phal(-ass)-**ko**
 Sunmi-TOP self’s apartment-ACC sell(-PAST)-CONV
 cohun cip-ul sa-ss-ta
 good house-ACC buy-PAST-DECL
 ‘Sunmi sold her apartment and bought a good house’

- b. Swunmi-nun cohun cip-ul [caki aphathu-lul phal-ko]
 Sunmi-TOP good house-ACC self's apartment-ACC sell-CONV
 sa-ss-ta.
 buy-PAST-DECL
 'Sunmi bought a good house, having sold her apartment'

As Rudnitskaya (1998) shows, there are a number of diverse factors that determine whether subordination tests are positive or negative. Thus, it is often not straightforward whether a verbal (converb) marker signals subordination or coordination.

Similarly, Culicover and Jackendoff (1997) show that there is a class of English clause-combining constructions that show mixed subordinate-coordinate behaviour, as illustrated in (121).

- (121) You drink another can of beer **and** I'm leaving
 (= If you drink another can of beer, I'm leaving)

This construction is semantically subordinate, but the syntactic evidence is mixed. Most strikingly, the linker *and* does not look like a clause-final subordinator, but much more like a medial coordinator. But Culicover and Jackendoff (1997:206) show that this construction does not obey the coordinate structure constraint, and behaves as subordinate also with respect to backwards anaphora.

Thus, structural tests show no more than a tendency to correlate with semantic criteria, not a strict one-to-one correspondence. But the investigation of the attested types of mismatches and constraints on mismatches is a rich area for future discoveries.

7.2 *Degrees of grammaticalization*

The patterns and coordinators discussed in this chapter are primarily those that show the highest degree of structural integration or **grammaticalization**. I have not said much about further semantic types of coordination such as causal coordination, consecutive coordination (e.g. French *Je pense donc je suis* 'I think, therefore I am') or explicative coordination (e.g. *The film is open only to adults, i.e. people over 18*). These coordination types are marginal, and the linkers used in them are not always clear cases of coordinators. In conjunction and adversative coordination, too, there are some linkers (e.g. *then, moreover, yet, however*) that are not generally recognized as coordinators, but are typically treated as **linking adverbs** (or **conjunctive adverbs**). The criteria for treating them as adverbs rather than coordinators are typically formal, not semantic. For instance, it is commonly said that coordinators are always in initial position and that they do not co-occur with other coordinators. The first criterion excludes *however*, the second excludes *yet* and *then* (cf. *She was unhappy about it,*

and yet / and then she did as she was told), and both criteria qualify for as a coordinator. In German, with its verb-second word order, a formal criterion is that adverbs, but not coordinators, occupy the preverbal slot and force the subject into postverbal position (e.g. contrast *und Lisa kam / *und kam Lisa* ‘and Lisa came’ with *dann kam Lisa / *dann Lisa kam* ‘then Lisa came’). But, as is so often the case, these various formal criteria do not always yield consistent results. For instance, *then* and *yet* behave like coordinators in that they can link not just sentences, but also vps (e.g. *The car turned suddenly, then screeched to a halt*), but they are unlike coordinators in that they can co-occur with *and*. And German *doch* ‘however’ allows either word order pattern (*doch Lisa kam spät / doch kam Lisa spät* ‘however, Lisa came late’). Thus, the category of coordinators does not have sharp boundaries, and, in a cross-linguistic perspective, it seems best to focus on the most grammaticalized members of the category.

7.3 *Is coordination universal?*

The degree of grammaticalization is also relevant for another important question: whether coordination is a universal that is found in all languages, or whether some languages lack coordinate patterns. Gil (1991) argues that Maricopa (a Yuman language of Arizona) has no coordinate structures, though he defines coordination formally, starting out from English-like patterns. At the same time, Gil notes that Maricopa speakers have a variety of ways of expressing ‘A and B’, e.g. simple juxtaposition (cf. (19b) above), or a form of the verb *uḍaav* ‘accompany’ (so that ‘John and Bill will come’ is literally ‘John, accompanying Bill, will come’). If Gil’s analysis is right, Maricopa is a language that has no specific grammatical constructions dedicated to expressing coordination, although it can express the same concepts by using its lexical resources, or by leaving them implicit. That may of course be the case, and it would constitute an important finding.

However, another possibility is that Maricopa coordinate structures simply exhibit a fairly low degree of grammaticalization, so that they are easily mistaken as completely non-grammaticalized. We saw in Section 5.1 that many languages with comitative conjunction at first blush appear to show no dedicated conjunction pattern, simply replacing ‘A and B’ by ‘A with B’. But when these comitative-conjoined patterns are examined more closely, it is often found that they are grammatically and semantically distinct from their comitative source constructions, even though they still show the same overt marker. It may well be that the Maricopa patterns are also on their way toward grammaticalization, and that a closer look would reveal evidence for this. But, whatever the right description of Maricopa turns out to be, it is clear that there is a universal tendency for languages to grammaticalize coordination markers from a variety of sources, and eventually the formal features of these coordination patterns seem

to converge. Different languages, or different constructions, exhibit different degrees of grammaticalization and of similarity with the source pattern, but the cross-linguistic similarities are quite striking as well.

8 Appendix: terminological issues

As in other domains of grammar, the terminology for coordination and related phenomena is often disparate and sometimes confusing. The following remarks point out synonyms and homonyms of the terms chosen in the main body of the chapter.

- (1) **Coordinator:** This is a non-traditional term for what has more often been called *coordinating conjunction*. The term *conjunction* in this traditional sense comprises both coordinators and markers of subordination (*subordinators*). I have avoided this term in this chapter because I want to reserve *conjunction* to denote a special type of coordination ('and'-coordination, or conjunctive coordination).
- (2) **Conjunction and disjunction:** An older term for *conjunctive coordination* (= *conjunction*) that is now rarely used is *copulative coordination*. (However, the term *copulative compound* (= *coordinative compound*) is still fairly common.) Besides *disjunctive coordination* (= *disjunction*), one also finds *alternative coordination*. Since conjunction is by far the most frequent type of coordination, the term *conjunction* is sometimes (erroneously or carelessly) used as a synonym of *coordination*.
- (3) **Coordinand:** This term is introduced in the present chapter for the units that are combined in a coordinate construction (cf. Dixon (1988:161), where I have found this term used in the same sense). There is no traditional term for this concept. Dik (1968) uses the term *term (of a coordination)*. Sometimes the term *conjunct* is used as a synonym of *coordinand* (just as *conjunction* is sometimes used as a synonym of *coordination*), but this is confusing and should be avoided.
- (4) **Emphatic coordination:** This term is used in the present chapter for coordinations such as *both A and B*, or *either X or Y*. There is no traditional term for such constructions. J. R. Payne (1985) uses the feature '[±separate]', so my *emphatic coordination* corresponds to Payne's '[+separate] coordination'. (Payne uses the feature '[±emphatic]' to distinguish between *A, B and C* and *A and B and C*, so my use of this term is very different from Payne's.)
- (5) **Inclusory conjunction:** This term is inspired by Lichtenberk (2000), who introduces the term *inclusory pronominal construction*. There is no traditional term for this concept. For phrasal inclusory conjunction as in (87), Schwartz (1988a, 1988b) and Aissen (1989:523) use the term *plural pronoun construction*, and in Australianist circles the term *inclusive*

construction seems to have been used (Wilkins (1989:407); but see now Singer (2001)). For the split construction as in (89), Schwartz (1988a, 1988b) uses the term *verb-coded coordination*. I prefer Lichtenberk's term *inclusory*, because it allows one to capture the similarities between the two constructions. It is better than *inclusive*, because the neologism *inclusory* makes it very clear that a special kind of construction is referred to.

- (6) **Analipsis** (= *forward ellipsis*) and **catalipsis** (= *backward ellipsis*): These are inspired by Zifonun *et al.*'s (1997 1:571) *Analepse/Katalepse*, which have antecedents in the late nineteenth century. The prefixes *ana-* and *cata-* are used in the same sense here as in *anaphoric* and *cataphoric*.

9 Suggestions for further reading

General overview articles on coordination are J. R. Payne (1985) (with emphasis on cross-linguistic diversity), van Oirsouw (1993), and Grover (1994) (with emphasis on ellipsis phenomena in English).

The best general book-length study of coordination is still Dik (1968), although much of the discussion of early transformational grammar is primarily of historical interest now.

Much of the literature on coordination from a formal syntactic point of view has been concerned with ellipsis in coordination in English and similar European languages, for instance the book-length studies by van Oirsouw (1987), Neijt (1979) and Wesche (1995). A formal semantic approach is adopted in Lang (1984).

The typological literature on coordination is rather scarce. For ellipsis, the two most important references are Harries-Delisle (1978) and, especially, Sanders (1977). For coordination in general, three important references are Moravcsik (1971), Mithun (1988), and Stassen (2000). A collection of papers describing coordinating constructions in various languages is Haspelmath (2004).

2 Complementation

Michael Noonan

0 Introduction

In this chapter we are concerned with sentential complementation, hereafter referred to simply as ‘complementation’. By complementation, we mean the syntactic situation that arises when a notional sentence or predication is an argument of a predicate. For our purposes, a predication can be viewed as an argument of a predicate if it functions as the subject or object of that predicate. So, for example, the subject of (1), *Elliot*

(1) Elliot annoyed Floyd

can be replaced by various syntactic configurations that are notionally predications, i.e. consist of a predicate and a string of arguments:

- (2) a. *That Elliot entered the room* annoyed Floyd
b. *Elliot’s entering the room* annoyed Floyd
c. *For Elliot to enter the room* would annoy Floyd

The italicized constituents in (2) are all sentential subjects of *annoy* and, therefore, subject complements of *annoy*. Similarly, *Nell*, the object of *remember* in (3)

(3) Zeke remembered Nell

can be replaced by a predication that also functions as the object of *remember*, as we see in (4):

- (4) a. Zeke remembered *that Nell left*
b. Zeke remembered *Nell’s leaving*
c. Zeke remembered *to leave*

This chapter is a corrected, updated, and slightly revised version of the chapter that appeared in the first edition of these volumes. That version was written in 1979 and embodied the theoretical and conceptual apparatus of that period. In preparing this version of the chapter, I decided to leave the conceptual apparatus intact since I believe that it provides a useful way for field workers to think about the structures described here. Needless to say, a theoretical presentation of the same material, whether from a formalist or functionalist perspective, would look rather different, but would be much less practical for the purposes for which this work is intended.

The italicized portions of (4) are object complements of *remember*. As illustrated in (4c), complements may be truncated in the sense that the notional subject and certain other elements of a complete sentence may be absent. Predicates like *remember*, *see*, *think*, *cause*, etc., that take subject or object complements are referred to as ‘complement-taking predicates’ (CTPs).

Not all embedded sentences can be considered complements: relative clauses, purpose and manner clauses, locative and temporal clauses, etc., are not complements since they are not arguments of verbs. None of the italicized strings in (5) is a complement:¹

- (5)
- a. Alf saw the man *that Pearl knows*
 - b. Roscoe hit Floyd *to cause trouble*
 - c. *On entering the room*, Irv saw Max standing by the window
 - d. *When Zuma grows up*, she’ll be a truck driver
 - e. Nelson entered the room *carrying a briefcase*

Further, in this chapter we are not concerned with cases that fit the semantic definition of complementation given above, but where the main predicate is syntactically reduced to the form of a clause-modifying adverb, as in:

- (6)
- a. Oddly, Zeke eats leeks (cf. It is odd *that Zeke eats leeks*)
 - b. Strangely enough, Lucille knows Sanskrit (cf. It is strange *that Lucille knows Sanskrit*)

The organization of this chapter is as follows: in section 1, I discuss the morphology of complements, in section 2, the syntax of complements, and in section 3, the semantics of complementation. In section 4, I discuss complement systems. In section 5, I briefly discuss noun complementation.

1 The morphology of complements

1.1 *Complement types*

Even within a single language, complements can come in a variety of forms. English, for example, has four main forms for its complements, i.e. it has four main *complement types*. These complement types are illustrated in (7):

¹ Headless relatives, as illustrated in

Wanda knows *what Boris eats*

are likewise not considered to be complements, even though they are, technically, clauses functioning as arguments of predicates. The grammar of these clauses is best considered along with that of other relative clauses.

- (7)
- That Cartier defeated Dugué* would be significant (*that*-clause)
 - For Cartier to defeat Dugué* would be significant (infinitive clause)
 - Cartier's defeating Dugué* is significant (gerundial or verbal noun clause)
 - Nelson saw *Cartier defeating Dugué* (participial clause)

Other languages may have a greater or lesser number of complement types. For instance, Irish has only two complement types, illustrated in (8) (NZN = nominalization):

- (8)
- Dúirt sé go dtiocfadh sé
said.3SG he COMP come.COND he
'He said that he would come'
(*go*-clause)
 - Is maith liom iad a fheiceáil
COP good with.me them COMP see.NZN
'I like to see them'
(verbal noun)

Some languages may have the same number of complement types as English, but may have different sorts of complements. For example, Lango, a Nilotic language, has four main complement types:

- (9)
- Àtîn òpòyò nî àcégò dóggólâ
child remembered.3SG COMP closed.1SG door
'The child remembered that I closed the door'
(indicative)
 - Àtîn òpòyò òcègò dóggólâ
child remembered.3SG closed.3SG door
'The child remembered to close the door'
(paratactic complement)
 - Àtîn òpòyò cèggò dóggólâ
child remembered.3SG close.INF door
'The child remembered to close the door'
(infinitive)
 - Àtîn òmìtò nî àcêg dóggólâ
child wanted COMP close.1SG':SJUNCT door
'The child wanted me to close the door'
(subjunctive)

A complement type is identified basically by (i) the morphology of the predicate, (ii) the sorts of syntactic relations the predicate has with its arguments

(complement-internal syntax), and (iii) the syntactic relation of the complement construction as a whole with the rest of the sentence (complement-external syntax).

1.2 Complementizers

Complement types often have associated with them a word, particle, clitic or affix, one of whose functions it is to identify the entity as a complement. Such forms are known as *complementizers*. Derivational affixes, such as English *-ing*, which are used to convert a form from one part of speech to another are not considered here to be complementizers. More than one complementizer may occur with a given complement type. Alternatively, some complement types may have no complementizer associated with them at all. In English, the particle *that* in (7a) is a complementizer associated with a complement type named after it, the *that*-clause. The particle *if* can also function as a complementizer with this same complement type, as in:

- (10) I don't know if Zeke knows Harry

Most infinitives have the complementizer *to*, but some have no complementizer. Neither the verbal noun nor participial complement types have complementizers in English. In Lango, there is only one complementizer, *nî*, and it is used with two distinct complement types, the indicative as in (9a) and the subjunctive as in (9d), where the verbs differ from each other in grammatical mood. The *nî* complementizer is the main morphological distinguisher between the indicative complement type and the paratactic complement, which are otherwise similar morphologically, though the syntactic properties of the two differ considerably (section 2.4). The Lango paratactic and infinitive complements lack complementizers altogether.

The use of a complementizer with a given complement type is sometimes optional or contextually determined, i.e. its presence is determined by pragmatic, not grammatical, considerations. Examples (11a) and (11b) are both grammatical, the choice between them signalling the pragmatic status of the information contained in the complement (Thompson and Mulac (1991b); Bolinger (1972)):

- (11) a. Perry knows that *Hugh is vulnerable*
b. Perry knows *Hugh is vulnerable*

When *that*-clauses are subjects, however, the use of *that* is obligatory:

- (12) a. *That Hugh is vulnerable* is remarkable
b. **Hugh is vulnerable* is remarkable

English *that* can be contrasted with the behaviour of the complementizer *go* in Irish, which is obligatory in all contexts:

- (13) a. Tá a fhios agam *go léifidh sí an leabhar*
 COP its knowledge at.me COMP read.FUT she the book
 'I know that she'll read the book'
 b. *Tá a fhios agam *léifidh sí an leabhar*

The English complementizer *to* associated with infinitives is also dependent on context, but the principles governing its distribution are rather different from those governing the distribution of the *that*-complementizer. As indicated above, the use of *that* is optional with object complements, but obligatory with subject complements: the distribution with subject complements is therefore syntactically determined. There are syntactically determined aspects of the distribution of the *to*-complementizer also: when infinitives are in other than object position the *to*-complementizer is obligatory. But in object position, the distribution of *to* is governed, rather arbitrarily (from a synchronic perspective), by the CTP. With complement-taking predicates like *force*, *want* and *allow*, the use of *to* is obligatory:

- (14) a. Evelle forced Jerry to change his plans
 b. *Evelle forced Jerry change his plans
 (15) a. Joe wants Pierre to retire
 b. *Joe wants Pierre retire
 (16) a. Henry allowed Dick to speak
 b. *Henry allowed Dick speak

The predicate *help* can occur with or without *to*:

- (17) a. Leonid helped Boris to see the error of his ways
 b. Leonid helped Boris see the error of his ways

To is ungrammatical with *make* and *let*:

- (18) a. *Bert made Jimmy to blush
 b. Bert made Jimmy blush
 (19) a. *The judge let Spiro to go
 b. The judge let Spiro go

In Yaqui, one complement type takes two complementizers: *ke*, a particle that precedes the clause, and *kai*, a clause-final clitic. With this complement type, one or both of the complementizers must be present. This is illustrated in (20) (data from Lindenfeld (1973); Carlos Seguíñ (p.c.)):

- (20) a. Tuisi tu?i ke hu hamut bwika-kai
 very good COMP the woman sing-COMP
 'It's very good that the woman sings'
- b. Tuisi tu?i ke hu hamut bwika
- c. Tuisi tu?i hu hamut bwika-kai
- d. *Tuisi tu?i hu hamut bwika

Complementizers typically derive historically from pronouns, conjunctions, adpositions or case markers, and, rarely, verbs, and so may resemble words currently used in these capacities.² The English complementizers *that*, *if* and *to* are derived from and thus resemble the demonstrative pronoun *that*, the conjunction *if*, and the preposition *to*, respectively. Similar examples can be cited from a great number of languages. In Kanuri, an East Saharan language, clitics otherwise functioning as accusative and dative case markers may be affixed onto finite verbs and function as complementizers (data from Lukas (1967)):

- (21) Àvá-nzó-yè shí-rò kúnǝná cîn
 father-his-NOM him-DAT money give.3SG
 'His father gives him money'
- (22) Sá'vá-'nyí íshín-rò tǝmǝǝná
 friend-my come.3SG:DAT thought.1SG:PERF
 'I thought my friend would come'
- (23) Sá'vá-'nyí íshìn
 friend-my come.3SG
 'My friend is coming'

In Russian, an interrogative and relative pronoun *čto* functions also as a complementizer:

- (24) Čtó ty čital
 what you read
 'What were you reading?'
- (25) Ja ne znaju, čtó ty čital
 I NEG know what you read
 'I don't know what you were reading'

² See J. M. Anderson (1971) and Washabaugh (1975) for discussion of the development of complementizers from adpositions, Lord (1993) for development from verbs, and Frajzyngier (1991) for development from demonstratives.

- (26) Ja ne znaju, čto ty čital
 I NEG know what you read
 'I don't know that you were reading'

As a pronoun, *čto* is always stressed (24–5). As a complementizer, as in (26), it is not stressed. Maori illustrates the common tendency to use an adposition with dative (indirect object) or allative (direction toward) senses as a complementizer for complements with determined time reference (cf. section 3.1.1; Clark (1973)):

- (27) E hoki ana au *ki* te kaainga
 PRES return PROG I to the village
 'I'm going back to the village'
- (28) Ka hoatu te taurekareka *ki* te rangatira
 AORIST given the slave to the chief
 'The slave was given to the chief'
- (29) E hiahia ana raatou *ki* te haere
 PRES want PROG they COMP the go
 'They want to go'

English *to* has the same range of uses as Maori *ki*. In Uzbek, a participle *deb* 'saying' functions as a complementizer (Abduzuxur Abduazizov (p.c.); and Sjoberg (1963)):

- (30) Bu odam bir joʻja-ni oʻyirladi deb aytti u
 this man one chicken-OBJ stole COMP said.3SG he
 'He said that the man stole a certain chicken'

Sometimes the same complement type takes on different meanings with different complementizers. In Jakaltek, for instance, the sentence-like complement type can occur with several complementizers, either individually or in combination. One of these complementizers, *chubil*, implies that the information in the complement is accorded a high degree of credibility, while another, *tato*, is used with complements about which there is some reservation on the part of the speaker, or even outright disbelief. These differences are illustrated by the following sentences (Craig (1977)):

- (31) a. Xal naj tato chuluj naj presidente
 said ART COMP will.come ART president
 'He said that the president would come'
- b. Xal naj chubil chuluj naj presidente
 'He said that the president will come'

Example (31a) would be a report of an assertion whose credibility is open to doubt. Example (31b), on the other hand, presents the reported assertion as a fact, since either the ‘he’ in (31b) is reliable, or the speaker has good reason to believe that the statement is true. In Kabre, a Gur language, the subjunctive complement can occur with the complementizers *né* and *zi* (SJNCT = subjunctive):

- (32) a. Màlàbá àbàlú *né* *isé*
 pressed.1SG:PERF man COMP run.3SG:SJNCT
 ‘I forced the man to run’
- b. Màlàbá àbàlú *zi* *isé*
 pressed.1SG:PERF man COMP run.3SG:SJNCT
 ‘I pressed the man to run’

With the *né* complementizer in (32a), there is an implication that the man ran, but in (32b) with *zi* there is no such implication.

1.3 The morphology of complement types

1.3.1 Sentence-like complement types

All languages have some sort of sentence-like complement type, one that without its complementizers has roughly the same syntactic form as a main clause. In a sentence-like (hereafter, s-like) complement type, the predicate has the same syntactic relation to its subject and its other arguments that it has in syntactic main clauses: it remains syntactically and morphologically a verb, and any case marking on subjects or objects will have the same form as that in main clauses (but see sentences (43–6) from Wappo below). Further, if the verb in main clauses is inflected for subject or object agreement in some language, then the verb in any s-like complement type in that language will also be inflected for subject or object agreement. In English, the sentence

- (33) Burt *is* a chicken farmer

is identical in form to the s-like complement in (34):

- (34) Max knows *that Burt is a chicken farmer*

The form taken by the complements in (35) and (36) is not s-like:

- (35) Max wants Burt to *be* a chicken farmer

- (36) Burt’s *being* a chicken farmer worries Max

Neither of the above complements meet the criteria for s-like complement types; the notional subject of the complement does not bear in either case the same syntactic relation to its predicate that it does in main clauses. In (35), the complement subject has been raised to object position in the matrix clause

(cf. section 2.2). In (36), the complement subject has a genitive case relation to its predicate. In neither case is the predicate inflected for subject agreement as in (33) and (34) above.

That a complement type is s-like does not preclude the possibility that its syntax may differ in certain respects from that of main clauses. In German, for example, the word order in s-like complements differs from that in main clauses:

- (37) Er ist schlau
 he COP cunning
 'He is cunning'
- (38) Es ist war, dass er schlau ist
 it COP true COMP he cunning COP
 'It's true that he is cunning'

In (37) the adjective *schlau* follows the copular verb *ist*, but in the complement in (38), the verb comes last. In Irish, many verbs have so-called 'dependent' forms which occur only in subordinate clauses and after a few verbal particles. For example, the main clauses

- (39) Tá sé ina dhochtúir
 COP he in.his doctor
 'He's a doctor'
- (40) Chonaic Seán an mhuc
 saw John the pig
 'John saw the pig'

when embedded as complements become, respectively:

- (41) Tá a fhios agam go bhfuil sé ina dhochtúir
 COP its knowledge at.me COMP COP he in.his doctor
 'I know that he's a doctor'
- (42) Tá a fhios agam go bhfaca Seán an mhuc
 COP its knowledge at.me COMP saw John the pig
 'I know that John saw the pig'

In Wappo, the subjects of main clauses are marked with a suffix *-i* (Li and Thompson (1976a)):

- (43) Chic-i c'ic'a t'a-ta?
 bear-SUBJ bird kill-PAST
 'The bear killed the bird'

- (44) Ce k'ew- i tuc'a-khi?
 that man-SUBJ big-PREDICATOR
 'That man is big'

When sentences like these are embedded as s-like complements, their internal syntax does not change, except that the subject marker *-i* cannot occur with the subjects of these clauses (*?ah* is the irregular subject form of the first person pronoun):

- (45) ?ah *chica c'ic'a t'a-ta?* haʔiskhi?
 I bear bird kill-PAST know
 'I know that the bear killed the bird'
- (46) ?ah *ce k'ew tuc'a-khi?* haʔiskhi?
 'I know that the man is big'

1.3.2 *Indicative versus subjunctive sentence-like complements*

In many languages there is more than one s-like complement type. When such a distinction exists, the form that most closely resembles declarative main clauses is referred to as *indicative*. Non-indicative s-like complement types usually have a special non-indicative stem or conjugation; they may also differ from indicatives in occurring with modal particles or special complementizers.

Non-indicative s-like complement types can be referred to by the semantically neutral term *subjunctive*. For a particular language, a term with more semantic content such as optative, irrealis, potential, etc., might be more appropriate. Indicative and subjunctive verbal forms are said to differ in *mood*, and there are rarely more than two s-like mood distinctions available in complement systems, though a number of languages have more than two mood distinctions available for use outside the complement system (see vol. III, chapter 5).

Indicative–subjunctive distinctions in complementation are attested in a number of language families. Only languages that distinguish tense and/or aspect in their verbal morphology, however, will be likely to have an indicative–subjunctive distinction.

English distinguishes an indicative from a (rather moribund) subjunctive in complementation. The subjunctive differs from the indicative only in the morphology of the verb. The indicative and subjunctive use the same complementizer, *that*:

- (47) a. King Melvin suggested *that Natasha was drawn and quartered*
 b. King Melvin suggested *that Natasha be drawn and quartered*
- (48) a. I insisted *that Roscoe lives here*
 b. I insisted *that Roscoe live here*

The (a) sentences above contain indicatives, while the (b) sentences contain subjunctives. In Lori, usually considered a dialect of Persian, the subjunctive has a prefix and a special conjugation distinguishing it from the indicative. As with English, the complementizer is the same (data from Stan Murai (p.c.)):

- (49) Zine eteqad dar *ke pia tile-ye dozid*
 woman belief have COMP man chicken-OBJ stole.3SG:INDIC
 ‘The woman believes that the man stole the chicken’
- (50) Zine væ pia xas *ke tile-ye be-doze*
 woman from man wanted COMP chicken-OBJ 3SG.SJNCT:steal
 ‘The woman wanted the man to steal the chicken’

In Rumanian, both the verb conjugation and the complementizer differ:

- (51) El spune că *citește* o carte
 he says COMP read.3SG:INDIC a book
 ‘He says that he’s reading a book’
- (52) El vrea să *citescă* o carte
 he wants COMP read.3SG:SJNCT a book
 ‘He wants to read a book’

In Russian, the subjunctive is identical in form to the indicative past tense. The complementizer is the same for both moods, but the subjunctive is always accompanied by the modal particle *by*:

- (53) Ja verju, *čto Boris pridët*
 I believe COMP Boris will.come:INDIC
 ‘I believe that Boris will come’
- (54) Ja verju, *čto Boris prišel*
 I believe COMP Boris came.INDIC
 ‘I believe that Boris came’
- (55) Ja ne verju, *čto by Boris prišel*
 I NEG believe COMP SJNCT.PCL Boris come.SJNCT
 ‘I don’t believe that Boris will come / came’

As the Russian case illustrates, subjunctives tend to have fewer inflectional possibilities than indicatives. The complement in (55) is neutral to a future or past interpretation, though the predicate is marked for perfective aspect. Past and future reference in Russian is clearly marked on indicatives, however, as (53) and (54) show. Many of the tense distinctions associated with subjunctives in the literature turn out on closer inspection to be aspectual distinctions. In Classical Greek, for example, the indicative present and aorist contrast along both a time and an aspect dimension. The present is imperfective and refers to

time coextensive with the time of speaking; the aorist is perfective and refers to time prior to the act of speaking (W. Goodwin (1892); Smyth (1920)):

- (56) *Speúdousi pròs tèn kómēn*
 hasten.3PL:PRES to the village
 ‘They are hastening to the village’
- (57) *Éspeusan pròs tèn kómēn*
 hasten.PL:AORIST to the village
 ‘They hastened to the village’

In the subjunctive, the tense distinction is lost and only the aspectual distinction remains between present and aorist:

- (58) *Efobeïto mē speúdōsi pròs tèn kómēn*
 afraid.3PL:IMPERF NEG hasten.3PL:PRES-SJNCT to the village
 ‘He was afraid that they should be hastening to the village’
- (59) *Efobeïto mē speúsōsi pròs tèn kómēn*
 afraid.3SG:IMPERF NEG hasten.3PL:AORIST:SNCT to the village
 ‘He was afraid that they should hasten to the village’

In Bemba, the indicative distinguishes twenty-four tense–aspect categories (Givón (1971, 1972)). In the subjunctive, only a restricted number of present and future distinctions is possible (some examples are provided in section 3.1.1), all of which appear to be the products of tense copying. In fact, many tense distinctions exhibited by subjunctives are not independently meaningful, but are the result of tense copying (cf. section 2.6).

The subjunctive may also neutralize aspectual distinctions. In Lango the indicative has a three-way aspectual contrast, distinguishing a progressive, a habitual, and a perfective:

- (60) *Ákwànnò búk*
 read.3SG:PROG book
 ‘He’s reading a book’
- (61) *Kwánô búk*
 read.3SG:HABIT book
 ‘He reads a book (all the time)’
- (62) *Okwànnò búk*
 read.3SG:PERF book
 ‘He read a book (all the way through)’

In the subjunctive, these distinctions are neutralized:

- (63) Dákô òdiò ìcò nî òkwǎl búk
 woman pressed.3SG man COMP read.3SG:SNCT book
 ‘The woman pressed the man {to read a book (all the time)
 to read a book (all the way through)’

On the other hand, the subjunctive may have as many inflectional categories as the indicative, as for instance in Ossetic (Abaev (1964)).

One inflectional distinction follows from the definition of the subjunctive complement as s-like: if the indicative has subject–verb or object–verb agreement, the subjunctive will almost invariably code these categories as well. Inflectional categories of subjunctives will be mentioned again briefly in section 1.3.4.

Subjunctives often bear some regular relation to another part of the verbal paradigm. The Russian example mentioned above where the subjunctive is morphologically identical to the past tense is rather atypical: the more usual pattern is that the subjunctive resembles the future tense form, as in the following example from Pashto:

- (64) Zə bə dā kitáb vúlvaləm
 I PCL this book read.1SG:PERF:FUT
 ‘I will read this book’
- (65) Zə ǧvărəm če dā kitáb vúlvaləm
 I want.1SG COMP this book read.1SG:PERF:SNCT
 ‘I want to read this book’

The future construction, unlike the subjunctive, requires the particle *bə*, but the verb forms are identical. Subjunctive and imperative paradigms are also frequently similar.

It seems that all languages with subjunctive complements can use subjunctives as main clauses (though the reverse may not be true: Irish has a somewhat rare subjunctive in main clauses that is not used in complementation). Main clause subjunctives tend to be used in modal, hortative or imperative senses. Consider the contrast between indicative and subjunctive clauses in French:

- (66) Dieu vous *bénit*
 God you bless.INDIC
 ‘God blesses you’
- (67) Dieu vous *bénisse*
 God you bless.SJUNCT
 ‘May God bless you’

Subjunctive main clauses may be accompanied by the subjunctive complementizer even though there is no overt complement-taking predicate accompanying the subjunctive, as in this example from Rumanian:

- (68) *Să* continuăm
 COMP continue.1PL:SNCT
 ‘Let’s continue’

1.3.3 *Paratactic complements and verb serialization in complementation*

Parataxis and verb serialization may be used in complementation. These constructions have much in common syntactically:

- (i) both consist of a subject NP followed by a series of verb phrases;
- (ii) each verb phrase contains a fully inflected verb;
- (iii) no marker of coordination or subordination links the series of verb phrases;
- (iv) no special verb forms are used: if the first verb in the series is indicative, all the rest will be too.

There are a number of important differences between the two constructions, but only one, relating to the matter of one versus two assertions, has a direct bearing on their use in complementation.³ In this section, only examples of parataxis will be given.⁴

In the paradigm cases of parataxis, the matrix clause and the paratactic complement each constitute clauses which could stand by themselves as independent sentences with approximately the same meaning. Below are some indicative–paratactic pairs from Lango:

- (69) a. *Dákô òkòbbì ìcô nî àtîn òkwòrò kál*
 woman told.3SG:DAT man COMP child sifted.3SG millet
 ‘The woman told the man that the child sifted millet’
- b. *Dákô òkòbbì ìcô òkwòrò kál*
 woman told.3SG:DAT man sifted.3SG millet
 ‘The woman said it to the man, he sifted millet’
 (The woman told the man to sift millet (and he did))
- (70) a. *Àtîn òpòyò nî dákô òkwòrò kál*
 child remembered.3SG COMP woman sifted.3SG millet
 ‘The child remembered that the woman sifted millet’
- b. *Àtîn òpòyò òkwòrò kál*
 child remembered.3SG sifted.3SG millet
 ‘The child remembered it, he sifted millet’
 (The child remembered to sift the millet (and he did))

³ The differences and similarities are discussed in some detail in Noonan and Bavin (1981) and Noonan (1992) and are briefly summarized in section 2.4.

⁴ Examples of serialization are provided in section 2.4. Paratactic complements are contrasted with other complement types in table 2.2.

1.3.4 *Infinitive complements*

The term *infinitive* has been used for rather different sorts of syntactic entities. The word ‘infinitive’ itself, meaning ‘not limited’ (e.g. by person, number, tense), would suggest itself for use with complement types that do not express inflectional distinctions. Such a classification of complement types into inflected versus non-inflected categories, however, would not provide a particularly useful classification. In this chapter, the term will be used somewhat differently, referring instead to verb-like entities that do not bear syntactic relations to their notional subjects; i.e. their subjects do not take nominative case marking or condition verb agreement (where otherwise appropriate for subjects), nor are they marked in the genitive case, as a subject of a nominalization might be marked. The notional subjects of infinitives are typically equi-deleted (section 2.1), raised (section 2.2), or made objects of adpositions, as in (74):

- (74) *For him to abandon Radical Syndicalism* would be terrible for
the movement

But because infinitives are verb-like, the relations that they may establish with their objects (as in the phrase *abandon Radical Syndicalism* in (74)) are the same as those established by verbs in s-like complements.

Except for subject agreement (and mood), infinitives may be inflected for all verbal categories such as tense–aspect, voice, object agreement, etc. In most cases, however, infinitives, like subjunctives, are inflected for fewer of these categories than indicative complements in the same language. It seems possible to arrange verbal inflections (minus subject agreement and mood) along a scale like that in table 2.1, which applies to all non-indicative complement types. Generally speaking, the further to the left an item is on this scale, the less likely it is to be coded on a non-indicative complement. The categories in set 4 are almost always coded on infinitive and subjunctive complements if they are coded on indicatives. (An exception is Hungarian, which has object agreement in verbs but lacks it in infinitives – Edith Moravcsik (p.c.)). When infinitive and subjunctive complement types differ in the number of inflectional categories they code, the s-like subjunctive will likely code more, but tense coding on subjunctives is more likely to be the product of tense copying (section 2.6).

Classical Greek provides an example of a language whose infinitives can code inflectional categories 1–4 in table 2.1. Greek also illustrates another important point, namely that certain inflectional categories of infinitives may be manifested only in certain contexts. The Greek indicative in active voice is coded for the following tense–aspect categories: present, (past) imperfective, future, aorist (basically, a perfective past), (present) perfect and pluperfect (= past perfect). The infinitive can be coded for all of these save imperfective

Table 2.1 *The relationship of verbal inflection to non-indicative complement types*

full range of tenses	past vs nonpast (morphologically may correspond to the perfect/non-perfect distinction in the indicative)	aspect	voice, transitivity, causative, desiderative, object agreement
1	2	3	4

and pluperfect. When infinitive complements are used for reported speech, their tense distinctions parallel in use their indicative counterparts:

- (75) Fēšì *grápsai*
say-3SG write.AORIST:INF
'He says that he wrote'
- (76) Fēšì *gegrafénai*
say-3SG write.PERF:INF
'He says that he has written'
- (77) Fēšì *gráfein*
say-3SG write.PRES:INF
'He says that he's writing'
- (78) Fēšì *grápsein*
say-3SG write.FUT:INF
'He says that he'll write'

Apart from their use in reported speech constructions, however, the future and perfect infinitives are rather rare (W. Goodwin (1892)), and the present and aorist infinitives simply code aspect in the manner described for subjunctives in section 1.3.2. In English, the infinitive construction can code a past/nonpast distinction, as well as aspect and voice. The past/nonpast distinction is illustrated below:

- (79) I believe Walt *to be a flat-earther*
- (80) I believe Walt *to have been a flat-earther*

The morphology used for the past in (80) (*have* followed by a past participle) codes secondary or relative pasts (perfect tenses) in indicative clauses. In Russian, infinitives cannot be coded for tense, although tense categories are coded on verbs. Russian infinitives are, however, coded for aspect and voice. An aspect distinction coded on infinitives in Russian is illustrated below:

- (81) Ja xoču *každyj den' igrat' na rojale*
 I want every day play.IMPERF:INF on piano
 'I want to play the piano every day'
- (82) Ja xoču *sygrat' vam melodiju*
 I want play.PERF:INF you-DAT tune
 'I want to play you a tune'

In Lango, infinitives are not coded for tense or aspect, though aspect is an important category in indicative complements, but are coded for transitivity and orientation (which corresponds very roughly to voice – see Noonan (1992)):

- (83) *Ámìttò nènnò gwók*
 want-1-SG see.TRANS:INF dog
 'I want to see the dog'
- (84) *Ámìttò nénô*
 want.1SG see.INTRANS[SUBJ.ORIENTED]:INF
 'I want to see'
- (85) *Ámìttò nèn*
 want.1SG see.INTRANS[OBJ.ORIENTED]:INF
 'I want to be seen / be visible'

The morphology of the infinitive construction may betray its origins in another grammatical category. In Jakaltek, for example, the infinitive is marked with the irrealis suffix *-oj*, but differs from the ordinary irrealis future in not taking subject agreement affixes (Craig 1977). In many languages, the infinitive shows clear signs of being derived from a nominal construction. This appears to be the case for most Indo-European infinitives, which derive historically from case-marked nominalizations (Buck (1933); W. Lehmann (1974); Jeffers (1975); Disterheft (1980)). For this reason, complementizers with infinitives frequently derive from adpositions or articles.

Infinitive complement types resemble paratactic complements in many respects. Both are verb phrases that lack overt subject NPS. They differ in that paratactic complements can be inflected for subject agreement whereas infinitives cannot, and paratactic complements are syntactically not subordinate clauses whereas infinitives are and may, therefore, occur with a complementizer, while paratactic complements may not. In languages that lack subject–verb agreement and do not have complementizers for infinitives, a problem may arise in deciding whether or not a given complement is an infinitive or a paratactic complement. For example, in Sre (Manley (1972)) verbs are not conjugated for subject agreement. Since a complementizer does not occur in the following

example, the complements could be interpreted as either infinitives or paratactic complements.

- (86) Kòn khay pàl rəgəy təlòŋ rə
 child his must be able try swim
 ‘His child has to be able to try to swim’

The complements in (86) would be interpreted as paratactic, however, only if each of the complements were capable of standing alone as an independent clause without substantial change of meaning for the whole. Since this is not possible in these cases, these complements are considered infinitives.

Infinitives are widely distributed across languages, though perhaps somewhat less commonly than nominalizations. They are frequently involved in clause-union phenomena (section 2.3).

1.3.5 *Nominalized complements*

Nominalized complements are, prototypically, predications with the internal structure of noun phrases. The predicate becomes nominalized, assuming the form of a verbal noun, and takes over the role of head noun of the noun phrase. The arguments may assume the status of genitives with the nominalized predicate as head noun. The nominalized predicate may occur with articles, case markers, adpositions, and in some cases may even be pluralized.

The relations that a nominalized predicate has with its arguments are the single most important feature distinguishing nominalizations from other sorts of complements. In a few cases, both notional subject and object may have a genitival relation with the nominalized predicate. English provides an example of this sort:

- (87) *Algernon’s shooting of the aardvark* drew international attention

The notional subject of the nominalized predicate *shooting* is coded in the genitive case, while the notional object establishes its genitival relation to the predicate by means of the preposition *of*. The more common situation, however, is that where only the subject bears a genitival relation to the predicate and the object is coded with the usual object marker. Uzbek provides an example of this sort (NZR = Nominalizer):

- (88) Xòtin bu ədam-niŋ ʃoʃa-ni oğirla-š-i-ni istadi
 woman this man-GEN chicken-OBJ steal-NZR-3SG-OBJ wanted.3SG
 ‘The woman wanted the man to steal the chicken’

The notional subject of *oğirla-* ‘steal’ is *ədam* ‘man’, which is marked in the genitive case with *-niŋ*. The *-i-* ‘his’, suffixed to the nominalized predicate *oğirla-š-*, reinforces the genitival relationship. The direct object of *oğirla-*, *ʃoʃa*

‘chicken’ takes the ordinary direct object marker. *Oğır-la-ş-i-* ‘his stealing’, as the direct object of *istadi* ‘wanted’, is also marked with the direct object marker.

In a few rare cases, the nominalized predicate may have a genitival relation only with its notional object. This situation holds in Irish, where the notional subject is either equi-deleted or raised:

- (89) Is ionadh liom Seán a bhualadh Thomáis
 COP surprise with.me John COMP hit.NZN Thomas.GEN
 ‘I’m surprised that John hit Thomas’

It is also possible for neither argument to bear a genitival relation to the nominalized predicate. In English, this situation occurs most frequently when the complement is an object of a preposition (see Visser (1973) for more examples and discussion):

- (90) I disapprove of *children smoking pot*

Nominalized complements vary considerably as to the verbal categories they can retain, ranging from those that can express few verbal categories to those that retain all verbal categories. In Squamish, for instance, nominalized complements can retain all of the verbal inflections, clitics, and sentence particles found in main clauses. Compare (92) and (91) (Kuipers (1967)):

- (91) Na č-n wa c’aq’-an-umi
 fact DECLAR-1SG PROG hit-TRANS-2SG.OBJ
 ‘I was hitting you’

- (92) Č-n ɬč-iws k^wi n-s-na wa c’aq’-an-umi
 DECLAR-1SG tired-body ART 1SG.POSS-NOM-fact PROG hit-TRANS-2SG.OBJ
 ‘I’m tired of hitting you’

In Squamish, all nominals, including proper nouns, are always accompanied by articles. Nominalized complements conform to this principle, taking the article *k^wi*.

Nominalized complements can also occur with nominal categories such as case markers and number inflections. In Turkish, case inflections are placed on verbal nouns according to the general principles for placement of case categories in the language. Briefly, the absolute codes nonspecific direct objects, which, in the case of nominalized predicates, signals nonspecific or imperfective aspect. The accusative case codes specific direct objects, or perfective nominalizations. The dative case is used for goals:

- (93) *Çalış-mak* istiyor
work-NZR.ABS want.3SG
'He wants to work'
- (94) *Ekmek al-mağ-I* unuttu
bread take-NZR-ACC forgot.3SG
'He forgot to get bread'
- (95) *Yuru-meğ-e* başladık
walk-NZR-DAT began.1PL
'We began to walk'

Plural affixes are found on nominalized predicates in Ossetic (Abaev (1964)), marking imperfective aspect:

- (96) *Xæts-yn-tæ* sistoj *kuyrttat-imæ*
fight-NZR-PL started.3PL Kurtatin-with
'They started to fight with the Kurtatins'

The form of a nominalization is more likely to be idiosyncratic relative to the verbal paradigm than is the verb-like infinitive, which will likely have a regular relation to the verbal paradigm.

Some of the points in this section are treated in greater detail in vol. III, chapter 6.

1.3.6 *Participial complements*

Participles are adjectival or adverbial⁵ forms of verbs. The role of participles in complementation is usually limited, even in languages that make extensive use of participles. The reason for this is that, in their role as adjectives, participles are not the heads of constructions, but rather modify some noun which functions as the head; therefore, in complementation as elsewhere, participles function as attributive, not predicate, adjectives. Since complements are, by definition, predications functioning as arguments of predicates and since predicates are the heads of predications, complements will normally be rendered as constructions having predicates as their heads, regardless of whether the head is rendered as a verb or as a noun. Thus participial complements, whose predicates are adjectivals modifying nouns, do not resemble prototypical complement structures. Because of their syntactic properties, participles will normally be used in complementation only when the special semantic properties of participles can be exploited (see section 3.1.5).

⁵ The term *converb* has recently come to be used in place of 'adverbial participle': see Haspelmath (1995), also Bickel (1998). In this chapter, the term *converb* will only be used when referring to published work which employs the term.

The only place in complement systems where participles are regularly found is in complements to immediate perception predicates (section 3.2.12). Here the object of the immediate perception predicate is head and the participle a qualifying clause.⁶ Examples of such constructions can be found in Classical Greek:

- (97) a. *Eîde autòn paúonta*
 saw.3SG him.ACC stop.PART:PRES:MASC:PL:ACC
 ‘He saw him stopping’
- b. *Eîde autòn paúsanta*
 saw.3SG him.ACC stop.PART:AORIST:MASC:SG:ACC
 ‘He saw him stop’
- (98) a. *Eîde autèn paúousan*
 saw.3SG her.ACC stop.PART:PRES:FEM:SG:ACC
 ‘He saw her stopping’
- b. *Eîde autèn paúsāsan*
 saw.3SG her.ACC stop.PART:AORIST:FEM:SG:ACC
 ‘He saw her stop’

The pronouns *autòn* and *autèn* function as heads of their respective constructions, the participles agreeing with them in gender, number and case. The participles are also inflected for present and aorist tenses, and again these distinctions here are used only to reflect aspectual contrasts (see section 1.3.2). Participles, in their role as complements to immediate perception predicates, do not have tense, but may encode aspectual distinctions. Participles may also code voice distinctions. Notice that the so-called present and past participles in English, when used as complements to immediate perception predicates, encode active and passive voice respectively:

- (99) We saw the army *defeating* the enemy
- (100) We saw the army *defeated* by the enemy

Both participles above are ambiguous between complement and relative interpretations.

There are some instances of participles being used as complements of CTPs other than immediate perception predicates. In Classical Greek, participles could also function as complements to predicates in reported discourse, as we see below:

⁶ It is important to emphasize that these constructions are complement constructions and not relative constructions (see Kirsner and Thompson (1976) and section 3.2.12 for discussion of this point).

- (101) Éggellen autoús paúontas
 report.3SG them.ACC stop.PART.PRES:MASC:PL:ACC
 ‘He was reporting that they were stopping’
- (102) Éggellen autoús paúsantas
 report.3SG them.ACC stop.PART.AORIST:MASC:PL:ACC
 ‘He was reporting that they stopped’

In cases like this, participles can code tense. In a few cases, participles are also found as complements to modal predicates, as is the Latin gerundive (Greenough, Kiltredge, Howard, and D’Oeye (1903)) and the Hindu–Urdu gerundive (Bailey (1956)). As a non-indicative complement type, participial complements follow the scale in table 2.1 (section 1.3.4) in the verbal categories they encode.

Adverbial participles, which may head adverbial clauses (chapter 5), may also be used as complements. They differ from adjectival participles in their inability to agree with any head noun. In Catalan, adjectival participles agree with their head noun in number (Yates (1975)):

- (103) a. la classe *dirigent*
 ‘the ruling class’
 b. les classes *dirigents*
 ‘the ruling classes’

The adverbial participle is used in Catalan as a complement to immediate perception predicates and is invariant:

- (104) a. Vaig veure la dona *passant* per la duana
 go.1SG see.INF the woman go.PART through ART customs
 ‘I saw the woman go through customs’
 b. Vaig veure les dones *passant* per la duana
 go.1SG see.INF the women go.PART through ART customs
 ‘I saw the women go through customs’

1.3.7 Summary

In the last few sections, characteristic features of the various complement types have been discussed and illustrated. Some of the more important features are summarized in table 2.2.

2 The syntax of complementation

We have defined complementation as the grammatical state where a predication functions as an argument of a predicate. In contrasting this (universal) semantic characterization with the surface characteristics of sentences containing complements, a process terminology is useful, especially where cross-linguistic

Table 2.2 *Summary of complement types*

Complement Type	Part of speech of predicate	Syntactic relation of subject to predicate	Range of inflectional categories	Other characteristics
indicative	verb	same as main clause	same as main clause	s-like form (nearly) identical to declarative main clause
subjunctive	verb	same as main clause	typically reduced	s-like form that differs from declarative main clause – when main clause, often used in hortative or imperative senses
paratactic	verb	predicate may agree with subject, but does not form constituent with it	same as indicative	interpreted as separate assertion; syntactically not a subordinate clause; cannot take complementizer
infinitive	verb	predicate cannot form constituent with subject	reduced; cannot take subject–verb agreement	relations with object same as indicative
nominalization	noun	genitive relation between subject and predicate	reduced; may take nominal categories such as case and number	may have internal structure of NP; frequent gradation between nominalizations and infinitives
participle	adjective or adverb	subject is head, rest of predication is modifier	reduced; may take adjectival inflections when agreeing with subject	syntactically may conform to principles governing adjectives

comparisons are made. In the sections that follow, we will use process terminology to describe *equi-deletion*, *raising*, and other semantic phenomena.

2.1 *Equi-deletion*

As discussed above, certain complement types may be truncated or reduced in the sense that certain components normally found in main clauses may be absent from them. Consider the following sentences:

(105) Zeke wants *Norma to plant the corn*

(106) Zeke wants *to plant the corn*

In (105), *Zeke* is the main clause (or matrix) subject, *Norma* the complement subject. In (106), *Zeke* is both matrix and complement subject, but notice that *Zeke* in (106) is not mentioned twice, corresponding to its two semantic roles. That is, we do not have a sentence like

(107) **Zeke_i wants Zeke_i/him_i to plant the corn*

in place of (106). The second mention of *Zeke* has been deleted to produce (106) by a process known as equi-deletion. Equi-deletion (equi) deletes subjects of complements when they are coreferential with (i.e. refer to the same individual or thing as) some argument in the matrix. In (106) the complement subject has been equi-deleted under identity with the matrix subject.

It is possible to have equi-deletion under identity with matrix arguments other than the subject. In Irish, for example, objects of prepositions regularly condition equi:

(108) Ba mhaith liom theacht
 would.be good with.me come.NZN
 ‘I want to come’

The notional subject of *teacht* ‘come’ is deleted under identity with the pronominal portion of *liom* ‘with me’. When the notional subject of the complement is not coreferential with a matrix argument, it is overt, like *í* in:

(109) Ba mhaith liom í a theacht
 would.be good with.me her COMP come.NZN
 ‘I want her to come’

In English, direct objects can condition equi in the case of three-place predicates like *force*:

(110) The woman forced the man to winnow the millet

In (110), the subject of the infinitive *to winnow* is deleted under identity with the direct object of *force*, *man*. (Causative predicates like *force* are understood to have three arguments: an agent, a patient and a resulting state.)

The application of equi always results in a non-s-like complement type.

Languages can differ in the conditions under which equi can occur. English, as sentences (106) and (110) illustrate, allows equi under identity with either matrix subject or direct object. By contrast, Lango allows equi only under identity with subjects, never with direct objects:

(111) Dákô àmòttò nî lócà òryět kál
 woman want.3SG COMP man winnow.3SG:SNCT millet
 ‘The woman wants the man to winnow the millet’

- (112) Dákô àmòttò ryèttò kál
 woman want.3SG winnow.INF millet
 ‘The woman wants to winnow the millet’
- (113) Dákô òdiò lócà nî òryět kál
 woman pressed.3SG man COMP winnow.3SG:SJUNCT millet
 ‘The woman pressed the man to winnow the millet’

In (111), there is no coreference between matrix arguments and complement subject, so equi doesn’t apply and the complement remains s-like (subjunctive). In (112), the notional matrix and complement subjects are coreferential, so the complement subject has been equi-deleted, resulting in a non-s-like complement (infinitive). In (113), a condition of coreference exists between matrix object and complement subject but whereas the English example (110) exhibits an infinitive (evidence that equi has applied), the Lango example retains an s-like (subjunctive) complement. In (113), *lócà* ‘man’ is not repeated as a noun in the complement clause under the usual conditions governing coreference in discourse. The complement predicate, however, is conjugated for a third person singular subject.

Some languages make very restricted use of equi. In Albanian, for example, identity with neither matrix object nor subject normally conditions equi (data from Ferit Rustemi):

- (114) Gruaja deshi njeriu ta vjedhë pulën
 woman wanted.3SG man.NOM COMP steal.3SG:SJUNCT chicken
 ‘The woman wanted the man to steal the chicken’
- (115) Njeriu deshi ta vjedhë pulën
 man wanted.3SG COMP steal.3SG:SJUNCT chicken
 ‘The man wanted to steal the chicken’
- (116) Gruaja e detyroi njeriun ta vjedhë pulën
 woman PRO forced man.ACC COMP steal.3SG:SJUNCT chicken
 ‘The woman forced the man to steal the chicken’

In (114) *njeriu* ‘man’, the subject of the complement predicate *vjedhë* ‘steal’, is not coreferential with any argument in the matrix. In (115), the complement subject is ellipied anaphorically and is represented by the third singular inflection on *vjedhë*. The complement subject, however, cannot be said to be equi-deleted in (115) because: (i) the complement is still s-like (sentences do not require overt subject NPS in Albanian); and (ii) example (115) could mean either ‘the man wanted to steal the chicken’ or ‘the man wanted *him* to steal the chicken’, where ‘man’ and ‘him’ are not coreferential. The deletion of the second mention of *njeriu* with either gloss follows the usual discourse conditions on anaphoric ellipsis and is not the product of a sentence-internal process like

equi. In (116), the complement is s-like, and equi has not (and could not have) applied even though a relation of coreference exists between matrix object and complement subject.

Equi-deletion is a common process, especially when conditioned by coreference of complement subject to matrix agent or experiencer (typically encoded as subjects, but note the Irish example, (108), above). Deletion under identity with other arguments is rarer. Where equi-deletion exists, it is usually obligatory.

Equi must be distinguished from other kinds of deletion, as indicated in the discussion above. In many languages, subject arguments (and all other arguments, for that matter) need not be overtly mentioned when their reference is clear from the discourse context. In the following sentence from Malay, for example,

- (117) Saya mēngingat *bahwa sědang mēnchuri ayam*
 I remember COMP PROG steal chicken
 ‘I remember that he was stealing the chicken’

the subject of the complement is not overt, nor is there any agreement affix in the predicate to reference it. This sentence would only be felicitous if it were clear from the discourse context who the subject was. The deletion in this case has nothing to do with equi and the complement can be thought of as an independent sentence:

- (118) Sědang mēnchuri ayam
 PROG steal chicken
 ‘He was stealing the chicken’

Example (118) is a perfectly good sentence under the same conditions as (117). The conditions governing deletion in these cases are essentially the same as those governing pronominalization of arguments in English. Further, subjects may not be overt when they have a general or nonspecific reference, as in:

- (119) *Eating guavas is fun*

A non-s-like complement type occurs in English in these cases, but equi has not applied since conditions for coreference have not been met, i.e. there is no matrix argument which the subject can be identical to.

Brief mention should be made of the phenomenon variously known as *counter-equi* (Harada (1973)) or *backward control* (Farrell (1995)). Counter-equi is, essentially, a sort of reverse equi: an argument in the matrix is deleted under identity with an argument in a subordinate clause. Analyses making use of counter-equi are often controversial (Miyagawa (1999)), but a number of cases have been reported in the literature: see Polinsky (2001) and especially Polinsky and Potsdam (2002) for references and discussion. However, even if we accept the validity of the phenomenon, cases requiring an analysis involving

counter-equi are quite rare. Because of this, and because of the complexity of the arguments purporting to demonstrate instances of counter-equi, no examples will be given here. Analyses involving counter-equi have been proposed for phasal predicates (section 3.2.11), achievement predicates (section 3.2.10) and manipulative predicates (section 3.2.8).

2.2 *Raised arguments*

In addition to outright deletion via equi, there is another method whereby arguments may be removed from their predications, resulting in a non-s-like complement type. This method involves the placement of an argument which is notionally part of the complement proposition (typically the subject) in a slot having a grammatical relation (e.g. subject or direct object) to the CTP. This movement of an argument from a lower to a higher sentence is called *raising*. Sentence (121) differs from sentence (120) in that raising has applied in (121), moving the complement subject into the matrix as direct object:

(120) Irv believes *Harriet* is a secret agent

(121) Irv believes *Harriet* to be a secret agent⁷

Harriet has a different grammatical status in (120) and (121). This is attested by the fact that when *Harriet* in (120) is pronominalized, the subject form *she* results, whereas when *Harriet* in (121) is pronominalized, the object form *her* appears:

(120') Irv believes *she* is a secret agent

(121') Irv believes *her* to be a secret agent

This is consistent with the view that *Harriet* is the subject of the complement verb *is* in (120) and has been raised to become the object of the matrix verb *believe* in (121). The sort of raising illustrated in (121) is called subject to object (Subj–Obj) raising.

We have conclusive evidence for raising when the putatively raised form is *semantically* an argument of the complement clause but *syntactically* a part of the matrix clause. For instance, *believe* is a two-place predicate; it takes as subject an experiencer argument and as object the thing believed. It is possible, however, to raise the subject of the object complement of *believe*, as in (121). But notice that the truth value does not change. What Irv believes is not *Harriet* (in fact he could distrust *Harriet* completely), but rather *that Harriet is a secret agent*. In other words, even though *Harriet* in (121) is the direct object of

⁷ In this section all raised arguments are in italics.

believe, and thus syntactically part of the matrix clause, semantically *Harriet* remains part of the complement, which is what Irv believes, just as in (120).

Now contrast the behaviour of complements of *believe* with those of *force* in the following repeated examples:

- (121) Irv believes *Harriet* to be a secret agent
 (110) The woman forced the man to winnow the millet

These two sentences look superficially similar, but only in (121) do we conclude that raising has taken place; *force* is a three-place predicate, taking as argument an agent, a patient, and an argument which codes the action that results from the agent's manipulation of the patient. *Man* in (110) is already an argument of *force* and therefore is not raised to the matrix from the complement. In (110), the subject of the complement clause is deleted by equi.

Case marking can provide clues about raising. Where pairs of sentences exist such as (120') and (121'), the object case marking on *her* provides definitive proof of raising. (Note that the opposite sort of movement, 'lowering' of arguments, does not occur.) Even pairs of sentences from different languages can help establish a raising analysis. In comparing the Albanian sentence (114) with its English counterpart

- (114) Gruaja deshi njeriu ta vjedhë pulën
 woman wanted.3SG man.NOM COMP steal.3SG:SJUNCT chicken
 'The woman wanted the man to steal the chicken'

- (114') The woman wanted *the man* to steal the chicken

we note first the identity of meaning. Since the predicate–argument relation is a meaning relation, if *deshi* and *wanted* mean the same thing, they must have the same sort of arguments. Assuming they do mean the same thing, the sentences are comparable. The noun *njeriu* 'man' in (114) is coded in the nominative case. Albanian distinguishes a nominative (*njeriu*) from an accusative (*njeriun*), so the presence of the nominative in (114) is an indication that no raising has occurred. In (114'), man is not marked for case, but if *man* is replaced by a pronoun we get *him*, which is in the objective (= accusative) case. Words bearing the same semantic relation in Albanian and English, *njeriu* and *man* respectively, have different grammatical relations, and, because of the object case marking on *him*, we can conclude that raising has taken place in English (but not Albanian). Needless to say, such comparisons must be used with great care. They provide hints rather than definitive proof. The ultimate proof comes from a comparison of the semantic analysis with the syntactic one in the manner described above.

When raising takes place, the complement appears in a non-s-like form, like the English infinitive, if such a form exists in the language. But notice that the existence of such forms per se is not proof of raising, as is the case in (110).

All the examples discussed so far involve Subj–Obj raising, but other sorts of raising exist as well. Complement subjects can also be raised to matrix subject position (Subj–Subj), as we see in comparing (122) with (123):

(122) It seems that Boris dislikes vodka

(123) *Boris* seems to dislike vodka

In (123), *Boris* has been raised from complement subject position to matrix subject position. There are also cases of raising from object position to subject (Obj–Subj) and from complement object to matrix object (Obj–Obj). Obj–Subj raising is illustrated below:

(124) It's tough for Norm to beat Herb

(125) *Herb* is tough for Norm to beat

Herb in (125) has undergone Obj–Subj raising. Obj–Obj raising does not occur in English, but is found in Irish:

(126) D'éirigh leis *iad* a thabhairt leis
 rose.3SG with.him them COMP bring-NZN with.him
 'He managed to bring them with him'

Iad 'them' has been raised from object position in the complement to object position in the matrix. The complement subject has been equi-deleted under identity with the pronominal form in *leis* 'with him' in the matrix. We know *iad* has been raised for a number of reasons, the most obvious of which is its position within the sentence. Irish is a vso language, so objects ordinarily follow predicates:

(126') Thug sé leis *iad*
 brought he with.him them
 'He brought them with him'

Yet in (126), *iad* precedes the predicate *thabhairt*, occupying the usual position for objects of the matrix verb *d'éirigh* 'rose'.

Raising may be optional (without apparent effect on the truth value), as in the English sentences above, or obligatory. In Irish, one argument from a nominalized complement is raised to object in the matrix. The subject will be raised unless it is equi-deleted, in which case the object is obligatorily raised:

- (127) Is ionadh liom é a fheiceáil Sheáin anseo
 COP surprise with.me him COMP see.NZN John.GEN here
 ‘I’m surprised that he saw John here’
- (128) Is ionadh liom Seán a fheiceáil anseo
 COP surprise with.me John COMP see.NZN here
 ‘I’m surprised to see John here’

In (127), the subject is raised into the matrix. It is then coded by the object form *é* ‘him’, rather than the subject form *sé* ‘he’. In (128), the subject has been equi-deleted and the object *Seán* has been raised. In English there are a few CTPs for which Subj–Obj raising is obligatory. When the subject of the complement of *want is* not equi-deleted, it must be raised into matrix object position:

- (129) *I want that the man steal the chicken
- (130) I want *the man* to steal the chicken

In (129), no raising has occurred and the sentence is ungrammatical. Many languages, however, would translate (130) with a form resembling (129), e.g. Lango

- (131) Ámittò ní lócà òkwäl gwèndò
 want.1SG COMP man steal.3SG:SNCT chicken
 ‘I want the man to steal the chicken’

where *lócà* ‘man’ remains the subject of *òkwäl* ‘steal’ since Lango does not allow Subj–Obj raising. English, on the other hand, does not allow Obj–Obj raising, which, as illustrated above, is possible in Irish.

Cross-linguistically, raising is not nearly as common as equi. Many languages do not employ any sort of raising at all (excluding from consideration here instances of clause union discussed in section 2.3). Perhaps the most common sort of raising is Obj–Subj, although this occurs only with evaluative CTPs such as *good*, *bad* and *hard*. The exact number of these evaluative CTPs that can trigger Obj–Subj raising will vary from language to language. English allows a rather open set of evaluative predicates to trigger Obj–Subj raising, whereas Lango allows it only with *bèr* ‘good’:

- (132) Twòl bèr àcámâ
 snake good for.eating
 ‘Snake is good to eat’
- (133) *Twòl ràc àcámâ
 ‘Snake is.bad for.eating’

- (134) *Twòl tèk àcámâ
 ‘Snake is.hard for.eating’

When arguments are raised, they assume the grammatical role (e.g. subject or object) that would ordinarily be held by the complement to which they notionally belong. In (135)

- (135) Floyd wants *Zeke* to drive

the raised argument *Zeke* is the direct object of *wants* and has been raised from an object complement of *wants*. Similarly, in

- (136) *Roscoe* seems to be a moonshiner

Roscoe has been raised from the subject complement of *seems*, which in turn has been extraposed to sentence-final position.⁸

2.3 Incorporation of reduced complements into the matrix

Any complement type that has fewer syntactic and inflectional possibilities than an indicative main clause can be referred to as a *reduced complement*. S-like indicative complements are, by definition, non-reduced. The reduced complements considered so far retain some characteristics of independent clauses. For instance, the predicate in the complement may continue to govern a set of grammatical relations independent of those governed by the embedding verb. In the sentence

- (137) Nell made Dudley test the wort

Dudley is the direct object of *made*, while the infinite complement *test the wort* functions as the factitive object⁹ of *made*; *wort* is the direct object of *test*. Example (137) illustrates two levels of grammatical relations governed by the matrix and complement predicates respectively, displayed as figure 2.1. The notional subject of *test* has been equi-deleted under identity with the direct object *Dudley*. Example (137) and figure 2.1 illustrate a variety of clause reduction where the complement predicate can maintain grammatical relations of its own, independent of the grammatical relations determined by the matrix verb. We will call this sort of clause reduction *simple clause reduction* (SCR). There is another variety of clause reduction which we will call *clause union* (CU) where the matrix and complement predicates share one set of grammatical relations. A few CTPS

⁸ See section 2.5 and Johnson (1977) for more discussion of this phenomenon. The syntax of raising in English is discussed in Postal (1974). Steever (1977) discusses the semantic consequences of raising in English.

⁹ Factitive objects are found with three-place, manipulative predicates, where they represent the state or action brought about by the subject’s activity on the direct object.

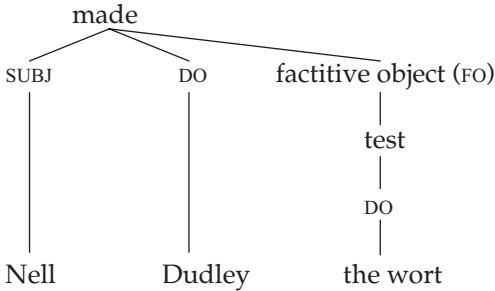


Figure 2.1 Two levels of grammatical relations

in French offer a contrast between SCR and CU. One such is *laisser* (French data from Mathias (1978) and Beaubien, Sabourin and St-Amour (1976)):

- (138) a. Roger *laissera* Marie *marcher*
 Roger let.3SG-FUT Marie walk.INF
 ‘Roger will let Marie walk’
- b. Roger *laissera* Marie *manger les pommes*
 Roger let-3SG-FUT Marie eat.INF the apples
 ‘Roger will let Marie eat the apples’
- (139) a. Roger *laissera* *marcher* Marie
 Roger let-3SG-FUT walk.INF Marie
 ‘Roger will let Marie walk’
- b. Roger *laissera* *manger les pommes à* Marie
 Roger let-3SG-FUT eat.INF the apples to Marie
 ‘Roger will let Marie eat the apples’

The sentences in (138) illustrate SCR, while those in (139) illustrate CU. Contrast (139b) with (138b): in (138b), both *laissera* and *manger* have direct objects, *Marie* and *les pommes*, respectively. In (139b) the matrix and complement clauses have been merged to the degree that only one set of grammatical relations is shared between them. The grammatical relations in (138b) and (139b) can be displayed graphically as in Figure 2.2. In (139b) the predicates of the matrix and complement predications have been merged and one set of grammatical relations is shared between them. *Marie*, the DO of *laissera* in (138b) becomes the indirect object of the merged predicate *laissera manger* as indicated by the indirect object marker *à*, while *les pommes* becomes the DO of the merged predicate. A full set of grammatical relations would include SUBJ, DO, IO, FO,

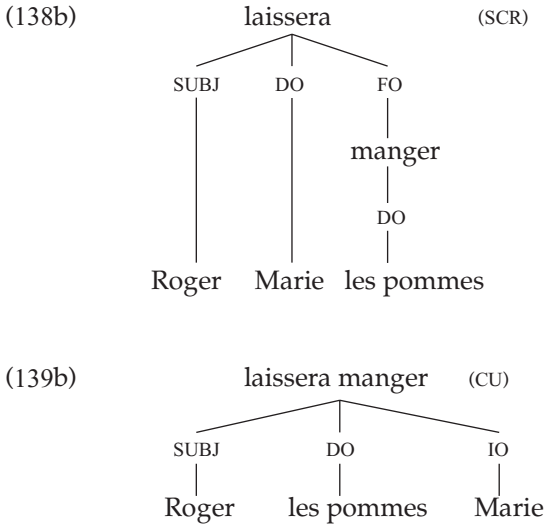


Figure 2.2 The two levels of grammatical relations in (138b) and (139b)

and oblique object (OO).¹⁰ In a set of grammatical relations, there can be only one SUBJ, DO, IO, and FO, though there may be more than one OO.¹¹ In CU, the arguments of two notional predications must be made to conform to one set of grammatical relations. In the typical case, the SUBJ of the CTP will retain its grammatical role, as will the DO, IO, etc. of the complement predication. The DO of the CTP must take on the highest-ranking grammatical relation not filled by another argument in the merged predication. In (139b), this argument takes on the role of IO since the DO slot is already filled. If the IO slot is already filled, as in (140),

- (140) Roger laissera Marie donner les livres à Jean
 Roger let.3SG Marie give.INF the books to John
 ‘Roger will let Marie give the books to John’

CU will result in the DO of the CTP *laissera* becoming an OO as in (141):

- (141) Roger laissera donner les livres à Jean *par Marie*
 Roger let.3SG give.INF the books to John by Marie
 ‘Roger will let Marie give the books to John’

¹⁰ It may be that some languages make no use of grammatical relations (P. Schachter (1976); Noonan (1977)). Even among the great majority that do, IO and FO may not function as distinct grammatical relations. See vol. I, chapter 3.

¹¹ See, however, Gary and Keenan (1977) for a discussion as to whether there can be more than one direct object.

In sum, the hierarchy for determining the grammatical role of the notional DO of the CTP in CU is as follows:¹²

- (142) DO
IO
OO (often, though not invariably, expressed as a passive agent)

A more radical form of CU is *lexical union* (LU). LU results in the merged predicates forming a single lexical unit; the CTP typically is represented as an affix on the (notional) complement predicate. As an example of LU, consider the following sentences from Georgian:

- (143) a. Is movida
he came
'He came'
b. Me mas movatanine
I him come.CAUSE
'I made him come'

Example (143b) represents an instance of LU where the predicates meaning 'come' and 'cause' have been merged into a single lexical unit. The distribution of grammatical roles in LU follows the same general principles as for other forms of CU.¹³

Many languages make rather extensive use of CU. Lahu is a case in point, where a very high percentage of cases of complementation will involve CU or, more rarely, LU. Below is a complex sentence from Lahu involving multiple CU and an instance of LU (Matisoff (1973)):

- (144) ðe yâmi thà? ɔyâpâ thà? mènî thà? ɔ cā cî
mother daughter OBJ son OBJ cat OBJ rice eat CAUSE
tu te ve
UNREALIZED CAUSE NOM
'The mother had her daughter make her son feed the cat rice'

All of the arguments save the highest subject ðe 'mother' and the lowest object ɔ 'rice' are accompanied by the marker *thà?* in apparent violation of the principles summarized above. *Thà?*, however, is not really a DO marker, but rather accompanies human nonsubjects and focussed constituents. The grammatical role of nonsubjects is normally not marked on nouns, but is, rather, inferred

¹² See Comrie (1976), Johnson (1977), Aissen and Perlmutter (1976), and Polinsky (1995) for more discussion of this phenomenon. For a discussion relevant to all aspects of CU and lexical union, see Shopen (1985: vol. III, chapter 6).

¹³ See Shibatani (1976) for discussion of the syntax and semantics of LU.

from the sort of real-world object the argument represents and the sort of verbs present in the verbal complex.

2.4 *Parataxis and serialization*

Along with their syntactic similarities (section 1.3.3), paratactic and serial constructions have similar semantic ranges. Both, for instance, can be found in causative and immediate perception constructions. The two constructions differ in a number of respects, which can only be summarized here:¹⁴ for example verbs in serial constructions have obligatory agreement in tense–aspect,¹⁵ whereas paratactic constructions do not. For instance in Gã, the following tense–aspect distinctions are available:

- (145) a. Mìbà (past)
 come.1SG:PAST
 ‘I came’
 b. Míbà (perfect)
 come.1SG:PERF
 ‘I have come’
 c. Míbàà (habitual)
 come.1SG:HABIT
 ‘I come’

In serial constructions, person and tense–aspect distinctions like those illustrated above will be found on each verb in the series:

- (146) a. Mínyé mibà (past)
 be.able.1SG:PAST come.1SG:PAST
 ‘I was able to come’
 b. Mínyé míbà (perfect)
 be.able.1SG:PERF come.1SG:PERF
 ‘I have been able to come’
 c. Mínyé’ús míbàà (habitual)
 be.able.1SG:HABIT come.1SG:HABIT
 ‘I’m able to come’

Further, each clause may be independently negated in parataxis whereas with serials only one negative is allowable and has the entire construction within its scope. In parataxis, each verb may have a different subject, as in this Lango example:

¹⁴ Discussed in Noonan and Bavin (1981) and Noonan (1992). Serial constructions are discussed in Stahlke (1970), Bamgbose (1974), George (1976) and Lord (1993).

¹⁵ Exceptions have been noted by Bamgbose (1974:27).

- (147) Ìcô òdiá àcégò dóggólâ
 man pressed.3SG:SUBJ:1SG.OBJ closed.1SG:SUBJ door
 ‘The man forced me to close the door’
 (literally ‘The man pressed me, I closed the door’)

With serials, there is only one grammatical subject, whatever the semantic subject of the following verbs may be, as in the following Akan example (Schachter (1974):258):

- (148) Mede aburów migu msum
 take.1SG corn flow.1SG in water
 ‘I caused the corn to flow into the water’ or
 ‘I poured the corn into the water’

Clearly, *aburów* ‘corn’ is the semantic subject of ‘flow’, yet the verb takes first person concord.

The syntactic differences noted above correlate with a crucial semantic difference, namely that paratactic constructions contain two assertions, i.e. each clause is separately asserted, whereas serial constructions contain just one, encompassing the entire construction. In this way, serial constructions resemble more ordinary sentences with subordinate clauses. Independent aspect marking and negation would seem a necessary consequence of a clause that constitutes a separate assertion, as would a lack of obligatory subject agreement. The two-assertion aspect of parataxis will be discussed in section 3.1.4.

One criterial characteristic of both serial and paratactic constructions is that only the first verb in the series can have an overt subject NP, i.e. serial and paratactic constructions consist of a subject NP and its verb phrase, followed by one or more verb phrases. The notional subject of each verb following the first is represented only by subject–verb agreement, and is coreferential with either the subject or object of the preceding verb or the first verb in the series. But, unlike the infinitive which is also subjectless, the verb in the paratactic complement is fully inflected for person and tense–aspect if these are inflectional categories in the language. Paratactic and infinitive complement types contrast in Lango:

- (149) Án àpóyò àcégò dóggólâ (paratactic)
 I remembered.1SG closed.1SG door
 ‘I remembered to close the door’
 (literally ‘I remembered it; I closed the door’)
- (150) Án àpóyò cèggò dóggólâ (infinitive)
 I remembered.1SG close.INF door
 ‘I remembered to close the door’

of tone sandhi, but is a grammatically conditioned feature. These patterns are illustrated below:

(155) èn òkwàlò gwènò
he stole.3SG chicken
'He stole the chicken'

(156) Òkwàlò gwènò
stole.3SG chicken
'He stole the chicken'

In (155) the tone pattern on the verb is *òkwàlò* with a high tone on the second syllable because of the overt pronominal subject *én*, while in (156) the tone pattern is *òkwàlò*, with a low tone, because of the lack of an overt pronominal subject. This tone alternation is found in subordinate clauses too, as illustrated below:

(157) Dákò òtàmò nî èn òkwàlò gwènò
woman believed.3SG COMP he stole.3SG chicken
'The woman believed that he stole the chicken'

(158) Dákò òtàmò nî òkwàlò gwènò
woman believed.3SG COMP stole.3SG chicken
'The woman believed that he stole the chicken'

In the paratactic construction, repeated here below,

(159) Dákò òd̄ié òkwàlò gwènò
woman pressed.3SG.SUBJ:3SG.OBJ stole.3SG.SUBJ chicken
'The woman forced him to steal the chicken'

the tonal pattern of *òkwàlò* is clearly the same as in (156) and (158) where the verb lacks an overt nominal subject. So, despite the presence of its notional subject immediately before it, *òkwàlò* behaves tonally as though it had no overt nominal subject, so the pronoun *-è* is indeed the syntactic object of *dí-* 'press'.

From the standpoint of complementation, many aspects of the syntax and semantics of paratactic constructions resemble those of adjacent and logically connected sentences in discourse, rather than the main predicate–subordinate relationship that otherwise obtains in complementation. For instance, (149) could well be rendered in English as

(160) I remembered it; I closed the door

and (151) as:

(161) The woman pressed the man; he stole the chicken

and perhaps do more justice to the semantic and grammatical relations involved in those sentences than the somewhat more idiomatic translations given above. It should be noted, however, that, from a phonological point of view, (149) and (151) are single sentences. They have an intonational contour like that of single sentences, and rules of external sandhi that do not operate across sentence boundaries operate within paratactic constructions (Noonan and Bavin (1981); Noonan (1992)).

Another manifestation of the difference between paratactic complements and other sorts of complements in Lango has to do with the possibility for utilizing 'switch-reference' morphology (Haiman and Munro (1983)). In ordinary subordinate clauses, both indicative and subjunctive, a verb inflected for third person must have a prefix indicating whether the subject of the subordinate clause is the same or different from the subject of the CTP. In the third person singular perfective, the prefix indicating same subject (ss, non-switch reference) is *è-*, and the unmarked prefix indicating a third person singular subject (which can be interpreted as switch reference) is *ò-*. These are illustrated below:

(162) *Dákô òpòyò ní ècégò dóggólâ*
 woman remembered.3SG COMP closed.3SG.ss door
 'The woman remembered that she closed the door'
 (non-switch reference)

(163) *Dákô òpòyò ní òcègò dóggólâ*
 woman remembered.3SG COMP closed.3SG door
 'The woman remembered that he/she closed the door'
 (switch reference)

In (162), the subject of *ècégò* must be interpreted as *dákô* 'woman', while, in (163), the subject of *òcègò* must be interpreted as being someone other than the woman. This opposition is available only in subordinate clauses. Since the switch-reference prefix *ò-* is phonologically identical to the ordinary main clause third person singular perfective prefix *ò-*, (164) is a possible sentence,

(164) *Ocègò dóggólâ*
 closed.3SG.SUBJ door
 'He closed the door'

whereas (165) is not:

(165) **ècégò dóggólâ*
 closed.3SG.SUBJ door
 'He closed the door'

The prefix *è-* indicating non-switch reference is possible only in subordinate clauses, and is not found in adjacent sentences in discourse. So the English

(166) The woman hit the man. She ran away

where the subject in both clauses is the same, as in (162), cannot be rendered by

(167) *Dákô òjwàtò ìcâ. èḡwècò
 woman hit.3SG.SUBJ man ran away.3SG.SS
 ‘The woman hit the man. She ran away’

where the second verb *èḡwècò* has the non-switch reference prefix *è-*, but it can be rendered by

(168) Dákô òjwàtò ìcâ. Òḡwècò

where the second verb has the *ò-* prefix. Example (168) can also mean:

(169) The woman hit the man. He ran away

Paratactic constructions resemble in this respect constructions like (168) more than other complement constructions like (162) and (163), since switch-reference morphology is not available in parataxis. The sentence

(170) *Dákô òpòyò ècégò dóggólâ
 woman remembered.3SG.SUBJ closed.3SG door
 ‘The woman remembered to close the door’

is ungrammatical because of the *è-* non-switch reference prefix on *ècégò*, even though the subjects of *òpòyò* and *ècégò* must be interpreted as being coreferential. The meaning of (170) would have to be rendered by

(171) Dákô òpòyò òcègò dóggólâ
 woman remembered.3SG.SUBJ closed-3SG.SUBJ door
 ‘The woman remembered to close the door’

where the form *òcègò*, which in true subordinate clauses indicates switch reference, is used in this case where the subjects must be interpreted as coreferential.

2.5 *Distribution of complements within sentences*

As we have seen, complements function as subjects or objects. They are usually positioned in sentences just like other subjects or objects, but in many languages there are strong preferences, or even outright constraints, on the distribution of complements, which result in complements having different distributional patterns from other grammatical structures filling the same grammatical roles. For instance, the nominalized complement in English can occur in subject position in both declarative and interrogative sentences:

- (172) a. Floyd's leaving town is significant
 b. Is Floyd's leaving town significant?

The s-like complement type in English, however, may occur in subject position in declarative sentences, but not in interrogative sentences that are formed by placing an auxiliary element in sentence-initial position:

- (173) a. That Floyd left town is significant
 b. *Is that Floyd left town significant?

Restrictions on the distribution of complement types are, in fact, quite widespread in English.¹⁶

- (174) a. I believe *John's having left* to have upset you
 b. *I believe *that John left* to have upset you
 (cf. That John left has upset you)
- (175) a. *For John to be executed* would be regarded by many people as outrageous
 b. *Many people would regard *for John to be executed* as outrageous

Constraints on the distribution of complement types normally take the form of restrictions against the placement of complements whose heads are verbs in sentence-initial, or, more commonly, in sentence-medial, position. Languages may deal with such restrictions by making use of ordinary word order possibilities or by employing special constructions which, typically, remove s-like complements to the end of a sentence. The process of moving a complement to the end of a sentence is called 'extraposition'. This process is syntactically distinct from ones such as passive involving arguments other than complements. Complements moved to the end of the sentence are referred to as 'extraposed'.

Example (173b) violates the constraint in English against having complements with verbal heads in medial position; however, this sentence can be rendered grammatical by extraposition, as in (176):

- (176) Is it significant that Floyd left town?

Notice that in (176), the complement has been removed to sentence-final position and its original place in subject position taken over by the pronoun *it*. Replacement of the extraposed complement by a proform is not found in all languages.

¹⁶ Examples are from Grosu and Thompson (1977), which should be consulted for more discussion of this phenomenon in English and other languages.

In a few cases, extraposition seems to be obligatory, even though the non-extraposed sentence would not violate the ordinary constraints on the placement of complements. In such cases, extraposition is governed by the CTP. In English, the predicates *seem* and *appear* have obligatory extraposition of their subjects:

- (177) a. *That Floyd is drunk seems to me
 b. It seems to me that Floyd is drunk
 c. *That Floyd is drunk appears to me
 d. It appears to me that Floyd is drunk

Extraposition normally has the effect not only of removing the complement from its grammatical position, but also of depriving it of its grammatical role. In the sentence

- (178) It is known to everyone that Zelda wrote *War and Peace*
 (cf. That Zelda wrote *War and Peace* is known to everyone)

the extraposed clause no longer functions as the subject. Evidence for this includes the fact that *it* can be raised like a subject (as in (179a)) and equi-deleted like a subject (as in (179b)):

- (179) a. I want *it* to be known to everyone that Zelda wrote *War and Peace*
 b. It is unlikely to be known to everyone that Zelda wrote *War and Peace*
 (cf. It is unlikely that *it* is known to everyone that Zelda wrote *War and Peace*)

In Irish, extraposition from subject is virtually obligatory. In the example below, a pronominal copy *sé* is left in subject position:

- (180)
 Bhí *sé* curtha amach go raibh Ruarí anseo arís ag ól
 was it put.PART out COMP was Rory here again at drink.NZN
 ‘It was rumoured that Rory was here drinking again’

Extraposition in (180) is obligatory since Irish requires all s-like complements to occur in sentence-final position. The next example illustrates extraposition from subject when the subject complement is already in sentence-final position:

- (181) Breathnaíonn sé go bhfuil eolas aige air
 seems it COMP is knowledge at.him on.it
 ‘It seems that he knows about it’

In this sentence, there is only one overt argument of *breathnaíonn* and it is represented both by *sé* ‘it’ and the complement clause of which *sé* is a cataphoric copy.

So far we have only considered extraposition from subject, but extraposition from object is also found and is reasonably common especially in the SOV languages of the Middle East, for example Persian, Armenian and Uzbek. Eastern Armenian, an SOV language, has a constraint like that of Irish (VSO), requiring s-like complements to occur in sentence-final position. The ordinary SOV word order of Eastern Armenian is illustrated in (182) (data primarily from Galust Mardirussian (p.c.)):

- (182) *Mard-ə hav-ə gojats^hav*
 man-the chicken-the stole
 ‘The man stole the chicken’

S-like object complements, however, do not occur preverbally as objects normally would, but rather are extraposed to sentence-final position:

- (183) *Kənik-ə imanuma vor mard-ə hav-ə gojats^hav*
 woman-the knows COMP man-the chicken-the stole
 ‘The woman knows that the man stole the chicken’

In Persian (SOV), s-like complements, both indicative and subjunctive, must be extraposed, but reduced complements may only be extraposed when, as nominalizations, they are objects of prepositions (data primarily from Zohreh Imanjomeh (p.c.)):

- (184) a. *Æli goft ke Babæk bimar æst*
 Ali said.3SG COMP Babak sick is
 ‘Ali said that Babak is sick’
 b. **Æli ke Babæk bimar æst goft*
 (Extraposition is obligatory with s-like complements)
- (185) a. *Mæn šoru? be avaz xand-æn kərdæm*
 I beginning to song recite.NZR did-1SG
 ‘I began to sing’
 b. *Mæn šoru? kərdæm be avaz xand-æn*
 (Extraposition possible with nominal complements which are objects of prepositions)
- (186) a. *Mæn amæd-æn-e Babæk-ra fərman dadæm*
 I come-NZR-EZ Babak-OBJ order gave.1SG
 ‘I ordered Babak to come’
 b. **Mæn fərman dadæm amæd-æn-e Babæk-ra*
 c. **Mæn Babæk-ra fərman dadæm amæd-æn(-e)*
 (Extraposition not possible with nominalized complements unless they are objects of prepositions)

In Uzbek, also sov, extraposition is only possible with s-like complements. The language distinguishes extraposed complements with the optional complementizer *ki* from non-extraposed complements with *deb* ‘saying’. These latter complements are used in reported discourse (data from Abduzokhur Abduazizov (p.c.)):

(187)

- a. Men bu odam-niŋ joŋa-ni oŋirla-gan-i-ni bilaman
 I this man-GEN chicken-OBJ steal-NZR-3SG.POSS-OBJ know-1SG
 ‘I know that this man stole the chicken’
 (Nominalized complement, extraposition not possible)
- b. Men bilamen ki bu odam joŋa-ni oŋirladi
 I know-1SG COMP this man chicken-OBJ stole-3SG
 ‘I know that this man stole the chicken’
 (Extraposition obligatory with this sort of s-like complement)
- c. Xotin bu odam joŋa-ni oŋirladi deb dedi
 woman this man chicken-OBJ stole-3SG saying said
 ‘The woman said that this man stole the chicken’
 (Extraposition not possible with this sort of s-like complement)

In sov languages, extraposition is usually related to the possibility for postponing other sorts of sentence elements, typically oblique arguments. Extraposition need not, however, be accompanied by such a possibility. Uzbek seldom postpones oblique arguments but extraposes s-like complements frequently.

Another topic that must be mentioned here is the parenthetical use of predicates, such as *believe*, *think*, *suppose* and *regret*. In their non-parenthetical use, these verbs express positive propositional attitudes to the proposition embodied in their complement (see sections 3.1.2 and 3.2.2). Such a use is illustrated below:

- (188) Floyd believed that radical syndicalism is the best form of government

In stating (188), one would most likely be making an assertion about what Floyd believed and not one about one’s own attitude toward radical syndicalism. It is possible, however, to use *believe* parenthetically in such a way that the assertion is invested in the complement, especially with a first person singular subject and verb in the present tense. When used parenthetically, the position of the CTP is freer than usual: the CTP and its subject may be placed initially or after any major sentence constituent:

- (189) I believe radical syndicalism is the best form of government

- (190) Radical syndicalism is, I believe, the best form of government

(191) Radical syndicalism is the best form of government, I believe

In one possible interpretation of (189) and in the most likely interpretations of (190) and (191), *believe* is used parenthetically; the main assertion constitutes a claim about radical syndicalism and not a statement about one's beliefs as such. The function of the parenthetical verb in these sentences is 'to modify or weaken the claim to truth that would be implied by a simple assertion'.¹⁷

The syntactic effect of the parenthetical use of the CTP is to make the complement the main clause. Notice that the complementizer *that*, normally optional with *believe*, cannot be used when the CTP is used parenthetically:

(192) *That radical syndicalism is, I believe, the best form of government

(193) *That radical syndicalism is the best form of government, I believe

This is true also of languages where the use of the complementizer is ordinarily obligatory. Indicative complements in Lango are always accompanied by the complementizer *nî* except when the CTP is used parenthetically, in which case *nî* is not used. Only affirmative predicates can be used parenthetically, so with a negative predicate the complementizer cannot be omitted:

Negative predicates: parenthetical use not allowed

(194) Pé àtámô nî Òkélò dàktàl
NEG believe.1SG COMP Okello doctor
'I don't believe that Okello is a doctor'

(195) *Pé àtámô Òkélò dàktàl
'I don't believe that Okello is a doctor'

Parenthetical uses of affirmative predicates

(196) Àtámô Òkélò dàktàl
believe.1SG Okello doctor
'I believe Okello is a doctor'

(197) Òkélò, àtámô, dàktàl
'Okello, I believe, is a doctor'

(198) *nî Òkélò, àtámô, dàktàl

So far as I am aware, all languages can use predicates like *believe* parenthetically, but not all languages allow for the movement of the CTP and its subject into the complement clause. Irish, for instance, does not seem to allow either the deletion of the complementizer or the movement of the parenthetical into the complement clause:

¹⁷ Urmson (1963); discussed also by Wittgenstein (1953), Hooper (1975) and Thompson (2002).

- (199) Is eagal liom go bhfuil an bás aige¹⁸
 COP fear with.me COMP COP the death at.him
 'I'm afraid that he'll die'
- (200) *Is eagal liom {fuil/tá} an bás aige
- (201) *Tá an bás, is eagal liom, aige

It is possible to place the parenthetical at the end, but this seems to result in two independent clauses since

- (202) Is eagal liom

can stand by itself as a sentence meaning 'I'm afraid it's so'.

2.6 *Sequence of tense / mood restrictions*

Many languages that employ tense or mood morphology restrict in various ways the tense or mood categories allowable in complements. Sequence of tense or mood restrictions may take any one of the following forms.

(i) Tense categories may be copied onto the complement from the CTP. In English, for example, reported speech (indirect discourse) may be marked with the primary tense of the CTP, the original (notional) tense appearing as secondary tense where possible.¹⁹ A primary tense is one which makes reference to only one point in time, which is always relative to the time of the utterance. Secondary tenses make reference to an additional point in time, marking it relative to a primary tense, not to the moment of speaking. One common secondary tense is the secondary past, or perfect, formed in English with the auxiliary *have* followed by the past participle. In *Zeke had come by the time Zelda cashed her cheque* the verb complex *had come* references two points in time: the time, past relative to the moment of speaking, when Zelda cashed her cheque, and the time of Zeke's coming, which is past relative to Zelda's cashing her cheque (see figure 2.3).

The (b) sentences below evidence tense-copying.

- | | | |
|-------|----------------------------------|-----------------------|
| (203) | a. Floyd said 'I came' | PAST |
| | b. Floyd said that he had come | PAST + SECONDARY PAST |
| (204) | a. Floyd said 'I'm coming' | PRESENT |
| | b. Floyd said that he was coming | PAST |

¹⁸ *Fuil*, 'nasalized' to *bhfuil* after *go*, is the subordinate clause version of the copula *tá*.

¹⁹ See R. Lakoff (1970) and Riddle (1975) for some discussion of the semantics of tense copying in English.

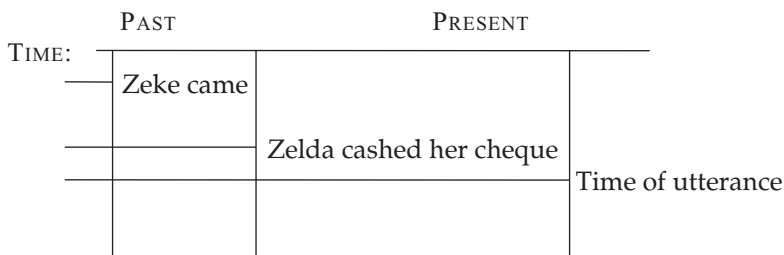


Figure 2.3 Time reference with a secondary tense

- (205) a. Floyd said 'I'll come' FUTURE
 b. Floyd said that he would come PAST + SECONDARY FUTURE

Tense copying represents an attempt to mould the complement to the subjective viewpoint of the speaker and is frequently associated with other changes in the complement (cf. section 3.2.1). English and other languages use the distinction between primary and secondary time reference for various semantic purposes. Instead of (205b) we can say

- (206) Floyd said that he'll come

which lacks tense copying. The future in the complement represents a primary tense distinction, i.e. one relative to the time of the utterance. The future reference in the complement in (205b) is relative to the time reference of the CTP and is therefore secondary. The most likely interpretation of (206) is that Floyd is still expected, whereas with (205b), Floyd has either already arrived or is not coming.

Tense copying is not universal in reported speech. In Russian, for instance, reported speech is expressed in the tense in which the statement was originally made, regardless of the tense of the CTP:

- (207) Boris skazal, čto prišël
 Boris said COMP came.MASC:SG
 'Boris said that he came'
- (208) Boris skazal, čto prixodit
 Boris said COMP come.3SG
 'Boris said that he's coming'
- (209) Boris skazal, čto pridët
 Boris said COMP come.3SG:FUT
 'Boris said that he will come'

These Russian sentences have no counterparts like the English (203b), (204b) and (205b).

(ii) Tense possibilities may be restricted on the complement because of the semantics of the CTP. For instance complements to the verb *promise*, when s-like, must employ future morphology:

(210) I promise that I'll come

(211) *I promise that I came

(Example (211) is grammatical in those dialects where *promise* = 'swear'.) The reason for this, of course, is that the thing promised necessarily follows the act of promising in time. We include here also complements in paratactic and serial constructions which must have the same time reference as the CTP. Paratactic and serial complements typically occur in semantic environments with determined time reference (section 3.1.1).

(iii) Choice of mood may be governed by the tense in the matrix. In such cases, the usual semantic role assigned to mood distinctions appears to be neutralized. An example of mood distinctions governed by tense is found in Classical Greek. In indirect discourse, the indicative follows matrix verbs in non-past tenses, while the optative follows past tenses. Classical Greek does not employ tense copying (W. Goodwin (1892)):

(212) Légei hóti gráfei
say.3SG COMP write.3SG:PRES:INDIC
'He says that he is writing'

(213) Eípen hóti gráfoi
say-3SG:PAST COMP write-3SG:PRES:OPTATIVE
'He says that he was writing'

2.7 Negative raising

Negative raising is the name applied to the situation where a negative marker appears to be removed from the complement clause with which it is logically associated and raised to the ordinary position for negatives within the matrix clause.²⁰ It occurs in the great majority of the world's languages. In the following examples, the (b) sentences have a raised negative:²¹

²⁰ Negative raising has been referred to by a number of names in the literature: negative attraction (Jespersen (1964)), negative transportation (R. Lakoff (1969)), and negative absorption (Klima 1964)). Horn (1978) reviews the literature on and current status of negative raising.

²¹ Sentences like (214b), it should be noted, seem to be ambiguous between a negative raising interpretation and a true negation of the CTP, corresponding to a commitment/non-commitment interpretation of the speaker's evaluation of the complement proposition (Jackendoff (1971)). These two interpretations are similar to Lyons's negation of the phrastic versus negation of the neustic, respectively (Lyons (1977)).

- (214) a. I think that Floyd didn't hit Roscoe
 b. I don't think that Floyd hit Roscoe
- (215) a. Zeke believes that Martians don't live in caves
 b. Zeke doesn't believe that Martians live in caves
- (216) a. Hugh wants Mary Ann not to win
 b. Hugh doesn't want Mary Ann to win

Negative raising occurs with only a restricted set of CTPS; for other CTPS, the presence of the negative in the complement results in a different meaning:

- (217) I regret that Floyd didn't hit Roscoe
- (218) I don't regret that Floyd hit Roscoe

Generally speaking, only propositional attitude predicates (such as *believe* or *deny*), desiderative predicates (*want*), and modal predicates (*can* or *be able*) allow for negative raising without change of truth value.

3 The semantics of complementation

Complementation is basically a matter of matching a particular complement type to a particular complement-taking predicate. The basis for this matching is the semantic relation between predicate and complement that is inherent in the meaning of the CTP, defining the relation of the predicate to the action or state described in the embedded predication, and the discourse function of the complement itself. In general, the stronger the semantic bond between the events described by the matrix and complement predicates, the greater the degree of syntactic integration there will be between the two clauses. Sentence-like complement types are characteristic of the weakest degree of syntactic integration, while reduced complement types signal a stronger bond, and clause union signals a still closer degree of syntactic integration.

It is well to remember, however, that language-specific factors keep this matching of complement-type to CTP from working in exactly the same way across languages. Languages have different inventories of complement types, and even complement types given the same label (nominalization, infinitive, etc.) may not be syntactically and morphologically identical. A given complement type, embedded within the grammatical system of the language, composed of certain kinds of grammatical material, and connected to the matrix hypotactically or paratactically, either contributes or fails to contribute certain sorts of information to the construction as a whole and so is intrinsically better suited for certain kinds of CTPS and to certain discourse functions. In this way, different complement types can be used with the same CTP, exploiting their inherent meaning potential. The choice of complementizer may also affect the meaning potential of a complement.

3.1 The semantics of complement types

There are several factors that can affect the semantic potential of a complement type:

- (i) inherent modality, such as mood distinctions
- (ii) degree of reduction
- (iii) choice of complementizer
- (iv) method of syntactic relation to the matrix clause: subordination versus parataxis
- (v) grammatical status of the notional predicate: verb, noun (in nominalized complements), adjective (in participial complements).

These factors will be taken up in order below.

3.1.1 Mood distinctions

The term *mood* will be used in this chapter to refer to a grammatical category, while *modality* will refer to a semantic category. The two are related in that mood categories can usually be viewed as grammaticalizations of modalities.

As mentioned in section 1.3.2 the term *indicative* in complementation refers to the mood which most closely resembles that of simple declarative sentences. *Subjunctive* is the neutral term used to describe any opposing mood distinction in complementation; other terms, such as *optative*, *potential* and *consequential*, carry with them more specific mood designations.

The essence of the subjunctive in complementation is the coding of complements that are in some way *dependent*. A complement is dependent if some aspect of its meaning or interpretation follows from information given in the CTP. Not all dependent complements, however, are coded as subjunctives in any given language with an indicative–subjunctive distinction. Three sorts of dependency are important here:

- (i) time reference dependency
- (ii) truth-value (epistemic) dependency
- (iii) discourse dependency

A complement has dependent or determined time reference (DTR) if its time reference is a necessary consequence of the meaning of the CTP. A complement is truth-value dependent if the complement construction containing it involves an explicit qualification of commitment to the truth of the proposition embodied in the complement. A complement is discourse-dependent if it is part of the background or common ground of the participants in a discourse.²²

The most basic of these dependencies is time-reference dependency, and the property of DTR is almost always included in the modalities represented by the

²² Discourse-dependent complements have the property of being pragmatically presupposed (Kempson (1975)).

subjunctive. A complement having DTR typically refers to a future world-state relative to the time reference of the CTP. For example, in the sentence

(219) José ordered João to interrogate Smith

João's interrogation of Smith must be thought of as following José's order in time. That is, the complement has a future time reference relative to the time reference of the CTP *order*, even if both events, the order and the interrogation, took place in the past relative to now. José could not, for example, order João to do something in the past relative to the act of ordering, thus ruling out a sentence like (220):

(220) *José is ordering João to interrogate Smith yesterday

CTPs that represent commands, requests, intention, desires, and expressions of necessity, ability, or obligation are among those whose complements have DTR.

Complements to many CTPs have independent time reference (ITR). The time reference of the complement in (221) is in no way logically bound by the time reference of the CTP:

(221) I know that— $\left[\begin{array}{l} \text{Zeke ate the leek} \\ \text{Zeke is eating the leek} \\ \text{Zeke will eat the leek} \end{array} \right.$

CTPs that have complements with ITR include those that assert, report, comment on them as background, or make truth-value judgements about their complements.

Lori is a language that utilizes its indicative/subjunctive opposition to express the ITR/DTR distinction. In Lori, both indicative and subjunctive complements use the complementizer *ke*, but the two moods differ in inflection. The indicative is conjugated for tense, but the subjunctive is not since it is only used for complements with DTR. The indicative/subjunctive distinction is illustrated below:

Indicative

(222) Zine fekr i-kone ke pia tile-ye dozi
 woman thought PROG-do.3SG COMP man chicken-OBJ stole.3SG:INDIC
 'The woman thinks that the man stole the chicken'

(223) Zine go ke pia tile-ye dozi
 woman said COMP man chicken-OBJ stole.3SG:INDIC
 'The woman said that the man stole the chicken'

- (224) Zine naraxæte ke pia tile-ye dozi
 woman regrets.3SG COMP man chicken-OBJ stole.3SG:INDIC
 ‘The woman regrets that the man stole the chicken’
- (225) Zine va šak e ke pia tile-ye dozi
 woman from doubt is COMP man chicken-OBJ stole.3SG:INDIC
 ‘The woman doubts that the man stole the chicken’

Subjunctive

- (226) Zine pia-ye vadašt ke tile-ye bedoze
 woman man-OBJ forced.3SG COMP chicken-OBJ steal.3SG:SJNCT
 ‘The woman forced the man to steal the chicken’
- (227) Zine va pia xas ke tile-ye bedoze
 woman from man wanted.3SG COMP chicken-OBJ steal.3SG:SJNCT
 ‘The woman wanted the man to steal the chicken’
- (228) Pia kušeš kerd ke tile-ye bedoze
 man attempt did.3SG COMP chicken-OBJ steal.3SG:SJNCT
 ‘The man tried to steal the chicken’
- (229) Pia xoš-eš i-a ke tile-ye le
 man pleasantness-his PROG-come.3SG COMP chicken-OBJ PL
 bedoze
 steal.3SG:SJNCT
 ‘The man likes to steal chickens’
- (230) Pia i-tares ke tile-ye bedoze
 man PROG-be.able:3SG COMP chicken-OBJ steal.3SG:SJNCT
 ‘The man is able to steal the chicken’

As we see in the last three examples, complements with DTR do not have to represent future events, but may simply represent potential events or states. The range of DTR complements includes those whose time reference is the same as the CTP, such as complements to phasal (or aspectual) predicates like *begin*, those that are timeless in the sense that they represent general conditions or states, such as certain complements of *like*, and those that have no time reference because they represent non-events (as distinct from those that are simply potential), such as certain complements of *try*. What all these have in common, of course, is that their time reference is determined by the meaning and use of the CTP so that only one time reference, the one determined by the CTP, is possible for these complements.

Indicative/subjunctive oppositions like the one illustrated above for Lori are fairly common. Bulgarian, like Lori, has its indicative/subjunctive opposition

built on ITR/DTR. The indicative and subjunctive have distinct complementizers (*če* and *da* respectively) and differ in inflectional possibilities; the indicative is inflected for tense while the subjunctive is invariable and uses the same person–number inflections as the indicative present (data from Ilya Talyev (p.c.)):

Indicative

- (231) Misli, če vie ste umoren
 think.3SG COMP you COP tired
 ‘He thinks that you’re tired’
- (232) Dobre, če te sreštnax
 good COMP you met.1SG
 ‘It’s good that I met you’
- (233) Čux, če toj mu dal parite
 heard.1SG COMP he to.him gave.3SG money
 ‘I heard that he gave him the money’

Subjunctive

- (234) Mislja da ida
 think.1SG COMP go.1SG:SNCT
 ‘I intend to go’
- (235) Iskam da kupja
 want.1SG COMP buy.1SG:SNCT
 ‘I want to buy’
- (236) Moga da vidja
 be.able.1SG COMP see.1SG:SNCT
 ‘I can see’
- (237) Veče započnaxa da minavat
 already began.3PL COMP pass.by.3PL:SNCT
 ‘They’ve already begun to pass by’

Truth-value dependent complements are those whose CTP expresses a kind of propositional attitude toward the truth of the complement, for example CTPs such as *think*, *believe*, *doubt*, *deny*, and *be possible* (cf. section 3.2.2). Complements to such predicates have ITR. It is fairly rare to find a contrast in form between complements of propositional attitude CTPs and those that denote assertions (as with complements of *say*) or reports of such assertions. Vestiges of such systems are found in Central Asia, however. There, one can find a contrast between truth-value dependent complements associated with an ordinary complementizer,

Table 2.3 *Realis and irrealis modality in complement roles*

COMPLEMENT ROLE	
REALIS	assertion
	report of assertion
	positive propositional attitude
	background (factive)
IRREALIS	negative propositional attitude
	hypothetical proposition
	DTR (commands, requests, intentions, desires, etc.)

and assertions or reports of assertions associated with an adverbial participial form of, for example, *say* or *do*. Such a distinction was illustrated for Uzbek in section 2.5, where the verb ‘know’ expresses a propositional attitude and takes an extraposed complement with the complementizer *ki*. The verb ‘say’, on the other hand, expresses no propositional attitude, takes a non-extraposed complement, and is preceded by *deb* ‘saying’.

A much more common situation is for languages to distinguish between positive propositional attitudes and negative or dubitative propositional attitudes and to group the former with assertions and reports of assertions as the indicative, and the latter with DTR complements as the subjunctive. It is common to find a class of indicative complements that includes not only those of positive propositional attitude verbs such as *believe*, but complements to commentative or factive predicates such as *regret*. These complements typically represent propositions taken as background to a discourse, and are normally presupposed to be true (Kiparsky and Kiparsky (1970); Kempson (1975); C. Wilson (1975); cf. section 3.2.4). Hypotheticals line up with negative or dubitative propositional attitudes as subjunctive, though they may be associated with a special hypothetical or conditional mood in some languages (cf. vol. III, chapter 5). Contrafactuals like *pretend* pose special problems (cf. section 3.2.3). We can distinguish in this way complements that have *realis* modality versus those that have *irrealis* modality. Realis modality is associated with complements whose propositions are asserted as a fact or commented on as a factual or actual event or state. Irrealis modality carries with it no such implication; what one can infer about a complement with irrealis modality comes directly from the CTP. Table 2.3 displays the distribution of realis and irrealis modality relative to some complement roles.

Russian is an example of a language for which a realis/irrealis distinction underlies the indicative/subjunctive opposition:

Indicative

- (238) Ja govorju, što Boris pridët
I say COMP Boris will.come
'I say that Boris will come'
- (239) Ja dumaju, što Boris pridët
I think COMP Boris will.come
'I think that Boris will come'
- (240) On govoril, što Boris pridët
he said COMP Boris will.come
'He said that Boris will come'
- (241) Mne nraivsja, što Boris pridët
1S-DAT likes COMP Boris will.come
'I like it that Boris will come'²³

Subjunctive

- (242) Ja somnevajus', što by Boris prišël
I doubt COMP Boris come.SJUNCT
'I doubt that Boris will come / came'
- (243) Ja ne verju, što by Boris prišël
I NEG believe COMP Boris come.SJUNCT
'I don't believe that Boris will come / came'
- (244) Ja xoču, što by Boris prišël
I want COMP Boris come.SJUNCT
'I want Boris to come'
- (245) Ja bojus', što by Boris ne prišël
I fear COMP Boris NEG come.SJUNCT
'I'm afraid that Boris will come'
- (246) Ja prikazal, što by Boris prišël
I ordered COMP Boris come.SJUNCT
'I ordered Boris to come'
- (247) Nužno, što by Boris prišël
necessary COMP Boris come.SJUNCT
'It's necessary for Boris to come'

Languages that utilize indicative/subjunctive opposition for realis/irrealis distinction, like Russian and Persian, frequently do not have tense distinctions

²³ I would like to thank Aleksandra Aikhenvald for pointing out an error in an earlier version of this sentence.

available for their subjunctives even though tense distinctions are coded in the indicative. While tense distinctions would be useless (*qua* tense distinctions) in the DTR range of the subjunctive, there is no logical reason why they could not be used with subjunctive complements to propositional attitude predicates as they are in English:

- (248) I don't believe that
- | | |
|---|------------------------|
| { | Floyd skipped town |
| } | Floyd is skipping town |
| } | Floyd will skip town |

Yet neither Persian nor Russian (as glosses to some of the above sentences indicate) have tense distinctions in the subjunctive.

One sort of limited exception to this is found in Bemba (Givón (1971, 1972)). Bemba has a basic realis/irrealis distinction in its mood categories, but divides the irrealis modality between two subjunctives. The first, called by Givón the 'subjunctive of uncertainty', encodes negative propositional attitudes. The second, the 'subjunctive of coercion', is associated with DTR contexts. Indicatives in Bemba have a large number of tense–aspect distinctions, including a number of futures representing different degrees of futurity. The subjunctive of uncertainty, like the Russian and Persian subjunctives discussed above, has no tense distinctions available, utilizing only a simple aspect distinction. The subjunctive of coercion, however, does have tense distinctions, contrasting a non-future with the various futures available in Bemba:

- (249) A-à-ebele John ukuti a-y-e
 he-PAST-tell John COMP he-leave-SJNCT
 'He told John to leave'
- (250) A-léé-eba John ukuti a-y-e
 'He is telling John to leave'
- (251) A-kà-eba John ukuti a-kà-y-e
 'He will tell John to leave (tomorrow)'
- (252) A-ká-eba John ukuti a-ká-y-e
 'He will tell John to leave (after tomorrow)'

Tense marking in these is simply a matter of tense copying (section 2.6) since the marking is dependent on that of the CTP.

A complement is discourse-dependent if the proposition it contains constitutes part of the common ground or background to a discourse. Discourse-dependent complements include complements to commentative (factive)

predicates and complements to those negative propositional attitude predicates that constitute denials, such as *deny* or *not believe*.²⁴

There are a few complement systems, Spanish among them, that group together discourse-dependent complements with DTR complements and complements of negative propositional attitude predicates to form a non-assertive modality which is coded in the subjunctive (Hooper (1975); Terrell and Hooper (1974); Klein (1977); Guitart (1978); but see also Lunn (1995)). The indicative encodes assertions, reports of assertions, and complements of predicates with positive propositional attitudes; such complements can be called *assertive* (*NB*: not all complements in this class are assertions in the technical sense of this term).

In Spanish, the distribution of indicative and subjunctive complements parallels the Russian case exemplified above, except that discourse-dependent complements are coded in the subjunctive. Thus, sentence (253)

- (253) Lamento que Juan salga esta noche
 regret.1SG COMP John leave.3SG:SNCT this night
 'I regret that John will leave tonight'

employing the subjunctive is grammatical, whereas

- (254) *Lamento que Juan sale esta noche
 regret.1SG COMP John leave.3SG:INDIC this night

employing the indicative is not. The same sentence in Russian is grammatical only with the indicative:

- (255) Sožaleju, čto Ivan uedet segodnja večerom
 regret.1SG COMP Ivan leave.3SG: FUT today evening
 'I regret that Ivan will leave tonight'

Complements of commentative predicates like *regret* are discourse-dependent because, in saying sentences like (253), one must assume (if one is being sincere) that the hearer already knows the information in the complement. This information is the common ground or background to the discourse and the function of the sentence is to comment on this information (cf. 3.2.4). Example (253) would have an indicative complement in Persian and Russian.

The tense distinctions available in the Spanish subjunctive are used mostly in tense copying, but can, as when used with complements to commentative predicates, be used to represent real, independent tense distinctions. The greater the range of the subjunctive, in particular when it has the ability to code

²⁴ See Lyons (1977) for the distinction between denial and assertion of negative propositions.

Table 2.4 *The three semantic distinctions underlying indicative–subjunctive oppositions*

Semantic opposition	Complement role	Semantic opposition
ASSERTIVE	assertion report of assertion positive propositional attitude	REALIS
NON-ASSERTIVE	background (factive) negative propositional attitude hypothetical commands, requests, intentions, desires, etc.	IRREALIS

Semantic opposition	Complement role
INDEPENDENT TIME REFERENCE	assertion report of assertion positive propositional attitude background (factive)
DEPENDENT TIME REFERENCE	negative propositional attitude hypothetical commands, requests, intentions, desires, etc.

non-assertive ITR complements, the more likely it is to be able to express independent tense.

The three semantic distinctions underlying the indicative/subjunctive oppositions described above can be displayed as in table 2.4. I do not intend to imply that the hierarchy of complement roles given in table 2.4 is always observed in indicative/subjunctive oppositions, though in most cases it is. In Modern Literary German, for instance, the subjunctive is used for reports of assertions, but is only used sporadically and somewhat idiosyncratically elsewhere in the hierarchy. For example, complements to *wollen* ‘wish’ are in the indicative when the main verb is in the present tense, but in the subjunctive when the main verb is past (Lockwood (1968)):

- (256) Wir wollen, dass er es tut
 we wish.PRES COMP he it do.PRES:INDIC
 ‘We wish that he’d do it’

- (257) Wir wollten, dass er es täte
 we wish.PAST COMP he it do.PAST:SNCT
 ‘We wish that he did it’

Cases like this illustrate the conventionalized use of mood present in mood government (section 2.6). Such cases represent a considerable reduction or even loss of the original modal character of the subjunctive and the subsequent grammaticalization of the use of the subjunctive in a portion of its former range.²⁵

The meaning differences between indicative and subjunctive complement types can be exploited with a given CTP allowing for the expression of a variety of implication relationships. For instance, in Bemba (Givón (1971, 1972)) the realis/irrealis modality opposition expressed by the indicative/subjunctive distinction may be used with the same coercive verb to indicate a difference in implication:

- (258) John a-à-koonkomeshya Robert a-à-boombele
 John 3SG-PAST-order Robert 3SG-PAST-work.INDIC
 ‘John ordered Robert (long ago) and Robert worked (long ago)’
- (259) John a-à-koonkomeshya Robert a-bomb-e
 John 3SG-PAST-order Robert 3SG-work-SJUNCT
 ‘John ordered Robert to work (and Robert may or may not have worked)’

The complement in (258) can be inferred to be a factual event. The subjunctive in (259), however, carries no implication that the event it encodes is a real or actual event.

3.1.2 *Degree of reduction*

There is a general principle in complementation that information tends neither to be repeated nor to be lost. Exceptions to this are easy enough to find, but the principle holds true in the great majority of cases. For this reason, reduced complements, which are likely to lack tense distinctions (see section 1), are typically associated with predicates whose complements have DTR. Infinitives, for example, are frequently restricted to DTR contexts since their use elsewhere would result in information loss. Indicative complements are normally excluded from DTR contexts since they are typically coded for tense, and therefore the expression of tense in such cases is redundant.

In English, infinitives, with a couple of exceptions to be discussed below, are associated with DTR contexts while indicatives are associated with ITR

²⁵ See Lockwood (1968) for discussion of the reduction of the former role of the subjunctive in German.

contexts. Infinitives occur as complements to predicates expressing commands, requests, intentions, desires, etc. They do not normally occur as complements to predicates that are assertive, commentative, or express propositional attitude, all of which take indicative complements in English. The exceptions to this are instructive in that they show how various factors may override the general principles governing the distribution of complement types in a language. *Believe*, a propositional attitude predicate, can take either infinitive or indicative complements:

(260) I believe Zeke to be an idiot

(261) I believe that Zeke is an idiot

Sentences like these can be used, straightforwardly enough, to make a statement about propositional attitude. But such sentences can also be used to assert the proposition embodied in the complement: that is, the function of the statement is not simply to express a propositional attitude, but rather to present the proposition embodied in the complement as an assertion. The function of *believe* and similar verbs, especially in sentences like (260), is simply to soften the force of the assertion, guiding the hearer to a proper appreciation of the complement proposition in its context, rather than being in itself part of what is asserted (see Urmson (1963)). The use of *believe* here is in many respects like the parenthetical use of this predicate described in section 2.5. The time reference of *believe* in such cases represents the time reference of the asserted proposition. When (260) is used to assert the complement proposition, there is, then, only one significant time reference, that of the asserted proposition. So an infinitive can be used without loss of information.²⁶

Like *believe*, *promise* can also take an infinitive or indicative complement:

(262) I promise to go at nine

(263) I promise that I'll go at nine

Notice, however, that infinitives are only possible with *promise* if the subject of *promise* and the complement predicate are coreferential, so that *I promise that John will go* is not the same as *I promise John to go*; in the latter *John* is an indirect object of *promise*, not a raised subject. The reason for this has to do with the 'controllability factor' associated with infinitives (see below). Unlike *believe*, whose complements have ITR, complements to *promise* have DTR: the thing promised must follow the act of promising. We would predict, then, that *promise* would take infinitive complements only, which, as (263) illustrates, is

²⁶ The parenthetical analysis of sentences with *believe* + infinitive only applies, of course, to sentences with first person singular subject.

clearly not the case. The reason for the acceptability of (263) probably derives from the fact that it (like (262)) is semantically related to one meaning of (264):

(264) I'll go at nine

Example (264) can be used as an assertion, but it is far more likely to be used in performing the illocutionary act of promising, in which case it means about the same thing as (263). In (263) and its parenthetical equivalent (265)

(265) I'll go at nine, I promise

the nature of the speech act is made explicit, unlike (264), but the illocutionary force of the statement is the same as (264). Example (263), then, can be looked at as a 'syntactic blend' (G. Lakoff (1974)) of the semantically equivalent statements (262) and (264), consisting of a statement like (264), with the illocutionary force of a promise, and the CTP *promise* as in (262), making the nature of the speech act explicit.

Because reduced complement types like infinitives tend to be used in DTR contexts, they are not discourse-dependent. Their time reference is either fixed, in which case there is a necessary sequencing of matrix and complement states or events, or the time reference is simply irrelevant, in which case the CTP amounts to a comment or judgement on any potential occurrence of the complement event or state. The latter case can be illustrated by sentences like:

(266) I like to eat snails

(267) It's odd for camels to drink vodka

One consequence of fixed time reference is the implication (where semantic-pragmatic factors permit) that the matrix event or state is in some way responsible for, or at least affects, the complement state or event. This was called the 'controllability factor' by Riddle (1975). This controllability factor does not, of course, hold in ITR contexts, and thus the distinction between the DTR of s-like complements and the DTR of reduced complements can be exploited with given CTPs to create meaning contrasts:

(268) a. I remembered that I closed the door
b. I remembered to close the door

(269) a. Zeke decided that he was a bootlegger
b. Zeke decided to be a bootlegger

(270) a. Nell told Enrico that he was a good singer
b. Nell told Enrico to be a good singer

The complements in the (a) sentences above refer to states of affairs that exist independently of the action or state described in the matrix, whereas in the

(b) sentences, there is a clear dependence between the matrix and complement proposition.

A further consequence of the controllability factor is that, if the CTP can be interpreted as an action, then the complement can be interpreted as an action even though the complement in isolation refers to a state. For instance,

(271) Floyd is a nice boy

(272) Floyd is an acrobat

describe two states attributed to Floyd. When the above propositions are made infinitival complements, as in

(273) Floyd tried to be a nice boy

(274) Floyd tried to be an acrobat

they are interpreted actively, describing actions not states. Again, the difference between these reduced complement types and non-reduced complement types can be exploited for semantic effect:

(275) a. Floyd remembered that he was a nice boy
b. Floyd remembered to be a nice boy

(276) a. Max convinced Floyd that he was a nice boy
b. Max convinced Floyd to be a nice boy

(277) a. Floyd pretended that he was a nice boy
b. Floyd pretended to be a nice boy

The (a) sentences have the state interpretation, while the (b) sentences express some notion of activity.

3.1.3 *Complementizers*

When a form functions as a complementizer and something else, its meaning outside the complement system will likely be related to its use in complementation. The complementizer, then, may not be simply a neutral marker of a complement type, but may bring with it a meaning that can affect the semantics and therefore the distribution of the complement type it is associated with. A straightforward example of this is the English particle *if*, which functions as a sentence connective in

(278) I'll leave if Zeke comes

and as a complementizer in

(279) I doubt if Zeke knows

The constructions in (278) and (279) are clearly different; as one illustration of this difference, (280) but not (281) is a possible sentence:

(280) If Zeke comes, I'll leave

(281) *If Zeke knows, I doubt

As a sentence connective, *if* sets up a relation between antecedent and consequent states or events; the consequent does not hold unless the condition stated in the antecedent holds. As a complementizer, *if* is mostly used with complements where the usual positive implications associated with a given CTP are not meant to hold. For instance, complements of *nice* normally are given a factive interpretation, i.e. presupposed to be true:

(282) It was nice that Zeke came

(283) It wasn't nice that Zeke came

It is reasonable to infer from both (281) and (282) that Zeke in fact came. When the matrix is stated conditionally, the complement is not meant to have a factive interpretation and *if* is chosen as the complementizer:

(284) It would be nice if Zeke came

Similarly, complements of *know* as in

(285) Alf knows that Zeke came

are assigned a factive interpretation. This interpretation can be cancelled with *if* as complementizer:

(286) Alf knows if Zeke came (but I don't)

It doesn't follow from (286) that Zeke came. But the predicate *doubt*, which expresses a negative propositional attitude amounting to a denial of the proposition embodied in its complement, as in

(287) I doubt that Zeke came

can also take complements with *if*, as in

(288) I doubt if Zeke came

The effect of *if* as a complementizer is to cancel positive implications, and it has no effect on negative ones, so (287) and (288) are roughly synonymous.

In conditional constructions like (278) and (280), the *if*-clause represents a non-actual or unreal state or event. The irrealis modality of the consequent is identified by *will/would* or some other indicator of futurity. In complementation, *if* is likewise associated with non-actual or irrealis modality; none of the complements in (284), (286), or (288) can be taken as a real or actual event.

Irrealis modality seems to underlie both uses of *if*, the meanings being clearly related.

Bolinger (1972) has claimed the *that*-complementizer and the *that*-demonstrative in English are similarly related, in that the distribution of the *that*-complementizer is affected by its ultimately demonstrative function.

In many languages, adpositions function as complementizers (cf. section 1.2). Their meaning outside complementation may relate directly to their use in complementation. As one example, the Irish preposition *gan* translates English ‘without’ in its use with nominal and phrasal adjuncts:

- (289) D'imigh sé gan leabhar
left he without book
'He left without a book'
- (290) D'imigh sé gan mé a fheiceáil
left he without me COMP see.NZN
'He left without seeing me'

In complementation, *gan* is used to negate noun complements:

- (291) D'iarr mé air gan imeacht
asked I on him NEG leave.NZN
'I asked him not to leave'

Semantically, *gan* is negative in all its uses. Even in (289), *gan* could be roughly translated as ‘not with’. The negative aspect of *gan* predominates in (290) and (291).

3.1.4 Manner of syntactic relation to the matrix

Notional complements may be rendered (i) as subordinate clauses or (ii) as verb phrases in paratactic constructions, in which case they are syntactically on a par with the clause containing the CTP (see section 2.4). This syntactic difference can be exploited to create semantic contrasts between paratactic and subordinate complement types.

In Lango, the subjunctive and the paratactic complement types can both be used with a large number of CTPs. One example of this contrast is given below:

- (292) Dákô òdìò ìcô òkwàlò gwèndò
woman pressed.3SG man stole.3SG chicken
'The woman forced the man to steal the chicken' (paratactic)
- (293) Dákô òdìò ìcô nî òkwál gwèndò
woman pressed.3SG man COMP steal.3SG:SNCT chicken
'The woman pressed the man to steal the chicken' (subjunctive)

With (292), we can legitimately infer that the man in fact stole the chicken, while with (293) we can make no such inference: we only know that the woman put pressure on the man to do what she wanted him to do. Paratactic complements have interpretations as ‘realized’ states or events; subjunctive complements have an ‘unrealized’ interpretation. This semantic difference follows from the syntax. Since the Lango paratactic complement behaves syntactically like a juxtaposed independent sentence, saying (292) amounts to making two assertions:

- (294) Dákô òdiò ìcê òkwàlò gwènò
 woman pressed-3SG man stole-3SG chicken
 ‘The woman pressed the man. He stole the chicken’

Since each of the component predications represents an independent assertion, it follows that the complement would be interpreted as a fact. Example (293), however, represents a single assertion; the interpretation of the complement is mediated through the semantics of the CTP, which in this case does not allow an implicative interpretation. The semantic difference, then, between parataxis and hypotaxis (subordination) in complementation involves the number of assertions the construction contains; each clause in the paratactic construction is a separate assertion, whereas in hypotaxis there is a single assertion involving both CTP and complement.

Paratactic complements typically occur in DTR environments, especially in causative and immediate perception contexts. The reason for this is that the nature of these situations, a cause and an effect, an action and its perception, lend themselves particularly well to coding as two separate though logically connected events. The complement in these cases can be interpreted as a separate assertion, taking its place in the progression of the discourse without the mediation of the CTP. Hypotaxis in complementation is a device for qualifying the interpretation of a predication, with the CTP acting as a sort of semantic filter.

Hypotaxis is the complementation device *par excellence* because the complement is, logically, an argument of the predicate and hypotaxis is a direct syntactic reflection of this semantic situation. The syntax parallels the semantics. Parataxis will likely be used in complementation only where the interpretation of the complement mediated through the CTP will be essentially the same as if it were coded as a separate assertion.

Serial constructions are in many respects intermediate between hypotaxis and parataxis. As in hypotaxis, notional complements in serial constructions form a single assertion with their CTPs. But, like parataxis, the component verb phrases seem to be syntactically on a par.²⁷ The fact that a serialized construction

²⁷ The status of these verb phrases has been the subject of much debate (Schachter (1974); Bamgbose (1974); Joseph and Zwicky (1990); Lefebvre (1991)). A possible diachronic connection is discussed in Noonan and Bavin (1981).

typically represents one assertion and a paratactic construction two, affects their use in complementation. Both are usual in causative, immediate perception, and phasal contexts. Serial constructions alone are used in ablative and desiderative contexts because these are incompatible with the two-assertion aspect of parataxis. Parenthetical senses of predicates like *believe* are quite compatible with parataxis, but not serialization.

3.1.5 Grammatical status of the complement predicate

The part of speech (verb, noun or adjective) of the complement predicate can be correlated with the use of the complement type that contains it, though how closely a complement type conforms to the 'ideal' distribution suggested by the grammatical status of its predicate depends on a number of factors, chief among which is the number and the kind of oppositions (distinct complement types) in the complement system. What follows are some generalizations about 'ideal' distributions. (We can define an 'ideal' distribution as a list of the uses that some grammatical entity is by nature best suited for and for which it is invariably used if it exists in the system at all.) Since complement predicates are coded as verbs in the great majority of cases (e.g. in s-like, paratactic, and infinitive complements), coding predicates as verbs can be viewed as the unmarked case, and indeed there are languages which allow this as the only possibility for coding predicates. We will therefore concentrate our attention here on the marked cases, i.e. complement predicates as nouns or adjectives, noting that these forms always coexist in complement systems with predicates coded as verbs.

Nominalizations can be divided into two types: nominalized propositions and activity or state nominalizations. Nominalized propositions are referring expressions, i.e. they are used by speakers to refer to information given previously in a discourse or taken as background to a discourse. Nominalized propositions, then, are background information, discourse dependents and, of course, do not in themselves constitute assertions. Activity or state nominalizations are used to refer to kinds of activities or states, not to specific events or states constituting backgrounded information. Examples of each sort of nominalization are given below:

(295) NOMINALIZED PROPOSITIONS

- a. *Zeke's hitting Roscoe* annoyed Floyd
- b. We regret *Floyd's flunking Flemish*
- c. *Floyd's flunking Flemish* is unlikely
- d. *Leo's drinking the metheglin straight down* caused him to pass out
- e. *Eating Beefos* made Mort sick

(296) ACTIVITY OR STATE NOMINALIZATIONS

- a. Nell enjoys *shooting rabbits*
- b. *Eating grapes* is fun

- c. Henry is proud of *being tall*
- d. *Drinking mead* causes gout
- e. Arnold disapproves of *children drinking water*

Nominalizations of either sort result in a sort of objectification of the predicate, investing it with the status of a name. Nominalized propositions needn't be presupposed, as (295c) shows (activity or state nominalizations can't be presupposed since they're nonreferential), but even when non-factive, they still represent backgrounded information. This is the essential characteristic of nominalized predications, though they may take on broader functions in the context of particular grammars.

As discussed in section 1.3.6, adjectivalized predications, or participles, because of the peculiarities of their syntax vis-à-vis other complement types, play a rather restricted role in complementation, being limited, normally, to use with immediate perception predicates, where, however, they are of reasonably frequent occurrence. The use of participles with immediate perception predicates follows from the use of participles generally.

As nominalization involves objectification of predicates, adjectivalization involves converting predicates into modifiers or qualifiers, specifying either attributes of nominals or attendant circumstances of events. An example of this latter use of participles is

(297) Leaving the room, Gurt saw Burt

where the participial phrase *leaving the room* sets forth the circumstances under which the action of our primary concern, *Gurt saw Burt*, takes place. The two events are taken to be simultaneous and share a notional argument, *Gurt*.

These characteristic features of participles, the ability to express simultaneity with another event and the sharing of arguments with the main event, makes the participle quite suitable for use with immediate perception predicates: the event coded by the CTP and that coded by the complement must necessarily be simultaneous, and, furthermore, participants involved in the matrix and complement events can be said to be shared. For instance, if we say

(298) Gurt saw Burt leaving the room

it follows for all practical purposes that

(299) Gurt saw Burt²⁸

Burt, then, is a shared participant in the two events coded in (298), and the events themselves must be viewed as simultaneous.

²⁸ But see the discussion of this issue in Kirsner and Thompson (1976) and section 3.2.12.

The characteristics of the participle that make it compatible with immediate perception predicates make it unsuitable for use with most CTPs. To give just one example, in the sentence

- (300) *I believe Brinck breaking his leg
(cf. I believe that Brinck broke his leg)

the matrix and complement events do not necessarily occur simultaneously. Sentence (301), where the events do occur simultaneously, is possible:

- (301) I believe that Brinck is breaking his leg

But so is (302) possible:

- (302) a. I believe that Brinck broke his leg
b. I believe that Brinck will break his leg

With immediate perception predicates, the two events are necessarily, not accidentally, simultaneous. Further, it does not follow from (300) (or its grammatical counterpart) that

- (303) I believe Brinck

3.2 *The classes of complement-taking predicates*

In the last section, characteristic semantic features of complement types were discussed. In this section, we will complete the discussion of the semantics of complementation by discussing semantic classes of CTPs. The schema provided here for the classification of CTPs is meant to be a practical one, allowing for easy identification of the classes relevant for a discussion of complementation, and to be one with labels which correspond to those most commonly found in the literature.

It should be made clear at this point that the classes of CTPs discussed below are meant to reflect the uses of CTPs in complementation rather than the full semantic properties of any given verb or set of verbs in any language. For instance, the English verb *tell* as a CTP has two main uses, one as an utterance predicate

- (304) Floyd told Zeke that Roscoe buried the mash

and another as a manipulative predicate:

- (305) Floyd told Zeke to bury the mash

It is certainly the case that there is a unified meaning of *tell* under which both uses are subsumed, but in this section we will consider each of the uses of *tell* separately since it is the uses that determine the choice of complement type.

References to notions like ‘subject’ in this, as in other sections, are meant to apply only in those languages where subjects and other grammatical relations can meaningfully be said to exist (cf. Schachter (1976) and Noonan (1977)); otherwise, ‘subject’ should be taken to refer to A and S arguments (Dixon (1994; see also Palmer (1994)). ‘Basic subjects’ refer to subjects of active sentences.

3.2.1 *Utterance predicates*

Utterance predicates are used in sentences describing a simple transfer of information initiated by an agentive subject. The complement represents the transferred information, and the CTP describes the manner of transfer, the illocutionary force of the original statement, and can also give an evaluation of the speaker’s (as opposed to the agent subject’s) view of the veracity of the proposition encoded in the complement. The basic subject of the CTP is the entity to whom the original statement is attributed, i.e. the agent. The addressee may be expressed as a DO or IO in the matrix, but it is less likely to be overtly expressed than the agent. English verbs that can be used as utterance predicates include *say, tell, report, promise, ask*,²⁹ etc., as we see in the following sentences:

- (306) Zeke said that Norm left
- (307) Herm told Rita that Norm left
- (308) The UPI reported that Norm left
- (309) Norm promised that he would leave
- (310) Nell asked if Norm left

The information given in the complement of utterance predicates can be presented in either of two ways: as a direct quotation (direct discourse) or as an indirect quotation (indirect discourse). The function of the direct quotation is to give the actual words of the speaker, while indirect quotations are adapted in varying degrees to the viewpoint of the speaker (the one who utters sentences like (306–10). This adaptation involves the reorientation of the various deictic or shifter categories (Jakobson (1957)), for example pronouns, locative markers, and tense markers (section 2.6). For instance, if the original statement was

- (311) I’ll go there tomorrow

a direct quote would simply take the form

²⁹ Many of these verbs can also be manipulative predicates (section 3.2.8). The difference between these uses involves whether there is a simple transfer of information (utterance predicates) or a direct attempt to influence or manipulate the addressee (manipulative predicates). The distinction may be a fine one in some cases, but the syntactic consequences are considerable: in English it is the difference between an s-like complement and an infinitive.

(312) He said, ‘I’ll go there tomorrow’

An indirect quote, on the other hand, might take the form

(313) He said that he would come here today

where each of the shifter categories is appropriately modified to the viewpoint of the reporter.

Not all languages employ indirect quotes, or, if they are used, they may be used only infrequently. Mayfield (1972) reports that Agta has no true indirect quotes. Shackle (1972) reports that true indirect speech is rare in Punjabi, and Bailey (1924) claims that indirect speech is hardly used at all in Shina.

With the exception of *promise* (discussed in sections 2.6 and 3.1.2) and similar predicates, complements to utterance predicates have ITR. This favours the use of s-like complement types since they are the most likely to allow tense to be storable independently of the matrix. Further, by definition, direct discourse automatically results in s-like complements. Therefore, since all languages have ways of presenting direct quotes, all languages use s-like complements with utterance predicates, though other complement types can occur with predicates in this class for indirect discourse. There are, in fact, languages that use true s-like complements only with direct quotes, for example Chantyal (Noonan (2003)). In Chantyal, in general, only nominalized complements are permitted except in those cases where the complement can be interpreted as a direct quote, in which case the verb *bfi-* ‘say’ must be overtly present. So, for example, we find the following:

(314)

na tisun Kadmandu-ri fiya-i bfi-wa khi-sə səmjfi-i
 I last. year Kathmandu-LOC go-PERF SAY-NZN he-ERG remember-PERF
 ‘He remembered that he went to Kathmandu last year’
 (literally, ‘He remembered saying, “I went to Kathmandu last year”’)

In this sentence, the object of *səmjfi-* ‘remember’ is *bfi-wa* ‘saying’, which in turn takes the preceding clause as its object complement. While forms like *bfi-wa* frequently develop into complementizers, there is evidence that this has not yet occurred in Chantyal. One bit of evidence supporting this is that the complements of *bfi-wa* can only be understood as direct quotes: (i) the sentence cannot be interpreted as meaning ‘He remembered that I went to Kathmandu last year’; and (ii) if the complement clause subject *na* ‘I’ is replaced by *khi* ‘he’, the sentence cannot be interpreted as ‘He_i remembered that he_i went to Kathmandu last year’ where the two instances of ‘he’ are coreferential. The latter follows because *khi tisun Kadmandu-ri fiya-i bfi-wa khi-sə səmjfi-i* means literally: ‘He remembered saying “He went to Kathmandu last year”’.

Almost all languages distinguish direct from indirect discourse by means of intonation: there is typically a pause before and/or after the direct quote, while indirect discourse is treated like any other complement from the standpoint of intonation. In addition, some languages, for instance Bemba, use different complementizers for indicating direct versus indirect discourse (Givón (1972)):

- (315) John a-à-ebele *uku-ti* n-kà-isa
 John 3.SG-PAST-say INF-say 1.SG-FUT-come'
 'John said that I will come'
- (316) John a-à-ebele *a-à-ti* n-kà-isa
 John 3SG-PAST-say 3SG-PAST-say 1SG-FUT-come
 'John said "I will come"'

The infinitive form of the defective verb *ti* 'say' is used as a complementizer with indirect quotes, while its simple past counterpart is used with direct quotes. In English, the complementizer *that* is optional with indirect quotes, but obligatorily absent with direct quotes:

- (317) a. *MacArthur said that 'I shall return'
 b. MacArthur said 'I shall return'
- (318) a. MacArthur said that he would return
 b. MacArthur said he would return

With indirect quotes, subjunctive and other reduced complement types can also occur, though they are far less common in this context than indicative complements. When such complement types do occur with indirect quotes, their inflectional possibilities can be utilized to indicate tense distinctions. For instance, Latin is said to have three infinitives: a present, a perfect and a future (Greenough *et al.* (1903)). The future infinitive is only used in indirect discourse. The present and perfect infinitives, like the Greek present and aorist infinitives discussed in section 1.3.4, ordinarily represent imperfect and perfective aspect, respectively. In indirect discourse, the tense markers on these infinitives assume a true time-reference function:

- (319) Dīcunt eum *iuvāre* eam
 say.3PL:PRES him help.PRES:INF her
 'They say that he's helping her'
- (320) Dīcunt eum *iūvisse* eam
 say.3PL:PRES him help.PERF:INF her
 'They say that he helped her'

- (321) Dīcunt eum iūtūrum esse eam
 say.3PL:PRES him help.FUT:PART be.PRES:INF her
 ‘They say that he’ll help her’

Darden (1973) reports a similar phenomenon in literary Lithuanian. In such cases, then, the ITR context of complements to utterance verbs enables the time reference potential of this complement type to be realized.

Because the ITR context provided by indirect quotes so heavily favours indicative complements, the use of other complement types may be idiosyncratic. The German use of the subjunctive discussed in section 3.1.1 is an example of this sort; the use of the subjunctive there depends on the tense of the CTP. In English, the utterance predicate *report* can take infinitive complements in indirect discourse as well as the more expected indicative (as in (308) above):

- (322) The UPI reported Norm to have left

The idiomatic nature of this usage is revealed when we examine semantically similar predicates which do not take infinitive complements under the same conditions, for example *say*, *announce*:

- (323) *John said Norm to have left
 (324) *John announced Norm to have left

For many speakers, however, the use of the infinitive with *report* is not wholly idiosyncratic, but rather reflects a meaning contrast. Example (322) differs from (308) in presenting the information given in the complement as less reliable, possibly contrary-to-fact, whereas the information given in the complement in (308) is, from the speaker’s point of view, more likely to be factual (Postal (1974)). The use of the infinitive for indirect discourse in English has often been attributed to Latin influence, for example by Visser (1973).

While the use of such devices in English is peripheral at best, many languages possess regular devices for indicating the reliability of information given as indirect quotes. One such device was illustrated in section 1.2 for Jacaltele, where the complementizer marked an indirect quote as representing reliable or unreliable information.

3.2.2 *Propositional attitude predicates*

Propositional attitude predicates express an attitude regarding the truth of the proposition expressed as their complement. The propositional attitude may be positive as in the verbs *believe*, *think*, *suppose*, *assume*, etc., or negative as in *not believe*, *doubt*, *deny*, etc. Animate subjects of such predicates are experiencers, as opposed to the agentive basic subjects of utterance predicates. Experiencers, however, needn’t be overtly expressed. In sentences like

(325) It's certain that Hugh will be defeated

(326) It's possible that Perry will lose

the holder of the propositional attitude must be the speaker and therefore the experiencer is contextually redundant in such sentences.³⁰ Many languages do not have predicates such as *be certain*, using instead predicates like *believe* where the experiencer, the holder of the propositional attitude, is always overtly expressed. Further, some languages have only one true propositional attitude predicate, expressing a stronger or weaker commitment to the truth of the complement proposition via verb inflections, sentence particles or adverbs, complementizers, complement types, etc., and negative propositional attitude via negation.

Predicates expressing positive propositional attitude are the most likely predicates to be used parenthetically (section 2.5).

With first person subjects, English is likely to express degrees of certainty or commitment to a proposition by means of different CTPs (e.g., *be certain* versus *be possible*, *believe* versus *doubt*), negation, or by means of adverbials, for instance:

(327) I sort of believe that the Mets will win (but I'm not certain)

When the subject is not first person, the speaker can still express varying degrees of commitment to the complement predication. In ordinary usage

(328) Olaf thinks the Mets will win

suggests a negative propositional attitude on the part of the speaker. This negative attitude can be expressed overtly (not left to inference) as

(329) Olaf stupidly believes that the Mets will win

(330) Olaf stupidly guesses that the Mets will win

The tendency across languages is for the CTP to express the subject's propositional attitude, while adverbials, choice of complementizer and complement type normally express the speaker's propositional attitude.

In Jacaltele, the complementizers *chubil* and *tato* perform the function of indicating speaker propositional attitude with propositional attitude predicates, just as they do with utterance predicates (section 1.2; Craig (1977)). Givón and Kimenyi (1974) report a similar situation in Kinyarwanda where the choice of

³⁰ Predicates like *be evident* in

It's evident to George that Ron frequently blunders

seem to allow for two holders of propositional attitude, George and the speaker, since if this sentence is said sincerely (not ironically) the speaker is committed to the truth of the complement proposition.

ko and *ngo* as complementizers reflects a neutral versus negative propositional attitude on the part of the speaker:

- (331) Yatekereže ko amazi yari mare-mare
 think.3SG.PAST COMP water be.3SG deep
 'He thought that the water was deep'
- (332) Yatekereže ngo amazi yari mare-mare
 'He (misguidedly) thought that the water was deep'

Speaker propositional attitude can also be indicated by choice of complement type. Indicative versus subjunctive complements can be used, as described in section 3.1.1, to indicate positive versus negative propositional attitude.

Complements to negative propositional attitude predicates like *doubt* not infrequently appear in the form of questions. This phenomenon occurs in Irish:

- (333) An dtiocfadh sé?
 Q come.FUT he
 'Will he come?'
- (334) Tá amhras orm an dtiocfadh sé
 COP doubt on.me Q come.FUT he
 'I doubt if he'll come'

English uses special complementizers, *if* and *whether*, under these conditions. See section 3.1.3 for discussion of the use of *if* in such sentences in English. The use of the interrogative form in Irish has a similar explanation, namely that the question morphology indicates uncertainty on the part of the speaker. Complements to utterance predicates like *ask* that report questions exhibit this feature as well.

3.2.3 *Pretence predicates*

Pretence predicates are a semantically complex class whose subjects may be either experiencers (*imagine*, some senses of *pretend*, *make believe*) or agents (*fool (into thinking)*, *trick (into thinking)*, some senses of *pretend*, *make believe*). These predicates have as a characteristic that the world described by the proposition embodied in the complement is not the real world. The status of the complement proposition in the real world is not given, though there is a very general implication that the proposition is false (Kempson (1975)). The complements to these predicates have ITR.

The interesting aspect of these complements from the standpoint of complementation is the form of their complements in systems contrasting indicative and subjunctive complement types. Complements to pretence predicates are normally interpreted as hypothetical non-events, and hence would seem to be classified as irrealis or non-assertive (cf. section 3.1.1). One would expect, then, that, in languages that used a realis/irrealis or assertive/non-assertive contrast

to underlie their indicative/subjunctive distinction, complements to pretence predicates would be coded as subjunctives. This, however, is not the case: these complements are coded as indicatives. Russian, as illustrated in section 3.1.1, uses a realis/irrealis distinction for its indicatives and subjunctives. Complements to *pritvorjatsja* 'pretend' are indicative; the subjunctive is unacceptable (data from Boris Palant (p.c.)):

- (335) Ja pritvorjalsja, čto Ivan prišël
 I pretended COMP Ivan came.INDIC
 'I pretended that Ivan came'
- (336) *Ja pritvorjalsja, čtoby Ivan prišël
 I pretended COMP Ivan come.SJUNCT
 'I pretended that Ivan came'

Similarly in Spanish, which uses an assertive/non-assertive distinction, only indicatives are possible with these predicates (data from Andrés Gallardo (p.c.)):

- (337) Aparentaron que vino
 pretended.3PL COMP came.3SG:INDIC
 'They pretended that he came'
- (338) *Aparentaron que viniera
 pretended.3PL COMP come.3SG:SJUNCT
 'They pretended that he came'

The reason for the indicative in these cases seems to derive from the fact that the pretence predicate establishes an alternative reality and the complement constitutes an assertion within that alternative reality. As an assertion, it is coded in the indicative. This serves to emphasize the fact that it is the function of the complement and its relation with its CTP that determine complement type, not entailment relations, as is often implied in the literature (e.g. Karttunen (1971b); Kiparsky and Kiparsky (1970)).

3.2.4 *Commentative predicates (factives)*

The term *commentative* has been chosen here over the more traditional term *factive* because commentative is a more general term and more clearly characterizes the range of uses of these predicates.³¹ Commentative predicates resemble propositional attitude predicates in that, when an overt human subject appears, the subject is an experiencer since the predicate gives information about mental attitudes. They differ from propositional attitude predicates in that they provide a comment on the complement proposition which takes the form of an emotional reaction or evaluation (*regret, be sorry, be sad*) or a judgement (*be*

³¹ There is a considerable literature on these predicates, for example Kiparsky and Kiparsky (1970); Morgan (1969); Karttunen (1971b); Kempson (1975).

odd, be significant, be important). Both emotional evaluations and judgements are normally made on events or states that people take to be real (Rosenberg (1975)). As a result, complements to commentative predicates have been said to be presupposed.³² Further, sentences with commentative CTPs typically take the form of a comment expressed by the CTP on the complement proposition as topic (old, background information), so complements to commentative CTPs are discourse dependents (section 3.1.1).

Discourse-dependent complements have ITR (their time reference does not logically depend on the CTP), and therefore are normally coded as indicative complements. Their discourse dependency would also make them compatible with nominalizations (section 3.1.5). English allows both s-like and nominalized complement types with these complements:

(339) Nelson regrets that Perry got the nod

(340) Nelson regrets Perry's getting the nod

Languages that employ an assertive/non-assertive distinction for their indicative/subjunctive opposition will use a subjunctive complement type for these complements.

Commentative predicates also occur with infinitive complements in English (Kiparsky and Kiparsky (1970); Spears (1973)). The consequences of juxtaposing a commentative predicate and a DTR infinitive in English would seem to be predictable, namely the CTP would provide a comment on any potential occurrence of the proposition embodied in the complement consistent with the time reference of the CTP. The controllability factor (section 3.1.2) is not involved in the interpretation of infinitive complements of commentatives, since the complement does not refer to a specific event with a fixed time reference relative to the CTP.

When the 'any potential occurrence' interpretation of infinitives in these cases coincides with a pragmatic interpretation of the complement proposition as punctual (representing a single event), then the interpretation of s-like complements and infinitives may be virtually identical:

(341) It was odd that Floyd came

(342) It was odd for Floyd to come

In other cases, however, the two may differ considerably in meaning:

(343) It's odd that turtles don't outrun rabbits

(344) It's odd for turtles not to outrun rabbits

The sentence (343) amounts to a comment on the proposition

³² Kiparsky and Kiparsky (1970); Kempson (1975); Rosenberg (1975).

(345) Turtles don't outrun rabbits

whereas (344) implies that turtles usually do outrun rabbits. Example (343) comments on the complement as representing a fact; non-reduced complements are interpreted as having independent existence and so can accommodate a factive interpretation. Example (344) comments on the complement as a potential occurrence. Judging a fact as odd is quite distinct from judging a potential occurrence as odd, hence the meaning difference.

In languages where adjectives are syntactically distinguished from verbs, there is a strong preference for coding commentative predicates as adjectives. Many languages have only adjectives filling this class of predicates, i.e. forms like *be sorry* in place of *regret*, etc.

3.2.5 *Predicates of knowledge and acquisition of knowledge*

This class of predicates has been called 'semifactive' (Karttunen (1971a); Terrell and Hooper (1974)) and 'epistemic-qualifying' (Guitart (1978)). These predicates take experiencer subjects and describe the state, or the manner of acquisition, of knowledge. Knowledge and acquisition of knowledge (KAK) predicates include *know*, *discover*, *realize*, *find out* and *forget*, as well as perception predicates such as *see* and *hear* when used in a sense other than that of immediate perception (section 3.2.12), i.e. as in (346) but not (347):

(346) I saw that Floyd left (KAK sense)

(347) I saw Floyd leave (Immediate perception sense)

Dream is also a KAK predicate where the source of knowledge is not the real world (in most cultural contexts).

Excluding *dream* from further consideration here, complements to KAK predicates are presupposed to be true, since it only makes sense to assert knowledge or acquisition of knowledge about something one takes as a fact. Complements to KAK predicates, however, differ from complements to commentative predicates in that they do not necessarily constitute backgrounded material, but instead may be new in the discourse context, being part of what is asserted. One can assert both the manner of acquisition of knowledge and the content of the knowledge as new information, so that

(348) I discovered that Sally left Herman

can present the complement as new information (and could therefore be used appropriately where the content of the complement was not known), whereas

(349) I regret that Sally left Herman

cannot felicitously be used to present this information as new.

Since complements to *KAK* predicates have ITR, and are typically part of what is asserted (are not discourse-dependent), they are normally encoded as indicative complements. When *KAK* predicates are negated or questioned, however, they may be used to express negative propositional attitude toward the complement proposition, in which case the usual syntactic consequences of negative propositional attitude follow in the context of a given language. In Spanish, such complements are put in the subjunctive (Guitart 1978), the usual procedure in Spanish for negative propositional attitude.

The predicate *know* has some unique properties. Unlike the other predicates of this class, *know* makes no assertion about manner of acquisition, only the fact of knowledge. As a result, its complements typically represent backgrounded material like commentatives. In addition to the fact of knowledge, however, *know* also asserts a positive propositional attitude toward its complement, like *believe* and unlike the commentative *regret*, which asserts an emotional reaction and comments on the complement as background. The form of complements with *know* cross-linguistically is like those of *believe* and unlike those of *regret* where the two differ. Evidently, expression of propositional attitude is a stronger determiner of complement type than backgrounding.

3.2.6 *Predicates of fearing*

Predicates of fearing, such as *be afraid*, *fear*, *worry* and *be anxious* have enough peculiarities cross-linguistically to merit dealing with them as a class. They are characterized semantically by having experiencer subjects and expressing an attitude of fear or concern that the complement proposition will be or has been realized. The complement has ITR.

One peculiarity of complements to predicates of fearing is that languages differ in the assignment of negation to such complements. In English (350), Irish (351) and Jacaltec (352) (Jacaltec data from Craig (1977)), for example, the complement is expressed as a positive statement if it is interpreted affirmatively:

(350) He's afraid *that Floyd came*

(351) Is eagal léi go dtiocfaidh sé
 COP fear with.her COMP come.FUT he
 'She's afraid that he'll come'

(352) Chin xiw tato chach ayc'ayoj swi' te' ñah
 COP.1SG afraid COMP you fall.down top.3SG:POSS the house
 'I'm afraid that you'll fall from the roof'

In Latin, however, it is expressed as a negative if interpreted affirmatively, and as a positive if interpreted negatively (data from Greenough *et al.* (1903)):

- (353) Vereor *ne accidat*
 fear.1SG NEG happen.3SG
 ‘I fear that it may happen’
- (354) Vereor *ut accidat*
 fear.1SG COMP happen.3SG
 ‘I fear that it may not happen’

In Russian, a complement that is interpreted affirmatively is put in the negative (and in the subjunctive) if the complement represents simple possibility, but in the positive (and the indicative) if the complement is interpreted as something almost certain to occur:

- (355) Ja bojus', *kak by on ne prišël*
 I fear.1SG COMP SJNCT he NEG come.SJNCT
 ‘I’m afraid that he may come’
- (356) Ja bojus', *čto on pridët*
 I fear.1SG COMP he come.FUT:INDIC
 ‘I’m afraid that he’ll come’

As in the Russian case above, many languages possess devices to indicate the degree of certainty for the realization of the complement proposition. Russian changes the negation of the complement, uses its indicative/subjunctive distinction, and changes the complementizer (which is independent of the mood category switch since both *čto* and *kak* can occur with indicatives and subjunctives). When the indicative/subjunctive distinction is based on a realis/irrealis or assertive/non-assertive opposition, a language may use the indicative for more certain complements of fearing, and the subjunctive for less certain ones.

Predicates of fearing commonly occur with non-s-like complement types such as infinitives, especially when an equi-relation exists between notional subjects. In such cases, a meaning contrast between non-reduced and reduced complement types can be exploited:

- (357) *Non-reduced complements*
- I was afraid that I fell asleep
 - I was afraid that I would fall asleep
 - I was afraid that I left
 - I was afraid that I would leave
- (358) *Reduced complements*
- I was afraid to fall asleep
 - I was afraid to leave

Example (358) differs from (357) in the ‘control factor’ discussed in section 3.1.2, which is associated with complement types with DTR such as the English

infinitive. In (358), the subject is presented as a potential controller of the complement event, whereas in (357) the subject is expressed as a simple experiencer of emotion.

In English Irish, and a number of other languages, predicates of fearing are frequently used as parentheticals:

(359) John, I'm afraid, is a Democrat

3.2.7 *Desiderative predicates*

Desiderative predicates, such as *want*, *wish*, *desire* and *hope* are characterized by having experiencer subjects expressing a desire that the complement proposition be realized. In this respect, they can be looked on as being the opposite of predicates of fearing, expressing a positive as opposed to a negative feeling about the ultimate realization of the complement proposition.

Desiderative predicates divide up semantically into three usage classes. The first, the *hope*-class, has complements with ITR, as we see in the following examples:

(360) I hope that John came

(361) I hope that John will come

Hope-class predicates are the true counterparts of predicates of fearing since both types express an emotional attitude toward a proposition whose status is, for whatever reason, unknown, but which could turn out to be true. The *wish*-class predicates also have ITR complements,

(362) I wish that John came / had come

(363) I wish that John would come

but differ from those of the *hope*-class in that they are normally given a contrafactive interpretation, so that, while the status of *John came* in (360) is simply unknown, the complement in (362) is implied to be false. This difference between *wish*- and *hope*-class predicates holds even when the complements have future reference; the complement in (364) is implied to be at least likely to be realized, whereas the complement in (365) is implied to be only a remote possibility:

(364) I hope that Smith will resign

(365) I wish that Smith would resign

If the complement proposition is incapable of realization, for whatever reason, it cannot be a complement of a *hope*-class predicate but can be a complement of a *wish*-class predicate:

(366) *I hope that I was/were twenty again

(367) I wish that I were twenty again

The contrafactive interpretation of *wish*-class predicates has its counterpart in the morphology of the verb complex. Notice that (365) uses the modal *would* while (364) has *will*; *will* expresses definite possibility, *would* has a less definite, hypothetical interpretation. In (367) the complement appears in the past subjunctive, a residual category in English used in hypothetical or contrafactive contexts. *Would* is the past subjunctive of *will*.

The third and last class is the *want*-class. Complements to *want*-class predicates have DTR, and express a desire that some state or event may be realized in the future. The complement in

(368) I want John to come

can only have future reference. *Want*-class predicates resemble *wish*-class predicates in that their complements may refer to an unrealizable state of affairs:

(369) He wants to be twenty again; he's a bit crazy

All languages share the three-way classification between the *hope*-, *wish*- and *want*-classes, but they do not all make the same formal distinctions. Most common is a distinction between the *wish*-class and either or both of the other two. Other languages may not make the same lexical distinctions that English does for the CTP verbs themselves, but they may have contrasting choices for complement types, or they may have reliability, irrealis or conditional markers on the CTP, on the complement predicate, or both.

The complement types used by these classes of predicates follow from their meaning. *Hope*-class predicates are usually associated with non-reduced complements. In Russian, for example, *hope*-class predicates take indicative complements:

(370) Ja nadejus', što Ivan prišël
 I hope.1SG COMP Ivan came.INDIC
 'I hope that Ivan came'

Spanish also uses an indicative with these predicates. *Hope*-class predicates differ from other desideratives also in their inability to allow negative raising (Horn (1978)). Verbs used as *hope*-class predicates can often double as *want*-class predicates as in

(371) I hope to go

especially when an equi-relation exists between notional subjects. The complement type, then, is the same as for the DTR complements of *want*-class predicates, namely reduced complements, typically subjunctives or infinitives. These forms will be used if they are available in the system (see section 4). A

frequently encountered situation for *want*-class predicates is the use of infinitives when an equi-relation exists between subjects, and subjunctives when no equi-relation exists. Lango provides an illustration of this:

- (372) Dákô àm̀ttò jwàttò lóè
 woman want.3SG hit.INF man
 ‘The woman wants to hit the man’
- (373) Dákô àm̀ttò nî àfîn òjwät lóè
 woman want.3SG COMP child hit.3SG:SNCT man
 ‘The woman wants the child to hit the man’

As the glosses to the above sentences show, English uses infinitives for both types of sentences, raising the complement subject to object position (section 2.2) when no equi-relation exists. This sort of situation is somewhat rare. A rather more common situation is exemplified by Albanian, where, even with an equi-relation, the subjunctive is used (data from Ferit Rustemi (p.c.)):

- (374) Gruaja deshi njeriu ta vjedhë
 woman.NOM wanted.3SG man.NOM COMP steal.3SG:SNCT
 pulën
 chicken.ACC
 ‘The woman wanted the man to steal the chicken’
- (375) Gruaja deshi ta vjedhë pulën
 woman.NOM wanted.3SG COMP steal.3SG:SNCT chicken.ACC
 ‘The woman wanted to steal the chicken’

Desiderative predicates are good candidates for lexical union (section 2.3) and examples can be found from many language families. Below is an example from Sanskrit (Gonda (1966)):

- (376) Pibati
 drink.3SG
 ‘He’s drinking’
- (377) Pipāsati
 drink.want:3SG
 ‘He wants to drink’

In many languages, the subjunctive in a main clause has the force of a desiderative CTP plus complement, as in Catalan (data from Yates (1975)):

- (378) Que tinguin bon viatge
 COMP have.2PL:SNCT good journey
 ‘Have a good trip’
 (literally ‘I hope you have a good trip’)

Some languages may use a mood other than the subjunctive to express desire in a main clause. The Greek optative is an example of this sort:

- (379) Fúgoi
 flee.3SG:OPTATIVE
 ‘May he flee’
 (literally ‘I want him to flee’)

Cases like this can be difficult to distinguish from imperatives.

There are a number of cases of forms doing double duty. In Irish, for example, *maith* ‘good’ can be used both as a commentative and a desiderative predicate:

- (380) *Commentative*
 Is maith dhó í a theacht
 be good to.him her COMP come.NZN
 ‘It’s good for him that she came’

- (381) *Desiderative*
 Ba mhaith liom í a theacht
 be.COND good with.me her COMP come.NZN
 ‘I want her to come’

The syntactic difference between (380) and (381) involves the use of the conditional mood (vol. III, chapter 5) on the supporting copula in the matrix, and a change in preposition: *do* ‘to’ with the benefactee in the commentative, *le* ‘with’ with the experiencer in the desiderative. In Hebrew, the word *xošev* does double duty as a propositional attitude predicate and as a desiderative: with indicative complements it means ‘I think’ and with infinitive complements it means ‘I plan’ (data from Ora Leivant (p.c.)):

- (382) Aní xošev še-ha-iš ganav et ha-keseš
 I think COMP-ART-man stole OBJ ART-money
 ‘I think that the man stole the money’
- (383) Aní xošev lignov et ha-keseš
 I plan steal.INF OBJ ART-money
 ‘I plan to steal the money’

The control factor (section 3.1.2) associated with the DTR infinitive accounts for the meaning shifts. The predicate meaning ‘want’ frequently does double duty as a modal predicate expressing ‘need’ or ‘necessity’. Because of the DTR future orientation of *want*-class predicates, they frequently come to be used as markers of future (as in many of the Balkan languages).

3.2.8 *Manipulative predicates*

Manipulatives include the closely related causative and permissive predicates, both involving an element of causation. We are concerned in this section with ‘efficient’ not ‘final’ cause (Longacre (1976)), since final cause is normally expressed via adjuncts (e.g. purpose clauses, ‘John went *in order to please Harriet*’). Manipulative predicates express a relation between an agent or a situation which functions as a cause, an affectee, and a resulting situation. The affectee must be a participant in the resulting situation. When the cause is a situation, the sentence may be rendered not by a complement structure, but rather by a structure like the English *because*-construction:

(384) Floyd hit Roscoe because Zeke forced him

The meaning of (384) can also be rendered via complementation:

(385) Zeke’s forcing Floyd made him hit Roscoe

(386) Zeke forced Floyd to hit Roscoe

Manipulative CTPs typically encode situations where the agent attempts to manipulate the affectee into performing some action or assuming some state.

Manipulative predicates may be simple (*cause*) or, when lexical structures in a language permit, they may in addition encode information about the manner of causation (*force, make, persuade, tell, threaten, let, cajole*), sometimes including an illocutionary act (*command, order, request, ask* and other predicates that are primarily utterance predicates).

The nature of the causative relationship requires a specific temporal order of cause and effect, so complements to manipulative predicates have DTR and are reduced. Since there is an obligatory coreference between the affectee (the DO of the manipulative predicate) and the subject of the complement, the complement subject may be non-overt, resulting in an infinitive. This happens in English and in Spanish (Spanish data from Pat Seaver (p.c.)):

(387) Max persuaded Nellie to run for mayor

(388) Juan le dejó armar-la
 John him let.3SG assemble.INF-it
 ‘John let him assemble it’

In some languages, equi-deletion requires identity between subjects, so that a sentence-like reduced complement type (e.g. subjunctive) is used instead, as in Lango:

(389) Dákô òd’ò lócà nî òtět kwèrí
 woman pressed.3SG man COMP to.forge.3SG:SNCT hoe
 ‘The woman pressed the man to forge the hoe’

The causative relation itself is neutral as to whether the complement proposition is necessarily realized or non-realized. Many languages have devices to indicate such relationships. English, generally speaking, indicates the difference between realized versus non-realized interpretations of complement propositions lexically in the matrix CTP. For example, complements to *force* are interpreted as realized, whereas complements to *persuade* and especially *press* are not:

- (390) I forced Hugh to resign
(implies Hugh resigned)
- (391) I persuaded Hugh to resign
(implies that Hugh was convinced that he should resign, but carries no implication about his actual resignation)³³
- (392) I pressed Hugh to resign
(quite neutral as to whether or not Hugh resigned)

Other languages may mark this difference by choice of complement type. In the Lango sentence (389), above, the complement is neutral as to whether it is realized or not. When the subjunctive of (389) is replaced by the paratactic complement of (393), the complement receives a realized interpretation:

- (393) Dákô òdìò lócə̀ òtètò kwèrí
woman pressed.3SG man forged.3SG:INDIC hoe
'The woman forced the man to forge a hoe'
(literally 'The woman pressed the man; he forged the hoe')

Causatives, even more than desideratives, are good candidates for lexical union. Below is an example from Amharic (data from Mariam Assefa Morrisey (p.c.)):

- (394) Yimət'al
come.FUT:3SG.MASC.SUBJ
'He'll come'
- (395) Yamət'əwal
come.CAUSE:FUT:3SG.MASC.OBJ:3SG.MASC.SUBJ
'He'll bring it'
(literally 'He'll cause it to come')

3.2.9 Modal predicates

Broadly defined, modal predicates would include any predicate expressing modality which is epistemic (concerned with degree of certainty of

³³ For some speakers, *persuade* is like *force*, not *press*.

knowledge) or deontic (concerned with moral obligation or permission). We have included predicates meeting the epistemic part of this definition in the category of propositional attitude predicates. Here we will restrict the term to just those predicates expressing moral obligation and moral necessity, and group these with predicates of ability which resemble them closely in syntactic properties. Modal predicates in English, then, will include forms such as *can*, *be able*, *ought*, *should*, *may* and *be obliged*. We note that most of these forms have epistemic interpretation as well, a frequently encountered situation across languages.

Modal predicates all have complements with DTR.³⁴ Complements to modals refer to either future events or states (relative to the time reference of the CTP)

(396) Leon has to be in Fresno by three

or potential events or states of affairs

(397) Vladimir can eat a whole pizza

As a result, modals take reduced complements such as subjunctives and infinitives. Modal predicates may give the appearance of being one-place predicates

(398) It's necessary for Leon to be in Fresno by three

or two-place predicates with an equi-deleted complement subject:

(399) Leon must be in Fresno by three

Their use with subjunctives in many languages, as in the Albanian (see (400)) and Lori (see (401)) examples below, seems to argue for a two-place analysis, while purely semantic considerations favour the one-place analysis with subject raising.³⁵

(400) Njeriu mundeshte te vjedhë pulën
 man was.able.3SG COMP steal.3SG:SNCT chicken
 'The man was able to steal a chicken'

(401) Pia i-tæres ke tile-ye bedoze
 man PROG-was.able.3SG COMP chicken-OBJ steal.3SG:SNCT
 'The man was able to steal a chicken'

Modal predicates are excellent candidates for clause or lexical union (section 2.3); English and other Germanic languages provide examples of clause union with these predicates. In English, a number of modal predicates such as *can*, *must*, *should*, *may*, etc., function as a special syntactic class of verbal auxiliaries

³⁴ Notice that with epistemic interpretations, complements have ITR:

It must be that Arnold owns an Edsel

³⁵ Some discussion of this issue can be found in Jenkins (1972).

with a set of unique syntactic properties (see Palmer (1968, 1986); R. Allen (1966)). The Turkish ‘necessitative’ provides an example of lexical union with this class; *-meli* ‘ought’ can be suffixed to any verbal root to form a necessitative verbal stem (Lewis (1967)):

- (402) Gel-di-m
‘I came’
- (403) Gel-eceğ-im
‘I’ll come’
- (404) Gel-meli-yim
‘I ought to come’

In many languages, subjunctives used as main clauses may be given a modal interpretation, as well as the semantically related imperative sense.

3.2.10 *Achievement predicates*

Achievement predicates were discussed by Karttunen (1971a) under the name of ‘implicative’ predicates. Achievement predicates can be divided into positive and negative achievement classes. Positive achievement predicates, such as *manage*, *chance*, *dare*, *remember to*, *happen to* and *get to*, refer to the manner or realization of achievement. Negative achievement predicates, such as *try*, *forget to*, *fail* and *avoid*, refer to the manner of, or reason for, the lack of achievement in the complement predication. In both the positive and negative cases the complement has DTR since the time reference of the achievement (or lack of achievement) of the event will have the same time reference as the event (or its non-occurrence). Complements to achievement predicates, then, will take the form of reduced complements.

Complements to achievement predicates (especially negative achievement predicates) frequently represent names of activities or backgrounded propositions and so are compatible with nominalized propositions when these are available (cf. section 3.1.5):

- (405) Zeke tried eating spinach
- (406) Nelson avoids taking baths

3.2.11 *Phasal predicates (aspectuals)*

These predicates have been termed ‘aspectuals’ by Newmeyer (1969) and others. The useful term ‘phasal’ is derived from Longacre (1976). Phasal predicates refer to the phase of an act or state: its inception, continuation, or termination, and are represented in English by forms such as *begin*, *start*, *continue*, *keep on*, *finish*, *stop* and *cease*. In this category, we should also place *repeat* and *resume*, predicates with an iterative sense. Complements to phasal predicates have DTR since the time reference of the above-mentioned phase of an event must be the

same as that of the event itself. For this reason, phasal predicates are associated with reduced complements.

The three phases of actions or states – inception, continuation, termination – may be associated with different complement types because each is inherently associated with a different aspect: inception with inceptive (inchoative) aspect, continuation with progressive (durative) aspect, and termination with perfective (completive) aspect. Because of the strong association between phasal predicates and aspect, complements to phasal predicates may appear in the form of adverbial (converbal) clauses not ordinarily associated with complements. This most commonly happens when languages otherwise lack complement types which can express aspectual contrasts. So, for example, Chantyal has two complement types: an s-like complement, only found with the quotative verb *say*; and a nominalization, which is used elsewhere. However, with phasal predicates, converbs (verbals used adverbially) with aspectual senses can be used as complements: complements to *begin* are nominalizations, complements to *continue* are progressive converbs or nominalizations, and complements to *finish* are sequential converbs, which have a perfective sense:

- (407) Ram ca-wa thali-i
 Ram eat-NZN begin-PERF
 ‘Ram began to eat’
- (408) Ram ca-wa ci-i
 Ram eat-NZN sit-PERF
 ‘Ram continued to eat’
- (409) Ram ca-kəy ci-i
 Ram eat-PROG sit-PERF
 ‘Ram continued to eat’
- (410) Ram ca-si cfiin-ji
 Ram eat-SEQ finish-PERF
 ‘Ram finished eating’
 (literally ‘Ram, having eaten, finished’)

Aspectual and/or tense distinctions within the set of complement types in a given language can be exploited with phasal predicates to create contrasts in meaning. For example, in English we have the contrast between:

- (411) a. Zelda started to sneeze but then didn’t sneeze
 b. *Zelda started sneezing but then didn’t sneeze

The infinitive (*to sneeze*) has a prospective, secondary future sense among its range of meanings, whereas the gerund (*sneezing*) is neutral with regard to tense (for extended discussions of this and similar contrasts in English, see Freed (1979); Wierzbicka (1988); Tobin (1993)). Further, phasal predicates

with otherwise similar meanings, e.g. the terminatives *finish* and *cease*, may take different ranges of complement types:

- (412) a. Roscoe finished shucking the corn
 b. *Roscoe finished to shuck the corn
- (413) a. Roscoe ceased shucking the corn
 b. Roscoe ceased to shuck the corn

Dixon (1991) explains the difference between *finish* and *cease* as one of ‘object’ versus ‘subject’ orientation, respectively: *finish* denotes cessation of activity, whereas *cease* denotes the withdrawal of involvement of the subject from the activity. *Roscoe finished shucking the corn* implies that the corn is all shucked; *Roscoe ceased to shuck the corn* implies that Roscoe will no longer shuck corn. The prospective, secondary future sense of the infinitive in (413b) reinforces this sense.

The argument structure of clauses with phasal predicates also requires comment. In (407), repeated below,

- (407) Ram ca-wa thali-i
 Ram eat-NZN begin-PERF
 ‘Ram began to eat’

it is clear that *Ram* is the subject of *ca-* ‘eat’ and not of *thali-* ‘begin’ since the case assigned to *Ram* is dependent on *ca-* not *thali-*. So, if *ca-* is used transitively, i.e. if there is a direct object of *ca-*, *Ram* must appear in the ergative case (subjects of transitive predicates in Chantyal are marked with the ergative (Noonan (2002))):

- (414) Ram-sə sya ca-wa thali-i
 Ram-ERG meat eat-NZN begin-PERF
 ‘Ram began to eat meat’

Since case is assigned to *Ram* by *ca-* and not by *thali-*, we can infer that *Ram* is the subject of *ca-* ‘eat’ and that *Ram-sə sya ca-wa* is a phrase functioning as the subject complement of *thali-*; *thali-* ‘begin’, therefore, is intransitive with a single, clausal argument, and the whole sentence means something like *Ram’s eating meat began*. Notice, however, that in the English translation of (414), *Ram began to eat meat*, *Ram* is clearly the subject of *began*. It is generally assumed that, in cases like this, the subject of the complement has been raised to be matrix subject (for discussion of this issue, see Newmeyer (1975); Langacker (1995)).

Phasal notions can be indicated by a variety of techniques aside from phasal predicates in complementation. Many languages have verb affixes or particles for indicating these notions and, indeed, phasal predicates develop historically into aspectual particles and affixes (Bybee, Perkins, and Pagliuca (1994)). In

some languages, continuation can be indicated by repeating the verb, as we see in this example from Tairora (Vincent (1973)):

- (415) Otu bi otu bi otu bi-ro
 go.down go go.down go go.down go-3SG
 'He continued going down'

3.2.12 *Immediate perception predicates*

Immediate perception predicates include forms such as *see*, *hear*, *watch* and *feel* where the predicate names the sensory mode by which the subject directly perceives the event coded in the complement. Also included in this class are predicates like *imagine*, where the event and its perception are entirely mental. Complements to immediate perception predicates have DTR since the immediate perception of an event must have the same time reference as the event itself. Complements to immediate perception predicates will therefore be reduced, though some exceptional cases are noted below.

As mentioned in sections 1.3.6 and 3.1.5, participles are frequently used in forming complements to immediate perception predicates. In these constructions, the subject of the complement proposition is treated as the DO of the CTP and the participle takes this DO as its head. A related construction is found in Lori ((416), data from Stan Murai (p.c.)), French ((417), data from June Mathias (p.c.)), Spanish ((418), data from Pat Seaver (p.c.)), and a few other languages, where the complement takes the form of a relative clause with the DO as its head:

- (416) Zine pia-ye di ke tile-ye i-dozi
 woman man-OBJ saw COMP chicken-OBJ PROG-steal.3SG
 'The woman saw the man stealing the chicken'
- (417) Marie voit Roger qui mange les pommes
 Marie sees Roger RPRO eat the apples
 'Mary sees Roger eating the apples'
- (418) Oigo a Juan que toca la guitarra
 hear.1SG to John COMP play.3SG the guitar
 'I hear John playing the guitar'

Both Spanish and French more commonly use infinitives as complements to these predicates.³⁶

³⁶ The use of participles with immediate perception predicates was discussed in section 3.1.5. The relative clause constructions, quite rare cross-linguistically, probably have a similar explanation, due to the functional similarity of participles and relative clauses. These relative clause constructions have been discussed by Kayne (1975), Mathias (1978) and Seaver (1978), who note the differences between these and ordinary relative clauses (which are simply the product of pragmatic factors).

It is important to note, as Kirsner and Thompson (1976) point out, that semantically it is the entire event, not the argument coded as the matrix direct object, that is perceived. For example, in the sentence

(419) I smelled Hank spreading the fertilizer

it is not Hank that is smelled. Similar arguments would apply for other instances of raising, for example with *want* in English.

A few languages use ordinary indicative complements with immediate perception predicates, creating a construction that may be identical to the KAK predicate use of perception predicates. Eastern Armenian appears to provide an example of this (data from Galust Mardirussian (p.c.)):

(420) Kənik-ə tesav vor mard-ə hav-ə gojats^hav
 woman-ART saw.3SG COMP man-ART chicken-ART stole.3SG
 ‘The woman saw the man steal the chicken’
 (literally ‘The woman saw that the man stole the chicken’)

Such cases may be difficult to distinguish from relative clause complements where the relative clause has been moved to postverbal position. Some languages differentiate immediate perception versus KAK uses of perception predicates by choice of complementizer. In Malay, for example, the complementizer *bahwa* is normally optional; it is optional with KAK uses of perception predicates, but cannot be used with immediate perception senses. *Teingok* ‘watch’, which has no KAK counterpart, illustrates this (data from Eng-Kwong Cheang (p.c.)):

(421) Saya mēn-engok (*bahwa) orang itu sēdang mēn-churi ayam
 I TRANS-watch (COMP) man the PROG TRANS-steal chicken
 ‘I watched the man stealing the chicken’

Alongside the participles and relative clauses noted above, complement types not otherwise found in the complement system may be used with immediate perception predicates. Russian, for example, uses a special complementizer *kak* with the indicative for complements to these predicates. In complementation, *kak* is otherwise found only with the subjunctive with complements to predicates of fearing:

(422) Ja videl kak Boris čitaet knigu
 I saw COMP Boris read book
 ‘I saw Boris reading a book’

The complement does not undergo tense copying. The KAK use of the above CTP would result in a sentence differing from (422) only in the substitution of *čto* for *kak*, the ordinary indicative complementizer.

Languages can distinguish between agentive (deliberate) and non-agentive (non-deliberate) perception. This is very frequently done in the case of visual perception, as in the English lexical contrast between *watch* and *see*. Only the non-deliberate forms have counterparts in KAK predicates.

3.2.13 *Negative predicates*

While in the great majority of the world's languages negation is accomplished via a negative particle, or, more rarely, a negative conjugation or negative verbal stem, a few languages express negation as a CTP which takes the negated proposition as its complement. From a semantic point of view, this state of affairs is quite reasonable since negation can be expressed in logic as a one-place predicate. The rarity of overt negative predicates is more a reflection of the convenience of a negative particle versus a complement construction than of any semantic considerations.

An example of a negative predicate is provided by Fijian (Churchward (1941)):

- (423) Ena lako ko koya
 FUT go ART he
 'He will go'
- (424) Ena sega ni lako ko koya
 FUT NEG COMP go ART he
 'He won't go'

Another example is provided by Shuswap (Kuipers (1974)):

- (425) χəqpnwθw'n
 understand.1SG
 'I understand.'
- (426) Tá? k s-xəqpnwθw'n
 NEG ART NZN-understand.1SG
 'I don't understand'

In (426) the negative predicate takes a nominalized complement.

Complements to negative predicates have DTR since the time reference of a proposition must be the same as its negation.

3.2.14 *Conjunctive predicates*

A few languages use verbs to translate English conjunctions like *and* and *and then*. Semantically, such conjunctions can be viewed as two-place predicates. Whether the complement to such predicates would have ITR or DTR would depend on the meaning of the predicate.

In Lango, there is a conjunctive predicate *tê* meaning ‘and then’. This predicate only appears in the habitual aspect and is conjugated for person, agreeing with the subject of the second conjoined clause. The second clause appears in the form of an infinitive, while the first clause precedes *tê* and is not marked as subordinate in any way:

- (427) Àcámò rìṅó àtê mǎttò pì
 ate-1SG meat and.then.1SG drink.INF water
 ‘I ate meat and then I drank water’
- (428) Á'bínò pìttò kótí tê dṅṅò
 Come.1SG plant.INF seeds and.then.3SG grow.INF
 ‘I’ll plant the seeds and then they’ll grow’
- (429) Òtèdò rìṅó òtê càmmò
 cook.3SG meat and.then.1PL eat.INF
 ‘He cooked the meat and then we ate it’

This construction occurs frequently in Lango discourse.

4 Complementation systems

With the exception of negative and conjunctive CTPs, all languages have about the same set of uses of CTPs and their complements. All languages do not, however, have the same number or kinds of complement types. In this section, we will examine the ways in which complement types are distributed among the various CTPs.

As mentioned in section 1, languages differ as to the number and kinds of complement types available to them. English, for example, has an indicative, a rather moribund subjunctive, an infinitive, a nominalization and a participle. Lango has an indicative, a subjunctive, a paratactic complement and an infinitive. Lori has an indicative, a subjunctive and a nominalization. Albanian has an indicative, a subjunctive and a participle. Irish has an indicative and a nominalization. As discussed in section 3, each of the complement types mentioned above has a special affinity for certain uses, but, since the entire system must be accommodated, the range of any given complement type may be extended beyond its ‘ideal’ range. In general, the fewer the oppositions available within a complement system, the more likely a given complement type will be extended beyond its ideal range.

We will discuss briefly some representative complement systems. Compare, for example, the description of the Lango system presented below and that given in Noonan (1992). Where the ranges of two complement types overlap, it is understood that either complement type could occur in that context.

All languages have an *s*-like indicative complement type, and all languages have some sort of reduced complement type in opposition to the indicative. Complement systems with two members tend to make their primary break at the ITR/DTR distinction, the morphology of the reduced complement type determining to a large degree any other semantic distinctions that may be present in the system. In Albanian, the indicative codes all ITR contexts, the subjunctive, DTR contexts. In Irish, however, the nominalized complement type is not only used in all DTR cases, but is also used in any context where the complement is backgrounded; the nominalized complement type is exploited both as the reduced complement type and as a nominal.

The Albanian subjunctive simply fills the role of reduced complement type; in a two-member system, a subjunctive is seldom used for more than this. This is true also for infinitives in two-member systems. The Albanian situation is typical of many Balkan languages, such as Macedonian, Bulgarian and Modern Greek. The Irish situation described above is typical of the Celtic languages. A variation on this sort of two-member system is illustrated by Lahu, which contrasts an indicative complement type used in ITR contexts with an infinitive complement type used only in DTR contexts. Malay contrasts an indicative with an infinitive complement type, which is distinguished from the indicative in that it cannot form a syntactic constituent with its notional subject and cannot occur with auxiliaries and particles. This complement type has DTR only, and occurs only when its notional subject is equi-deleted under identity with the matrix subject or DO. This sort of system is often encountered in languages that do not inflect verbs for tense, aspect and mood. Another sort of two-member system is found in Squamish and other Native American languages, where the indicative complement is almost restricted to complements of utterance predicates; the nominalized complement type, which can express full tense–aspect and mood distinctions, is used elsewhere.

Three-member systems typically include indicative, subjunctive and infinitive or nominalized complement types. In systems like this, the subjunctive frequently codes irrealis modality (section 3.1.1). In Russian, for example, the indicative is used in realis contexts with ITR and for complements to immediate perception predicates. The subjunctive codes irrealis contexts. The infinitive is used in DTR contexts where the complement subject has been equi-deleted under identity with matrix subject or direct object (see Brecht (1974)). The subjunctive is used in all other DTR contexts. Persian has a similar system except that it replaces the infinitive with a nominal complement. The Persian nominalized complement has a greater range than the Russian infinitive, since it is used in all the contexts the infinitive is, as well as being used to code backgrounded complements. Lori and Eastern Armenian use their three-member opposition somewhat differently. The indicative is used in all ITR contexts and for complements to immediate perception predicates. The subjunctive codes DTR contexts, while the nominal is restricted to

backgrounded contexts. Three-member systems, especially of the first type, are fairly common.

Another sort of three-member opposition is illustrated by Modern Hebrew. Hebrew contrasts an indicative with an infinitive, and there is also a participle used only in immediate perception contexts. The infinitive is used only in DTR contexts, but since raising-to-object is not possible in Hebrew, the infinitive is used only when its notional subject is equi-deleted under identity with either the matrix subject or direct object.

Four-member systems typically include indicative and subjunctive complement types, and two non-s-like complement types. Catalan is typical of this sort of system, with an indicative used in assertive contexts, a subjunctive used in non-assertive contexts, an infinitive in DTR contexts where its notional subject has been equi-deleted under identity with the matrix subject, and a participial complement used for immediate perception complements. This sort of system is typical of the Western Romance languages. Another sort of four-member system is found in Lango, where the indicative codes ITR contexts, with the other three complement types used in DTR contexts: the paratactic complement is used where the complement is taken as expressing a realized situation, the subjunctive is used in unrealized situations, and the infinitive replaces either when the subject is equi-deleted. This sort of system is found in other Nilotic languages. With the effective loss of the subjunctive, most dialects of English have only a four-member system, contrasting an indicative which occurs only in ITR contexts with an infinitive used primarily in DTR contexts (some exceptions have been noted above). The nominalized complement is used for backgrounded information, and the participles occur mainly as complements to immediate perception predicates.

Systems of more than four members are rather uncommon. These systems typically include a contrast of more than two s-like complement types. Classical Greek, for example, contrasted an indicative, a subjunctive and an optative, all s-like complement types, with an infinitive and a participial complement type. Conservative forms of English manage a five-way contrast with just two s-like complements, contrasting an indicative, a subjunctive, an infinitive, a nominalization and a participle.

5 A note on noun complementation

Many grammarians have distinguished ordinary complementation from noun complementation (*eg* Quirk *et al.* (1985), and Huddleston (1971)). Noun complements are sometimes referred to as 'appositive clauses'. In fact, the structure of noun complements differs from other instances of complementation only in that the CTP is a noun and not a verb or an adjective. Many of the structures that we have considered in the preceding sections were in fact instances of noun complementation.

Some languages show a marked propensity for rendering predicates as nouns. In Irish, for example, predicates with experiencer arguments are typically nouns, the experiencer assuming a genitival relation to the nominalized predicate:

- (430) Tá *súil* agam go bhfaighidh tú é
 COP hope at.me COMP get.FUT you it
 'I hope that you'll get it'
- (431) Tá a *fhios* agam gur tháinig sé
 COP its knowledge at.me COMP.PAST came he
 'I know that he came'
- (432) Tá *aifeála* orm go mbauilfear é
 COP regret on.me COMP beat.FUT:IMPRS him
 'I regret that he'll be beaten'
- (433) Tá *amhras* orm an dtiocfadh sé
 COP doubt on.me Q come-FUT he
 'I doubt whether he'll come'

There is no verbal counterpart of *súil* in Modern Irish, even though other languages, for example English, can express this predicate verbally as well as nominally. But this is not just a peculiarity of Irish. English also has predicates that can function as noun heads of complement constructions – for example *fact*, *idea* – that have no verbal counterpart in the language. Most heads of noun complement constructions in English, however, have verbal counterparts, for example *ability* (*be able*), *decision* (*decide*), *hope* (*hope*), *belief* (*believe*), *command* (*command*), *desire* (*desire*), and *suggestion* (*suggest*). Though all these nominals are related to verbs, their semantic relations to them may be quite idiosyncratic as the following pairs of nominals show: *continuity* and *continuation* (*continue*), *referral* and *reference* (*refer*).

Complements to noun heads typically exhibit the same range of complement types as complements to other sorts of heads, as the following examples show:

- (434) Walt's ability to chew gum and tie his shoes at the same time
 impressed everyone
 Walt is able to chew gum and tie his shoes at the same time
 INFINITIVE
- (435) Andrea's belief that Max is the King of Greenland annoyed Sally
 Andrea believes that Max is the King of Greenland
 INDICATIVE
- (436) Queen Zelda's command that Zeke be shot drew cries of protest
 Queen Zelda commanded that Zeke be shot
 SUBJUNCTIVE

The distribution of these complement types is dependent on the same set of semantic and pragmatic factors that determine the distribution of complements with other sorts of heads. Complements to noun heads occasionally may have to assimilate to the internal structure of (see NPS vol. III, chapter 6 for some discussion of this).

6 Obtaining information about complement systems

Most published grammatical descriptions are inadequate sources for data about the organization of the complement system. One reason for this is that complementation has not, until fairly recently, been considered a single topic for discussion in grammars. What information is available is usually scattered in various places throughout the grammar and at best may be adequate only for the reconstruction of the broad outlines of the system. A useful adjunct to the grammar, when no native-speaker informants can be found, is a good dictionary with a generous supply of illustrative sentences. By making a list of CTPs and checking their dictionary entries, much useful information can be gleaned. Unfortunately, not all dictionaries are helpful in this way, and it is usually only dictionaries of the better-studied languages (with more helpful grammars available in any case) that provide large numbers of illustrative sentences.

It goes without saying that the best technique for obtaining data about complement systems is elicitation from native-speaker informants. One should only attempt to elicit data about complementation (or any other types of complex sentences) after a basic sketch of verbal and nominal morphology and syntax has been obtained from the examination of simple sentences.

A useful procedure for obtaining an overview of the system is outlined as follows. First, prepare a list of CTPs. Use the classes of CTPs given in section 3.2 as the basis for the list. Next, select a simple transitive sentence to use as the complement proposition. It is useful to elicit complement types initially with one constant complement proposition, varying it only where the sense or the opportunity to examine certain semantic or syntactic possibilities would suggest a change. In this way, changes in the form of the complement are more easily observed and comparisons more easily made. Now, create sentences from your list of CTPs using the simple transitive sentence as the complement and ask your informant to translate. For instance, you might begin with utterance predicates as CTPs and create sentences like:

- (437) a. The woman said that the boy stole the chicken
b. The woman asked the man if the boy stole the chicken
c. The woman told the man that the boy stole the chicken

Be sure to check out the various semantic and grammatical possibilities suggested in the subsections of 3.2. For example, in gathering data about

utterance predicates, check out the difference between direct and indirect discourse, as in

- (438) a. The woman said, 'I stole the chicken'
 b. The woman said that she stole the chicken
 c. The woman said that I stole the chicken

After going through your list of CTPs with your basic transitive sentence, vary the predicate in the complement and see if other predicates exhibit the same range of morphological categories in complementation. Be sure to include in your sample the predicates that are most likely to be irregular, for example *be* (if such a predicate exists in the language), *come*, *go*, etc., since these predicates may retain vestiges of categories no longer productive in the system as a whole.

At this stage you should have adequate data to permit you to identify complement types and to begin to speculate on their semantic range vis-à-vis the set of CTPs. Make some hypotheses and check them out. A useful way to check out hypotheses of this sort is to find some predicates (like *remember*, in English) that can occur with more than one complement type and try to discover what the semantic difference is in choosing one complement type over the other. Bear in mind also that the grammatical forms representing the complement types in your language are probably not restricted in use solely to the complement system, but are used elsewhere in the grammar. Your hypotheses about the function of these forms within complementation should be compatible with their use elsewhere.

7 **Suggestions for further reading**

There are a large number of works which deal with aspects of complementation in individual languages, but few that provide an overview of complementation, either cross-linguistically or in a particular language. Of those few, Ransom (1986) and Dixon (1991) are especially to be recommended.

Additional references include Givón (1980), Bolinger (1968) and Wierzbicka (1988) on the semantics of complement types, and Bolinger (1972), Dimmendaal (1989) and Frajzyngier (1995) on complementizers. Frajzyngier (1996) is an in-depth study of subordinate constructions (mostly complement clauses) in Chadic; Genee (1998) is an in-depth study of complementation in Irish. Comrie and Horie (1995) provide an interesting discussion of the boundary between relative clauses and complements. Lehmann (1988) and Palmer (1987) place complement clauses within the general scheme of subordination and clause linkage.

3 Noun phrase structure

Matthew S. Dryer

0 Introduction

In discussing the structure of noun phrases cross-linguistically, I will assume a rather rough characterization of noun phrases, as syntactic constituents which serve as arguments of verbs. There are a variety of ways in which this is inadequate as a precise definition and there are a number of legitimate questions about exactly what ought to be considered a noun phrase, but these issues are somewhat marginal to the primary purpose of this chapter, which is to discuss some of the ways in which noun phrases differ across languages in a way that will be helpful to someone describing noun phrases in a particular language.

It is convenient for the purposes of discussion to distinguish three sorts of noun phrases: (i) simple noun phrases, which contain only pronouns or nouns plus simple modifiers like articles, adjectives, demonstratives, or numerals; (ii) complex noun phrases, which contain more complex sorts of modifiers, like genitive or possessive modifiers and relative clauses; and (iii) various sorts of noun phrases which lack a head noun. These three types are discussed in sections 1, 2, and 3 respectively.

1 Simple noun phrases

The most common noun phrases in many languages contain a single word which is either a noun or a pronoun. In most if not all languages, pronouns generally occur alone in noun phrases without modifiers. Constructions in which pronouns occur with modifiers, as in *we linguists* or *something inexpensive* in English, are often possible but infrequently used. Although traditional grammar defines pronouns as words that take the place of nouns, a more accurate characterization of most pronouns is that they take the place of noun *phrases*. In many languages, it may be difficult to distinguish pronouns from nouns except on a semantic basis.

1.1 *Articles*

In many languages, probably a majority, it is not only possible but very common for noun phrases to consist of only a noun, as in (1), from Yidiñ (Dixon (1977a)), a Pama-Nyungan language spoken in northeastern Australia. See the beginning of the volume for a explanatory list of the abbreviations used in the glosses.

- (1) wagu:da gudaga-ŋgu baɖa:l
 man.ABS dog-ERG bit
 ‘the/a dog bit the/a man’

Whether or not this is in general possible in a language hinges considerably on whether the language has articles: the high frequency of noun phrases consisting of just a noun in a language like Yidiñ reflects the fact that the language lacks articles, while corresponding noun phrases in a language like English would require an article. While English permits noun phrases consisting of just a noun when that noun is a proper noun (*I like Pat*), a mass noun (*I like milk*) or the plural of a count noun (*I like flowers*), this is not possible with the singular of count nouns (**I like flower*); in these cases, English requires some sort of determiner (*I like this flower*, *I have brought you a flower*).

Many languages have a definite article or an indefinite article but not both. In Kutenai, a language isolate spoken in western Canada and the United States, for example, there is a definite article, as in (2a), but indefinite noun phrases are unmarked, as in (2b).

- (2) a. hu wu-kat-i ni? paʔkiy
 1SG see-INDIC the woman
 ‘I saw the woman’
 b. hu wu-kat-i paʔkiy
 1SG see-INDIC woman
 ‘I saw a woman’

Less common are languages in which there is an indefinite article but no definite article: Amele (Roberts (1987)), a Madang language of Papua New Guinea, has an indefinite article *oso*, which follows the noun, as illustrated in (3a), but no definite article, as illustrated in (3b).

- (3) a. *dana oso* ija na sigin heje on
 man INDEF 1SG GEN knife illicit take.3SG.REM.PAST
 ‘a man stole my knife’
 b. *dana* ho-i-a
 man come-3SG-PAST.TODAY
 ‘the man came’

In languages with both a definite article and an indefinite article, the two articles often do not form a grammatical class, exhibiting different grammatical properties. For example, the indefinite article in Mupun (Frajzyngier (1993)), a Chadic language of Nigeria, appears on the opposite side of the noun from the definite article. In (4a), the indefinite article *mee* precedes the noun, one of the few modifiers of nouns that does so in this language, while the definite article follows the noun, as in (4b).

- (4) a. n=naa [mee ngu nan] n=tul fu
 1SG=see [INDEF man adult] PREP=house 2PL
 'I saw an old man at your place'
- b. [nləər də sə nə] fii
 [shirt DEM DEF] dry
 'this very shirt is dry'

While definite and indefinite articles are obligatory in some languages, there are other languages in which they are optional. For example, while the definite article in Kutenai illustrated above in (2a) is normally present with singular noun phrases denoting humans, it is not obligatory; thus (2b) could also mean 'I saw the woman'. Similarly, the indefinite article is optional in Kayardild (Evans (1995)), a Tangkic language spoken in Australia: it occurs in (5a) (*warngiida*, glossed 'one'), but not with the noun phrase interpreted as indefinite in (5b).

- (5) a. *warngiid-a dangka-a rar-id-a*
 one-NOM man-NOM south-CONTIN-NOM
 buruwan-mula-a-ja budii-j
 initiation.ground-VABL-MODAL-ACTUAL run-ACTUAL
 'a man ran away southward from the initiation ground'
- b. *dangka-a burri-ja ngijin-ji*
 man-NOM emerge-ACTUAL 1SG-MLOC
 'a man ambushed me'

In some languages with optional indefinite articles, the article codes a meaning narrower than that of the indefinite article in English. Often, indefinite articles more specifically mark a referent as prominent in the discourse. Similarly, definite articles have a narrower range of usage in some languages than others. There are at least three common functions associated with definite articles: (i) an anaphoric use, where the noun phrase refers to something mentioned in the preceding discourse; (ii) a nonanaphoric use, where the noun phrase denotes something known to both speaker and hearer but not mentioned in the preceding discourse, such as references to the sun or the moon; and (iii) an intermediate use, where the referent is not itself referred to in the preceding discourse, but is nevertheless linked to or inferrable from something in the preceding discourse

(e.g., *the door* and *the doorbell* in *When I arrived, I walked up to the door and rang the doorbell*). In some languages, definite articles are restricted to a subset of these functions. Most commonly, they are restricted to anaphoric uses and are sometime glossed as ‘previously mentioned’. The definite article *ndi* in Ngiti (Kutsch Lojenga (1994)), a Central Sudanic language of the Democratic Republic of the Congo, illustrated in (6), is an instance of a definite article with such a restriction.

- (6) *yà ndi dza*
 this DEF house
 ‘this house (mentioned before)’

Less commonly, the definite article is restricted to nonanaphoric uses. This is the case with the definite marker *-na* in Karo Batak (Woollams (1996)), an Austronesian language of Sumatra in Indonesia. The example in (7) is appropriate in a context where the speaker is buying something and no mention has been made of the money, though it is inferrable in the context of purchasing something.

- (7) *énda sén-na*
 this money-DEF
 ‘here’s the money’

In many languages, words with demonstrative meaning are often used in contexts in which English would use a definite article. In Takia (Ross (2002a)), an Austronesian language of Papua New Guinea, for example, the word *an* is used in contexts in which English would use the word *that*, as in (8a), but it is also widely used in contexts in which English would use the definite article, or even ones where English would just use a possessive pronoun (but no article), as in (8b).

- (8) a. [*mau an*] w-ani u-moi
 [taro that] 2SG-eat 2SG-not.want
 ‘don’t eat that taro!’
 b. [*ɲine-g malkouk an*] ɲu-bisei=g . . .
 1SG.POSS-1SG white.person DEF 1SG-depart=REALIS
 ‘I left my white master . . .’

This is most apparent when one examines texts in a language and finds that a form that is described as a demonstrative is used far more often than one would find with a demonstrative in languages like English. We might describe a situation like this by saying that *an* in Takia has two functions, that of a demonstrative and that of a definite article. However, such a description is probably

Eurocentric and it is better to say that the range of meaning covered by *an* includes that of demonstratives and definite articles in other languages. Despite the fact that the word *an* in Takia is often used simply as a marker of definiteness, it is best called a demonstrative because it belongs to a demonstrative paradigm in that language: it is the intermediate member in a set of three demonstratives (the others are proximal *en* and distal *on*), and there are various demonstrative sets of words that vary in the same way, such as the locative adverbs (proximal *ebo*, intermediate *abo*, distal *obo*). Typically, demonstratives used as definite markers are not obligatory. The use of demonstratives as definite markers reflects the fact that they are a common diachronic source for definite articles: they start as demonstratives, get extended to anaphoric usage and then finally (in some cases) can be used nonanaphorically as well. Demonstratives that are used as definite markers are often restricted to anaphoric usage; this is the case, for example, for Takia.

In some languages, it is possible to distinguish definite and demonstrative uses of the same word syntactically. For example, in Ute (Southern Ute Tribe (1980)), a Uto-Aztec language of the western United States, the same lexeme functions as a distal demonstrative when it precedes the noun and as a definite article when it follows the noun.

- (9) a. 'ú ta'wáci̲
 that man
 'that man'
- b. ta'wáci̲ 'u
 man DEF
 'the man'

It is also stressed when used as a demonstrative (the acute accent indicates stress), but not when it is used as a definite article.

Somewhat less common is for a language to use a third person pronoun as a definite article, combining with a noun or with words that often function as modifiers of nouns. In Tidore (Van Staden (2000)), a West Papuan language of eastern Indonesia, the third person pronoun functions as a definite article. This is illustrated by the third person plural pronoun *ona* in (10).

- (10) *ona* guru=ge
 3PL teacher=that
 'those teachers'

Just as many languages use demonstratives where English would use a definite article, it is similarly the case that many languages use the numeral for

'one' in contexts where English would use an indefinite article. This is found in a number of European languages, such as French, illustrated in (11).

- (11) *un* livre
 a/one book
 'a book', 'one book'

In some languages, the form of the indefinite article is the same as that of the numeral for 'one', but the syntax is different. In Turkish (Kornfilt (1997)), for example, the word *bir* precedes adjectives modifying the noun when it means 'one' but follows the adjectives if it is functioning as an indefinite article, as illustrated in (12).

- (12) a. *bir* güzel olgun elma
 one nice ripe apple
 'one nice ripe apple'
 b. güzel olgun *bir* elma
 nice ripe an apple
 'a nice ripe apple'

Some languages have articles that code specificity rather than definiteness. For example, Futuna-Aniwa (Dougherty (1983)), a Polynesian language of Vanuatu, has two articles which can be called specific and nonspecific. The specific article is used where English would use the definite article or where English would use the indefinite article but where the speaker has a specific referent in mind, as in (13a), while the nonspecific article is used where the speaker has no particular referent in mind, as in (13b).

- (13) a. na-n tukia [*ta* fatu]
 PAST-1SG hit [SPEC rock]
 'I hit against a rock'
 b. a roroveka kaseroitia ma [*sa* ika] aratu
 ART Roroveka catch NEG [NONSPEC fish] tomorrow
 'Roroveka won't get any fish tomorrow'

Some languages have morphemes that code definiteness but which are probably best not viewed as articles. A number of languages have morphemes that mark direct objects, but only if the direct object is definite, as illustrated by the word *ra* in Persian (Mahootian (1997)), illustrated in (14).

- (14) be mina mæn [gol *ra*] dad-æm
 to Mina I [flower OBJ.DEF] give.PAST-1SG
 'I gave the flower to Mina'

Such morphemes are generally viewed as postpositions or case markers rather than as definite articles.

Markers of definiteness and indefiniteness are most commonly separate words, but in some languages they are affixes. The example in (15) illustrates a suffix *-fekha* in Korowai (Van Enk and de Vries (1997)), a Trans-New Guinea language of West Papua, that marks the noun phrase as indefinite.

- (15) *uma-té-do* *abül-fekha* *khomilo-bo*
 tell-3PL.REALIS-DIFF.SUBJ man-INDEF die.3SG.REALIS-PERF
 ‘they told that a certain man had died’

Similarly, the example in (16) illustrates a definite prefix on nouns in Egyptian Arabic (Gary and Gamal-Eldin (1982)).

- (16) *?it -tājjaar-a* *gaaja*
 the-plane-F.SG come
 ‘the plane is coming’

Markers of definiteness and indefiniteness are also often clitics, which sometimes attach to the noun, but in other instances attach to some modifier of the noun. Example (17) illustrates this in Fyem (Nettle (1998)), a Niger-Congo language of Nigeria, where the definite article =*mo* cliticizes onto whatever is the last word in the noun phrase, in this case the verb of a relative clause modifying the noun.

- (17) *náá* *ni* [*ɲét-i* *taa* *ʒé=mo*] *tók*
 1SG.PERF give [man-FOC 3SG.PERF come=DEF] mush
 ‘I gave mush to the man who came’

The term *article* is often restricted to words that vary for definiteness or specificity. However, the term is naturally applied to words in some languages which are obligatory in noun phrases and which code grammatical features of the noun phrase other than definiteness. For example, Ilocano (Rubino (2000, p.c.)), an Austronesian language of the Philippines, has a set of eight words that vary for number, for case (core versus oblique) and for whether the noun they occur with is a common noun or a proper noun. In (18a), the noun *Maria* occurs with the article *ni*, which is used with singular core (subject or object) noun phrases with proper nouns; in (18b), *babái* ‘girl’ occurs with the article *ti*, which is used with singular core noun phrases with common nouns; and also in (18b), the noun *madióngan* ‘mah jong parlour’ occurs with the article *iti*, which is used with singular oblique noun phrases with common nouns.

- (18) a. *nakíta*=n-ak [ni Maria]
 see=3SG.ERG-1SG.ABS PROPER.CORE.SG Maria
 ‘Maria saw me’
- b. *nakíta*=n-ak [ti babái] [iti
 see=3SG.ERG-1SG.ABS COMMON.CORE.SG girl COMMON.OBL.SG
madióngan]
 mah.jong.parlour
 ‘the girl saw me at the mah jong parlour’

Both of the noun phrases in (18b) are necessarily definite, but not because the articles code definiteness: *ti babái* ‘the girl’ is definite because syntactic arguments of the verb are always definite in Ilocano, and *iti madióngan* ‘the mah jong parlour [oblique]’ can be made indefinite by adding *maysa nga* ‘one’ to yield *iti maysa nga madióngan* ‘a mah jong parlour (oblique)’; the fact that *iti* remains when it is indefinite makes clear that *iti* does not code definiteness. Although these words do not vary for definiteness, what they share with articles in European languages is the fact that they are a set of words which occur with high frequency in noun phrases and which vary for certain grammatical features of the noun phrase, much as articles in European languages often vary not only for definiteness but also for gender, number, and, in some languages, case. Under this notion of ‘article’, the coding of definiteness is not a defining feature, but simply one of the many grammatical features of noun phrases that articles often code.

In Khasi, a Mon-Khmer language of northeast India, there are four articles (all of which correspond in form to independent pronouns): (i) masculine singular; (ii) feminine singular; (iii) plural; and (iv) diminutive (singular or plural). Some examples are given in (19).

- (19) a. *ka* khmat b. *ʔuu* bnaay c. *ʔii* khnaay
 FEM eye MASC moon DIMIN mouse
 ‘an/the eye’ ‘the moon’ ‘the/a little mouse’

Again, these articles do not code definiteness, but vary for gender, number and size.

A simpler case of articles is found in Kiribatese (Groves, Groves, and Jacobs (1985)), an Austronesian language of Kiribati in the Pacific, where the articles vary only for number, with a singular one and a plural one, illustrated in (20).

- (20) a. *te* atiibu
 SG stone
 ‘a stone’, ‘the stone’
- b. *taian* atiibu
 PLUR stone
 ‘stones’, ‘some stones’, ‘the stones’

Again, what these two words in Kiribatese share with the other instances of articles is that noun phrases in Kiribatese normally occur with one of them. The word *taian* in (20b) can also be called a plural word, as discussed in section 1.5 below.

An even simpler case is found in Koromfe (Rennison (1997)), a Niger-Congo language of Burkina Faso and Mali, in which there is an article *a*, illustrated in (21), which is used with all common nouns except ones already modified by certain other modifiers, like demonstratives and numerals.

- (21) də pa [a kɛʃ hoŋ] [a ʃãna]
 3SG.HUMAN give [ART woman DEF.HUMAN.SG] [ART millet.PLUR]
 ‘he gives some millet to the woman’

In addition to the general prenominal article *a*, Koromfe also has a set of post-nominal definite articles which vary for number, humanness, and diminutive, illustrated by the human singular definite article *hoŋ* in (21). This illustrates that a language may have more than one class of words that satisfy the criteria here for what is an article. In fact, in addition to the words mentioned, Koromfe has yet another word that is used to refer back to referents mentioned previously in the discourse, as in (22).

- (22) a bɔrɔ nandɪ
 ART man PREVIOUSLY.MENTIONED
 ‘that man that we’ve just been talking about’

In Jakalteq (Craig (1977)), a Mayan language of Guatemala, each noun belongs to one of twenty-one semantic classes, and is always accompanied by the appropriate noun class marker, as in (23).

- (23) a. *naj* sonlom
 CLASS(man) marimba.player
 ‘the marimba player’
 b. *ix* malin
 CLASS(woman) Mary
 ‘Mary’
 c. *te’* ïiah
 CLASS(wood) house
 ‘the house’

This construction is distinct from numeral classifiers (see section 1.4 below); Jakalteq also has numeral classifiers, which combine with the numeral and which co-occur with the above class markers, as in (24).

- (24) ca-c’oñ no’ txitam
 two-CLSFR CLASS(animal) pig
 ‘two pigs’

These noun class markers in Jakaltek, although they only code the class a noun belongs to, can be considered a type of article because they are obligatory in noun phrases. Note that the examples in (23) are definite only because they lack the indefinite article; indefinite noun phrases in Jakaltek contain both an indefinite article and a class marker, as in (25).

- (25) *hune' te'* *ħila*
 INDEF CLASS(wood) chair
 'a chair'

Again this illustrates how a language can have more than one article-like element within the same noun phrase. Finally, it should be noted that the noun classifiers in Jakaltek also function as third person pronouns. In (26), the classifier *naj* occurs twice, once in the main clause in combination with the noun *pel* 'Peter' and once by itself in the subordinate clause.

- (26) *xal naj pel chubil chuluĵ naj hecal*
 said CLASS(man) Peter COMP FUT.COME CLASS(man) tomorrow
 'Peter said that he will come tomorrow'

Some linguists may be hesitant to apply the term *article* to sets of words that code case. The articles in the Ilocano examples in (18) above vary for core versus oblique case and for number, but those in Niuean (Seiter (1980)), a Polynesian language, vary for more case distinctions, and do not vary for number, varying only for whether the noun phrase involves a common noun, a proper noun, or a pronoun, with one set for common nouns and a second set for proper nouns and pronouns, as in (27).

- (27) a. *ne tāmāte [he tagata tāne] [e puaka]*
 PAST kill [ERG.COMM person male] [ABS.COMM pig]
 'a man killed a pig'
 b. *takafaga hololoa [e au] [e tau lupe]*
 hunt frequently [ERG.PRO 1SG] [ABS.COMM PLUR pigeon]
 'I frequently hunt pigeons'

These case-marking words in Niuean differ from the other words I have called articles, in that case seems to be their primary function; the role of common nouns versus proper nouns and pronouns might just be seen as factors that determine which form of the case marker is used. A further way in which they are different from articles is that they occur with independent pronouns, as in *e au* '1SG, ERGATIVE' in (27b). Note also that they co-occur with other article-like words, like the plural word *tau* in (27b) and the indefinite article *taha*, as illustrated in (28).

(28)

ne liu kitia foki [he taha tama fifine] [a koe]
 PAST return see also [ERG.COMM INDEF child female] [ABS.PRO 2SG]
 ‘a little girl saw you once again’

It is assumed here that whether one chooses to call these words in Niuean ‘articles’ or something else is simply a terminological issue.

Languages vary in whether articles occur with proper nouns. While it is perhaps more common for proper nouns to occur without articles, in some languages they do occur with an article. The examples above in (13b) from Futuna-Aniwa, in (18a) from Ilocano, and in (23b) and (26) from Jakalteq illustrate proper nouns occurring with an article. The same is true in Modern Greek (Joseph and Philippaki-Warburton (1987)), as in (29), where the definite article also varies for case.

(29) [o jánis] stékete brostá apó [ton pétro]
 [the.NOM John.NOM] stand.3SG front from [the.ACC Peter.ACC]
 ‘John is standing in front of Peter’

1.2 *The notion of ‘determiner’*

Many linguists use the term *determiner* for definite and indefinite articles, as well as other words like demonstratives. However, this term is probably best reserved for languages like English in which there are words which articles do not co-occur with, like demonstratives and possessive words (cf. **the my book*, **the this book*); we can use the term ‘determiner’ to denote the set of such words that occur in the same position in the noun phrase and do not co-occur with each other in such a language. But there are many languages in which articles (or at least definite articles) freely co-occur with demonstratives and possessive words, as in (8b) above from Takia and (10) from Tidore. Similarly, the example in (30) illustrates a definite article and demonstrative co-occurring in Koyra Chiini (Heath (1999)), a Songhay language spoken in Mali.

(30) har woo di yo
 man DEM DEF PLUR
 ‘these/those two men’

Similarly, (31) from Engenni (Thomas (1978)), a Niger-Congo language of Nigeria, shows a possessive word, a demonstrative, and a definite article all co-occurring with each other.

(31) ɔni wò âka nà
 wife 2SG.POSS that the
 ‘that wife of yours’

Even in some languages in which demonstratives and articles do not normally co-occur, the two may co-occur in different positions within the noun phrase. For example, in Urak Lawoi (Hogan (1988)), an Austronesian language of Thailand, the demonstrative occurs after the noun, as in (32a), while the definite article occurs before the noun, as in (32b).

- (32) a. rumah besar itu
 house big that
 ‘that big house’
 b. koq nanaq
 DEF children
 ‘the children’

In such languages in which definite articles co-occur with demonstratives or occur in different positions in the noun phrase, there is little justification for a grammatical notion of determiner, unless one restricts it to articles; it is misleading to apply the term to demonstratives in such languages.

1.3 *Demonstratives*

While articles are found in only some languages, all languages appear to have words that we can call ‘demonstratives’. There are two types of demonstratives: demonstrative pronouns, which occur by themselves as noun phrases, as in (33a), and demonstrative modifiers of nouns (traditionally called ‘demonstrative adjectives’), as in (33b).

- (33) a. *This* is a great book
 b. [*This* book] is great

Languages differ as to whether demonstrative pronouns and demonstrative modifiers take the same form: in English, they do, while in Awa Pit (Curnow (1997)), a Barbacoan language spoken around the Ecuador–Colombia border, they do not – the demonstrative modifiers are *an* ‘this’ and *sun* ‘that’, while the demonstrative pronouns are *ana* ‘this’ and *suna* ‘that’.

There are two features that characterize demonstratives in most languages. The first is that they can be used to draw the hearer’s attention to something in the perceptual space of the speaker and hearer, possibly with a gesture indicating the approximate location of the referent. The second is that they involve at least a two-way contrast in terms of distance from the speaker, as in English *this* and *that*. A few languages have demonstrative words that have only the first of these two features. For example, in French the demonstrative *ce*, as in (34a), is neutral with respect to distance, although a distinction in terms of distance

is available by supplementing *ce* with postnominal *-ci* or *-là*, as in (34b) and (34c).

- (34) a. *ce* livre
 DEM book
 'this/that book'
 b. *ce* livre-*ci*
 DEM book-here
 'this book'
 c. *ce* livre-*là*
 DEM book-there
 'that book'

The French construction in (34b,c) can be seen as a kind of double demonstrative. In some languages, double demonstratives are normal if not obligatory. For example, in Milang (Tayeng (1976)), a Tibeto-Burman language of northeast India, the same demonstrative word occurs twice, once before the noun, and once after the noun, as in (35).

- (35) *yo* miu *yo*
 this boy this
 'this boy'

The situation is similar in Nishi (Hamilton (1900)), another Tibeto-Burman language of northeast India, as in (36), except that the pronominal demonstrative is identical to the demonstrative adverb for 'here' or 'there', somewhat analogous to English 'this book here', except that this is the normal way to express demonstratives in Nishi.

- (36) *sã* mindui *sî*
 here buffalo this
 'this buffalo'

While most languages have demonstrative words that directly modify nouns, a few languages require that they be placed in relative clauses. This is the case for the distal demonstrative in Sahidic Coptic (Lambdin (1983)), an Afro-Asiatic language once spoken in Egypt: while the proximal demonstrative is a clitic preceding the noun, as in (37a), the distal demonstrative follows with the relative word, as in (37b).

- (37) a. *pei=rōme*
 this=man
 'this man'
 b. *p=rōme* [et *m̄mau*]
 DEF=man [REL that]
 'that man' (literally 'the man that is that')

1.4 *Numerals*

There are two sorts of numeral words that occur as modifiers of nouns. One of these is cardinal numerals, words that indicate how many referents the noun phrase denotes, as in English *three books*. These contrast with ordinal numerals, which identify a referent in terms of its order with respect to other referents, as in English *the third book*. Ordinal numerals are most commonly derived from cardinal numerals, as illustrated by the English suffix *-th* (*six* vs *sixth*) and the prefix *vina-* (*made* ‘four’, *vinamade* ‘fourth’) in Roviana (Corston-Oliver (2002)), an Austronesian language of the Solomon Islands. The lower ordinal numerals are occasionally suppletively related to their corresponding cardinal numerals, as with English *first* and *second*.

Cardinal and ordinal numerals often differ in their syntax. For example, in Karo Batak (Woollams (1996)), cardinal numerals normally precede the noun, as in (38a), while ordinal numerals follow the noun, as in (38b).

- (38) a. *telu wari*
 three days
 ‘three days’
 b. *lubang pelimaken*
 hole fifth
 ‘the fifth hole’

Some languages express ordinal numerals with a periphrastic construction. In Khasi (Rabel (1961)), a Mon-Khmer language of northeast India, cardinal numerals occur with classifiers as premodifiers of the noun, as in (39a), while the equivalent of ordinal numerals is expressed by treating the relevant cardinal numeral as a verb and placing it in a relative clause modifying the noun, as in (39b).

- (39) a. *?aar tllii kii ksew*
 two CLSFR PLUR dog
 ‘two dogs’
 b. *?uuni?uu long ?uu ba laay*
 this is he REL three
 ‘this is the third’
 (more literally ‘this is he who is three’)

In many languages, cardinal numerals cannot directly modify nouns but must be accompanied by a numeral classifier, as in (39a) from Khasi and (40) from Dong (Long and Zheng (1998)), a Tai-Kadai language spoken in China.

- (40) a. ʔi⁵⁵ muŋ³¹ ñə n²¹²
 one CLSFR man
 ‘one man’
- b. ja²¹² ʔoŋ⁵⁵ mai³¹
 two CLSFR tree
 ‘two trees’

The classifier *muŋ*³¹ and *ʔoŋ*⁵⁵ in (40) are two of five semantically based classifiers in Dong that depend on the meaning of the noun. The five classes associated with the classifiers are: (i) people; (ii) animals; (iii) plants; (iv) upper outer garments; and (v) long thin things. The classifier *muŋ*³¹ in (40a) is the classifier associated with people, while *ʔoŋ*⁵⁵ in (40b) is the one associated with plants. There are also a couple of general classifiers that do not have any particular semantics associated with them.

In a few languages, numerals must occur with an invariant word, which is strictly speaking not a classifier (since there is only one of them), but which otherwise functions like a classifier in that its presence is required if the numeral is modifying a noun. An example of this is the word *e* (glossed ‘NUM’ for ‘number marker’) in Gela (Crowley (2002)), an Austronesian language of the Solomon Islands, as in (41).

- (41) *e* tolu na bolo
 NUM three ART pig
 ‘three pigs’

There is a question in some languages whether the numeral modifies the noun or whether it is better to view the numeral as the head and the noun as modifier. This latter view is often suggested for languages with numeral classifiers; under this view the numeral modifies the classifier and the numeral plus classifier serves as head, with the noun as modifier. Such an analysis also suggests itself for some languages without numeral classifiers. In Rif Berber (Kossmann (2000)), spoken in Morocco, most modifiers follow the noun, but numerals precede, as in (42a); but the construction they occur in is the same as the genitive construction, illustrated in (42b), suggesting that the numeral is the head.

- (42) a. t̩lata [n tə wɾar]
 three [GEN hill]
 ‘three hills’
- b. axxam [n wə ryaz]
 house [GEN man]
 ‘the man’s house’

This construction is reminiscent of English *three of the hills*, except that the construction in (42a) does not have to have partitive meaning. In Turkish (Kornfilt (1997)), the numeral can either precede the noun as a modifier, as in (43a), or follow with partitive meaning, as in (43b).

- (43) a. *üç elma*
 three apple
 'three apples'
- b. *elma-lar-ın üç-ü*
 apple-PLUR-GEN three-3SG.POSS
 'three of the apples'

The partitive structure in (43b), with genitive case on the word for 'apple' and a third person possessive suffix on the word for 'three', is identical to the normal genitive construction in Turkish, illustrated in (95) below, suggesting that the numeral should be viewed as the head.

There are a number of other words in most languages which are semantically like cardinal numerals in being quantifying words, which behave like cardinal numerals in most languages, but which in some languages do not. This includes words meaning 'many', 'much', 'few', 'all', 'every', and 'some'. In English, for example, the word *all* precedes a determiner (*all the men*), while numerals follow the determiner (*the three men*). Similarly, while the numeral precedes the noun in Basque, as in (44a), the words for 'all', 'some', and 'many' follow the noun, as illustrated in (44b).

- (44) a. *bi esku*
 two hand
 'two hands'
- b. *armiarma-sare asko*
 spider-web many
 'many spider webs'

In Kurdish, numerals precede the noun, but the word for 'many' follows the noun.

1.5 *Plural words*

Some languages have words whose meaning is similar to that of plural affixes in other languages, but which are separate words; such words can be called plural words, as in (45) from Koyra Chiini (Heath (1999)), and (46) from Arop-Lokep (D'Jernes (2002)), an Austronesian language of Papua New Guinea.

- (45) *haw di yo*
 COW DEF PLUR
 'the cows'

- (46) *di* ookoo
 PLUR canoe
 ‘the canoes’

In Lenakel (Lynch (1978)), an Austronesian language of Vanuatu, there is not only a plural word, as in (47a), but also a dual word as in (47b).

- (47) a. kuri *miin* aan
 dog PLUR that
 ‘those dogs’
 b. pera-suaas *mil*
 woman-small DUAL
 ‘the two girls’

The fact that the dual word is distinct from the numeral for ‘two’ is illustrated by the example in (48), which contains both the dual word and the numeral for ‘two’.

- (48) uus *mil* *kiu* ka
 man DUAL two that
 ‘those two men’

Plural words can often be viewed as a type of article, which varies only for number. The examples in (20) above from Kiribatese illustrate a singular word and a plural word, which I suggest be viewed as articles, since noun phrases require one of them. We can also distinguish ‘pure’ plural words, which only code plurality, from articles that code number in addition to other semantic or grammatical features of the noun phrase, in which these articles are the sole indication of number in noun phrases. For example, in Siar (Ross (2002b)), an Austronesian language of Papua New Guinea, the sole indication of plurality occurs in articles which also vary for animacy and specificity. For example, the article *tok* in (49) codes plurality and nonspecificity with inanimate nouns.

- (49) lau besen a yan [*tok* un]
 I not.yet 1SG eat [PLUR.NONSPEC.INAN banana]
 ‘I haven’t eaten any bananas’

In some languages, the plural word is distinct from other words that can be called articles. In Arosi, an Austronesian language of the Solomon Islands, the plural word is distinct from the articles, which vary for common versus proper noun, subject versus nonsubject, and definite versus indefinite, illustrated in (50).

- (50) na *mwani* he'u
 COMMON.DEF.SUBJ PLUR star
 'the stars'

Languages with plural words vary as to whether the plural word belongs to the same category as numerals. In some languages, it occurs in the same position in the noun phrase as numerals and does not co-occur with a numeral. This is the case in Bawm (Reichle (1981)), a Tibeto-Burman language of Bangladesh, in which the numeral and the plural word follow adjectives and precede demonstratives modifying a noun. In contrast, in Jakalteq (Craig (1977)), the plural word co-occurs with the numeral, as in (51).

- (51) caw-aŋ *heb* naj winaj
 TWO-CLSFR PLUR CLASS man
 'two men'

In some languages, the plural word is a clitic that attaches in some fixed position within the noun phrase. In Margi (Hoffmann (1963)), a Chadic language of Nigeria, the plural clitic follows postnominal adjectives, relative clauses, and genitives, but precedes the definite marker and demonstratives. In (52), it attaches to the genitive noun *Íjí* 'God', but precedes the demonstrative *kú*.

- (52) [ndər gə́ Íjí] = 'yàr kú
 [word of God]=PLUR this
 'these words of God'

1.6 *Adjectives*

There are two senses in which linguists use the term *adjective*. On its first usage, it is used semantically to denote a set of words on the basis of their meaning, regardless of their grammatical properties in particular languages. On its second usage, it is used as a label for a word class in a particular language defined by grammatical characteristics which distinguish it from other words in that language. On the first of these, it is used as a label for words that are descriptive words that denote what some people call 'properties', such as size and colour, though in practice it is used for words with meanings corresponding to words traditionally called 'adjectives' in English, with meanings like 'big', 'red', 'good', 'long', and 'fast'. (The term is also sometimes used more generally to include any modifier of nouns, including demonstratives and numerals, but this usage is now less common; on this older usage, the words that are here called 'adjectives' were often called 'descriptive adjectives'.)

In order to keep separate these two uses of the term, I will use the expression 'semantic adjectives' to denote words that are adjectives in the first of the two senses described above. Languages differ in the extent to which semantic

adjectives form a distinct word class, with grammatical characteristics which distinguish them from other words in the language. In many languages, semantic adjectives are grammatically verbs, with the same morphology and syntax as other verbs. For example, the word for 'tall' in Ojibwa (Rich Rhodes (p.c)), an Algonquian language of eastern North America, occurs with the same subject prefix in (53a) as the word for 'sing' in (53b).

- (53) a. *n-ginooz*
 1SG-tall
 'I am tall'
- b. *n-nagam*
 1SG-sing
 'I am singing'

These two words also inflect in the same way when they modify a noun, as in (54), occurring with a relativizing prefix and a subject suffix.

- (54) a. *nini e-gnoozi-d*
 man REL-tall-3SG
 'a tall man'
- b. *nini e-ngamo-d*
 man REL-sing-3SG
 'a man who is singing'

In such languages, when semantic adjectives modify nouns, they are really relative clauses, albeit simple relative clauses consisting of a single word. But they are not grammatically distinct from relative clauses consisting of only a verb denoting an action.

In many languages, semantic adjectives are verbs, because they share properties with other verbs, but nevertheless form a distinct subclass of verbs because they differ from other verbs in other respects. For example, in Chemehuevi (Press (1980)), a Uto-Aztecan language of the western United States, semantic adjectives require participial suffixes when modifying nouns, just like clear instances of verbs; however, they differ from other verbs in that other verbs must occur with a demonstrative when modifying a noun prenominaly, as in (55a), while semantic adjectives do not have to, as illustrated in (55b).

- (55) a. [nukwi-c aŋ aipac] pa?a-j
 [run-PTCPL that boy] tall-PRES
 'the running boy is tall'
- b. [pa?a-nti-m aipac] nukwi-j
 [tall-PTCPL-ANIM boy] run-PRES
 'the tall boy is running'

Note that semantic adjectives in Chemehuevi also differ from other verbs in that they require an animate suffix (which takes the form *-m* in (55b)) when they are modifying an animate noun; with nonadjectival verbs, this suffix is only used when the verb is modifying a plural animate noun. In languages in which semantic adjectives form a subclass of verbs, they are often called ‘stative verbs’, although one can equally well call them ‘adjectival verbs’ or even just ‘adjectives’, with the understanding that in some languages, adjectives are a subclass of verbs.

Similarly, semantic adjectives in Mupun (Frajzyngier (1993)) resemble verbs in various ways, justifying treating them as a subclass of verbs. For example, they occur with a set of pronominal subject morphemes, which are otherwise associated with verbs, as illustrated by the first person singular subject prefix *n-* in (56).

- (56) a. *n-ɓ al* b. *n-sam*
 1SG-strong 1SG-sleep
 ‘I am strong’ ‘I slept’

Like other verbs, they occur with relative markers when they modify a noun, but while other verbs require a pronominal subject morpheme when they modify a noun, semantic adjectives do not occur with a pronominal subject morpheme. Thus, in (57a), the semantic adjective *cí* ‘different’ occurs with the relative marker *ɗe*, but without the third person singular masculine subject pronoun *wu*, which occurs with the nonadjectival verb in (57b).

- (57) a. *n-dem* [ngwe ɗe cí]
 1SG-like [man REL different]
 ‘I like a different man’
 b. *n-dem* [ngwe ɗe *wu* *cii*]
 1SG-like [man REL 3SG.MASC refuse]
 ‘I like a man who refuses’

In some languages, semantic adjectives share characteristics with nouns rather than with verbs. This is true for many languages in Europe. For example in Latin, adjectives inflect for number and case, as in (58), and the morphology is the same as that for nouns.

- (58) a. [*bon-a* *terr-a*] *est*
 [good-FEM.NOM.SG land-FEM.NOM.SG] be.PRES.3SG
 ‘it is good land’
 b. [*bon-am* *terr-am*] *vidi*
 [good-FEM.ACC.SG land-FEM.ACC.SG] see.1SG
 ‘I saw good land’

In other respects, however, they are distinct from nouns. For example, adjectives inflect for all three genders, whereas nouns have inherent gender. And adjectives can modify nouns (as in 58), agreeing in case, number and gender with the noun they modify, something nouns cannot do. When a noun modifies another noun in Latin, it must occur in the genitive case and it inflects for its own gender and number, as illustrated by *vinī* ‘wine’ in (59).

- (59) *inopi-a* *vin-ī*
 shortage-FEM.NOM.SG wine-NEUT.GEN.SG
 ‘a wine shortage’

The shared features, however, justify recognizing them as a distinct subclass of nouns (or, equivalently, positing a higher level category like ‘nominal’ that encompasses both nouns and adjectives). Languages like English, in which adjectives share few characteristics with either nouns or verbs, are a minority.

In some languages, semantic adjectives divide into different word classes in terms of their grammatical characteristics. In Ju|’oan (Dickens (1992)), a Northern Khoisan language, some semantic adjectives belong to a distinct word class of adjectives (though they share plural morphology with nouns), while others are verbs. Those which are in the separate adjective class simply follow the noun when they modify it, as in (60a). In contrast, those which are verbs are formally relative clauses, as in (60b), indicated by the relative marker =à, which appears as a clitic on the word preceding the relative clause (most commonly the head noun), parallel to (60c).

- (60) a. *tjù* *zé*
 house new
 ‘a new house’
 b. *jù=à* *g|aoh*
 person=REL strong
 ‘a strong person’
 c. *jù=à* [*kú* *dcàá mí tcísi*]
 person=REL [IMPERF steal 1SG thing]
 ‘the person who is stealing my things’

The situation is similar in Ambai (Silzer (1983)), an Austronesian language spoken in the Indonesian part of New Guinea: there is a small closed class of adjectives which do not inflect, while most semantic adjectives are verbs. The example in (61a) illustrates a noninflecting adjective, while (61b) illustrates a semantic adjective that is grammatically a verb, with a third person singular subject prefix, occurring formally as a relative clause, exactly parallel to the relative clause in (61c).

- (61) a. inontarai *fuba*
 person large
 ‘a large person’
- b. inontarai *d-edai*
 person 3SG-tall
 ‘a tall person’
- c. inontarai *d-autai*
 person 3SG-climb
 ‘the person who climbed’

In Koromfe (Rennison (1997)), some semantic adjectives are nouns while others are verbs, and the two occur in different positions within the noun phrase, the former immediately after the modified noun, the latter after adjectival nouns and numerals. In (62), for example, the words *ḵḵḵnɛ* ‘small’ and *bīnīl̄* ‘black’ are nouns and precede *tāā* ‘three’, while *tam* ‘lost’ is a verb and follows the numeral.

- (62) *lugəni ḵḵḵnɛ bīnīl̄ tāā tam hɛŋ*
 cat.PLUR small.PLUR black.PLUR three lost DEF.NON.HUMAN.PLUR
 ‘those three small lost black cats’

In Nkore-Kiga (Taylor (1985)), a Bantu language spoken in Uganda, some semantic adjectives exhibit nominal properties – illustrated by *omurungi* ‘good’ in (63a), which, like nouns, occurs with a noun class prefix – and some are verbs – illustrated by *erikwera* ‘white’ in (63b), which occurs with a relativizing prefix and a tense–aspect prefix, both features of verbs.

- (63) a. omu-ntu *omu-rungi*
 NOUN.CLASS-person NOUN.CLASS-good
 ‘the good person’
- b. esaati *e-rikw-era*
 shirt REL-PRES.CONTIN-white
 ‘a white shirt’

It should be noted that there are other meanings of semantic adjectives in Nkore-Kiga which are expressed by nouns, where the noun has a meaning corresponding to that of an abstract noun in English. In the construction in (64), the noun *amaani* ‘strength’ corresponds more closely to the English noun *strength* than to the adjective *strong*, and occurs as object of a preposition, so that a more literal translation might be ‘a young man of strength’.

- (64) omutsigazi *w=amaani*
 young.man of=strength
 ‘a strong young man’

In Ungarinjin (Rumsey (1982)), a Wororan language spoken in northern Australia, some semantic adjectives bear prefixes that inflect for noun class, person and number, while others do not. The set of prefixes that occur with the former is the same as the set of possessive prefixes used with body-part nouns, but their meaning is different, so this provides little argument for treating these semantic adjectives as nouns. Hence, there are apparently two distinct classes of semantic adjectives in Ungarinjin, neither of which is a subclass of verbs or nouns. The example in (65a) illustrates one of the noninflecting adjectives while (65b) illustrates one of the prefixing adjectives.

- (65) a. *gaŋmangu djomali*
 yam big
 ‘big yam’
- b. *ŋabun wu-niyaŋari*
 water NOUN.CLASS-good
 ‘good water’

Semantic adjectives occasionally combine with modifiers to form phrases. Modifiers of adjectives may be degree words or various sorts of phrases, as in the examples in (66) from Malayalam (Asher and Kumari (1997)), a Dravidian language spoken in southern India.

- (66) a. [parama dayaaluvaaya] iijvaran
 very merciful God
 ‘a very merciful God’
- b. [eŋ ne-kka! valiya] manuŋyan
 1SG.ACC-than big man
 ‘a man bigger than me’

Some languages do not permit adjectives with modifiers to modify nouns directly, but require that they be expressed by a relative clause. This is illustrated for Indonesian (Sneddon (1996)) in (67): in (67a), the simple adjective immediately follows the noun, without additional marking, while in (67b) the adjective is modified by a degree word *terlalu* ‘too’, and must be expressed as a relative clause, with the relative marker *yang*.

- (67) a. rumah *besar*
 house big
 ‘a big house’
- b. jas [yang *terlalu besar*]
 jacket [REL too big]
 ‘a jacket which is too big’

Note that even English prefers to place the adjective phrase in a relative clause, if it involves the degree word *too*, as illustrated in (68).

- (68) a. ?*a *too big* jacket
 b. a jacket *which is too big*

In Rif Berber (Kossmann (2000)), an adjective can only modify a noun if the noun phrase is interpreted as definite, as in (69a); if the noun phrase is indefinite, the adjective must be put in a relative clause, as in (69b) (where the nonverbal copula *d* indicates that it is a relative clause).

- (69) a. iħramən *iməzzyanən*
 boy.PLUR small
 ‘the small boys’
 b. iqəššudən [*d* iməqq^wranən]
 wood COP large
 ‘large pieces of wood’

Another way in which adjectives do not directly modify nouns is found in Siar (Ross (2002b)). When an adjective accompanies a noun in Siar, both the adjective and the noun occur with an article (which varies for number, specificity and noun class) and a ligature word connects the two constituents, as in (70).

- (70) [ep wakak] in [ep lamas]
 [SG.SPEC.NC₁ good] LIG [SG.SPEC.NC₁ coconut.palm]
 ‘a good coconut palm’

Such constructions might be analysed as involving two noun phrases.

In some languages, semantic adjectives do not modify nouns, even in the sense of occurring in a relative clause modifying a noun. In the translation equivalents of English noun phrases with an adjective modifying a noun, the semantic adjective is actually the predicate of a so-called internally headed relative clause, and the noun (or noun phrase) is subject of that predicate. See examples and discussion in section 3.2 below.

1.7 *Nouns used as modifiers*

The most common way in which nouns occur as modifiers of nouns is in genitive constructions, in which it is really a noun phrase rather than just a noun that is modifying the head noun. These are discussed in section 2.1 below. However, some, but not all, languages allow nouns to modify nouns without possessive meaning. English allows this in phrases like *music teacher*. Similarly, in Bashkir (Poppe (1964)), a Turkic language spoken in Russia, a noun can modify a noun as a possessor, in which case it is marked in the genitive case, as in (71a), or with some nonpossessive meaning, in which case it is not case-marked, as in (71b).

- (71) a. *gafuri-ðeŋ* kitabi
 Gafuri-GEN book
 ‘Gafuri’s book’ (i.e. ‘the book belonging to Gafuri’)
- b. *gafuri* kitabi
 Gafuri book
 ‘the book on Gafuri’

Constructions in which a noun directly modifies another noun are sometimes called ‘compounds’. It is important, however, to distinguish two types of constructions which are called ‘compounds’, namely lexical compounds, in which the compound has an idiosyncratic meaning not predictable from the meaning of the component parts, as compared with syntactic compounds, in which one noun is modifying a second noun in a productive syntactic construction. For example, English *boy scout* is a lexical compound, while *music teacher* is a syntactic compound. The former behaves like a single word, while the latter is a type of phrase.

1.8 *Locative adverbs*

Locative demonstratives, words whose basic function is adverbial, like *here* and *there* in English, can sometimes modify nouns as well, as in English *the food here*, and in (72) from Amele (Roberts (1987)).

- (72) *jobon ceheleg/cuhulug*
 village up.there / down.there
 ‘the village up there / down there’

In some languages, when they modify nouns, the locative demonstratives have the meaning ‘from here’, ‘from there’, when they modify nouns, as in Ngiti (Kutsch Lojenga (1994)), illustrated in (73).

- (73) *ma m̀ni* [àwú ngbángba]
 1SG 1SG.know.PERF.PRES [there child]
 ‘I know the child from there’

1.9 *Interrogative modifiers*

For various semantic types of modifiers of nouns, there are corresponding interrogative expressions, as illustrated for English by the pairs of noun phrases in (74), with the interrogative expressions illustrated on the left and their corresponding noninterrogative expressions illustrated on the right.

- (74) which book this book
 what sort of book a good book
 how many books three books
 whose book my book

Languages vary in the extent to which they have single words for expressing these interrogative meanings: note the multi-word English expressions *how many* and *what sort of*. In some languages, these meanings are expressed by single words. For example, ‘how many’ is expressed by a single word in Ambulas (P. R. Wilson (1980)), a Sepik-Ramu language of Papua New Guinea, as illustrated in (75a), and ‘what sort of’ is expressed by a single word in Tsova-Tush (Holisky and Gagua (1994)), a Nakh-Daghestanian language of the Caucasus region of Russia, as illustrated in (75b).

- (75) a. baalé *yapap*
 pig how.many
 ‘how many pigs’
 b. [*molun* k’nat] Va e, ğazen-i le mos:in
 [what.sort boy] is 3SG good-Q or bad
 ‘What sort of boy is he, good or bad?’

Words or expressions meaning ‘how many’ often occur with mass nouns with the meaning ‘how much’, as illustrated in (76) by the word *mǎnà* from Miya (Schuh (1998)), a Chadic language of Nigeria.

- (76) a. sàba *mǎnà*
 person.PLUR how.many
 ‘how many people’
 b. shùw *mǎnà*
 oil how.much
 ‘how much oil’

Such interrogative expressions are generally treated grammatically like their corresponding noninterrogative expressions. For example, the postnominal position of *yagap* ‘how many’ in the Ambulas example in (75a) above mirrors the postnominal position of numerals in this language, as illustrated in (77).

- (77) gaan *kupuk*
 night three
 ‘three nights’

Similarly, in (78), the interrogative word *ɲiza* ‘how many’ in Gela (Crowley (2002)) occurs before the noun, preceded by the numeral marker *e* and followed by the article *na*, exactly like a numeral, as in (41) above.

- (78) e ɲiza na kake
 NUM how.many ART taro
 'how many taro'

Occasionally, however, languages treat interrogative words differently from their corresponding noninterrogative words. For example, in Turkana (Dimmendaal (1983)), a Nilotic language of Kenya, numerals follow the noun, as in (79a), but the expression for 'how many' precedes the noun, as in (79b).

- (79) a. ɲa-kine-i' ɲaarey'
 PLUR-goat-PLUR two
 'two goats'
- b. ɲɪaɪ ɲi-keɲi
 how.many PLUR-bird
 'how many birds'

1.10 Miscellaneous noun modifiers

There are a number of meanings that are frequently represented by words that modify nouns but often with rather idiosyncratic grammatical properties. These include quantifying words – ones meaning 'all', 'every', 'some', 'many' – as well as words meaning 'another', 'different', 'same', 'only' and 'even'. As noted above, the word *all* in English precedes determiners (*all the men*), a property shared only by *both* (*both the men*). In Burushaski (Lorimer (1935)), a language isolate of Pakistan, all modifiers of nouns precede the noun except for the words meaning 'all' and 'both', which follow the noun. In Malayalam (Asher and Kumari (1997)), all modifiers precede the noun, except for those meaning 'all', 'only', and 'even'. In Dholuo (Omondi (1982)), a Nilotic language spoken in Kenya, all modifiers follow the noun, except for a diminutive particle. In Kinyarwanda (Hurel (1959)), a Bantu language spoken in Rwanda, the word for 'other' is the only word other than demonstratives that can precede the noun, though unlike demonstratives it can also follow the noun.

2 Complex noun phrases

2.1 Genitive or possessive constructions

2.1.1 Genitive constructions with nominal possessors

The terms *genitive* and *possessive* are both used for constructions in which a noun occurs with another noun phrase denoting a possessor, as in English *London's mayor* or *the mayor of London*, or the example in (80) from Kayardild (Evans 1995).

- (80) *dangka-karra dulk*
 man-GEN country
 ‘the man’s country’

The term ‘possessive’ is also applied sometimes to two other types of constructions, where possession is predicated at the clause level, illustrated by English *She has three children* and *That book is mine*; for that reason, the term *genitive construction* (rather than ‘possessive’) will be used here for a noun phrase construction of the sort illustrated in (80). The modifying noun phrase in a genitive construction (*dangkakarra* in (80)) can be called either ‘the genitive noun phrase’ or ‘the possessor’. The noun that is modified by the genitive noun phrase can be called ‘the head noun’ or ‘the possessed noun’.

The range of meanings associated with genitive constructions is much broader than the word *possession* might suggest. It includes kinship relations (*John’s sister*), part–whole relations (*John’s hand*, *the bottom of the basket*), possession or ownership (*John’s sandwich*) and various abstract relations (*John’s birthday*, *the population of London*, *the mayor of London*, *the destruction of the city*, *the arrival of the enemy*, etc.). While some languages use different constructions for different types of genitive relationships (see section 2.1.4 below), it is very common for languages to use the same construction for all of these relationships.

There are considerable differences among genitive constructions cross-linguistically. One difference is that some languages mark the possessor while other languages mark the possessed noun. For example, in (81) from Hua (Haiman (1980)), a Trans-New Guinea language, it is the possessor which is marked, occurring in the genitive case.

- (81) *de-ma’ fu*
 man-GEN pig
 ‘the man’s pig’

In contrast, in Cree (Ellis (1983)), an Algonquian language spoken in Canada, the possessor is unmarked, while the possessed noun occurs with a possessive prefix, representing the person and number of the possessor, as in (82).

- (82) *cān o-cīmān*
 John 3SG.POSS-canoe
 ‘John’s canoe’

It is important not to confuse the two sorts of affixes in (81) and (82). The genitive affix in (81) is a case affix and signals that the possessor noun it occurs with is functioning as a possessor. The possessive affix in (82), in contrast, is a pronominal morpheme, varying for pronominal features of the possessor. The difference is analogous to the difference between two different sorts of affixes that one might call ‘subject affixes’, namely a subject case affix

on a noun functioning as subject, and subject agreement on a verb, agreeing in person and number with the subject. Genitive affixes are a form of dependent-marking (Nichols 1986), since the possessor is a grammatical dependent of the head noun, while possessive affixes are a form of head-marking, since they occur on the head noun. Linguists occasionally employ the term ‘possessive affix’ for genitive affixes, but since such usage is potentially confusing, it is best avoided.

Note that in languages with possessive affixes, the possessor noun phrase can generally be left out, as in (83) from Cree, in which case the noun phrase is interpreted as having a pronominal possessor.

- (83) o-cīmān
3SG.POSS-canoe
‘his canoe’

See section 2.1.2 below for further discussion of pronominal possessors.

Some languages employ a construction in which the morphological marking occurs on the possessed noun, but, unlike Cree, the marking does not indicate properties of the possessor but simply indicates that the possessed noun is possessed. For example, in Haida (Swanton (1911)), a language spoken off the west coast of Canada, the possessed noun occurs with a suffix *-ga*, regardless of the person and number of the possessor, as illustrated in (84).

- (84) a. Wā'nəgəŋ gi't-ga b. dī gō'ñ-ga
Wanagan son-POSS'D 1SG father-POSS'D
‘Wanagan’s son’ ‘my father’

In addition to the two constructions illustrated in (81) and (82), a third common type of construction is one in which the possessor is marked with an adposition, as illustrated by the English preposition *of* in *the mayor of London*, and by the postposition *pa* in (85) from Rumu (Pettersen (1999)), a Trans-New Guinea language.

- (85) [hei akö pa] matë
[word that GEN] meaning
‘the meaning of that word’

Since the function of the adposition is like that of a genitive case affix and since the adposition forms a constituent with the possessor, this type of construction involves a form of dependent-marking.

Some languages employ a construction with a morpheme which is intermediate between a genitive case affix and a genitive adposition, where the genitive morpheme is a clitic that attaches to the last (or first) word in the noun phrase, as illustrated by the English genitive morpheme spelled *'s*, as in (86), or the clitic

=*gat* in (87) from Nabak (Fabian, Fabian and Waters (1998)), a Trans-New Guinea language spoken in Papua New Guinea.

- (86) a. [the Queen of England]'s crown
 b. [a friend of mine]'s car
- (87) [an *temaŋ*]=*gat* *mka*
 [man *big*]=GEN house
 'the big man's house'

In many languages in which the genitive construction involves a word that intervenes between the possessor and the possessed noun, it is not obvious that this word is an adposition, and, in some cases, there is reason to say that it is not an adposition. For example, in Mandarin Chinese (Li and Thompson (1981)), the word *de* occurs between the possessor and the possessed noun, as in (88a), but it occurs more generally with other modifiers of nouns as well, such as relative clauses, as in (88b) (hence the gloss 'LINK').

- (88) a. *tùzi de ěrduō*
 rabbit LINK ear
 'a rabbit's ear'
- b. [*Zhāngsān mǎi de*] *qìchē*
 [*Zhangsan buy LINK*] car
 'the car that Zhangsan bought'

There are still other languages in which a word intervenes between the possessor and possessed noun, which is not an adposition but a pronominal word varying for features of the possessor, as in (89) from Loniu (Hamel (1994)), an Austronesian language of Papua New Guinea.

- (89) *natama iy pihin*
 father 3SG.POSS woman
 'the woman's father'

This type of construction is probably best viewed as a variant of the head-marking construction in Cree, illustrated in (82) above, except that the pronominal morpheme is a separate word in Loniu rather than an affix.

In languages in which there is a separate word marking a genitive construction, the word typically intervenes between the possessor and the possessed noun, as in (85), (88), (89) and English *the mayor of London*. Occasionally, however, it occurs outside the two nouns, as in (90) from Moru (Tucker and Bryan (1966)), a Central Sudanic language spoken in Sudan.

- (90) dri [ts^wé rɔ́]
 head tree of
 ‘the head (i.e. top) of the tree’

If the word is an adposition, it will occur adjacent to the possessor, as in (90); but if it is a pronominal word, it will typically occur adjacent to the possessed noun, as in (91) from Kobon (Davies (1981)), a Trans-New Guinea language, where the pronoun *nipe* is agreeing in person and number with the possessor *nibi yad* ‘my wife’.

- (91) nibi yad ñi nipe
 wife 1SG.POSS son 3SG.POSS
 ‘my wife’s son’

However, in (92) from Kamoro (Boelaars (1950)), another Trans-New Guinea language, the pronoun occurs adjacent to the possessor and is separated from the possessed noun.

- (92) kamé: na:ti a:ra-t¹a
 house headman 3SG-GEN
 ‘the house of the headman’

A further common type of genitive construction is one with no marking of the relationship at all, where the possessor and possessed noun are simply juxtaposed, as in (93) from Chalcatongo Mixtec (Macauley (1996)), spoken in Mexico, and (94) from Nivkh (Gruzdeva (1998)), a language isolate spoken in Russia, in eastern Siberia.

- (93) kačíní peðrú
 hat Pedro
 ‘Pedro’s hat’
- (94) osk au
 hare voice
 ‘the voice of the hare’

Note that the two languages in (93) and (94) differ in the order of the two nouns: Chalcatongo employs noun–genitive order in (93), while Nivkh employs genitive–noun order in (94).

Some languages employ a combination of two of the above constructions. For example, Turkish employs both a genitive suffix on the possessor and a possessive suffix on the possessed noun, as in (95).

- (95) Ahmed-in oğl-u
 Ahmet-GEN son-3SG.POSS
 ‘Ahmet’s son’

In Tendet (Randal (1998)), a Surmic language spoken in Sudan, there is both a genitive case suffix on the possessor and a linker word that occurs between the possessed noun and the possessor, as in (96).

- (96) mana cí ongol-ɔ
 field LINK elephant-GEN
 ‘the elephant’s field’

This same linker is also used with relative clauses, as in (97).

- (97) dhúnɔc [cí bālī ákátí Lohám-i]
 waterbuck [LINK PAST PERF.spear Loham-SUBJ]
 ‘a waterbuck that Loham speared’

2.1.2 *Pronominal possessors*

In some languages, the construction used for pronominal possessors is the same as that used for nominal possessors (i.e. possessors headed by a noun). For example, in Kodava (K. Ebert (1996)), a Dravidian language spoken in India, both pronominal possessors and nominal possessors take the same genitive case suffix *-da*, as illustrated in (98), in which the first word is a pronominal possessor of the second word and the second word is a nominal possessor of the third word.

- (98) [[avẽn-ɖa] appẽn-ɖa] paɭiyẽ mane
 [[3SG.MASC-GEN] father-GEN] old house
 ‘his father’s old house’

Similarly, in Khmer (Cambodian; Jacob (1968)), simple juxtaposition of possessed noun and possessor is used both with nominal possessors, as in (99a), and with pronominal possessors, as in (99b).

- (99) a. tũ: ta:
 cupboard grandfather
 ‘grandfather’s cupboard’
 b. phtẽəh khɿom
 house 1SG
 ‘my house’

However, languages in which nominal and pronominal possessors are treated the same way form a small minority of the world’s languages.

In many languages with some form of dependent-marking on nominal possessors, like a genitive case affix or the English clitic *’s*, there is a distinct morphological class of possessive pronouns, often without a clearly identifiable genitive morpheme. Thus compare English *the man’s house* with *my house* or *your house*. (Note that some people restrict the term ‘possessive pronoun’ as it applies to English to words like *yours* and *mine*; in this chapter, the term will

be applied to the pronominal possessive words that serve as modifiers of nouns.) Similarly, in Yaqui (Dedrick and Casad (1999)), a Uto-Aztecan language spoken in northern Mexico, while nominal possessors occur with a suffix *-ta*, as in (100a), pronominal possessors involve a distinct set of pronouns, illustrated in (100b).

- (100) a. Hóan-ta huúbi
 John-GEN wife
 ‘John’s wife’
 b. ’ín tómi
 1SG.POSS money
 ‘my money’

In some languages pronominal possession involves a distinct construction from that used with nominal possession. In French, for example, nominal possession involves placing the possessor after the possessed noun, with the preposition *de*, as in (101a), while pronominal possession involves a pronominal possessive pronoun that agrees with the possessed noun in gender and number as in (101b).

- (101) a. le livre de Jean
 the.MASC.SG book of John
 ‘John’s book’
 b. *mon* livre
 1SG.POSS.MASC.SG book
 ‘my book’

The term *possessive adjective* is appropriate for forms like *mon* in (101b) because of the fact that it agrees in number and gender with the head noun. However, although this sort of construction is common in Indo-European languages, it is relatively uncommon in other language families.

A major source of differences between nominal possession and pronominal possession is the fact that, in many languages, pronominal possessors are normally represented just by possessive affixes on the possessed noun. Thus, in Kutenai, a third person pronominal possessor is normally represented by the suffix *-ʔis*, as in (102a), while nominal possessors will occur as separate nouns, with the same suffix *-ʔis* on the possessed noun, as in (102b).

- (102) a. xaʔi-ʔis
 son-3SG.POSS
 ‘his/her son’
 b. xaʔi-ʔis qu paʔkiy
 son-3SG.POSS that woman
 ‘that woman’s son’

2.1.3 *Multiple genitive constructions*

Many languages have more than one genitive construction. English has both the construction with a postnominal possessor, with the preposition *of* (*the mayor of London*) and the construction with a prenominal possessor, with the clitic *'s* (*London's mayor*).

Awa Pit (Curnow (1997)) employs a construction with a clitic postposition if the possessor is human but employs simple juxtaposition if it is nonhuman, as illustrated in (103).

- (103) a. Santos=pa pimpul
 Santos=GEN leg
 ‘Santos’s leg’
 b. kwizha pimpul
 dog leg
 ‘the leg of the dog’

Lafofa (Tucker and Bryan (1966)), a Kordofanian language spoken in Sudan, has two constructions, one involving juxtaposition with the possessor preceding the possessed noun, as in (104a), the other with the possessor following the noun with a postposition *ni*, as in (104b).

- (104) a. piṭṭgwarei kai
 chief cows
 ‘the chief’s cows’
 b. kai [piṭṭgwarei ni]
 cows [chief of]
 ‘the chief’s cows’

Lafofa is like many languages in that it is unclear what conditions the choice between two constructions.

Similarly, in Yagua, a language isolate spoken in Peru, there is one construction involving juxtaposition, with the possessor preceding the possessed noun, as in (105a), and a second construction involving a possessive affix on the possessed noun, with the possessor following the possessed noun, as in (105b).

- (105) a. Tomáása rooriy
 Tom house
 ‘Tom’s house’
 b. sa-rooriy Tomáása
 3SG.POSS-house Tom
 ‘Tom’s house’

2.1.4 *Alienable and inalienable possession*

The most common instances of multiple genitive constructions involve a contrast of alienable and inalienable possession. Inalienable possession involves kinship relations and part-whole relations, where the relationship is essentially an inherent or permanent one, as in (106a) and (106b), in contrast to alienable possession, as in (106c), where the relationship is a conventional one.

- (106) a. John's father
 b. John's hand
 c. John's dog

In Maybrat (Dol (1999)), a West Papuan language, the construction for inalienable possession is head-marking, with a possessive prefix on the head noun, preceded by the possessor, as in (107).

- (107) Sely m-me
 Sely 3SG.NONMASC.POSS.-mother
 'Sely's mother'

In contrast, the construction for alienable possession is dependent-marking, with a genitive prefix on the possessor, and the possessor following the possessed noun, as in (108).

- (108) amah ro-Petrus
 house GEN-Petrus
 'Petrus's house'

In Lenakel (Lynch (1978)), alienable and inalienable possession are treated differently, both with pronominal possessors and with nominal possessors. With pronominal possessors in inalienable possession, the possessor is indicated by possessive suffixes on the possessed noun, as in (109).

- (109) a. rim-k b. nimwansii-mar
 father-1SG.POSS buttocks-1PL.EXCL.POSS
 'my father' 'our backsides'

In contrast, with pronominal possessors in alienable possession, the same possessive suffixes are attached to one of five 'possessive classifiers' which follow the possessed noun. These five possessive classifiers are distinguished semantically by properties of the possessed noun: (i) things to be eaten; (ii) things to be drunk; (iii) things to be planted; (iv) places; and (v) other things not fitting into one of the first four categories. Some examples are given in (110).

- (110) a. nuw miin nɪk-k
 yam PLUR POSS.EATEN-1SG.POSS
 ‘my yams’
- b. nɪkava ituga nɪmwa-m
 kava foreign POSS.DRUNK-2SG.POSS
 ‘your liquor’
- c. nimwa vi taha-k
 house new POSS.OTHER-1SG.POSS
 ‘my new house’

There is also a difference between inalienable and alienable possession with nominal possessors. Inalienable possession involves placing the possessor immediately after the possessed noun, without any marker of the relationship, as in (111).

- (111) pwia [uus aan]
 older.brother [man that]
 ‘that man’s older brother’

With alienable possession, however, although the possessor follows the possessed noun, the appropriate possessive classifier of the sort illustrated in (110) (but without a possessive suffix) is placed between the two, following the possessed noun and preceding the possessor, as in (112) (which illustrates the two classifiers that are not illustrated in (110)).

- (112) a. [nɪkɪlɪv owas] ne misi
 [hibiscus old] POSS.PLANTED missionary
 ‘the missionary’s old hibiscus’
- b. nauanu iimwa Nasu
 village POSS.PLACE Nasu
 ‘Nasu’s village’

In Ngiti (Kutsch Lojenga (1994)), inalienable possession involves juxtaposition of the possessor and possessed noun, as in (113).

- (113) kamà-dɔ
 chief-head
 ‘the chief’s head’

Alienable possession involves a construction employing one of a small number of postpositional genitive markers, as in (114).

- (114) [kamà bhà] dza
 [chief GEN] house
 ‘the chief’s house’

There is also a difference in Ngiti between the two types of possession with pronominal possessors. With inalienable possession, the possessor is expressed by a possessive suffix on the possessed noun, as in (115).

- (115) afi-du
 heart-1SG.POSS
 ‘my heart’

Note that the order of morphemes in (115) is the opposite of that in (113), where the possessor occurs as the first part of the compound. With alienable possession, the possessor is expressed by a separate possessive pronominal word preceding the possessed noun, as in (116).

- (116) pbàkà ikyì
 1SG.POSS cow
 ‘my cow’

Again, the construction in (116) is different from that in (114), in that no postposition is used.

While the most common relationships involving inalienable possession are kinship relations and part–whole relations, the inalienable construction in Woleaian (Sohn (1975)), an Austronesian language of Micronesia, also includes objects which are ‘about’ the possessor or by the possessor, as in (117).

- | | | |
|-------|--------------------------|------------------|
| (117) | a. baabiyor-oi | b. sasiing-ei |
| | book-1SG.POSS | picture-1SG.POSS |
| | ‘book about me or by me’ | ‘picture of me’ |

Contrast (117a) with (118), in which the alienable construction is used.

- (118) yaai baabiyor
 1SG.POSS.CLSFR book
 ‘my book, i.e. book belonging to me’

While the choice between the two sorts of possession is partly determined by the particular noun possessed, some nouns in Ngiti, as in many other languages, can occur with either alienable or inalienable possession, with a difference in meaning. For example, in (119a), the inalienable possession construction is used, with a part–whole relationship, while in (119b), the alienable possession construction is used, with a relationship of ‘belonging’.

- (119) a. azù-du
 blood-1SG.POSS
 ‘my blood (from my body)’
- b. pbàkà azu
 1SG.POSS blood
 ‘my blood (which belongs to me but doesn’t come from my body)’

In some languages, the inalienable construction is not used for both kinship and part-whole relations but for only one of them. In Abun (Berry and Berry (1999)), a West Papuan language, the construction used for part-whole relations involves juxtaposition, as in (120a), while alienable possession and kinship relations involve a construction with an intervening genitive word *bi*, as in (120b) and (120c).

- (120) a. Sepenyel gwes
 Sepenyel leg
 ‘Sepenyel’s leg’
- b. [yetu ge dik yo bi] nu
 [person CLSFR one INDEF GEN] house
 ‘someone’s house’
- c. [Andar bi] im
 [Andar GEN] mother
 ‘Andar’s mother’

While possessive pronouns normally precede the noun in Kana (Ikoro (1996)), a Niger-Congo language of Nigeria, there is a distinct set of possessive pronouns that can be used only if the possessed noun is a body part, and these follow the noun, illustrated by the first person possessive pronoun *mē* in (121).

- (121) sí mē
 face 1SG.POSS
 ‘my face’

The example in (122) illustrates the normal prenominal first person singular possessive pronoun *nà*, with an alienably possessed noun.

- (122) nà kpá
 1SG.POSS book
 ‘my book’

The construction in (122) is also possible with body part nouns, as in (123); in other words, either construction can be used with body part nouns.

- (123) *nà* *bá*
 1SG.POSS hand
 ‘my hand’

The construction in (121) can only be used with body part terms and cannot be used with kinship terms. Kinship terms occur with the prenominal possessive pronoun; however, they occur with a different tone, as in (124), showing that Kana actually has a three-way contrast between alienable possession, body parts and kinship terms.

- (124) *ná* *kà*
 1SG.POSS mother
 ‘my mother’

While a contrast of alienable and inalienable possession is semantically based, it is very common for the precise division to be lexically determined. The examples in (115) and (119a) above from Ngiti illustrate the use of possessive suffixes with inalienable possession. But some nouns in Ngiti denoting body parts only occur in the alienable possession construction. In some cases, this may be because they are more easily separable from their host (e.g. *àyì* ‘hair’), but in other cases there is no obvious explanation (e.g. *ipfo* ‘vagina’). Some kinship terms occur in either construction, without a difference in meaning, as in (125).

- (125) a. *dadá-du* b. *pbàkà* *dadá*
 elder.sister-1SG.POSS 1SG.POSS elder.sister
 ‘my elder sister’ ‘my elder sister’

In addition, the noun *azi* may mean either ‘brother-in-law’ or ‘son-in-law’, but when it occurs in the inalienable construction, it has the meaning ‘brother-in-law’, as in (126a), and when it occurs in the alienable construction, it has the meaning ‘son-in-law’, as in (126b).

- (126) a. *azi-du* b. *pbàka* *azi*
 brother.in.law-1SG.POSS 1SG.POSS son.in.law
 ‘my brother-in-law’ ‘my son-in-law’

Furthermore, some nouns in Ngiti require the inalienable possession construction although their meanings, at least the meaning suggested by the English glosses, might lead one to expect they would occur in the alienable possession construction, e.g. *-li* ‘charcoal’, *-ká* ‘feather’, *-ra* ‘flour’, *-tsí* ‘something worthless’.

Similarly, in Maybrat, while a person’s house involves alienable possession, as in (108) above, a pig’s nest involves inalienable possession, as illustrated in

(127) (where the position of the possessor before the head noun and the possessive prefix on the head noun is the construction for inalienable possession).

- (127) fane m-sif
 pig 3SG.NONMASC.POSS-nest
 'the pig's nest'

And in Dongolese Nubian (Armbruster (1960)), a Nilo-Saharan language spoken in northern Sudan, a subset of kinship terms are inalienably possessed and cannot occur without a possessive prefix, illustrated in (128).

- (128) a. tintim-bes b. tintin-^ʔen
 3PLUR.POSS-brother 3PLUR.POSS-mother
 'their brother' 'their mother'

However, there are other kin terms in Dongolese Nubian, including the nouns for 'son' and 'daughter', that behave like alienably possessed nouns: they do not take possessive prefixes, but occur with the genitive forms of independent pronouns, as in (129a), the same construction used with alienable possession, as in (129b).

- (129) a. tín tód b. tín hánuig
 3PLUR.GEN son 3PLUR.GEN donkey.PLUR
 'their son' 'their donkeys'

2.1.5 *Nonreferential genitives*

Many languages distinguish a genitive construction with a referential genitive from one with a nonreferential genitive, illustrated by the contrast in the English examples in (130).

- (130) a. John likes that deer's antlers
 b. John likes deer antlers

In (130a), the antlers of a specific deer are being referred to, while in (130b), no specific deer is involved. The English construction for nonreferential genitives in (130b) involves juxtaposition. English has a second construction for nonreferential genitives that superficially resembles the referential genitive construction in (130a) in that it involves the genitive clitic 's; however, the noun marked with the genitive clitic occurs in adjective position, possibly following other adjectives, as in (131a), unlike referential genitives, which occur in determiner position, preceding adjectives, as in (131b).

- (131) a. a blue [woman's] hat
 b. [that woman's] blue hat

In Roviana (Corston-Oliver 2002), the construction with a referential genitive involves a possessive suffix on the head noun, as in (132a), while a nonreferential genitive involves juxtaposition, as in (132b).

- (132) a. mamalaengi-na [barikaleqe hoi]
 voice-3SG.POSS [woman that]
 ‘that woman’s voice’
- b. mamalaengi barikaleqe
 voice woman
 ‘a woman’s voice’ / ‘a female voice’

2.2 *Adpositional phrases*

Languages differ as to whether they allow adpositional phrases or noun phrases with oblique cases to modify nouns. This is possible in English, as in *that box on the table* and in Bawm (Reichle (1981)), a Tibeto-Burman language of Bangladesh, as illustrated in (133), where the postpositional phrase *in sungah* ‘in the house’ precedes the noun.

- (133) [in sungah] mi tlâ
 [house in] man PLUR
 ‘the people in the house’

But in Lezgian (Haspelmath (1993)), a Daghestanian language of the Caucasus region of Russia, this is not possible. To express what English would express by means of a prepositional phrase modifying a noun, Lezgian must place the modifying phrase in a relative clause with an appropriate verb, such as the verb meaning ‘be’, as in (134).

- (134) *hajwan-r-ikaj tir max-ar*
 animal-PLUR-SUBRELATIVE be.PTPCL story-PLUR
 ‘fairy tales about animals’
 (literally ‘fairy tales which are about animals’)

2.3 *Relative clauses*

Because relative clauses are discussed at greater length in chapter 4, the discussion here will be somewhat abbreviated, concentrating on structural matters. Languages vary as to whether the relative clause takes the same form as a main clause, with the possible addition of some relative word, like a relative pronoun, marking the clause. In (135), from Abun (Berry and Berry (1999)), the relative clause takes the same form as a main clause, except for the initial relative word

gato and a ‘gap’ in the relative clause corresponding semantically to the head of the relative clause.

- (135) suk-jan [gato án jan mo nggwe]
 plant-NOMIN [REL 3PLUR plant in garden]
 ‘plants that they plant in that garden’

Note that in Abun, as in the majority of languages, the relative words are not relative pronouns, since they are invariant words lacking pronominal features.

In other languages, like Yukaghir (Maslova (1999)), a language isolate spoken in Siberia, the verb in relative clauses takes a suffix marking it as being in a relative clause, as in (136).

- (136) [tude-gele joq-to-l] ani-pe
 [3SG-ACC arrive-CAUS-REL] fish-PLUR
 ‘the fish that had brought him’

Such verb forms are often called participles, especially when they are nonfinite, as in Yukaghir, lacking the inflections found with main verbs. Participial modifiers of nouns in English, such as *eating the sandwich* in (137), are relative clauses of this sort.

- (137) The man [eating the sandwich] looks familiar

Some languages require that a demonstrative or some sort of determiner occur in a noun phrase whenever the noun is modified by a relative clause. For example, while determiners are in general optional in noun phrases in Woleaian (Sohn (1975)), one is required when the noun phrase contains a relative clause, illustrated by the demonstrative *la* ‘that’ in (138).

- (138) i giula biuleiu la [ye log iyang]
 1SG know place that [3SG stay there]
 ‘I know the place where he lives’

There are other languages in which it is not a grammatical requirement that there be an article or demonstrative, but in which the use of such words is more common than in other noun phrases. An example of such a language is Bagirmi (Stevenson (1969)), a Central Sudanic language spoken in Chad, illustrated in (139).

- (139) ŋ^won [ga ma m-ak-iny] na
 boy [REL 1SG 1SG-see-3SG.OBJ] DEF
 ‘the boy who I saw’

Some languages have determiners or articles that are specific to relative clauses. For example, Woleaian has a special indefinite determiner *le* that is only used in indefinite noun phrases containing a relative clause, as in (140).

- (140) i tipeli [se-mal yaremat le [ye gach]]
 1SG want [one-CLSFR person INDEF [3SG good]]
 ‘I want someone who is good’

Conversely, Takia (Ross (2002a)) has a clitic =*n* which attaches to the end of a relative clause in a noun phrase, as in (141), but it only occurs with relative clauses in noun phrases that are interpreted as definite.

- (141) ab a [oŋ w-abiya=*n*]
 house DEM house 2SG-build=REL.DEF
 ‘the house that you built’

Relative clauses in Jur Mödö (Persson (1981)), a Central Sudanic language spoken in Sudan, must begin with one of two relative markers or with a demonstrative. Furthermore, if the noun phrase is specific, the relative clause must also occur with a clause-final marker. The example in (142) illustrates a relative clause with both a clause-initial marker *ámé* and a clause-final marker *nè*.

- (142) b̀̀ [ámé 'b̀̀ǹ̀ r̀̀ b̀̀ d̀̀r̀̀í ǹ̀]
 person [REL his body person right.hand REL]
 ‘the person who was the right-handed one’

In some languages, the relative clause does not modify the noun, but is a clause containing a noun phrase that corresponds semantically to the head noun in English translations. Such relative clauses are often called internally headed relative clauses and are discussed in section 3.2 below.

2.4 Conjoined noun phrases

Most languages allow noun phrases that are formed by conjoining or coordinating two noun phrases, as in English *the house and the garage* and the Kutenai example in (143), where the conjunction is a clitic that attaches to the first conjunct.

- (143) titqat=ϕ paʔkiy
 man=and woman
 ‘a man and a woman’

See chapter 1 for detailed discussion of coordinate constructions.

3 Noun phrases without nouns

In the narrowest sense of the term, a noun phrase must contain a noun or pronoun, possibly accompanied by other words or phrases modifying the noun or pronoun. Many languages have constituents that are not of this form, but

which are sometimes called ‘noun phrases’ because of grammatical similarities to typical instances of noun phrases, such as occurrence in subject or object position. Whether or not such constituents are properly called noun phrases, I will assume to be a purely terminological question. But for some of the constructions in question, if we do not call them noun phrases, we have a need for some alternative label that includes both noun phrases and these other constructions. For purposes of presentation, I will use the term *noun phrase* broadly here.

3.1 *Noun phrases with only ‘modifying’ words*

Many languages allow noun phrases that consist of words that normally would be modifiers of a noun, but without any noun. In the example in (144) from Nkore-Kiga (Taylor (1985)), the subject is a word that normally functions as an adjective.

- (144) *omuto* a-ka-gamba na-anye
 young 3SG-REM.PAST-speak with-me
 ‘the young one spoke to me’

Similarly, the noun phrase in (145) from Spanish (Luis Paris (p.c.)) consists of a determiner plus an adjective.

- (145) *el* *blanc-o*
 the.MASC white-MASC
 ‘the white one (masculine)’

In the example in (146) from Misantla Totonac (Mackay (1999)), spoken in Mexico, the adjective occurs with a possessive prefix (which is also possible when the adjective is modifying a noun).

- (146) *iš-t̥it* *†tatá*
 3POSS-black sleep
 ‘his black one is sleeping’

It is important to distinguish cases like these where the construction is possible for any adjective from phenomena like English *the poor*, which is possible only with certain adjectival words (cf. **the wide*) and has a different range of meanings from that found with adjectives modifying nouns; note that one cannot use *the poor* in (147a), but must say *the poor one*, as in (147b).

- (147) a. **All of the students in the class were very good except for one, and the poor was failing*
 b. *All of the students in the class were very good except for one, and the poor one was failing*

Furthermore, *the poor* in English is grammatically plural (*The poor are forgotten*, **The poor is forgotten*). It is probably best to treat English *poor* as a word that is sometimes an adjective and sometimes a noun, with distinct meanings.

Similar phenomena are occasionally found with other sorts of words or phrases that normally occur as modifiers of nouns. The example in (148) from Tidore illustrates the third plural pronoun functioning as a definite article (as in (10) above) combining with a semantic adjective and a numeral.

- (148) ona jang malofu
 3PL beautiful two
 ‘the two beautiful ones’

The example in (149) from Koyra Chiini (Heath (1999)) contains a possessor phrase followed by a definite article.

- (149) [woo di yo wan] di
 [DEM DEF PLUR of] DEF
 ‘the one [= wage] of those [workers]’
 (literally ‘the of those’)

In fact, English also allows possessor phrases without a noun to function as noun phrases, as in (150).

- (150) Your car is nice, but *John’s* is nicer

One approach to such noun phrases lacking nouns is to analyse them as involving ellipsis of a head noun, that is, as involving a noun that is present at some level of structure but which is not expressed overtly. One argument that is given for such an approach is that when a speaker uses noun phrases of this sort, it is normally the case that it is clear in the context what noun could have been used. A second argument is that in cases like (145) above from Spanish, the gender of the article is determined by the gender of the noun that could have been used.

But neither of these arguments is convincing. The fact that one can normally provide a noun that could have been used may simply reflect a fact about language use: normally when speakers refer to something, they can identify a noun that fits the thing. It is usually the case that when speakers use third person pronouns they are able to identify a noun that they could have used; but nobody would suggest that noun phrases consisting just of pronouns involve ellipsis of a noun. Similarly, in languages like Spanish, the gender of third person pronouns depends on what noun could have been used, but again it would be very odd to analyse such pronouns as involving ellipsis of a noun. Furthermore, such noun phrases without nouns can be used in those relatively infrequent contexts where the speaker does not know what the thing is, as in (151).

- (151) She saw something large and something small inside the cave, and then she saw *the large thing* move.

Languages that permit noun phrases without nouns apparently employ them in contexts like that in (151). For example, Hebrew (David Gil (p.c.)) would use the form in (152).

- (152) ha-gadol
DEF-large.SG.MASC
'the large one'

In such a context, Spanish (Luis Paris (p.c.)) uses a distinctive article *lo* that lacks a gender, as in (153).

- (153) lo grande
ART large
'the large [thing]'

In fact, the article *lo* cannot be used with a noun, suggesting that any analysis in terms of ellipsis is problematic.

Another possible approach to such cases with adjectives but no nouns is to say that the adjective is functioning as a noun in such cases. However, such an approach confuses word class with grammatical function. Such an approach is motivated if the phenomenon is lexically constrained, but not if it is productive for all members of a class. Treating these adjectives as nouns is analogous to saying that *music* in English *music teacher* is an adjective because it is modifying a noun, rather than simply saying that English allows nouns to modify nouns.

In some languages, when adjectives are used without an accompanying noun, they can occur with morphology that they do not occur with if a noun is present. For example, in Koyra Chiini, when an adjective is used without a noun, the adjective must take a prefix *i-*, which Heath (1999) calls an 'Absolute' prefix, as in (154).

- (154) i-jeeno di
ABSOL-old DEF
'the old one'

Similarly, if a numeral is used without a noun, it is either unmarked, or occurs with a distinct absolute prefix *a-*, as in (155).

- (155) a-hijka di
ABSOL-TWO the
'the two of them'

In some languages, the syntax of noun phrases without nouns may be different from those with nouns. For example, in Adioukrou (Herauld (1978)), a Kwa

language spoken in Côte d'Ivoire, a noun phrase with an adjective but no noun requires a definite article, while the definite article is optional if there is a noun.

3.2 *Headless relative clauses*

Headless relative clauses are a specific instance of noun phrases without nouns, but they warrant discussion because they are common and have various distinctive features. There are in fact a number of different sorts of constructions that can be called headless relative clauses. Not all linguists would group all of the constructions discussed here under this term. I use the term in a fairly loose sense for relative clauses that do not modify nouns or pronouns.

The English construction in (156a) differs from the construction in (157a) from Miya (Schuh (1998)) in that the form of the headless relative clause in (157a) is the same as the form of relative clause in (157b) modifying a noun, while this is not the case with the English construction in (156a), as illustrated by (156b).

- (156) a. I don't like *what you bought*
 b. I don't like the coat *that/which/*what you bought*
- (157) a. má rábaza
 REL.FEM.SG wet
 'the one (feminine, singular) that is wet'
 b. kàba [má rábaza]
 gown [REL.FEM.SG wet]
 'the gown that is wet'

In some languages, headless relative clauses can occur with other words that otherwise occur as modifiers of nouns. In Koromfe, while a noun phrase can consist of just a headless relative clause, as in (158a), it is also possible for the noun phrase to contain additional words that otherwise occur as modifiers of noun, as in (158b), where the noun phrase consists of the headless relative clause *benəma tufu* 'those who were sitting' plus a definite article and a quantifier.

- (158) a. mə hẽmsɛ [ala ba boŋ mə]
 1SG meet.PAST REL.SG NEG like 1SG
 'I met (someone) who doesn't like me'
 b. [benəma tufu bɛŋ dɔrɔ] bo ke ...
 [REL.PLUR sit.DUR DEF.HUMAN.PLUR all] say COMP
 'all those who were sitting said that . . .'

In some languages, headless relative clauses require an article, as in the Spanish (Luis Paris (p.c.)) example in (159).

- (159) el [que pasa]
 the.MASC [REL pass]
 ‘the one who is passing’

In Yukaghir (Maslova (1999)), there is a distinct verbal suffix associated with headless relative clauses. Compare (160a) (a repetition of (136) above), where the relative clause has a head noun, with (160b), where the relative clause is headless and the verb takes a suffix *-ben* marking the relative clause as headless.

- (160) a. [tude-gele joq-to-l] ani-pe
 [3SG-ACC arrive-CAUS-REL] fish-PLUR
 ‘the fish that had brought him’
 b. kelu-l-ben-pe
 come-REL-HEADLESS-PLUR
 ‘those who came’

In some languages, the morphology of relative clauses is such that the verbs are in some sense more nominal than finite verbs in main clauses, and one might construe the verb in such languages as sufficiently nominal, in the absence of a noun head, to be functioning as the nominal head of the noun phrase. For example, in Latin, a participial phrase can function as a noun phrase, and it inflects for case and number in a fashion similar to nouns, as in (161).

- (161) [puer-ōs voca-nt-em] vide-o
 boy-ACC.PLUR call-PRES.PTCPL-ACC.SG see.PRES-1SG
 ‘I see the one that is calling the boys’

Note that the nominal nature of the participle in Latin reflects the fact that participles resemble adjectives, both morphologically and in the external syntax of the participial phrase (e.g. modifying nouns), coupled with the fact that adjectives are highly nominal in Latin, as illustrated in (58) above. The possibility of employing participial phrases without nouns mirrors the same possibility found with adjectives, as in (162).

- (162) long-um vide-ō
 tall-ACC.SG.MASC see.PRES-1SG
 ‘I see the tall one (masculine)’

It should be emphasized, however, that, in their internal syntax, participial phrases are syntactically like clauses; transitive participles, for example, occur with accusative case-marked direct objects, as illustrated by the *puerōs* ‘boys’, object of *vocantem* ‘one who is calling’ in (161). Participles thus exhibit a mixture of verbal, adjectival, and nominal features.

Another example illustrating a relative construction in which the verb exhibits nominal properties is found in Evenki, a Tungus language spoken in Siberia.

The headless relative clause in (163a) is analogous to the headed relative clause in (163b).

- (163) a. [bi ugir-d'ari-v] so:t urgepchu
 [I lift-PTCPL-1SG.POSS] very heavy
 'what I am lifting is very heavy'
- b. [[bi ugir-d'ari-v] d'olo] so:t urgepchu
 [[I lift-PTCPL-1SG.POSS] stone] very heavy
 'the stone that I am lifting is very heavy'

The nominal nature of the participle is reflected by the fact that it takes a possessive suffix inflecting for the features of the subject of the participle.

The Turkish example in (164) (Kornfilt (1997)) is somewhat analogous: not only do we get a possessive suffix on the participle inflecting for features of the subject of the relative clause, but that subject, *adamin*, is in the genitive case rather than nominative case, and the participle itself is marked with accusative case, reflecting the function of the noun phrase in the main clause.

- (164) [adam-in ye-diğ-in]-i al-dı-m
 [man-GEN eat-OBJ.PTCPL-3SG.POSS]-ACC take-PAST-1SG
 'I took what the man ate'

We thus find a number of respects in which the participial relative clause exhibits nominal features.

A somewhat different sort of construction is found in Cebuano, an Austroneesian language spoken in the Philippines, illustrated in (165).

- (165) mi-dagan [ang [mi-palit sa saging]]
 ACTOR.FOC-run [TOPIC [ACTOR.FOC-buy NONTOPIC banana]]
 'the one that bought bananas ran away'

While the structure in (165) involves a noun phrase consisting of a determiner *ang* followed by a clause, it is not clear that the label 'relative clause' is appropriate for that clause, since it lacks the relative marker *nga* that occurs with headed relative clauses, as in (166).

- (166) mi-dagan [ang babaye [nga mi-palit
 ACTOR.FOC-run [TOPIC woman [REL ACTOR.FOC-buy
 sa saging]]
 NONTOPIC banana]]
 'the woman that bought bananas ran away'

Nevertheless, it shares with the relative clause in (166) the fact that there is a 'gap' in the clause, corresponding to the referent of the entire noun phrase, and both constructions are subject to the grammatical constraint that only the

grammatical ‘topic’ (which is the actor in a clause where the verb is actor focus) can be relativized.

Cebuano reflects a language type in which there is a weak noun–verb distinction and, in so far as there is such a distinction, it seems to play little role in constraining what can occur in noun phrases. In other words, noun phrases can be formed from a determiner plus a word that can be a noun or a verb or an adjective, or words that normally occur as modifiers or complements of such words, such as the object noun phrase *sa saging* in (165). Thus the two sentences in (167) apparently have the same grammatical structure.

- (167) a. *mi-dagan* [ang *babaye*]
 ACTOR.FOC-run [TOPIC woman]
 ‘the woman is running’
- b. *babaye* [ang *mi-dagan*]
 woman [TOPIC ACTOR.FOC-run]
 ‘the one who is running is a woman’

Nouns and verbs exhibit some differences in Cebuano (for example in their morphology), but these differences are irrelevant to the syntactic constructions reflected in (167). In this sense, the verb *midagan* ‘run’ in (167b) is just as much a head as the noun *babaye* ‘woman’ in (167a). Nevertheless, examples like (167b) illustrate the equivalent of a headless relative clause in other languages, and illustrate a further type of noun phrase lacking a noun.

The final subtype of headless relative clause is so-called ‘internally headed relative clauses’ (discussed also in chapter 4). Many linguists are at pains to distinguish headless relative clauses from internally headed relative clauses, and there may be languages in which one needs to distinguish two separate constructions, but the term ‘headless relative clause’ is being used deliberately broadly here to cover phenomena involving noun phrases that contain relative clauses that are not modifying a noun (or pronoun). The examples in (168) illustrate internally headed relative clauses in Mesa Grande Diegueño (Cuoro and Langdon (1975)), a Yuman language spoken along the border of the United States and Mexico.

- (168) a. [*'ehatt gaat akewii*]=ve=ch *chepam*
 [dog cat chase]=DEF=SUBJ get.away
 ‘the cat that the dog chased got away’
- b. [*'ehatt gaat kw-akewii*]=ve=ch *nye-chuukuw*
 [dog cat REL.SUBJ-chase]=DEF=SUBJ IOBJ-bite
 ‘the dog that chased the cat bit me’

In both sentences in (168), the subject of the main clause is a noun phrase which consists of a clause followed by a definite clitic and a subject case clitic. In both

sentences, the noun that corresponds to the head noun in the English translation occurs inside the relative clause. This is clearest with *gaat* 'cat' in (168a), since it is preceded and followed by words in the relative clause. The reason that constructions like these are often called 'internally headed' is that the noun that corresponds to the head in the English translations is internal to the relative clause. If we use the word 'head' in a purely semantic way, to denote the word that corresponds to the head noun in the English translations, then we can call *gaat* 'cat' in (168a) the head.

It is important to emphasize that the noun which is semantically the head in these clauses is not in any grammatical sense a head. Rather, *gaat* 'cat' in (168a) is grammatically a noun (phrase) functioning as object of the verb *akewii* 'chase'. Its special role arises from the fact that it is semantically co-indexed with the entire noun phrase that consists of the relative clause plus the definite and subject case clitics. But because it is not grammatically a head, and because the noun phrase consists only of the relative clause and the two clitics, these examples satisfy the criteria here for headless relative clauses.

In languages with internally headed relative clauses, there is often a problem of potential ambiguity: if the relative clause contains two or more nouns, which of these nouns is to be interpreted as the semantic head, the noun (phrase) coreferential to the noun phrase containing the relative clause? The Diegueño examples in (168) are unambiguous for the following reasons. The fact that the noun phrase in (168a) that contains the internally headed relative clause denotes the cat, while that in (168b) denotes the dog, follows from the presence of the subject relative prefix *kw-* in (168b) and its absence in (168a). Its presence in (168b) signals that the noun phrase containing the internally headed relative clause is coreferential to the subject in the relative clause, which is '*ehatt* 'dog'. That this noun is subject is determined by the word order in the relative clause: subjects precede objects. Conversely, the absence of this prefix on the verb in (168a) signals that the larger noun phrase is coreferential to a nonsubject in the relative clause, and, in the absence of an alternative, this is the object *gaat* 'cat'.

Note that in languages with internally headed relative clauses in which semantic adjectives are grammatically verbs, semantic adjectives do not modify nouns, but occur as the verb in the internally headed relative clause, with the noun as subject of the semantic adjective. In the Diegueño example in (169), for example, the word *kunemshap* 'white' is the verb in an internally headed relative clause, with *aq* 'bone' its subject.

- (169) 'iikwich=ve=ch [aq ku-nemshap]=vu aakwal
 man=DEF=SUBJ [bone REL.SUBJ-white]=DEF lick
 'the man licked the white bone'

Because internally headed relative clauses with semantic adjectives typically consist of two words, it may not be obvious at first glance that, in examples like (169) from Diegueño, the semantic adjective is not modifying the noun. However, once one sees that semantic adjectives are verbs, and once one sees that structures with a semantic adjective are precisely the same structures as examples that more clearly involve internally headed relative clauses, as is shown in examples like those in (168) above for Diegueño, then it becomes apparent that the structures with semantic adjectives are just a simple form of internally headed relative clause.

In languages with internally headed relative clauses, it is common for there to be no semantic head noun in the relative clause, in which case the relative clause is headless, even using ‘head’ in a semantic sense. This is illustrated by the Kutenai example in (170a). In this example, the subject of the main clause is *ni? ku wukat* ‘the person/thing that I saw’, which consists of the definite article *ni?* followed by the subordinate clause *ku wukat* ‘I saw him/her/it’. Its structure is the same as (170b), except that in (170b), there is a semantic head noun in the relative clause, so that the subject of the main clause consists of the definite article *ni?* followed by the subordinate clause *ku wukat paʔkiy* ‘I saw the woman’.

- (170) a. *wiʔqa?-ni* [*ni?* *k=u* *wukat*]
 big-INDIC [DEF SUBORD=1.SUBJ see]
 ‘the person that I saw was tall’ or ‘the thing that I saw was big’
- b. *wiʔqa?-ni* [*ni?* *k=u* *wukat paʔkiy*]
 big-INDIC [DEF SUBORD=1.SUBJ see woman]
 ‘the woman that I saw was tall’

It is important to emphasize that the two examples in (170) do not involve different constructions. The difference between (170a) and (170b) simply reflects the general possibility in Kutenai that a third person argument that is interpreted pronominally will not be expressed overtly. In other words, the absence of a semantic head noun in (170a) simply reflects a pronominal interpretation. Thus the difference between (170a) and (170b) is the same as the difference between (171a) and (171b), except that the examples in (171) are not subordinative.

- (171) a. *hu wukat-i*
 1.SUBJ see-INDIC
 ‘I saw her’
- b. *hu wukat-i paʔkiy*
 1.SUBJ see-INDIC woman
 ‘I saw the/a woman’

In fact, if we embed the examples in (171) as complement clauses, as in (172), we get structures which are identical to those in (170), except that these complement clauses denote a proposition and are not interpreted as coreferential to something inside the subordinate clause.

- (172) a. hu n^{ɔ̃}upx-ni [ni? k=u wukat]
 1.SUBJ INDIC=know-INDIC [DEF SUBORD=1SUBJ see]
 ‘I know that I saw him/her/it’
- b. hu n^{ɔ̃}upx-ni [ni? k=u wukat pa#kiy]
 1.SUBJ INDIC=know-INDIC [DEF SUBORD=1SUBJ see woman]
 ‘I know that I saw the/a woman’

3.3 *Noun clauses*

The term *noun clause* is often applied to subordinate clauses which appear in positions otherwise associated with noun phrases, as illustrated by the noun clauses in subject position in (173a) from English and (174) from Mandarin Chinese (Li and Thompson (1981)), and the noun clauses in object position in the English example in (173b) and the Kutenai examples above in (172).

- (173) a. [That he might return] never occurred to me
 b. I know [that it will rain]
- (174) [tā shēng bìng] shì dàshì
 [3SG fall sick] be big.matter
 ‘that he fell sick is a big matter’

While noun clauses are like headless relatives in being clauses that are functioning as or like noun phrases, they differ in that noun phrases which are headless relatives are always coreferential to some expression or pronominal argument (usually phonologically null) inside the relative clause, while this is not the case with noun clauses. Noun clauses are not always treated as noun phrases: this depends partly on one’s analysis and partly on the facts in specific languages. For example, in (172) above from Kutenai, the noun clause occurs with a definite article; this is in fact normal in Kutenai with factive noun clauses, noun clauses which are presupposed, as is the case with *?upxni* ‘know’. The fact that this type of noun clause occurs with an article is one reason for analysing such clauses in Kutenai as noun phrases.

In addition to finite noun clauses like those in (173) and (174), many languages have various sorts of clausal constructions where the verb is to varying extents nominalized, as in (175) from Udihe (Nikolaeva and Tolskaya (2001)), a Tungus language spoken in eastern Siberia, in Russia (see chapter 2 and vol. III, chapter 6).

- (175) bi xono:-mi [nuati eme-ti-e-me-ti]
 1SG surprised-1SG [3PL come-REPET-PAST.PTCPL-ACC-3PLUR.POSS]
 'I was surprised that they returned'

While this example is naturally translated by a finite clause in English, the subordinate verb in (175) is a participial form that bears nominal inflection, in the form of an accusative case suffix and a third person plural possessive suffix corresponding to the subject of the verb. Discussion of constructions like these and other sorts of nonfinite verbal constructions that serve as arguments of the main verb is beyond the scope of this chapter; see chapter 2 and vol. III, chapter 6 for further discussion of nominalizations and complementation.

4 Conclusion

This chapter has discussed various sorts of elements that occur in noun phrases cross-linguistically. A more complete discussion of the structure of noun phrases in a language must also cover the order of various modifiers with respect to the noun (see vol. I, chapter 2, ('Word order')) and the possibility of combinations of different modifiers. The latter includes two issues. First, when more than one modifier occurs in the noun phrase, how are they ordered with respect to each other? And second, are there combinations of modifiers that cannot occur? These topics will be discussed here only very briefly.

It is common to represent the order of various modifiers with respect to each other by means of a complex formula, such as that in (176) for noun phrases in Tidore (Van Staden (2000)).

(176)

Noun – Adjective – $\left\{ \begin{array}{c} \text{Numeral} \\ \text{Indefinite Quantifier} \end{array} \right\}$ – Relative Clause – Demonstrative

While a formula like this includes as many modifiers as possible, this does not mean that speakers will ever produce noun phrases with all modifiers represented. The main point of such formulae is simply to represent the order of any pair of modifiers. Thus, (176) says, among other things, that a numeral follows an adjective and that a demonstrative follows a numeral. Such formulae are best at representing preferred orders. Further means are necessary for distinguishing other orders that are possible but less common from orders that are not possible at all. Furthermore, languages occasionally exhibit more complex ordering constraints that are not easily represented in such formulae. For example, in Aari (Hayward (1990)), an Omotic language spoken in Ethiopia, demonstratives more commonly follow the noun, as in (177a), but they only precede the noun if the noun is followed by a numeral, as in (177b).

- (177) a. ?eedín keené
 people DEM.PLUR
 ‘these people’
- b. keené ?aksí dónq-ine-m
 DEM.PLUR dog five-DEF-ACC
 ‘these five dogs’

Constraints on possible combinations of modifiers are illustrated by the fact that numerals and indefinite quantifiers do not co-occur in Tidore, as the formula in (176) indicates. They are also illustrated by the fact that in English, a prenominal possessive pronoun cannot co-occur with a demonstrative (**that my book*, **my that book*). But languages differ in this regard. For example, as illustrated in (31) above, Engenni allows not only these two to co-occur, but for them to occur with a definite article as well.

Suggestions for further reading

There is surprisingly little typological literature on the structure of noun phrases, despite the fact that this is discussed at length in many descriptive grammars. The most detailed discussion is Rijkhoff (2002). There is also basic discussion in Givón (1990, 2001). The chapters in this anthology on Parts-of-speech systems (vol. I, chapter 1), Word order (vol. I, chapter 2), Coordination (this volume, chapter 1), Complementation (this volume, chapter 2), Relative clauses (this volume, chapter 4), Gender and noun classes (vol. III, chapter 4), and Lexical Nominalization (vol. III, chapter 6) all deal with issues related to topics in this chapter. There is considerable literature on various specific topics touched on in this chapter, only a couple of which can be mentioned here. On issues surrounding semantic adjectives and how languages treat them grammatically, see Dixon (1977b). On alienable and inalienable possession, see Nichols (1988) and Chappell and McGregor (1996).

A number of chapters in the *World Atlas of Language Structures* (Haspelmath, *et al.* 2005) are relevant to topics discussed in this chapter, including Dryer (2005a, 2005b, 2005c, 2005d, 2005e) and Gil (2005a, 2005b).

4 Relative clauses*

Avery D. Andrews

0 Introduction

In this chapter, we examine the typology of relative clauses. We will define relative clauses as follows:

- (1) A relative clause (RC) is a subordinate clause which delimits the reference of an NP by specifying the role of the referent of that NP in the situation described by the RC

Since the NP whose reference is being delimited is in the matrix clause, we will call it NP_{mat} , and we will call the relative clause itself (which may be reduced or nominalized) S_{rel} . In the following examples, NP_{mat} is in italics, and S_{rel} , which may or may not be part of NP_{mat} , is bracketed:

- (2)
 - a. *The book* [*I bought yesterday*] was a trade paperback
 - b. *Somebody* lives nearby [*who has a CD-burner*]

In (2a), S_{rel} is contained within NP_{mat} , and constrains the referent of this NP to be something which I bought, whereas, in (2b), S_{rel} occurs at the end of the sentence, and constrains the referent of NP_{mat} (the subject of the whole sentence) to be the owner of a CD-burner.

In order to describe a situational role for the referent of NP_{mat} , S_{rel} needs to have a grammatical function associated with that role, which we can call the NP_{rel} function. There may or may not be an overt NP in the RC that expresses NP_{rel} function; in (2b) there is (the ‘relative pronoun’ *who* in subject position of the RC), and in (2a) there is not. In the latter case we can say that the RC contains a ‘gap’ for the NP_{rel} function (direct object, in this case). Confusing the grammatical and semantic functions of NP_{rel} and NP_{mat} is a common pitfall in studying RCS. For practice, you might try to identify the grammatical relation and semantic roles of NP_{mat} and NP_{rel} in these examples:¹

* I am indebted to Timothy Shopen and Matthew Dryer for useful comments on earlier versions of this chapter, and it also draws heavily on E. L. Keenan (1985) in approach and content. All errors are, of course, due to me.

¹ In (3a) NP_{mat} is a subject/agent while NP_{rel} is an object/patient; in (3b), NP_{mat} is an object/patient while NP_{rel} is a subject/agent.

- (3) a. *The man [who the dog was biting] was shouting*
 b. *The dog bit the man [who was shouting]*

When formulating claims and observations, it's a good idea to double check that you are not confusing the functions of NP_{rel} and NP_{mat} .

The typology of relative clauses is mostly a matter of differences in:

- (4) a. the structural relationships between S_{rel} and NP_{mat} (for example whether or not S_{rel} is a subconstituent of NP_{mat});
 b. the treatment of the NP_{rel} function (for example whether it is moved, specially marked, or omitted);
 c. constraints on the possibilities for what the NP_{rel} function can be (only subject, only core argument, etc.);
 d. the treatment of S_{rel} as a whole (such as whether it is reduced or nominalized).

We will consider each of these in turn, noting linkages between these dimensions of variation as they arise. Furthermore, languages often use more than one technique, or 'strategy', to form relative clauses, so we need to consider what kinds of combinations of strategies occur together.

Alongside of RCS, languages normally have a variety of structures that resemble RCS in various ways, without meeting the definition in (1). In English and many other languages, there is, for example, the so-called 'nonrestrictive' relative clause, which makes a comment about an NP or other constituent, without delimiting its reference (E. L. Keenan (1985:168)):

- (5) a. *The Japanese [who are industrious] now outcompete Europe*
 b. *The Japanese, [who are industrious], now outcompete Europe*

In (5a) above, the bracketed subordinate clause helps to identify the superior competitors, and meets the definition of an RC, while in (5b) it does not help in the identification, and therefore does not. In English, nonrestrictive relatives, although similar to RCS, differ from them in a variety of respects, such as having pauses to set them off from their surroundings. But in some other languages, such as Japanese, the same construction seems able to function as both a relative clause and a nonrestrictive relative (Kuno (1973:235)). Other structures that may have significant resemblances to RCS without meeting the definition include questions, comparative clauses and adverbial clauses. An interesting example from English is the 'concealed question' of (6b) below (E. L. Keenan (1985:170)):

- (6) a. *John always knows [which horse will win]*
 b. *John always knows [the horse that will win]*

In (6b) the bracketed NP looks like an NP containing an RC, but has the semantic function of the ‘indirect question’ in (6a). In this survey, we will only consider RCS as defined in (1), without investigating the related structures, interesting as they are.

1 Relationships between NP_{mat} and S_{rel}

Our first distinction is whether S_{rel} is contained within NP_{mat}, as in (2a) above, or is outside of it, as in (2b). The possibilities when S_{rel} is within NP_{mat} will be discussed in the first subsection below. We will follow Andrews (1985:11) in calling the former type ‘embedded’, Hale (1976) in calling the latter ‘adjoined’.

1.1 Embedded RCS

Embedded RCS have S_{rel} inside NP_{mat}. They have three major typological subdivisions, which are based on the relationship between S_{rel} and some additional nominal material, which we will call the ‘domain nominal’. The domain nominal serves the semantic function of identifying the domain of objects upon which the RC imposes a further restriction. In (2a), for example, the domain nominal is *book*.

The possibilities are that the domain nominal appears outside of S_{rel} (as in (2a)), inside of S_{rel}, or does not exist. These possibilities result in the three categories of external, internal and free (embedded) RCS.

1.1.1 External RCS

In English, external RCS follow the domain nominal; the other two possibilities are that they precede it, or occur in variable order. The former possibility is illustrated by Japanese. In (7b) and other examples below, based on the sentence (7a), the RC is bracketed while the domain nominal is italicized:

- (7) a. Yamada-san ga saru o kat-te i-ru
 Yamada-Mr SUBJ monkey DO keep-PTCPL be-PRES
 ‘Mr Yamada keeps a monkey’
- b. [*Yamada-san ga kat-te i-ru*] saru
 Yamada-Mr SUBJ keep-PTCPL be-PRES monkey
 ‘The monkey which Mr Yamada keeps’

There are various common but not invariable linkages between the relative order of RC and domain nominal and other properties of the RC. For example, RCS that precede the domain nominal are more likely to be nominalized than those that follow, but don’t appear to use special ‘relative pronouns’ to express NP_{rel}

function, tending rather to lack overt NP_{rel}. These tendencies will be commented on below.

Languages in which RCS precede the domain nominal are especially likely to be verb-final – such as Japanese, Korean, Turkish, and Navajo – although RC-first order also occurs in SVO languages such as Chinese (Li and Thompson (1981:116)):

- (8) [Zhāngsān mǎi de] *qichē* hěn guì
 Zangsan buy NOM car very expensive
 ‘The car that Zhangsan bought was very expensive’

Persian, on the other hand, is a verb-final language where relative clauses follow the domain nominal (Lambton (1953:75)):²

- (9) *Ketab-i* [ke be mæn dad-id] gomšode æst
 book-INDEF REL to me gave-2SG lost is
 ‘The book you gave to me is lost’

It is also possible, although unusual, for RCS to be able to either precede or follow the domain nominal. This occurs in Tagalog (Schachter and Otnes (1972:124)):

- (10) a. *tindaha-ng* [pinuntahan ko]
 store-LINK PERF.GO I
 b. [pinuntahan ko]-ng *tindahan*
 PERF.GO I-LINK store
 ‘The store I went to’

Here the RC is separated from the domain nominal by a so-called ‘linker’,³ which appears between the RC and the domain nominal, regardless of what order these appear in.

External RCS sometimes appear in the same position as ordinary adjectives. This is the case in Tagalog, where adjectives can precede or follow the heads in the same way that RCS do, and take the same linker (Schachter and Otnes (1972:122–4)):

- (11) a. *mayama-ng* tao
 rich-LINK man
 b. *tao-ng* mayaman
 man-LINK rich

² The suffix *-i* is normally used to mark indefiniteness, but also appears on the domain nominals of RCS, even when the interpretation is definite. See Taghvaipour (2003) for discussion.

³ Which takes the form *-ng* after a word ending in a vowel or a nasal, replacing the nasal in the latter case, *na* otherwise.

Relative clauses in Tagalog thus appear to simply be clauses that are functioning as adjectives, in terms of their positional properties as well as their meanings.

In other languages, there are significant differences between relative clauses and ordinary adjectival modifiers. In English for example the normal position for adjectives is in front of the head N, while relative clauses come after.⁴ In Japanese on the other hand, both adjectives and relative clauses precede the head nominal, but there is a difference: – adjectives must follow a demonstrative, but at least multi-word relative clauses prefer to precede it, although the following is also possible:⁵

- (12) a. ano yasui konpyuutaa
that cheap computer
b. *yasui ano konpyuutaa
cheap that computer
'that cheap computer'
- (13) a. [boku ga sonkeisite iru] kono hito
I NOM respecting be this person
b. kono [boku ga sonkeisite iru] hito
this I NOM respecting be person
'this person who I respect'

This appears to be an instance of a general tendency for RCS to appear further away from the head N than adjectives. Since both adjectives and RCS precede the head in Japanese, the effect here is that the RCS appear closer to the beginning of the NP.

In Lango, on the other hand, where both adjectives and RCS follow the head, RCS appear closer to the end (Noonan (1992:154–6)). In this language, demonstratives and other determiners normally appear suffixed to the last word of the NP, including adjectives:

⁴ However, in English, phrasal adjectival modifiers appear after the head NP:

a book yellow with age

These have sometimes been analysed as reduced RCS.

A further difference between prenominal and postnominal modifiers in English is that while postnominal modifiers always pick out a subset of the potential referents of the head nominal, prenominal modifiers can perform other semantic operations as well. For example, if something is 'a book yellow with age', it must be 'a book', but if something is 'a supposed Intel processor', it is not necessarily 'an Intel processor'.

⁵ Thanks to Misako Ishii and Peter Hendricks for checking these examples. Matthew Dryer (p.c.) finds that single-word relative clauses, on the other hand, prefer to follow the demonstrative.

- (14) a. gwók-kì
 dog-this
 ‘this dog’
- b. gwókk à dwón-ŋì
 dog ATT big.SG-this
 ‘this big dog’

RCS on the other hand can appear either before or after the determiner, or sandwiched between two instances of the (same) determiner:⁶

- (15) gwóggi à dɔŋ ò àryɔ̀-nì [ámê lóca ònèkò]-nì
 dogs ATT big two-this REL man 3s.kill.PERF-this
 ‘these two big dogs that the man killed’

It usually appears to be the case that when RCS appear in a different position from ordinary adjectival modifiers, they either appear after the head rather than before, or further away from the head. In some languages however, especially Tibeto-Burman, RCS precede the head N, but adjectives follow (Matthew Dryer (p.c.)).

There is, however, a further factor, which is that external RCS often appear in two different forms, commonly called ‘reduced’ and ‘unreduced’. The former are less like full clauses, typically having reduced tense–mood marking and greater restrictions on the NP_{rel} function (typically, NP_{rel} in reduced RCS must be subject or absolutive in grammatical function). The verbs of reduced RCS furthermore often have features of adjectival or nominal morphology.

When there is such a distinction, the reduced RCS may appear in the positions appropriate for adjectival modifiers while the unreduced ones appear in a different, and typically more external, position. This is illustrated by German and Finnish, respectively, in (16) and (17) below, where the (a) examples contain prenominal reduced RCS, and the (b) examples are postnominal unreduced (E. L. Keenan and Comrie (1977)):

- (16) a. [Pöydällä tanssinut] poika oli sairas
 on.table having.danced boy was sick
 ‘The boy who danced on the table was sick’
- b. John näki veitsen [jolla mies tappoi kanan]
 John saw knife with.which man killed chicken
 ‘John saw the knife with which the man killed the chicken’

⁶ Unfortunately, Noonan only cites an example with the determiner appearing both before and after the RC, although he says that it can appear in either position, as well as both.

- (17) a. der [in seinem Büro arbeitende] Mann
 the in his study working man
 ‘the man working in his study’
- b. der Mann, [der in seinem Büro arbeitet]
 the man who in his study works
 ‘the man who is working in his study’

It always appears to be the case that when reduced RCs appear in a different position from unreduced ones, they appear in a position shared with ordinary adjectival modifiers, and that the unreduced ones will be either postnominal, or further from the domain nominal. This indicates that reduced RCs are phrasal in nature, as opposed to the full RCs, which are clausal.

1.1.2 Internal RCs

Internal RCs have the domain nominal within the RC itself, either in the position that would be expected on the basis of the NP_{rel} function, or perhaps displaced from that position.⁷ Below are some internal RCs from Navajo (Platero (1974)), illustrating internal RCs with NP_{rel} as subject, object, object of preposition, and possessor:

- (18)
- a. [(Tl'édéáá) ashkii atháá'-áá] yádootih
 last.night boy 3SG.IMPERF.SNORE-REL.PAST FUT.3SG.speak
 ‘The boy who was snoring last night will speak’
- b. [Ashkii at'ééd yiyiitsá-néę] yálti'
 boy girl 3SG(OBJ).PERF.3SG(SUBJ).see-REL.PAST IMPERF.3SG.speak
 ‘The boy who saw the girl is speaking’ ‘The girl who the boy saw is speaking’ (ambiguous)
- c. [(Shi) łééchąą'í bá hashtaat-ígíí] nahał'in
 I dog for.3SG IMPERF.1SG.sing-REL.NONPAST IMPERF.3SG.bark
 ‘The dog that I am singing for is barking’
- d. [Łíí' bi-tsiigha' yishéé-éę] naalgeed
 horse its-mane 3SG(OBJ).PERF.1SG(SUBJ).shear-REL.PAST IMPERF.3SG.buck
 ‘The horse whose mane I sheared is bucking’

The possibility of a time-adverbial appearing initially in the RC in (18a) shows that the domain nominal is appearing within S_{rel}, rather than before it. Likewise the existence of a reading of (18b) in which *at'ééd* ‘the girl’ is NP_{rel} indicates that the domain nominal is inside S_{rel} in this case also. Since Navajo lacks postnominal embedded relatives, both (a) without the initial time

⁷ As discussed by Basilico (1996), and below.

adverbial, and the other reading of (b) must also be examples of internal RCS. The remaining examples illustrate some additional possibilities for the function of NP_{rel} and the domain nominal in such examples, although there are also positions that are blocked.⁸

Like many languages with internal RCS, Navajo also allows the domain nominal to appear after the RC, yielding alternates such as these to the sentences of (18):

(19)

- a. [(Tl'éeédáá) ałhą́ą'-ą́ąą] ashkii yádootih
 last. night 3SG.IMPERF.SNORE- REL.PAST boy FUT.3SG.speak
 'The boy who was snoring last night will speak'
- b. [Ashkii yiyiitsá-néę] at'éeéd yáti'
 boy 3SG(OBJ).PERF.3SG(SUBJ).speak-REL.PAST girl IMPERF.3SG.speak
 'The girl who the boy saw is speaking'
- c. [(Shi) bá hashtaal-ígíí] lééchą́ą́'í nahał'in
 I for.3SG IMPERF.1SG.sing-REL.NONPAST dog IMPERF.3SG.bark
 'The dog that I am singing for is barking'
- d. [Bi-tsiigha' yishée-éé'] híí' naalgeed
 its-mane 3SG(OBJ).PERF.1SG(SUBJ).shear-REL.PAST horse IMPERF.3SG.buck
 'The horse whose mane I sheared is bucking'

Basilico (1996) reviews and proposes an analysis of a number of recurrent characteristics of internal RCS first, that NP_{rel} be formally indefinite; second, that, in many languages, ambiguous internal RCS can be disambiguated by preposing NP_{rel} (but keeping it within the RC, and not necessarily moving it to the front). These issues will be considered when we discuss the treatment of NP_{rel}.

1.1.3 Free RCS

A final type which at least superficially resembles internal RCS are the so-called 'free relatives' which arguably lack a domain nominal:

- (20) a. The dog ate [what the cat left in its bowl]
 b. Let [whoever is without sin] cast the first stone

In (a) the bracketed sequence is a free RC with NP_{rel} in object function; in (b) it is one with NP_{rel} in subject function. In examples such as these from English, there is uncertainty as to whether the WH-marked form is appearing inside S_{rel} as NP_{rel}, or outside of it as head of NP_{mat}. The latter is argued by Bresnan and

⁸ Such as 'object' of a locational enclitic (Platero (1974:224–6)).

Grimshaw (1978); however, a difficulty with this is the apparent acceptability of examples such as:

- (21) [Whoever's woods these are] is a good judge of real estate

Here NP_{mat} is coreferential with *whoever*, but *whoever* is embedded in the larger NP *whoever's woods*. This is not problematic if this is a preposed NP within S_{rel}, but if it is external to S_{rel} as the head of NP_{mat}, the result would be a bizarre situation in which the head of an NP wasn't coreferential with the NP.

Free relatives coexist with other types of RC in many languages. In Navajo, for example, free relatives exist alongside of internal and pronominal embedded relatives, and are expressed with neither a domain nominal nor any overt material in NP_{rel} position (Kaufman (1974:527)):

- (22) [Kinłání-góó deeyáh-ígíí] bééhonisin
 Flagstaff-to 3SG.GO-REL.NONPAST 3SG(OBJ).IMPERF. 1SG(SUBJ).know
 'I know the person who is going to Flagstaff'

Free relatives appear to be semantically similar to structures with pronouns or demonstratives in NP_{mat} head position:

- (23) Let he who is without sin cast the first stone

In some languages, such as Icelandic, free RCs do not exist; pronominally headed ones similar to (23) are used instead.

1.2 Adjoined RCs

Adjoined RCs have S_{rel} appearing outside of NP_{mat}. Such RCs appear to be restricted to appearing at the beginning or the end of the clause; I am aware of no languages in which there is a fixed position for non-embedded RCs that is internal to the clause. Languages frequently allow both clause-initial and final position for adjoined RCs, as illustrated by these examples from Hindi (Srivastav (1991)):

- (24) a. [Jo laṛkii kaṛii hai] vo lambii hai
 WH girl standing is DEM tall is
 b. Vo laṛkii lambii hai [jo khaṛii hai]
 DEM girl tall is WH standing is
 'The girl who is standing is tall'

Superficially, these structures look like minor variants, but Srivastav shows that the left-adjoined (clause-initial) S_{rels} have significantly different properties from the right-adjoined (clause-final) ones, which share various properties with RCs appearing in the third possible position for RCs in Hindi: embedded postnominally.

One of these properties is that, with a left-adjoined RC, NP_{mat} must be definite and marked with the demonstrative *vo*, which is not required for the other two types:

- (25)
- a. *[Jo laṛkiyāā khaṛii hāī] do lambii hāī
 WH girls standing are two tall are
 - b. Do laṛkiyāā lambii hāī [jo khaṛii hāī]
 two girls tall are WH standing are
 - c. Do laṛkiyāā [jo khaṛii hāī] lambii hāī
 two girls WH standing are tall are
 ‘Two girls who are standing are tall’

A more striking property of left-adjoined RCs is that they can specify two NPs in NP_{rel} function, each with a corresponding demonstrative in the main clause. This is not possible for the right-adjoined clauses, and not able even to be envisioned with the embedded ones:

- (26)
- a. [Jis laṛki-ne_i jis laṛke-ko_j dekhaa] us-ne_i us-ko_j passand kiyaa
 WH girl-ERG WH boy-ACC saw DEM-ERG DEM-ACC liked
 - b. *Us laṛki-ne_i us laṛke-ko_j passand kiyaa [jis-ne_i jis-ko_j dekhaa]
 DEM girl-ERG DEM boy-ACC liked WH-ERG WH-ACC saw
 ‘Which girl saw which boy, she like him’ (‘You know the girl who saw the boy? Well, she liked him’)

In this case, the left-adjoined clause is constraining the reference of two NPs at the same time, by presenting a situation in which both are participants. The interpretation requires that there be a unique pair, a girl and a boy, such that the girl saw the boy, and then states that the girl liked the boy. On the basis of this and additional evidence, Srivastav concludes that the left-adjoined clauses are an essentially different type of construction from the other two. This conclusion is supported by the fact that right-adjoined RCs frequently occur in languages such as English (cf. (2b)), which lack left-adjoined RCs.

The distinctive properties of the left-adjoined clauses support the use of a special term for them; they are often called ‘corelatives’, and classified as different from relative clauses (E. L. Keenan (1985)). On the other hand, the fact that they use the same kind of special marking for NP_{rel} – different, for example, from interrogative marking – suggests that they should be treated as a kind of relative clause; since they meet the definition in (1), I will here treat them as a type of RC. It is reasonable to use the term ‘corelative’ for RCs with properties similar to those of Hindi left-adjoined RCs. Right-adjoined RCs in English are traditionally called ‘extraposed’, and this would appear to be an appropriate terminology for Hindi as well.

Downing (1973) finds that correlative RCS tend to occur in ‘loose’ verb-final languages, which allow some NPs, especially heavy ones, to appear after the verb without a special pragmatic effect. However, there have not been detailed studies of the kinds of differences between left- and right-adjoined varieties discussed by Srivastav. For example, Andrews (1985:67–8) finds that, in Marathi, a right-adjoined RC can modify two NPs with different syntactic functions, but this issue has not been investigated for other languages.

Hindi has both embedded and adjoined RCS, but it is possible for the former to be lacking. Warlpiri, for example (Hale (1976:79)), has both left- and right-adjoined RCS, but no embedded ones:

(27)

- a. Ngatjulu-rlu kapi-rna wawirri purra-mi [kutja-npa parntu-rnu
I-ERG FUT-1SG kangaroo cook-NONPAST REL-2SG spear-PAST
nyuntulu-rlu]
you-ERG
- b. [Nyuntulu-rlu kutja-npa wawirri pantu-rnu] ngatjulu-rlu kapi-rna
you-ERG REL-2SG kangaroo spear-PAST I-ERG FUT-1SG
purra-mi
cook-NONPAST

‘I will cook the kangaroo that you speared’

It is not known whether the two RC positions differ in Warlpiri in ways comparable to Hindi.

Other than the absence of embedded RCS, Warlpiri RCS also differ from those of Hindi in that there is no special marking of NP_{rel} . But whichever of NP_{rel} or NP_{mat} comes second can be marked with the demonstrative *ngula*, which is preferentially placed last if it represents NP_{rel} in a (right-adjoined) RC, or first if it represents NP_{mat} in a main-clause with a left-adjoined RC:

(28)

- a. Ngatjulu-rlu ka-rna-rla makiti-ki warri-rni
I-ERG PROG-1SG(SUBJ)-3SG(DAT) gun-DAT seek-NONPAST
yangka-ku, [kutja-rna wawirri rluwa-rnu (ngula-ngku)]
that-DAT REL-1SG(SUBJ) kangaroo shoot-PAST it-INTR
‘I am looking for the gun that I shot the kangaroo with’
- b. [Makiti-rli kutja-npa nyuntulu-rlu wawirri rluwa-rnu
gun-INSTR REL-2SG(SUBJ) you-ERG kangaroo shoot-PAST
yangka-ngku], ngula-ku ka-rna-rla warri-rni
that-INSTR it-DAT PROG-1SG(SUBJ)-3SG(DAT) seek-NONPAST
‘That gun you shot the kangaroo with, I’m looking for it’

It is also possible to repeat the nominal in both clauses.

When the two clauses have the same tense, an additional interpretation becomes possible, in which the subordinate clause is giving the time of the event of the main clause. Hence, for a sentence such as (29) below, there are two interpretations:

(29)

[Yankirri-rli kutja-lpa ngapa nga-rnu], ngatjulu-rlu-rna pantu-rnu
 Emu-ERG REL-PAST.PROG water drink-PAST I-ERG-1SG(SUBJ) spear-PAST
 ‘I speared the emu which was drinking water’ / ‘While the emu was drinking water, I speared it’

These two interpretations are called the ‘NP-relative’ and ‘T-relative’ interpretations. The latter kind of interpretation is unavailable for the earlier examples above because the tenses of the clauses are different, whereas, if the clauses have no potentially coreferential NPs, then only the T-relative interpretation will be available.

Although the Warlpiri adjoined relatives resemble the Hindi constructions in certain respects, the absence of formal marking makes it difficult to tell how similar the constructions really are. Hale (1976:92), for instance, cites an example which might be relativization on two NPs at once, but it is impossible to be sure.

Left-adjoined RCS, whether of truly correlative type or not, are widely distributed, being clearly found in Australia and the Americas, as well as in many Indo-European languages. In addition to South Asian, they appear in various other older Indo-European languages, such as Sanskrit, Old Latin, and Medieval Russian. Andrews (1985:54–6, 170–2) notes what appears to be a historical residue of the correlative clause in English, the ‘indefinite comparative’ construction of sentences such as *the more you eat, the hungrier you get*. Adjoined RCS always appear to be full, never reduced.

2 The treatment of NP_{rel}

NP_{rel} is often treated in a special way, with some combination of distinctive marking, movement, omission, or reduction to a pronoun. There are, furthermore, correlations between the treatment of NP_{rel} and other aspects of the construction: special marking is, for example, unusual for internal relatives, if it occurs at all, and omission of NP_{rel} does not seem to be possible for clause-initial adjoined RCS (correlatives). In this section we look at the major techniques in turn.

2.1 Marking

Special marking of NP_{rel} occurs in English, in the form of the ‘wh’ pronouns *who* and *which* that can be used to express NP_{rel}. Evidence that these are pronouns

expressing NP_{rel} rather than invariant markers introducing the RC is provided by the phenomenon of ‘pied piping’, wherein they appear inside a larger constituent of the relative clause which is proposed to the front of the RC (RC in brackets, moved NP containing NP_{rel} italicized):

- (30) a. The aspect of the proposal [*to which* I object most strongly] is that it cuts library funds by 70%
 b. The students [*whose exams* we reviewed] seem to have been marked fairly

In (a), the specially marked NP_{rel} is preceded by a preposition, while in (b), it is in genitive case.

English relative clauses can also be introduced by *that*, but pied piping is not possible:

- (31) a. The aspect of this proposal [that I object most strongly to]
 b. *The aspect of this proposal [to that I object most strongly]

It is generally assumed *that* in relative clauses is not a relative pronoun.

The English relative pronouns are also used as interrogatives, but this is not the case in general. Russian, for example, has a relative pronoun *kotorij* used in postnominal RCS, which is different from the interrogative pronouns. It is a relative pronoun rather than a clause-introducer because it is case-marked for the function of NP_{rel} rather than NP_{mat}:

- (32) *Kniga [kotoruju ja načital] na stole*
 book(NOM) which(ACC) I read on table
 ‘The book which I read is on the table’

The *j*-determiners and pronouns used to express NP_{rel} in Hindi are likewise used only in RCS, but not, for example, as interrogatives. The fact that distinctive morphological forms are used for NP_{rel} in correlative, embedded, and extraposed RCS is motivation for identifying all of these constructions as (different kinds of) relative clauses rather than fully distinct constructions.

A rather interesting restriction on special marking of NP_{rel} is that it never seems to occur with embedded pronominal RCS, although it does with all the other types: postnominal embedded, correlative, and arguably internal – if English examples such as (21) are accepted – and similarly English ‘paucal relatives’ (Andrews (1985:48–9)), if the WH-marked NPs are taken as within the RC rather than as specially marked domain nominals along the lines of (Bresnan and Grimshaw (1978)):

- (33) a. What beer we found was flat
 b. What few people survived were unable to give a coherent account of what happened

We will also consider under the heading of ‘marking’ the issue of whether NP_{rel} is definite or indefinite. Internal relatives appear to be formally indefinite, in languages where this is marked, as first noted by Williamson (1987) for Lakhota:

- (34) a. [Mary owiža wə kaḡe] ki/cha he opehewathu
 Mary quilt a make the/a DEM I.buy
 ‘I bought the/a quilt that Mary made’.
- b. *Mary owiža ki kaḡe ki he ophwewathu
 ‘Mary quilt the make the DEM I.buy’

Williams establishes that the NP_{rel} in these constructions must belong to the class of ‘cardinality expressions’ identified in Milsark (1974), making them semantically indefinite.

In prenominal embedded RCS, NP_{rel} usually seems to be definite when it is not omitted, as in the following example from Japanese, where NP_{rel} is a full NP of greater semantic generality than the domain nominal (Kuno (1973:237)):

- (35) watakushi ga so/kare/sono hito no namae o
 I NOM that/he/that person GEN name ACC
 wasuresimat-ta okyaku-san
 forget-PAST guest
 ‘the guest whose name I have forgotten’

But indefinite also seems to be possible, as in this example from Tibetan, where NP_{rel} is a copy of the domain nominal, without the definite determiner (Mazaudon (1976), cited by E. L. Keenan (1985:152)):

- (36) Peemεcoqtse waa-la kurka thii-pe]coqtse the
 Peeme(ERG) table(ABS) under(DAT) cross(ABS) table(ABS) the(ABS)
 na noo-qi yin
 I(ABS) buy-PRES be
 ‘I will buy the table under which Peem made a cross’

I am aware of no cases where NP_{rel} in a postnominal embedded RC appears to be formally indefinite.

2.2 *Pronominalization*

Independently of whether it is specially marked or moved, NP_{rel} is often reduced to some sort of pronoun. English NP_{rels} in postnominal RCS are always reduced to pronouns in addition to being moved and marked, although full NPs have some capacity to appear as NP_{rel} in nonrestrictive relatives, which we do not here regard as true RCS:

- (37) Then we went to Canberra, which putative city was attractive in its way, but not very much like a real city

The paucal relatives of (33) above also have either non-pronominal NP_{rel}s, or a WH-marked head.

For NP_{rel} to appear as an ordinary pronoun, with no further special treatment, is an especially common strategy for embedded postnominal RCS when NP_{rel} is not the subject, and often appears as an alternative to omission of NP_{rel}, especially when the function of NP_{rel} is ‘more oblique’ on the Accessibility Hierarchy, to be discussed later. This form of NP_{rel} is often called a ‘resumptive pronoun’.

A typical example is Modern Hebrew (Borer (1984)), where the NP_{rel} object can either be omitted or expressed as a resumptive pronoun:

- (38) raʔit-i ʔet ha-yeled she-ʔasher rina ʔohevet (ʔoto)
 saw-I ACC the-boy REL Rina loves him
 ‘I saw the boy that Rina loves’

The RC is introduced either by *she-* procliticized to the following word or by *ʔasher*, and there is another possibility, movement of NP_{rel}, that we’ll look at in the next section.

It also seems appropriate to recognize as resumptive pronouns cases where the pronoun is incorporated into prepositions, etc., if this also occurs with ordinary anaphoric pronouns. This can also be illustrated from Hebrew, with objects of prepositions, where omission of NP_{rel} is not possible:

- (39) raʔit-i ʔet ha-yeled she-ʔasher rina xashva ʔal-av/*ʔal
 saw-I ACC the-boy REL Rina thought about-him/*about
 ‘I saw the boy that Rina thought about’

For a recent formal analysis of resumption in a number of languages, see Asudeh (2004).

2.3 Movement

In many of the examples we have already seen with specially marked NP_{rel}, there is also movement to the beginning of the clause. In English, relative pronouns (specially marked NP_{rel}) move obligatorily to the beginning of the relative clause:

- (40) a. The person who(m) I spoke to was angry
 b. *The person I spoke to who(m) was angry

In Hebrew, movement of NP_{rel} (expressed as an ordinary pronoun) is optional, so that (41) is an alternative to (38) (the clause introducer becomes optional when NP_{rel} is preposed):

- (41) ra?it-i ?et ha-yeled (she-/?asher) ?oto rina ?ohevet
 saw-I ACC the-boy REL him Rina love
 'I saw the boy that Rina loves'

How do we know that these putatively preposed items are expressions of NP_{rel} rather than, for example, some sort of reduced copy of the domain nominal? The answer is that they show, or can show, properties associated with NP_{rel} rather than NP_{mat} . In the case of (41) (Hebrew), the form *?oto* 'him' expresses direct object function, which is the function of NP_{mat} too, but below in (42a) we see this form when NP_{mat} is subject (and would be expressed pronominally as *hu*). Similarly, in (42b) and (42c), we get the form *?alav* 'about him', when the NP_{rel} and not the NP_{mat} is object of a preposition:

- (42) a. Ze ha-?ish (she-/?asher) ?oto ra?it-i
 this the-man REL him saw-I
 'This is the man who I saw'
- b. Ra?it-i ?et ha-yeled (she-/?asher) ?al-av rina xashva
 saw-I ACC the-boy REL about-him Rina thought
 'I saw the boy that Rina thought about'
- c. Ra?it-i ?et ha-yeled (she-/?asher) rina xashva ?al-av
 saw-I ACC the-boy REL Rina thought about-him
 'I saw the boy that Rina thought about'

Example (42c) illustrates that the preposing is optional with a prepositional NP_{rel} , just as it is with direct objects.

The 'pied piping' construction discussed at the beginning of section 2.1 is a further indication of movement, and might be taken as an extreme case of NP_{rel} showing markers of its function within S_{rel} . Pied piping often occurs when it isn't possible to move anything from the NP_{rel} position. In English, possessors cannot be moved alone, but objects of prepositions can be:

- (43) a. *the man [who I met's dog] (grammatical on a different
 bracketing, where you meet the man rather than the dog)
 b. *the man [whose I met dog]
 c. the man that I spoke to

In German, movement isn't possible from either position:

- (44)
- a. der Mann, dessen Hund ich gefüttert habe
the man, whose dog I fed have
'The man whose dog I fed'
 - b. *der Mann, dessen ich Hund gefüttert habe
the man, whose I dog fed have
 - c. der Mann, mit dem ich gestern gesprochen habe
the man, with whom I yesterday spoken have
'the man who I spoke with yesterday'
 - d. *der Mann, dem ich mit gestern gesprochen habe
the man, whom I with yesterday spoken have

I am not aware of any languages which allow movement of direct object NP_{rel}, but pied piping of PP and NP containing possessive NP_{rel} isn't possible, although colloquial English is approaching this situation, since pied piping of PP is rather stilted.

Like marking, movement is absent with prenominal embedded RCS, but found with all the other types. This is a rather interesting correlation in behaviour.

2.4 *Omission*

Omission is another extremely popular treatment of NP_{rel}. Many languages, such as English and Modern Hebrew, have omission as an alternative to other strategies, under conditions that vary from language to language. English allows omission for NP_{rels} that are not the subject of the relative clause itself or possessives:

- (45)
- a. The representative [I met \emptyset] was polite
 - b. The candidate [John thinks \emptyset will win] is Tony
 - c. The people [we spoke with \emptyset] were sympathetic
 - d. *The person \emptyset talked to me was rude
 - e. *The person [Mary showed \emptyset (s) book to me] was interesting

Modern Hebrew requires omission of the subject of a relative clause, if it is NP_{rel}, and allows but does not require omission of objects, and does not allow omission of objects of prepositions:

- (46) ha-?arie_i she-/?asher (*hu_i) taraf ?et ha-yeled barax
the-lion REL he ate ACC the-boy escaped
'The lion that ate the boy escaped'
- (47) a. ra?it-i ?et ha-yeled she-/?asher ?rina ?ohevet (?oto)
saw-I ACC the-boy REL Rina loves him
'I saw the boy that Rina loves'

- b. raʔit-i ʔet ha-yeled she-ʔasher ʔrina xashva ʔal-av/*ʔal
 saw-I ACC the-boy REL Rina thought about-him/*about
 'I saw the boy that Rina thought about'

When movement and omission are both available for certain positions in a language, such as direct object, there are usually other positions, such as possess or object of preposition, for which either both or neither are possible, pied piping often providing an alternative to movement. For example, in Modern English, movement and omission are both possible out of PP, but not out of possessive position in NP, while in Modern Hebrew, they are both impossible out of PP. And in both languages, the effects of the restriction are mitigated by the possibility of pied-piping the entire constituent. But sometimes there is divergence, for example C. L. Allen (1980) shows that NP_{rel} could be moved but not deleted out of PP in Old English.

2.5 Other possibilities

Marking, movement, omission, and reduction are the overwhelmingly most common treatments of NP_{rel}, but these are not the only options, as seen above for Tibetan (36) and Warlpiri ((27) and (28)) where it is possible for nothing to be done to NP_{rel}. There is an unclassifiable range of further possibilities. In Swahili, for example, NP_{rel} are manifested as agreement markers on the verbs and prepositions governing them (functionally equivalent to resumptive pronouns), but there is in addition a special relative agreement marker appearing either on the verb, or on an RC-introductory particle, *amba* (Keach (1985:89)):

- (48) a. m-tu a-li-ye-kwenda sokoni
 CLI-person CLI(SUBJ)-past-CL1(REL)-go to. school
 'The person who went to school'
- b. m-tu amba-ye a-li-kwenda sokoni
 CLI-person AMBA-CL1(REL) CL1(SUBJ)-PAST-go to. school
 'The person who went to school'

The possibilities that we have enumerated should therefore be taken as indications of what is most likely to be encountered, not as absolute limits.

3 Constraints on the function of NP_{rel}

Constraints on the function of NP_{rel} have been of great theoretical interest from the early days of modern syntax, for two reasons. One is that early syntactic theories did not actually contain mechanisms for implementing such constraints, so that additional devices had to be added (J. R. Ross (1967)), or the structure of the theories drastically revised (Chomsky (1973) and a vast body of

subsequent work). The other is that many constructions other than just relative clauses seemed to be subject to the constraints (J. R. Ross (1967)), indicating that it would be wrong to pursue a purely ‘construction-based’ view of grammar whereby one could describe relative clauses, questions, etc., in isolation from each other; rather, there are common constraints holding across many different traditionally recognized constructions. The significance of this for field work and typology is that it is important not to look at constraints on NP_{rel} in isolation, but in comparison with constraints on questioning, focus, and other information-structuring constructions. The constraints that have been proposed and investigated fall into two major groups: island constraints, and the Accessibility Hierarchy.

3.1 *Island constraints*

Island constraints limit the region within S_{rel} in which NP_{rel} can appear. For example, the most famous of these, the ‘Complex NP Constraint’ (CNPC) of J. R. Ross (1967) says that it is impossible to relativize⁹ an NP contained within an S that modifies another NP. So the ungrammatical examples of (49) below are CNPC violations, while the acceptable ones of (50) are not:

- (49) a. *The people who John denied the claim that Mary had insulted
got angry
b. *The paper that Mary sued the professor who wrote was published
- (50) a. The people who John denied that Mary had insulted got angry
b. The paper that Mary sued the author of was published

Ross proposed that the CNPC and other similar constraints were universal. Subsequently, it was discovered that languages didn’t obey them uniformly. For example, Kuno (1973:238–40) argued that the CNPC did not apply to Japanese (preposed RCS, NP_{rel} omitted), as in this example of relativization out of a complex NP containing a relative clause:

- (51) [[\emptyset_i kite iru] yoohuku ga yogurete iru] sinsi;
wearing is suit NOM dirty is gentleman
‘The gentleman who the suit that (he) is wearing is dirty’

Andersson (1975) and others showed that this could also happen in languages such as Swedish, with postnominal RCS and deletion of NP_{rel} (Engdahl (1997:57)):

⁹ The original statement employed more general but theory-laden terms, restricting the possibilities for ‘movement’ and ‘deletion’.

(52)

här är en fråga_i [som jag inte känner någon [som kan svara på θ_i]]
 here is a question that I not know no. one that can answer to
 'Here is a question that I don't know anyone who can answer (it)'

Relativization from positions prohibited by the CNPC and other constraints proposed by Ross is particularly likely to be possible when NP_{rel} is expressed as a resumptive pronoun. We illustrate with relativization from a relative clause in Welsh (53), and from a coordinate structure in Egyptian Arabic (54) (E. L. Keenan (1985:156)); the English counterparts of both are clearly ungrammatical:

(53) 'r het y gwn y dyn a' i gadewodd ar y ford
 the hat the I.know the man that it left on the table
 'the hat that I know the man who left it on the table'

(54) al-rajul allathi hua wa ibna-hu thahabu ille New York
 the-man who he and son-his went to New York
 'The man who he and his son went to New York'

When a language allows both movement or deletion and resumptive pronouns, it is often the case that the former but not the latter obey the constraints, as in these examples from Modern Hebrew (Borer (1984:221, 226)):

- (55) a. ra?it-i ?et ha-yeled she-/?asher Dalya makira ?et ha-?isha
 saw-I ACC the-boy REL Dalya knows ACC the-woman
 she-?ohevet *(?oto)
 REL-loves him
 'I saw the boy who Dalya knows the woman who loves him'
- b. ra?it-i ?et ha-yeled she-/?asher rina ?ohevet *(?oto) ve- ?et
 saw-I ACC the-boy REL Rina loves him and- ACC
 ha-xavera shelo
 the-girlfriend his
 'I saw the boy who Rina loves him and his girlfriend'

Although island constraints have been extremely important for the development of syntactic theory, they tend to involve rather delicate judgements about complex structures, and exceptions to them appear to be relatively rare. Therefore, they have not played such a prominent role in linguistic typology and the investigation of little-known languages.

3.2 *The Accessibility Hierarchy*

For typology and basic linguistic description, much more important has been the Accessibility Hierarchy introduced by E. L. Keenan and Comrie (1977), which states implicational universals governing what kinds of grammatical functions NP_{rel} can bear in the RC. The relevant sentences are much simpler, and the judgements typically more robust, than is the case for the island constraints. The basic claim is that the grammatical functions of a language are arranged in a hierarchy such that if, in that language, NP_{rel} can bear a given grammatical function, it can also bear all functions that are higher on the hierarchy. The original formulation of the Accessibility Hierarchy is:

- (56) subject > direct object > indirect object > oblique > genitive > object of comparison

Some consequences are that, if a language can relativize anything, it can relativize subjects, and that, if it can relative genitives, it can also relativize direct and indirect objects, and obliques.

The hierarchy has held up pretty well under subsequent research, although some clarifications are necessary, and some potential counter-examples have been found. Clarifications are needed for the notions of ‘Subject’ and ‘Indirect Object’, since it turns out that these concepts can’t be taken for granted in all languages (Andrews in vol. 1, chapter 3).

3.2.1 *Subjects*

In most languages there is no substantial controversy about what the subject is; it is a grammatical function that is the normal means used for expressing NPs in A and S function. NPs bearing this function can always be relativized, and are in some languages the only NPs that can be relativized. An example of such a language is Malagasy (E. L. Keenan (1972:171)):¹⁰

- (57) a. Manasa ny lamba ny vehivahy
wash the clothes the woman
‘The woman is washing the clothes’
b. ny vehivahy (izay) manasa ny lamba
the woman that wash the clothes
‘The woman who is washing the clothes’
c. *ny lamba (izay) manasa ny vehivahy
the clothes that wash the woman
‘The clothes that the woman is washing’

¹⁰ See also E. L. Keenan (1976a).

Example (57a) is a normal main clause, while (57b) is a postnominal relative in which NP_{rel} functions as subject. Example (57c) is an attempt to produce a relative clause where NP_{rel} is the object, but the result is rejected by informants as nonsense meaning ‘the clothes which are washing the woman’. Furthermore, if *ny vehivahy* in (57c) is replaced with the nominative pronoun form *izy*, ‘she’, the result is completely ungrammatical and has no interpretation at all.

One might imagine that this restriction would yield a very unexpressive system of relative clauses, but the language avoids this by having a rich assortment of passive-like constructions whereby NPs with various semantic roles can be made subject. So to relativize on a patient, we can use an ordinary passive:

- (58) a. *Sasan-’ny vehivahy ny lamba*
 wash(PASS)-the woman the clothes
 ‘The clothes are washed by the woman’
 b. *ny lamba (izay) sasan-’ny vehivahy*
 the clothes (that) wash(PASS)-the woman
 ‘the clothes that are washed by the woman’

To relativize on an instrumental, we can use an ‘instrumental voice’ passive, where an instrumental appears overtly as subject in the main clause (59b), and omitted as NP_{rel} in (59c):

- (59) a. *Manasa lamba amin-’ny savony Rasoa*
 wash clothes with-the soap Rasoa
 ‘Rasoa is washing the clothes with the soap’
 b. *Anasan-dRasoa lamba ny savony*
 wash(INSTR.PASS)-Rasoa clothes the soap
 ‘The soap was used to wash clothes by Rasoa’
 c. *ny savony (izay) anasan-dRasoa lamba*
 the soap (that) wash(INSTR.PASS)-Rasoa clothes
 ‘the soap that Rasoa washed clothes with’

The Australian language Dyirbal and the Philippine language Tagalog resemble Malagasy in that only one grammatical relation can be relativized, but differ in that there is some controversy as to whether this grammatical relation should be identified as ‘subject’. The problem in Dyirbal is that the relativizable grammatical relation is the normal expression for s and P function, sometimes called an ‘absolute’, rather than s and A function, which would be uncontroversially subject (Dixon (1972:99–105)). So we can form relative clauses where NP_{rel} is s (60a) or P (60b) by merely adding the relativizing affix to the verb in place of the tense-marker:¹¹

¹¹ Pronouns in Dyirbal inflect with a nominative case in A/s function and accusative in P, while common nominals have ergative in A function and absolute in s/P. The relative and nonfuture

- (60) a. *ɲaɖa bani-ɲu baɲumbalbulu ɲina-ɲ*
 I.NOM come-REL a.long.way.downriver sit-FUT
 ‘I, who have come a long way downriver, will sit down’
- b. *balan ɖugumbil ɲaɖa buɾa-ɲu ɲina-ɲu*
 CLSFR woman(ABS) I.NOM watch-REL sit-NONFUT
 ‘The woman who I am watching is sitting down’

But to relativize on A, we must first form the antipassive of the verb, which in a main clause would express A as an absolutive rather than an ergative, and express P as a dative rather than an absolutive:

- (61) a. *bayi yaɾa bagal-ɲa-ɲu bagul yuɾi-gu*
 CLSFR man(ABS) spear-ANTIP-NONPAST CLSFR kangaroo-DAT
 ‘The man speared the kangaroo’
- b. *bayi yaɾa bagal-ɲa-ɲu bagul yuɾi-gu banaga-ɲu*
 CLSFR man(ABS) spear-ANTIP-REL CLSFR kangaroo-DAT return-NONPAST
 ‘The man who speared the kangaroo is returning’

Similarly to Malagasy, Dyirbal also contains techniques for expressing instrumentals and other semantic roles as absolutive (derived s), so that they can serve as NP_{rel}.

The problem afforded by Dyirbal can be dealt with by saying that, for the purposes of the Accessibility Hierarchy, ‘subject’ will be defined as the grammatical relation that is normally borne by NPs in s function, regardless of whether this grammatical relation is also the normal expression of A function (the usual situation) or of P function (unusual). See Fox (1987) for relevant discussion.

But this formulation won’t work for Tagalog, because it can be argued that there are two grammatical functions that normally express s function, an ‘a-subject’ or ‘actor’, which is always associated with the NP in A/s function, and a ‘p-subject’ or ‘pivot’, which can be associated with either A or P function, depending on the verb form (Andrews in vol 1, chapter 3, section 5.2). We can address this problem by saying that the relativizable grammatical functions will always include one that is normally associated with s function (for intransitive verbs, it is clear that the s is the unmarked choice for pivot, although others are possible). One can go on to add that, if there are multiple possibilities,

verb forms are sometimes identical but not always. Common nouns also normally appear with a classifier, here glossed CLSFR. Example (60a) has a nonrestrictive interpretation, and so might be judged irrelevant to the typology of RCS as considered here, but the construction of which it is an instance appears to have both restrictive and nonrestrictive interpretations. Since the construction isn’t distinctively nonrestrictive, we’ll include it.

the relativizable one will be the one that also shows the topic-related subject properties such as a tendency to be definite, and the ability to launch floated quantifiers (E. L. Keenan (1976b)). In terms of the discussion in section 5 of vol. 1, chapter 3, we can say that the p-subject will always be relativizable, if it exists. What about languages that lack a p-subject? Such languages, such as Warlpiri, appear to be quite liberal in their possibilities for the grammatical function of NP_{rel}; therefore, they don't provide evidence about the top of the Accessibility Hierarchy.

3.2.2 *Objects, indirect objects, and obliques*

After subject-only relativization, the next least restrictive kind of relativization allows relativization of subjects and objects. Bantu languages such as Luganda provide examples (Keenan (1972:186)):¹²

- (62) a. omukazi e-ye-basse
 woman SUBJ.REL-CLI.SG.SUBJ-sleep
 ‘the woman who sleeps’
 b. omussaja omukazi gwe-ya-kuba
 man woman OBJ.REL-CLI.SG.SUBJ-hit
 ‘The man who the woman hit’

Obliques such as instrumentals cannot be directly relativized:

- (63) a. John ya-tta enkonko n' ekiso
 John he-killed chicken with knife
 ‘John killed a chicken with a knife’
 b. *ekiso John kye-ya-tta enkonko na
 knife John REL-he-killed chicken with
 ‘The knife that John killed the chicken with’

Rather, the instrumental must be first promoted to object, and then it can be relativized as a syntactic object:¹³

- (64) a. John ya-tt-is-a ekiso enkonko
 John he-kill-INSTR-TA knife chicken
 ‘John killed a chicken with a knife’
 b. ekiso John kye-ya-tt-is-a enkokko
 knife John REL-he-kill-INSTR-TA chicken
 ‘the knife John killed a chicken with’

¹² In a Luganda relative clause, the verb is preceded by a relative marker indicating the gender (noun class), number and case (subject vs object) of NP_{rel}.

¹³ TA stands for ‘tense-aspect’.

A more common situation than prohibition of relativization below direct object is to limit the omission strategy for treating NP_{rel} (section 2.4) to subject and object, with NP_{rels} bearing functions lower on the Accessibility Hierarchy handled by a different strategy, such as resumptive or relative pronouns. E. L. Keenan and Comrie (1977) present Welsh and Finnish as examples of this kind of language.

Below direct object come indirect object and oblique. But a difficulty arises from the somewhat controversial nature of the 'indirect object' concept, and its unclear relations to direct object and oblique, discussed in Andrews in vol. 1, chapter 3 (see also Dryer (1986)). In traditional grammar, indirect object is often used to refer to recipients; however, the overt expression of recipients may be different from both direct objects and obliques (Warlpiri, Romance languages), or resemble one or the other, and may even appear in multiple forms in a single language, such as, for example, English, where recipients can resemble either obliques or direct objects:

- (65) a. Susan handed Paul the shovel
b. Susan handed the shovel to Paul

Keenan and Comrie did not distinguish between the various ways of expressing recipients, and the concomitant possibilities for themes (the argument that is transferred), and it remains somewhat unclear what the true generalizations are.

A language where indirect object is a plausible grammatical relation is Basque, where, in some dialects, relativizing is restricted to subjects, objects, and indirect objects, which carry distinct marking and are cross-referenced on the verb. Below are a basic sentence (66a) and three possible relative clauses, placed prenominal with the verb marked with a suffix *-n* (E. L. Keenan and Comrie (1977:22)):

- (66) a. gizon-a-k emakume-a-ri liburu-a eman dio
man-DEF-ERG woman-DEF-DAT book-DEF give has
'the man has given the book to the woman'
- b. emakume-a-ri liburu-a eman dio-n gizon-a
woman-DEF-DAT book-DEF give has-REL man-DEF
'the man who gave the book to the woman'
- c. gizon-a-k emakume-a-ri eman dio-n liburu-a
man-DEF-ERG woman-DEF-DAT give has-REL book-DEF
'the book the man gave to the woman'
- d. gizon-a-k liburu-a eman dio-n emakume-a
man-DEF-ERG book-DEF give has-REL woman-DEF
'the woman the man gave the book to'

For relativization on an oblique NP in Basque, there are different possibilities in different dialects. In some dialects, relativization is impossible, whereas in others different strategies may be employed, such as placing the RC postnominally, and expressing NP_{rel} with a resumptive pronoun. Since, in Basque, the consistently relativizable NPs are the same as those cross-referenced on the verb, we can say that core NPs include indirect objects, and are always relativizable with prenominal RCs and omission of NP_{rel}. If these conditions are not satisfied, relativization may not be possible, or a different strategy may be used, depending on the dialect.

In Basque, we could plausibly say that it is core NPs that relativize, but in Roviana (E. L. Keenan and Comrie (1977:63); Melanesian, New Georgia), recipients look like obliques, being marked with a preposition, but relativize with the subject-object strategies of omission, rather than retaining a role-marking word in the manner of obliques. It may be that indirect objects are core NPs that only superficially resemble obliques, or that the original characterization of the Accessibility Hierarchy in terms of indirect objects is indeed correct. It remains to be seen what kind of analysis would be motivated by further investigation of this language.

Some modifications to the Accessibility Hierarchy are suggested by Maxwell (1979), and relevant observations are scattered through many grammars and articles that have appeared since the 1970s; the subject appears to be due for a careful rethink.

4 The treatment of s_{rel}

The next topic we will consider is the treatment of s_{rel} itself. An obvious point is that RCs often begin with some kind of marker, which may be unique to RCs, or appear in a wide variety of subordinate clauses. The former possibility has already been illustrated by Modern Hebrew, with the RC-introducer *she-/ʔasher*; the latter can be exemplified by English, where RCs can be introduced by the marker *that*, also used to introduce complement clauses and some other types, such as *so-that* resultatives. The relative marker may also appear as part of the verbal morphology, as illustrated by Basque above (66). Marking of the verb is most frequent when the verb is clause-final, but can happen when it isn't, as seen in Swahili (48 above). The *kutja* of Warlpiri RCs seems to be a marker for adjoined RCs, while the *éé/áá* marker of Navajo (20) is for internal RCs. Such markers therefore seem to occur with all types of RC.

More interesting than mere marking are cases where something with syntactic ramifications happens to s_{rel}; the most prevalent occurrences are forms of reduction and nominalization of s_{rel}, discussed in the next section, and marking that codes the syntactic function of NP_{rel}, as discussed in section 4.2 .

4.1 *Reduction and nominalization*

Nominalization occurs when the structure of a clause gives some evidence of at least a partial conversion to nominal type. Typical indicators would be marking the subject like a possessor, attaching possessor morphology to the verb as cross-referencing with the subject, or attaching other typical nominal morphology such as determiners or case marking to the verb. In Japanese, for example, the subjects of relative and certain other kinds of subordinate clauses may be optionally marked with the genitive case-marker *no* instead of the *ga* that normally appears on subjects (Andrews (1985:27)):

- (67) kore wa [ano hito ga/no kai-ta] hon desu
 this THEME that person NOM/GEN write-PAST book is
 ‘This is the book which that person wrote’

Nominalization is commonly found with internal relatives – in Lakhota for example ((34) above), we find the relative clause being directly followed by determiners, an indication of nominal status.

Reduction is another frequent characteristic of s_{rel} . Reduced clauses have a restricted range of tense–aspect–mood marking, using different forms from ordinary unreduced clauses, and may furthermore have some participant obligatorily missing. In English, for example, there are reduced relative clauses using the *-ing* and ‘passive *-ed*’ forms:¹⁴

- (68) a. People eating peanuts will be prosecuted
 b. People reported to be absent will be fined

The *-ing* form requires the subject to be omitted, and rejects progressive and modal auxiliaries, only allowing, somewhat marginally, *have*-forms:

- (69) a. *People being walking down the road will be arrested for
 vagrancy
 b. *People canning speak French will be detained
 c. ?People having filled out this form should go through the door on
 the left

The passive reduced form in *-ed* requires its subject to omitted, and allows no tense–aspect–mood inflection of any kind, but is able to be interpreted as either time-simultaneous with or prior to the main clause (*people suspected of swapping songs vs people accused of swapping songs*).

¹⁴ These latter can be spelled out morphologically by a wide variety of means, including vowel-replacement with or without an affix *-en* (*dug, frozen*), as well as the *-ed* affix.

The properties of reduced relatives in English and many other languages are consistent with the idea that they lack certain syntactic components found in ordinary clauses, such as, for example, a tense-marker or ‘auxiliary’ constituent. As noted in section 1.1.1 above, reduced RCS sometimes appear in different positions from those in which full ones do, and, when this is the case, they always seem to occupy a position also occupied by adjectives. Reduction is the norm for prenominal RCS; Japanese is unusual in not having a reduced tense–mood system in its RCS, in spite of the optional genitive marking of subjects, an indication of nominalization.

Both reduction and nominalization appear to be restricted to embedded RCS; there are no accounts of co-relative RCS showing either phenomenon, and, in English, even structures that might in principle be taken as extraposed reduced relatives could also be analysed as circumstantial adverbials:

- (70) a. A man walked in who was wearing a hat
 b. ?*The man walked in who was wearing a hat
 c. A man walked in wearing a hat
 d. The man walked in wearing a hat

In (b), we see that the extraposed relative isn’t very acceptable with a definite subject, while, in (d), we see that no such restriction applies with a clause-final *-ing* modifier, suggesting that these are not reduced relatives.

4.2 *Marking the function of NP_{rel}*

Some languages mark information about the function of NP_{rel} on the verb or complementizer of the relative clause. An example is Turkish, where normal RCS appear prenominally in the head. There are two types, depending on whether NP_{rel} is inside the subject, or not. In the first case, the verb is in a nonfinite form marked with *-en*, and the subject, if overt, is nominative. In the second, the verb is marked with the nominalizer *-dig-* followed by cross-referencing of the subject, which is in the genitive case if it appears overtly:¹⁵

- (71) a. [mekteb-e gid-en] oğlan
 school-DAT go-SUBJREL boy
 ‘The boy who goes to school’
 b. [oğl-u mekteb-e gid-en] adam
 son-3SG school-DAT go-SUBJREL man
 ‘The man whose son goes to school’ (Underhill (1972:88–90))

¹⁵ The subject can be omitted if it is pronominal; both affixes have vowel-harmony alternations.

- (72) a. [Halil-in öldür-düğ-ü] adam
 Halil-GEN kill-NOM-3SG man
 ‘The man who Halil killed’
- b. [oğlan-in mekteb-in-e git-tiğ-i] adam
 boy-GEN school-3SG-DAT go-NOM-3SG man
 ‘The man whose school the boy goes to’ (Andrews (1985:32–3))

What is particularly interesting is that the *-en* participle is used not only when NP_{rel} is the subject, but when it is contained within the subject (and certain sentence-initial locatives which are arguably but not obviously subjects, as discussed by Underhill). These forms also illustrate nominalization and reduction. The non-subject relatives are nominalized inasmuch as their subjects are genitive and their verbs are cross-referenced with genitive morphology. And both types of clauses show a degree of reduction, using a single form for nonfuture instead of distinguishing past and nonpast. A considerably more complex system of this nature, with a three-way distinction between subject, object and oblique, is described for the Polynesian language Chamorro by Chung (1982).

Another form of role-marking is to distinguish cases where NP_{rel} is core (and typically omitted) versus oblique (typically retained). A very thoroughly described example of this sort is Modern Irish (McCloskey (1979: esp. pp. 5–10) for the most basic facts; McCloskey (2002) and Asudeh (2004) for more recent discussion). In this language, there are two distinct RC-markers, both pronounced [ə], but differing in their phonological effect on the following word. One effect, traditionally called ‘lenition’, involves deletion or conversion to aspiration or a fricative, and the other, traditionally called ‘nasalization’, involves nasalization or voicing. Following McCloskey, we’ll represent the particle with lenition as *aL*, nasalization as *aN* (combining conventional orthography with additional morphophonemic information). RCs with omitted subject and object NP_{rel} are called ‘direct relatives’, and take *aL*; RCs with retained NP_{rel} (object, oblique, and possessive, but not subject) are called ‘indirect relatives’, and take *aN*. Examples of subject and object direct relatives are:

- (73) a. an fear aL dhíol \emptyset an domhan
 the man DIR.REL sold the world
 ‘the man who sold the world’
- b. an scríbhneoir aL mholann na mic léinn \emptyset
 the writer DIR.REL praise the students
 ‘the writer who the students praise’

And here are some indirect relatives:

- (74)
- a. an scríbhneoir aN molann na mic léinn é
 the writer IND.REL praise the students him
 ‘the writer who the students praise’
- b. a fear aN dtabharann tú an t’airgead dó
 the man IND.REL give you the money to.him
 ‘the man who you give the money to’
- c. a fear aN bhfuil a mháthair san otharlann
 the man IND.REL is the mother in.the hospital
 ‘the man whose mother is in the hospital’

The marking of the nature of NP_{rel} appears not only on the RC itself, but also on any subordinate clauses with S_{rel} that contain NP_{rel}. So, from a sentence such as (75a) below, we form the relative clause (75b):

- (75)
- a. Mheas mé gurL thuig mé an t-úrscéal
 thought I that understood I the novel
 ‘I thought that I understood the novel’
- b. an t-úrscéal aL meas mé aL thuig mé ∅
 the novel DIR.REL thought I DIR.REL understood I
 ‘the novel I thought I understood’

When NP_{rel} is resumptive, a variety of things can happen. One possibility is that the minimal clause containing the resumptive pronoun begins with *aL*, while higher clauses up to and including S_{rel} begin with *aL*:

- (76)
- a. Deir siad goN measann sibh goN bhfuil an eochair ins doras
 say they that think you.PL that is the key in.the door
 ‘They say that you think that the key is in the door’
- b. an doras aL deir siad aL mheasann sibh aN bhfuil an eochair ann
 the door DIR say they DIR think you IND is the key in.it
 ‘the door they say you think the key is in’

See McCloskey (2002) and Asudeh (2004) for further discussion and analysis. Zaenen (1983) discusses a variety of other cases in which an NP_{rel} or other ‘extracted’ element has an effect on the possibilities for clause-structure.

5 Suggestions for further reading

Typological surveys of relative clauses include Downing (1978), Andrews (1985), and Lehmann (1986); Andrews also devotes some attention to constructions resembling RCs in various languages. Cole (1987) and Basilico (1996)

provide analyses of internal RCs in various languages, while Srivastav (1991) gives an in-depth treatment of co-relative and non-correlative RCs in Hindi. Asudeh (2004) provides a very thorough analysis of resumptive pronouns, and other aspects of the syntax of postnominal RCs, in a number of languages. A very important but unfortunately relatively inaccessible source is Lehmann (1984).

5 Adverbial clauses

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PART I A TYPOLOGY OF ADVERBIAL CLAUSES

0 Introduction

Many languages have mechanisms whereby one clause can be said to modify another in a way similar to the way in which an adverb modifies a proposition.

Just as with adverbs, which are single words or phrases, adverbial clauses can be labelled and categorized with respect to the semantic roles they play. For example, in the English sentences in (1), the italicized expressions can all be called ‘time adverbials’: that in (1a) is a ‘time adverb’; those in (1b) and (1c) are ‘time adverbial phrases’; while in (1d) we have a ‘time adverbial clause’:

- (1) a. She mailed it *yesterday*
b. He eats lunch *at 11.45*
c. She has chemistry lab *in the morning*
d. I get up *when the sun rises*

In Part I of this chapter we examine the various structural types of adverbial clauses found in languages of the world, while in Part II we treat the adverbial clause from its discourse perspective.

The remainder of Part I is organized as follows: section 1 characterizes the notion ‘adverbial subordinate clauses’, while section 2 examines the adverbial subordinate clause types which languages typically manifest. In section 3 we describe ‘speech act’ adverbial clauses, and in section 4 we raise the issue of subordinators being borrowed from one language into another. Section 5 summarizes the findings of Part I.

1 Characterization of adverbial clauses

The relationship between ‘subordinate’ and ‘main’ (coordinate) clauses is clearly a continuum. For a discussion of the ways in which clauses can be combined on this continuum, see Lehmann (1988). Assuming the ‘subordinate’ end of this continuum to involve clauses which are grammatically dependent on

another clause or on some element in another clause, we can distinguish three types of subordinate clauses: those which function as noun phrases (called complements), those which function as modifiers of nouns (called relative clauses), and those which function as modifiers of verb phrases or entire clauses (called adverbial clauses).

Among these three types, complement clauses and relative clauses usually represent an embedding structure at the subordinate end of the continuum, i.e., a clause within another one and a clause within a noun phrase, respectively. Adverbial clauses, however, are viewed as (hypotactic) clause combining with respect to the main clause since they relate to the main clause as a whole (see Matthiessen and Thompson (1988)). Thus while the term *subordination* includes all three types in its broad sense, adverbial clauses are in some sense 'less subordinate' than the prototypes of the other two types on the continuum.

There are three devices which are typically found among languages of the world for marking subordinate clauses, all of which are found with adverbial clauses. They are:

- (a) subordinating morphemes
- (b) special verb forms
- (c) word order

(a) Subordinating morphemes. There are two types of subordinating morphemes: (i) grammatical morphemes with no lexical meaning (e.g., English *to*, as in *to buy beer*); (ii) grammatical morphemes with lexical content (e.g., English *before*, *when*, *if*). Subordinating morphemes, such as conjunctive elements and adpositions, may be prepositional or postpositional. They tend to occur before the clause in a head-initial language (mostly with the basic word order of vso or svo, like Biblical Hebrew and English), and they occur after the clause in a head-final language (soV order like Korean and Japanese).

(2) a. *Prepositional* (English)

When he saw the picture, he immediately recognized his old friend

b. *Postpositional* (Japanese)

Ame ga agaru to, Gon wa hotto shite ana
 rain NOM stop when Gon TOP relief performing hole
 kara haidemashita
 from snuck.out

'When the rain stopped, Gon got relieved and came out of the hole'

(b) Special verb forms. A special verb form is one which is not used in independent clauses. In languages with subject-verb agreement, the special verb form may be a nonfinite form which lacks one or more agreement categories. In

Latin, for example, in independent clauses the verb must agree with its subject in person and number:

- (3) Dux scrib-it epistol-as
 leader(NOM.SG) write-PRES.3SG letter-ACC.PL
 ‘The leader writes letters’

But in an adverbial subordinate clause, the verb may take an ending which signals nothing about the person or number of the subject:

- (4) Ter-it temp-us scrib-endo epistol-as
 spend-PRES.3SG time-ACC.SG write-GERUND letter-ACC.PL
 ‘He spends time writing letters’

In a language without agreement, a special subordinate verb form may still be identifiable. In Wappo, a California Indian language, for example, the verb in an independent clause ends with a glottal stop (even when it is not sentence final), but this glottal stop is dropped in subordinate clauses of all types:

- (5) a. Cephi šawo pa?-ta?
 he(NOM) bread eat-PAST
 ‘He ate bread’
 b. Te šawo pa?-ta-wen, ah nale?iš-khi?
 he(ACC) bread eat-PAST-when/because I(NOM) angry-NONFUT
 ‘When/because he ate the bread, I got angry’
 c. Ah te šawo pa?-tah ha is-khi?
 I(NOM) he(ACC) bread eat-PAST know-NONFUT
 ‘I know that he ate the bread’

(c) Word order. Some languages have a special word order for subordinate clauses; German is a well-known example, where the finite verb appears at the end of the subordinate clause:

- (6) a. Wir wohn-ten auf dem Lande, wie ich dir
 we live-PAST on ART(DAT) land as I you(DAT)
 schon gesagt habe
 already told have(SG)
 ‘We lived in the country, as I have already told you’
 b. Ich habe dir schon gesagt
 I have(SG) you(DAT) already told
 ‘I have already told you’

In (6a), the finite verb *habe* ‘have’ in the *wie* ‘as’ clause appears at the end, while in the independent simple sentence, (6b), it appears in its standard second

position. This distinction between verb-final and verb-second order for subordinate and main clauses respectively is fairly regular in German (see R. P. Ebert (1973) for some discussion).¹

A slightly different example of a word order difference between main and subordinate clauses comes from Swedish, where a number of adverbial morphemes – including *kanske* ‘perhaps’, *ofta* ‘often’, and the negative marker – come after the finite verb in main clauses, as in (7a), but before it in subordinate clauses, as in (7b) (see Andersson (1975)):

- (7) a. Vi kunde inte öppna kokosnöten
 We could not open coconut
 ‘We could not open the coconut’
- b. Vi var ladsna därför att vi inte kunde öppna kokosnöten
 We were sorry because that we not could open coconut
 ‘We were sorry because we couldn’t open the coconut’

A characteristic of adverbial subordinate clauses in some languages is their position. For example, in Korean, Mandarin, Ethiopian Semitic, Turkish, and many other languages, adverbial clauses typically precede the main clause. Here is an example from Korean:

- (8) *Kwail-ul sa-le kakey-ey katta*
 fruit-ACC buy-to store-at went
 ‘(I) went to the store to buy fruit’

In many languages, however, the position of the adverbial clause is determined by its role in linking the main clause which it modifies to the preceding discourse. This phenomenon is discussed in Part II (section 4) of this chapter.

Before going on to a detailed discussion of the various types of adverbial clauses that can be found in languages of the world, it is crucial to point out that, although we have tried to identify the major types of adverbial clauses which we have found in the languages we have looked at, we are by no means claiming that a relationship which may be signalled by an adverbial subordinate clause in one language must be so signalled in every other language (see Scancarelli (1992)). For example, where one language may signal consecutivity by means of time adverbial clauses, another may do so by means of constructions involving not subordination but coordination or juxtaposition.

¹ *Denn* clauses are exceptional: they appear to be subordinate, but they exhibit ‘normal’ verb-second word order. Compare (a) and (b):

- | | | | | | | | | |
|----|--------|----------|-----|-------------|---------|-----|------------|-------|
| Er | musste | bezahlen | (a) | <i>denn</i> | er | war | da | |
| he | had.to | pay | | | because | he | was | there |
| | | | (b) | <i>weil</i> | er | da | <i>war</i> | |
| | | | | | because | he | there | was |
- ‘He had to pay because he was there’

Or some languages may have morphology dedicated to a particular inter-clausal relation which is only inferred in another language, as, for example, the ‘inconsequential’ clauses of Papuan languages discussed in Haiman (1988) and MacDonald (1988). In (9), an example from Hua, the clause after the inconsequential marker *-mana* ‘describes an unexpected or unwished-for event’ (Haiman 1988:54):

- (9) ‘Biga badeae!’ hi-*mana* rgi’ ve ’afie
 up.there boy(VOC) say-3SG.INCONS really yeah? 3SG.not.say
 ‘He said “You up there!”, but the other made no reply’

The Otomanguean languages of Mexico provide good examples of languages in which juxtaposition of clauses with certain aspect markers is more commonly exploited as a signal of clause relationships than are subordinating constructions (see Bartholomew (1973) and Longacre (1966)). Sentence (10a) is an example of two juxtaposed clauses in the Otomanguean language Otomi, which were translated into Spanish (see (10b)) by an Otomi bilingual using the subordinator *cuando* ‘when’:

- (10) a. Mí-zøni ya kam-ta bi-?yøni kha
 PAST-arrive(IMPERF) now my-father PAST-ask Q
 ši-pati kar-hmę
 PAST-heated(STAT) the-tortilla
 ‘My father had arrived, he asked if the tortilla were heated’
 b. *Cuando* lleg-ó mi papá, pregunt-ó si ya
 when arrive-PAST my father ask-PAST if already
 hubiera calenta-do las tortillas
 have(IMPERF.SJUNCT) heat-PAST.PTCPPL the tortillas
 ‘When my father arrived, he asked if the tortillas were heated’

Two further examples of the contrast between subordination and juxtaposition are shown in (11) and (12). English happens to be a language which makes relatively extensive use of the possibilities for subordinating one proposition to another. Thus, in English there is an adverbial subordinate clause type which we term ‘substitutive’ in section 2 below. An illustration is:

- (11) *Instead of studying*, he played ball

In Mandarin (and many other languages), however, this relationship is signalled not by a subordinate clause construction, but by a juxtaposition of a negative and a positive proposition:

- (12) Ta mei nian shu, ta da qiu le
 he NEG study book he hit ball ASP
 ‘He didn’t study, he played ball’

A similar example can be found by comparing a language in which a purpose clause is expressed by a subordinate clause with one in which a serial verb construction is used for this function. As an example of the first type of language, let us take Literary Arabic, where the subordinate clause is marked with the subjunctive *-a*:

- (13) ḏahab-tu ?ila s-su:q-i li-?-aštariy-a
 go(PERF)-I to DEF-market-GEN for-I-buy(IMPERF)-SJUNCT
 samak-a-n
 fish-ACC.COLLECTIVE-INDEF
 ‘I went to the market to buy fish’

Nupe, a Kwa language of Nigeria, however, like most Kwa languages, expresses purpose by means of a serial verb construction (see Noonan in chapter 2 of this volume), in which the second verb phrase is not marked as being subordinate in any way (see George (1975)):

- (14) Musa bé lá èbi
 Musa came took knife
 ‘Musa came to take the knife’

A somewhat different sort of situation can be found in chaining languages, such as those of the New Guinea Highlands or the Semitic languages of Ethiopia. In a head-final chaining language, a clause is marked as being either final or non-final in a sequence of clauses. Thus, whereas in English a subordinate clause might be used to express one event in a sequence (e.g. with *when*, *before*, *after*, etc.), a chaining language would use a non-final clause followed by a final one (for chaining languages, see Longacre in chapter 7, sections 4 and 5, in this volume; Longacre (1972); Healey (1966); Hetzron (1969, 1977); Olson (1973); McCarthy (1965); and Thurman (1975)).

Thus, it is advisable to keep in mind that both chaining and juxtaposition may occur in some languages to signal clause relationships which other languages use subordination for. For a more thorough discussion of these clause-relating devices, see Longacre in chapter 7 of this volume on interclausal relations. For a discussion of text relations which are not signalled, see Mann and Thompson (1986).

As a final note of caution, it must be mentioned that in some languages the same morpheme can be used for both coordination and subordination. (Gaelic appears to be such a language, with the morphemes *ach* ‘but’ and *agus* ‘and’ performing both functions; see Boyle (1973).) Naturally, to show that this is indeed the case, the linguist must specify precisely what the distinguishing criteria are for that language between subordination and coordination (see Lehmann (1988)).

Thus, it should be borne in mind that, in outlining the functional types of adverbial subordination which languages manifest, we are simply making no claim about a language which happens not to use subordination for a given function.

In the next section, we examine twelve adverbial clause types in detail. Before we begin, however, we must make explicit a very important point about formal similarities. We will assume with Haiman (1978:586) ‘that superficial similarities of form are reflections of underlying similarities of meaning’. Thus, in the discussion of adverbial clause types we will emphasize similarities in form between various types of adverbial clauses as well as between certain adverbial clause types and other constructions. This will not only reveal what semantic categories languages tend to code in their adverbial clause systems, but also highlight the types of formal similarities the field worker is likely to encounter in a new language.

2 The types of adverbial subordinate clauses

The adverbial clauses which have been reported for languages around the world can be divided into twelve basic types, which are:

(a) clauses which can be substituted by a single word:

time
location
manner

(b) clauses which cannot be substituted by a single word:²

purpose concessive
reason substitutive
circumstantial additive
simultaneous absolutive
conditional

The distinction between group (a) and group (b) is that, in general, languages have monomorphemic non-anaphoric adverbs expressing the time, location, and manner relationships, but they do not have such adverbs expressing purpose, reason, concession, etc.

2.1 *Clauses that can be substituted by a single word*

In this category are clauses expressing time, locative, and manner relationships. To illustrate the replaceability of clauses in this group by single non-anaphoric words, let us look at some examples from Isthmus Zapotec,

² Adverbial clauses of comparison, degree, and extent form a topic worthy of cross-linguistic research. They are not treated in this chapter.

another Otomanguean language of Mexico (from Velma Pickett (p.c., and 1960)):

(15) *Time*

- a. Kundubi bi yána*ji*
is.blowing wind today
'It's windy today'
- b. Ora geeda-be zune ni
when (POT)come-he (FUT)do.I it
'When he comes I'll do it'

(16) *Locative*

- a. Nabeza Juan rari'
dwells John here
'John lives here'
- b. Ra zeeda-be-ke nuu ti dani
where is.coming-he-that is a hill
'Where he was coming along, there was a hill'

(17) *Manner*

- a. Nageenda biluže-be
quickly finished-he
'He finished quickly'
- b. Gu'nu sika ma guti-lu'
(POT)do.you like already (COMPL)die-you
'Act as if you're dead'

From these examples, it is clear that in claiming that a clause can be substituted by a word, we are not suggesting that the word necessarily occurs in the same position as the clause does. What we are suggesting is that the *semantic relationship* between the adverbial clause and the main clause is the same as that between the adverbial word and the main clause. That is, either a word or an entire clause can express the time, locative, and manner relationships. As we will see, this is not the case for any of the other adverbial clause types we will be considering.

In addition to the fact that these clause types are semantically equivalent to single word adverbs, there is another interesting typological fact about such clauses: they tend to take the form of, or share properties with, relative clauses. Let us exemplify this point with English:

(18) a. *Time*

We'll go *when Tom gets here*

b. *Locative*

I'll meet you *where the statue used to be*

c. *Manner*

She spoke *as he had taught her to*

Each of these sentences can be paraphrased with a relative clause with a generic and relatively semantically empty head noun: *time*, *place*, and *way/manner*, respectively:

(19) a. *Time*

We'll go at **the time** at which Tom gets here

b. *Locative*

I'll meet you at **the place** at which the statue used to be

c. *Manner*

She spoke in **the way/manner** in which he had taught her to

Looking at just (19b), for example, we can see that the relative pronoun referring to the *place* functions as the location in the relative clause, and the noun phrase *the place at which the statue used to be* functions as the location in the main clause. In other words, time, locative, and manner clauses state that the relationship between the time, place, or manner of the event in the main clause and that of the subordinate clause is the same. And it is precisely for this reason that they often share properties with relative clause constructions.

In contrast, the other adverbial clause types which we will be looking at do not express that two events have something in common, but that one event *modifies* the other, as in the reason and conditional clause sentences, (20) and (21):

(20) *Because it was raining*, I stayed in

(21) *If you like spinach*, you'll love the salad I made

Since these sentences express a reason and a condition, respectively, for the main clause event, but not that two events have a reason or condition in common, they cannot be paraphrased as relative clauses and hence do not appear in relative clause form.³ In what follows we will examine time, locative, and manner clauses in more detail.

2.1.1 Time clauses

2.1.1.1 Temporal sequence clauses. The morphemes signalling 'succession' (see Longacre in chapter 7 of this volume), or temporal sequence relationships between clauses, are typically either independent morphemes on the order of

³ We are grateful to Matthew Dryer for his valuable help in clarifying this issue.

the English *when, before, after*, etc., or verbal affixes. In the languages of Papua New Guinea, the latter strategy is very common; here is an example from Barai (Olson (1973)), where *-mo* is a past sequence marker (PAST SEQ), one of several sequence markers (DS = different subject):

- (22) Bae-*mo*-gana e ije bu-ne ke
 ripe-PAST.SEQ-DS people these 3PL-FOCUS take
 ‘When it was ripe, these people took it’

English has a rich array of subordinating morphemes introducing temporal sequence clauses, including *when, while, as, before, after, since, until, now that, once, as soon as*, etc. But English also has the option of allowing the time clause to be in the form of a relative clause with a head noun such as *time, day, week*, etc.:

- (23) a. By *the time we got back*, the steaks were all gone.
 b. *The week that we spent in Big Sur*, it rained every day.

In Hausa, time adverbial clauses have all the surface characteristics of relative clauses (see Bagari (1976) for details). They contain the relative subordinator, which is *da*, and the aspect marker is the same as that which appears in relative clauses. Head nouns such as *locaci* ‘time’ and *baya* ‘back’ are used to make clear distinctions in time and location. Relative clauses may also be used as time adverbials without a head noun, in which case the meaning is the one understood with the noun *locaci* ‘time’, as in (24), where *sun* = completive aspect pronoun for main clauses, and *suka* = completive aspect pronoun for relative clauses:

- (24) a. Yara-n sun ga sarki (*locaci-n*) da
 kids-the they(COMPL) see king time-the REL
suka shiga birni
 they(REL.COMPL) enter city
 ‘The kids saw the king when they visited the city’
 b. Yara-n sun fita *baya-n da suka*
 kids-the they(COMPL) go.out back-of REL they(REL.COMPL)
ci abinci
 eat food
 ‘The kids went out after they had eaten’

In Mandarin, ‘when’ clauses are simply relative clauses on a head noun such as *shihou* ‘time’ or *neitian* ‘that day’:

- (25) *Ta lai de shihou*, women dou zou le
 he come REL time we all leave ASP
 ‘When he arrived, we all left’

The evidence in Swahili for time clauses being relative clauses is particularly interesting: in relative clauses, the relative clause marker is prefixed to the subordinate clause verb and agrees with the head noun in number and noun class. In time clauses, the relative marker is *po*, which agrees with abstract nouns of place and time, though such a head noun does not appear when the clause functions adverbially:

- (26) Baba a-na-*po*-pika chakula, kuna pilipili sana
 father SUBJ-PRES-REL-cook food there.is pepper plenty
 ‘When father cooks, there is plenty of pepper’

Other languages in which time clauses have the form of relative clauses include Hungarian, Korean, and Turkish.

2.1.1.2 Time/cause. In some languages which simply use a subordinating morpheme like *when* for time clauses, this morpheme may signal cause as well. It is easy to see why: two events which are mentioned together as being simultaneous or adjacent in time are often inferred to be causally related. Consider an English example such as:

- (27) When he told me how much money he lost, I had a fit

The natural inference here is that the telling *caused* the fit. Wappo is a language in which one subordinator is neutral between a time and a cause interpretation. Consider again example (5b):

- (5) b. Te šawo pa?-ta-wen, ah nale?iš-khi?
 he(ACC) bread eat-PAST-when/because I(NOM) angry-NONFUT
 ‘When/because he ate the bread, I got angry’

2.1.1.3 ‘Before’ clauses. ‘Before’ clauses are different from ‘when’ and ‘after’ clauses in that it is always the case that the event named in the ‘before’ clause has not yet happened by the time of the event named in the main clause. Thus there is a sense in which ‘before’ clauses are conceptually negative from the point of view of the event in the main clause. Languages may deal with this semantic fact in different ways. Some languages have no equivalent to ‘before’ clauses at all. In others, the ‘before’ clause interacts with negation in interesting ways. In Mandarin, a negative marker is optional in a past time ‘before’ clause with no change of meaning:

- (28) Ta (*mei*) lai yiqian, women yijing hui jia le
 he NEG come before we already return home ASP
 ‘Before he arrived, we had already gone home’

In Lakhota, ‘before’ clauses must take the negative marker *ni* in the past tense (Buechel (1939:251)):

- (29) T'e ni it'okab c'inca-pi kin wahokon-wica-kiye
 die NEG before child-PL the admonish-3PL.PATIENT-admonish
 ‘Before he died, he admonished his children’

Turkish has the same constraint: ‘before’ clauses must contain a negative marker.

Many languages, including Tolkapaya Yavapai, Quechua, Bauan Fijian (Lynn Gordon (p.c.)), and Ethiopian Semitic (Robert Hetzron (p.c.)), are different from both of these two cases in that there is no morpheme meaning ‘before’; in Yavapai (30), the prior event is signalled by a negative verb which has the simultaneity suffix (SIM), together with the irrealis (IRR) form of the verb (Hardy (1977)). Its literal meaning is then something like ‘when X hasn’t happened, Y happens’.

- (30) Kmun-v-ch vaa-h 'um-t-m tyach-va 'yoo-ch-a
 frost-DEM-SUBJ come-IRR NEG-SIM-SS corn-DEM I-gather-PL-IRR
 ‘Before the frost sets in, we’ll gather corn’

Similarly, in Quechua (31), the negative adverb *mana-raq* ‘not yet’ is used (David Weber (p.c.)):

- (31) Mana-raq šamu-r armaku-y
 not-yet come-SS bathe-IMP
 ‘Bathe before you come’
 (literally ‘not yet coming, bathe’)

In English, although ‘before’ clauses cannot occur with the negative *not*, they can occur with negative polarity items such as *any* and *ever*:

- (32) a. *Before any* shots were fired, a truce was declared
 b. *Before he ever* went to UCSD, he had heard of ‘space grammar’

The semantic fact that the event in the ‘before’ clause is always incomplete with respect to the main clause event, then, is reflected in many languages in the way negation shows up in the ‘before’ clause. The details may differ, but the principle is the same.

2.1.2 *Locative clauses*

Locative clauses in English and other languages are introduced by the subordinator *where*, as in:

(33) I'll meet you *where the statue used to be*

But, as with time clauses, locative clauses in some languages have the shape of relative clauses. In Turkish, for example, locative clauses can only be expressed with a head noun meaning 'place' and a prenominal relative clause (Eser Erguvanli (p.c.)):

(34) Sen Erol-un otur-duğ-u yer-e otur
 you Erol-GEN sit-OBJ-POSS place-DAT sit
 'You sit where Erol was sitting'

2.1.3 *Manner clauses*

A manner clause, as illustrated by the Isthmus Zapotec sentence in (17b) above, may be signalled by a subordinate clause marker, as in the following English examples:

(35) a. She talks *like* she has a cold
 b. Carry this *as* I told you to

Manner clauses in a number of languages may also have the form of relative clauses, for example English:

(36) Carry this *the way (that) I told you to*

In Swahili, the verb in the subordinate clause is marked with the relative marker *vyo*, which agrees with an abstract head noun with a meaning like 'way' (though the head noun is not present, just as with Swahili temporal clauses, see (26) above):

(37) Sema kama a-sema-vyo yeye
 say as SUBJ-say-REL he
 'Say it as he does'

In Quechua the relative marker appears in the manner clause (Weber (1978)):

(38) a. Noqa marka-kuna-chaw rika-*shaa*-naw yaykusuxhn
 I town-PL-LOC see-REL-MANNER we.will.enter
 'We will go in like I saw people do in the towns'
 b. Manam kankipaqchu kayku-*shayki*-naw-qa
 NEG you.will.not.be being-REL-MANNER-TOP
 'You will not be like you are now'
 c. Alista-pan kuura ni-*shan*-naw
 prepare-BEN3 priest say-REL-MANNER
 'They prepared it for him just like the priest said'

In line with what we said above, however, it seems clear that only those manner clauses in which the manner in the main clause is the same as that in the subordinate clause would look like relative clauses. Thus, while in (18c) the way she spoke is claimed to be the same as the way he taught her to, in (35a), the way she talks is *not* the way she has a cold. Thus sentences like (18c) have relative clause parallels, but those of the form (35a) do not.

2.1.4 Summary

So far we have seen, then, that clauses expressing time, location, and manner relationships are those which bear the same semantic relationship to the main clause as single adverbial words such as *now*, *here*, and *quickly*. They are typically introduced by subordinating morphemes, and may appear in relative clause form in some languages.

2.2 Clauses that cannot be substituted by a single word

While languages typically have adverbial words to modify a verb in terms of time, location, and manner, as we discussed in section 2.1, the semantic relationships to be discussed below are generally not renderable with a single non-anaphoric lexical item. For example, the conditional relationship is by its semantic nature one which cannot be expressed by a single adverb.

2.2.1 Purpose and reason clauses

Many languages use the same morphology for both purpose and reason clauses. Ngizim, a Chadic language, is one such language. The subordinating morpheme for both types of clauses is *gàadà* (see Schuh (1972:380)):

(39) Reason

Ata abən *gàadà* aci ngaa
eat(PERF) food he well
'He ate food because he was well'

(40) Purpose

Vəru *gàadà* dà ši səma
go.out(PERF) SJNCT drink beer
'He went out to drink beer'

The semantic explanation for the fact that one morpheme can serve these two functions is that both purpose and reason clauses can be seen as providing *explanations*, or *accounts*, for the occurrence of a given state or action (see Longacre in chapter 7, section 2.4.2, in this volume). They differ in that purpose clauses express a motivating event which must be *unrealized* at the time of the main event, while reason clauses express a motivating event which may be

realized at the time of the main clause event. In most languages, even those that use the same morphology for signalling purpose and reason, then, there will be different marking to signal the unrealized status of the purpose clause versus the realized status of the reason clause.

For example, in the Ngizim sentences in (39–40) above, the purpose clause, but not the reason clause, shows the subjunctive morpheme *dà*, which signals that the proposition is unrealized. Similarly, Kanuri, a Nilo-Saharan language of Africa, also shows the same morpheme, *ro*, in both types of clauses. Here is an interesting near-minimal pair (Hutchison (1976:147)):

(41) *Purpose*

Biska Monguno-ro lete-ro tawange ciwoko
 yesterday Monguno-to go(VN)-ro early(1SG) get.up(1SG.PAST)
 ‘Yesterday I got up early to go to Monguno’

(42) *Reason*

Biska Monguno-ro lengin-dø-ro tawange
 yesterday Monguno-to go(1SG.IMPERF)-DEF-ro early(1SG)
 ciwoko
 get.up(1SG.PAST)
 ‘Yesterday I got up early because I was going to Monguno’

In Kanuri, there are two morphological correlates to the realized/unrealized distinction. First, the verb in the purpose clause is a nonfinite verbal noun with no person or tense marking, while the verb in the reason clause is a fully inflected finite verb. Second, the presence of the definite marker *-dø* preceding *-ro* in the reason clause signals that the reason for which the main clause event happened is asserted as a fact. The purpose clause, representing an unrealized proposition, has no definite marker.

2.2.1.1 Datives, benefactives, or allatives. In some languages, the case marker expressing the idea of ‘to’ or ‘for’ used for datives, benefactives, or allatives (‘direction to’) is used for purpose clauses (Matthew Dryer (p.c.)). Thus, in Tamil, the case marker for indirect objects and allatives is also suffixed to the purpose clause:

(43) Avan poo-R-atu-kku kutu-tt-en
 he go-NONPAST-NOM-‘to’ give-PAST-1SG
 ‘I gave (something) in order that he can go’

The Kanuri examples in (41–42) above provide yet another illustration; the purpose/reason marker *-ro* is the allative suffix which is also used in these sentences for ‘to Monguno’. (Heine, Claudi, and Hünemeyer (1991) show

examples from several languages of this type of grammaticalization process from an adposition to a conjunction.)

In Kinyarwanda, the similarity between purpose clauses and benefactives is signalled in a slightly different way: since grammatical relations are marked on verbs rather than on nouns in Bantu languages, what we find is that a verb is marked by the same suffix when it takes a benefactive argument, as in (44a), as when it takes a purpose clause, as in (44b) (Kimenyi (1976)):

- (44) a. Umugóre a-rá-kor-er-a umugabo
 woman SUBJ.PRO-PRES-work-BEN-ASP man
 ‘The woman is working for the man’
- b. Abaantu bi-iig-ir-a ku-menya ubwéenge
 people SUBJ.PRO-study-BEN-ASP INF-know knowledge
 ‘People study in order to learn’

2.2.1.2 Same and different subjects. Many languages have distinct syntax for purpose clauses whose subject is the same as the main clause subject, as opposed to those whose subject is different. In fact, for same-subject purpose clauses, it is most common to find an infinitive, as in English and Kinyarwanda (see Haspelmath (1989) who argues that, cross-linguistically, an infinitive is the result of grammaticalization from purpose markers):

- (45) Tuagiiya muli parika *ku*-reeba uiyamasure
 we.went in zoo INF-see animals
 ‘We went to the zoo to see the animals’

For languages without an infinitive, verb forms in special moods or aspects are typically found in purpose clauses, as well as in other environments where a nonfinite verb is called for (such as with ‘want’). Consider these two examples from Godié, a Kru language (see Marchese (1976)):

- (46) -A yɛɪɪ ɔ ʔkɪ Godié walɪ ki
 we want he VOLITIVE Godié word talk
 ‘We want him to speak Godié’
- (47) ɔ sɪ ɲɪ kpa blɔ-ʔkw ɔ ʔkɪ pɪ lɪ
 he clear(INCOMPL) men road-on he VOLITIVE pass
 ‘He clears men from the road in order to pass’

Luisẽño is interesting here since purpose clauses have verbs with the same form as in one of the future tenses. For same-subject clauses it is *-lut*:

- (48) Nón má·kina sámsa-*lut*
 I car buy-FUT
 ‘I’m going to buy a car’
- (49) Yaʔáʃpil ʔuwóʔa-qu\$ má·kina sámsa-*lut*
 man work-PROG. PAST car buy-PURP
 ‘The man was working in order to buy a car’

Different-subject purpose clauses, however, use *-pi*, one of the future tenses used in relative clauses (Davis (1973:236, 299)):

- (50) *Relative*
 Nawítmal ʔéxŋi ʔu-qáni-*pi* pilék yawáywis
 girl tomorrow your-meet-FUT/REL very pretty
 ‘The girl you’re going to meet tomorrow is very pretty’
- (51) *Purpose*
 Yaʔáʃ ŋéŋi \$uŋ á-l kí-š pu-wá-qi-*pi*
 man leave/remote woman house(ACC) her-sweep-PURP
 ‘The man left in order for the woman to sweep the house’

Finally, some languages, like Wappo, have a special form for same-subject purpose clauses, which is only used to express purpose:

- (52) Isi celahaya čaphahaw-ta? olol-*ema*
 we(NOM) things put.away-PAST dance-PURP
 ‘We put away things in order to dance’

2.2.1.3 Negative purpose clauses. Before leaving the discussion of purpose clauses, we should point out that some languages have a special negative subordinator for negative purpose clauses. In English, it is *lest*; in Daga, a language of Papua New Guinea (Murane 1974:156), this morpheme is *tawa* (see also Haiman (1988) and MacDonald (1988)):

- (53) Enu-nege-pi *tawa* tarep war-an
 spear-me-3SG.MEDIAL lest dance get-1SG.PAST
 ‘Lest he spear me, I danced about’

2.2.2 *Circumstantial clauses*

Clauses expressing the circumstances by which a given state of affairs comes to be can be introduced by either affirmative or negative morphemes. In English these are *by* and *without*, both of which take the participial form of the verb:

- (54) He got into the army *by* lying about his age
- (55) She carried the punch into the living room *without* spilling a drop

2.2.3 Simultaneous clauses

Simultaneous clauses code the relationship called ‘overlap’ by Longacre in chapter 7. In marking that two events occurred simultaneously, it appears to be universally the case that languages allow one of the simultaneous events to be signalled as providing the context or background for the other, or foregrounded, event. The choice of which clause serves as the background is, of course, determined essentially by the nature of the discourse (see Hopper (1979), and Hopper and Thompson (1980), for the relationship between discourse and grammar in the expression of background/foreground information).

There are two common ways of marking a backgrounded clause as simultaneous with its main clause: either a marker explicitly signalling simultaneity is used, or a continuative, durative, or imperfective aspect marker is used. An example of the first strategy can be found in Tolkapaya Yavapai (Hardy (1977)). Here the suffix *-t* is a marker of simultaneity:

- (56) Kwawa 'chkyat-a-k vak 'unuu-t-m swach'skyap-ch
 hair I-cut-IRR-SS here I-INCOMPL-SIM-DS scissors-SUBJ
 vqaov-k yuny
 break-SS TNS
 ‘As I was cutting my hair, the scissors broke’

For an example of the second strategy, the use of an aspect marker which functions in simple sentences to mark ‘ongoingness’, we cite Yessan-Mayo of Papua New Guinea (Foreman (1974)). Here the suffix *-men* is a progressive aspect marker:

- (57) Ti Wiywek ti-men-im ti ak sam
 she Wewak be-PROG-FAR.PAST she then died
 ‘While she was in Wewak, she died’

English is a language in which both strategies are used: not only does *while* explicitly signal simultaneity, but the verb in a *while* clause may also be marked by the progressive marker *-ing*:

- (58) *While* (we were) eating, we heard a noise outside the window

Similarly, in Mandarin, the durative (DUR) aspect marker *-zhe* occurs in clauses with such a function:

- (59) Ta ku-zhe xinglai
 he cry-DUR wake.up
 ‘He woke up crying’

And Swahili uses its imperfective aspect marker *ki-* for clauses functioning in this way (Tom Hinnebusch (p.c.)):

- (60) A-li-amka a-ki-lia
 he-PAST-wake.up he-PROG-cry
 ‘He woke up crying’

A third strategy for signalling simultaneity is that found in Warlpiri and other Australian languages: what Hale (1976) calls the ‘adjoined relative clause’. With this strategy, two clauses are juxtaposed, one of which is marked as subordinate, but not signalling simultaneity in any way. Here is an example from Warlpiri, in which the subordination marking is the complementizer *kutja* (Hale (1976:78)):

- (61) ŋatjulu-ɭu ø-ŋa yankiri pantu-ŋu *kutja*-ɭpa ŋapa ŋa-ŋu
 I-ERG AUX emu spear-PAST COMP-AUX water drink-PAST
 ‘I speared the emu while it was drinking water’

2.2.4 Conditional clauses

Before beginning our discussion of the semantics and structure of conditional sentences, let us agree on the term ‘if’ clause for the clause which names the condition, and the term ‘then’ clause for the main clause. These terms are not intended to imply anything about the order in which the two clauses occur with respect to each other, nor about the obligatoriness of the morphemes which signal these clauses.

2.2.4.1 The semantics of conditionals. A basic semantic distinction between types of conditionals which is signalled by most languages is the distinction between *reality* conditionals and *unreality* conditionals. (The distinctions below are adapted from J. Schachter’s (1971) pioneering study on the syntax and semantics of conditional sentences in English.) Reality conditionals are those which refer to ‘real’ present, ‘habitual/generic’, or past situations. Examples from English are:

- (62) *Present*
 If it’s raining out there, my car is getting wet
- (63) *Habitual/generic*
 If you step on the brake, the car slows down
- (64) *Past*
 If you were at the party, then you know about Sue and Fred

The term ‘unreality conditionals’ is used for conditionals which refer to ‘unreal’ situations. There are two types of unreal situations: those in which we *imagine* what might be or what might have been, and those in which we *predict* what will be. We can label these two types of unreality *imaginative* and *predictive*, respectively. Examples from English:

(65) *Imaginative*

- a. If I saw David, I'd speak Barai with him (what might be –
hypothetical)
 b. If you had been at the concert, you would have seen Ravi Shankar
 (what might have been – *counterfactual*)

(66) *Predictive*

If he gets the job, we'll all celebrate

As can be seen from these examples, among the imaginative conditionals, a further distinction can be made. Some imaginatives refer to situations which might happen, as in (65a) above, while some refer to situations which *didn't* happen or which *couldn't* happen, as in (65b). Those which might happen we can call 'hypothetical'; those which *didn't* or *couldn't*, we can call 'counterfactual'.

The semantic types of conditionals, then, can be summarized as follows:

Real

- 1 present
- 2 habitual/generic
- 3 past

Unreal

- 1 *Imaginative*
 - a. hypothetical
 - b. counterfactual
- 2 *Predictive*

In the next subsection, we will see that languages divide up this semantic space in slightly different ways.

2.2.4.2 The syntax of conditionals. Most languages, as mentioned above, signal conditionals by means of subordinating morphemes such as *if*. Gwari, a Kwa language of Nigeria (Hyman and Magaji (1970)), for example, uses the subordinator *ńgyē*:

- (67) *ńgyē* hō sī shnamá, ho kū gyĩ
 if you buy yams you COMP eat
 'If you buy yams, eat them up'

Ngizim, a Chadic language (Schuh (1972)), on the other hand, although it has an 'if' word, makes much more extensive use of a clause-final marker *nən* (or its variant *-n*):

- (68) Ká rdə-naa aci bii-n dà kii'ya-naa tluwii-gu
 you stop-TRANS him not SJNCT eat-totality meat-the
 'If you don't stop him, he'll eat up the meat'

According to Schuh, *nən* is best viewed as an indefinite determiner which marks the conditional clause as not yet realized or of ‘general relevance’, as in (69):

- (69) Akər ika miya-k sau darəpta-*n*, aa tfa
 thief see(PERF) mouth-ASSOC hut open IMPERF enter
 ‘If a thief sees the door of a hut open, he will enter’

In imaginative conditionals, it is very common to find special marking. In English this marker is *would*; in Hausa (Bagari (1976)), it is *daa*, which occurs in both the ‘if’ clause and the ‘then’ clause.

- (70) If he were sick, he *would* call us
- (71) In *daa* sarki za-i ziyarce ni, *daa* naa baa shi tuwo
 if IMAG king FUT-he visit me IMAG I(COMP) give him tuwo
 ‘If the king visited me, I’d give him tuwo’

In both languages, the imaginative marker (IMAG) also shows up in non-conditional imaginative sentences, which is common in other languages as well:

- (72) *Would* that he were here now! (a bit archaic, meaning ‘I wish that he were here now’)
- (73) *Daa* naa sani
 IMAG PERF(1SG) know
 ‘Had I only known!’

In some languages, conditional clauses are marked as nominalizations or relative clauses. In Ngizim, as we saw above in (68), they are marked with what may be plausibly argued to be an indefinite determiner. Welmers (1973:433–4) points out that in ‘verifiable’ conditionals in Efik, a Kwa language, the word *dyékè* is used followed by relative clauses, where *dyékè* seems to be derived from a noun phrase meaning something like ‘the indefinite circumstance’. Furbee (1973:15) suggests for Tojolabal, a Mayan language, that conditional clauses may be like relative clauses in that both may be marked with the definite determiner *ha*.

2.2.4.3 Conditionals and time clauses. In some languages, including Indonesian and certain languages of Papua New Guinea, there is no distinction between ‘if’ clauses and ‘when’ clauses. In many of these languages, the neutralization holds, however, only for *predictive* conditionals and *future* time clauses. Vai, a Mande language of Liberia (Welmers (1976)), is a good example (where the discontinuous à-’èè is the conditional marker):

- (74) À à ná 'éè í-ì à fé'é-'à
 he come you-FUT him see-FUT
 'If he comes, you will see him' or
 'When he comes, you will see him'

That is, the distinction between English 'when' and 'if' clauses is simply one of degree of expectability, and is a distinction which many languages do not code.

A slightly different kind of relationship between predictive conditionals and temporal clauses can be found in a language like Kanuri (see Hutchison (1976)): the marker *ga* marks a predictive conditional clause (among other things), while *doga* (the definite marker plus *ga*) signals a reason clause in the future:

- (75) a. *Ishin-ga* shi-ga jengin
 come(3SG.IMPERF)-*ga* he-DO wait.for(1SG.IMPERF)
 'If he is coming I'll wait for him'
- b. *Ishin-də-ga* shi-ga jengin
 come(3SG.IMPERF)-DEF-*ga* he-do wait.for(1SG.IMPERF)
 'Since he's coming I'll wait for him'

2.2.4.4 Predictive clauses: 'real' or 'unreal'? Though predictive conditionals are semantically 'unreal', languages differ as to whether predictive conditionals are grouped *syntactically* with the imaginative conditionals, i.e., are coded together with them as 'unreal', or with the 'real' conditionals. Swahili and Chagga, another Bantu language (Saloné (1977)), are languages of the first type. In both languages, the 'then' clauses in predictive conditionals may be marked with either an imaginative marker (Swahili, *nge-*; Chagga, *we-*) or a future tense marker (Swahili, *ta-*; Chagga, special verb forms). Let us look at three Chagga examples:

- (76) *Hypothetical*
- a. John a-wé-icha inú ngí-*we*-korá machalári
 John SUBJ.PRO-IMAG-come today I-IMAG-cook bananas
 'If John came today, I would cook bananas'
- b. John k-a-cha inú ngé-*kora* machalári
 John if-SUBJ.PRO-come today I-cook(FUT) bananas
 'If John came today, I would cook bananas'

Predictive

- c. Kokóya John na-icha inú ngé-*kora* machalári
 if John SUBJ.PRO-come today I-cook(FUT) bananas
 'If John comes today, I will cook bananas'

Sentences (76a) and (76b) are both imaginative hypotheticals; both verbs in (76a) are marked with an imaginative marker, while the main verb in (76b) is a future verb form, exactly like the main verb in the predictive conditional in (76c). Note the difference in subordinating morphemes, none in (76a), different ones in (76b) and (76c).

English and Haya, another Bantu language (Saloné (1977)), on the other hand, are both languages in which predictive conditionals are never marked by the same morphology as imaginative conditionals, but have the same verb morphology as ‘real’ conditionals. Looking at an example in Haya, we see that predictive conditionals are marked with future tense markers in both ‘if’ and ‘then’ clauses; imaginative conditionals, on the other hand, may never be so marked, but must contain a past or perfect marker in both clauses:

- (77) a. *Predictive*
 K-á la-ijá n-da-mu-bóna
 if-he NEAR.FUT-COME I-NEAR.FUT-him-see
 ‘If he comes I’ll see him’
- b. *Imaginative*
 Ká n-a-ku-bona efarasy’ ein’ árabába
 if I-NEAR.PAST-UNREAL-see horse having wings
 ti-ni-á-ku-amini
 NEG-I-NEAR.PAST-UNREAL-believe
 ‘If I saw a horse with wings, I wouldn’t believe it’

The semantic explanation for the fact that languages differ as to whether predictive conditionals are marked in the same way as imaginative conditionals, i.e., as ‘unreal’, or in the same way as ‘real’ conditionals, is clearly that predictive conditionals can be seen semantically either as ‘unreal’ or as ‘real’. That is, a future prediction is about something that has not yet happened, so it is ‘unreal’, as are sentences about what did not happen or what might happen. But it is also ‘real’ in that it is making a prediction about a state of affairs in the ‘real world’, as opposed to the ‘imaginary’ world.

2.2.4.5 Imaginative conditionals: hypothetical and counterfactual. The semantic distinction between hypothetical and counterfactual conditionals is typically not matched one-to-one by a morphological distinction. There seem to be two kinds of ways in which the two planes fail to be precisely isomorphic. English is an example of the first way: the same morphology is used for both hypotheticals and those counterfactuals which express not what *didn’t* happen, but what we know *couldn’t* happen. Thus the form

- | | |
|--|-----------------------------------|
| ‘if’ clause | ‘then’ clause |
| ‘present subjunctive’ | <i>would</i> and uninflected verb |
| (= past tense, except with <i>be</i>) | |

is used in the following situations:

- (78) a. *Hypothetical (what might happen)*
 If I saw Jimmy Carter, I *would faint*
 b. *Counterfactual (expressing what couldn't happen)*
 If I *were* you, I *would write* a book

For counterfactuals expressing what *didn't* happen, on the other hand, only the following morphology is found:

‘if’ clause	‘then’ clause
<i>had</i> and past participle	<i>would</i> and uninflected verb

- (79) If we *had wanted* a quiet evening, we *would have left* you at home

The second way in which meaning and morphology may diverge in imaginative conditionals is for the language to make *no* morphological distinction between hypotheticals and counterfactuals. Isthmus Zapotec is like this: all imaginative conditionals (hypothetical and counterfactual) are marked with the unreality aspect (Velma Pickett (p.c.)):

- (80) a. *Hypothetical*
 Pa ñuuya ti elefante ra skwela ñiate'
 if see(UNREAL.1SG) an elephant at school die(UNREAL.1SG)
 ‘If I saw an elephant at school, I’d die’
 b. *Counterfactual (what couldn't happen)*
 Pa ñaka lii ke ninie zaka
 if be(UNREAL.1SG) you not talk(UNREAL) thus
 ‘If I were you I wouldn’t talk that way’
 c. *Counterfactual (what didn't happen)*
 Pa ño-be ni ñaka wara-be
 if eat(UNREAL)-he it be(UNREAL) sick-be
 ‘If he had eaten it he would be sick’

Luiseño is another such language in which hypothetical and counterfactual conditionals are not distinguished.

2.2.4.6 Negative conditionals. Many languages have a morpheme to signal a negative condition. In English it is *unless*:

- (81) *Unless* you get there by 6.00, we’re leaving without you
 (82) We’ll go to Chicago *unless* the airport is snowed in

Mandarin is another example; its negative conditional marker is *chufei*:

- (83) *Chufei* pianyì (yaoburan) wǒ bù mǎi
 unless cheap otherwise I not buy
 ‘Unless it’s cheap I won’t buy it’

What these conditionals signal is that the proposition in the main clause depends on a certain condition not obtaining. In languages with a special negative conditional morpheme, they may sometimes have the same truth value as a sentence whose ‘if’ clause contains the conditional marker and a negative marker, but the implications are not the same. Consider the following pair in English as an example:

- (84) a. *Unless it rains*, we’ll have our picnic
 b. *If it doesn’t rain*, we’ll have our picnic

While (84b) is neutral with respect to how likely the speaker thinks it is to rain, (84a) implies that the speaker thinks it is likely *not* to rain. Negative conditionals are typically like the ordinary conditionals of the language, both syntactically, in that they manifest the same restrictions on verb forms, and semantically, in the way the reality/unreality and hypothetical/counterfactual distinctions are expressed.

2.2.4.7 Concessive conditionals. The term ‘concessive conditional’ has been used to refer to clauses analogous to ‘even if’ clauses in English, coding the relation ‘frustrated implication’ discussed by Longacre in chapter 7, section 2.9.2, in this volume.

- (85) *Even if* it rains we’ll have our picnic
 (86) He wouldn’t have passed *even if* he had turned in his term paper

Mandarin has a subordinator which is morphologically distinct from any of its ‘if’ morphemes for this relationship:

- (87) *Jiushi* tā sòng gěi wǒ wǒ dōu bù yào
 even.if he give to I I still NEG want
 ‘Even if he gave it to me I wouldn’t take it’

Like negative conditionals, concessive conditionals in a given language are typically similar to ordinary conditionals in that language, in terms of verb forms and the expressions of reality/unreality and hypotheticality/counterfactuality. However, concessive conditional clauses do carry additional presuppositions not signalled by ordinary conditionals, which match quite closely those carried by such contrary-to-expectation morphemes as the English *even*. (For some discussion, see Fraser (1969) and de Chene (1976).)

Let us consider just one example from English to illustrate how these presuppositions operate. For sentences like (88)

(88) Even if it rains, we'll have our picnic

we can give the meaning of concessive conditionals roughly as follows:

- (89) asserted: we'll have our picnic
 presupposed: there is an expectation that the proposition [If it rains, we'll have our picnic] would *not* be true
 presupposed: there is a belief that the proposition [If it doesn't rain, we'll have our picnic] is likely

A concessive conditional declarative sentence is like an ordinary conditional sentence in that it may be talking about some 'unreal' event, either predictive or hypothetical, but it is like a concessive sentence (see next section) in that its main clause is asserted *in spite of* assumptions to the contrary.

2.2.5 *Concessive clauses*

Concessive is a general term for a clause which makes a concession, against which the proposition in the main clause is contrasted (see Haiman (1974)). There are two types of concessive clauses, those which we might label 'definite' and those which we might label 'indefinite'. 'Definite' concessive clauses are simply those marked by a concessive subordinator like 'although'. Examples from English include:

- (90) *Although* she hates Bartók, she agreed to go to the concert
 (91) *Even though* it's still early, we'd better find our seats
 (92) *Except that* we ran out of money, we had a great vacation

Tagalog (Schachter and Otones (1972:479)) is a language which has a rich variety of 'definite' concessive clause subordinators. Here is one example:

- (93) *Bagaman at hindi sila mag-aaral, umaasa silang pumasa*
 although not they will-study expect they(LINK) to.pass
 'Although they aren't going to study, they expect to pass'

Evidence of the semantic definiteness of these clauses is that they can be paraphrased with the complex introducer 'in spite of *the fact* that . . .'

The presuppositional and assertional structure for concessive sentences is similar to that which we discussed above for concessive conditionals. Let us again take one English example to illustrate. In sentences like

- (94) Although she hates Bartók, she agreed to go to the concert

the meaning of definite concessive sentences can be roughly characterized like this:

- (95) asserted: she agreed to go to the concert
 presupposed: there is an expectation that [if she hated Bartók, then she would agree to go to the concert] would *not* be true

‘Indefinite’ concessive clauses, on the other hand, are those which signal a meaning like ‘no matter what’ or ‘whatever’; these contain some unspecified element, typically an indefinite pronoun or question word. A universal quantifier may be used for an element in the concession, for example, *whoever, whatever, whenever, wherever*. Examples from English include such sentences as the following:

- (96) *No matter what* he said, she still refused to go out with him
 (97) *Whoever* he is, I’m not opening that door

In Mandarin, indefinite concessives are introduced by *wulun* or *bulun* and have the form of indirect questions:

- (98) *Wulun* ta shi shei, wo haishi bu qu
 no.matter he be who I still not go
 ‘No matter who he is I still won’t go’
 (99) *Bulun* ta lai bu lai, women ye dei zuo
 no.matter he come not come we still must do
 ‘Whether he comes or not, we’ll still have to do it’

2.2.6 Substitutive clauses

Some languages have subordinating markers for signalling the replacing of an expected event by an unexpected one. English uses such forms as *instead of* and *rather than* for this purpose (see Thompson (1972) for some discussion):

- (100) We barbecued chicken *instead of* going out to eat
 (101) Harry decided to eat the salad *rather than* send it back to the kitchen

In Isthmus Zapotec, a morpheme of Spanish origin, *lugar de* ‘in place of’, is found in the analogous construction:

- (102) *Lugar de* nuni-be ni zaka nuni-be ni sikari’
 place of do(UNREAL)-he it thus do(UNREAL)-he it this.way
 ‘Instead of doing it that way, he should have done it this way’

An examination of the verbs in the substitutive clauses in Zapotec and English reveals interesting parallels, which may be shared by a wider range of languages: both the form and the interpretation of the subordinate clause verbs are predictable. In Zapotec, example (102), the subordinate clause comes first, and the first verb must be in the unreal aspect because the action never gets realized. In

English, the verb must be a nonfinite form, the participial *-ing* form with *instead of* and either the participial or the uninflected verb form with *rather than*. In both languages, the *interpretation* of the time reference of the substitutive clause verb depends on that of the main clause verb.

As was the case with 'before' clauses, substitutive subordinate clauses, because of their negative meaning, interact with negation in interesting ways. In English, both substitutive and 'before' clauses can occur with negative polarity items like *any* and *ever*:

(103) Instead of doing *any* homework, he just sits around watching TV

2.2.7 Additive clauses

Some languages have subordinating morphemes which express one state of affairs in addition to another. In English, *besides* and *in addition to* serve this function; both require that their verbs be in the participial forms, which provides evidence that they are subordinate in this language:

(104) *In addition to* having your hand stamped, you must show your ticket stub

(105) *Besides* missing my bus, I got my feet all wet

2.2.8 Absolute clauses⁴

Absolute here is a cover term for a subordinate clause type in which the following conditions hold:

- (i) the clause is marked in some way as being subordinate;
- (ii) there is no explicit signal of the relationship between the main and subordinate clause; thus
- (iii) the interpretation of this relationship is inferred from the pragmatic and linguistic context.

There are essentially two ways to mark a clause as subordinate without signalling the precise subordinating relationship; one is to mark the verb in a special way, often by nominalizing it, and the other is to use a general subordinating morpheme. English, Latin, and Ngizim are languages in which the first type of strategy is used. English uses a nonfinite verb form:

⁴ The term *absolute* comes from traditional Latin grammar, *absolutus*, meaning 'free' or 'unconnected'. In traditional Latin grammar, however, its usage is restricted to clauses of the second type described in this section, exemplified by (108), whose subject bears no grammatical or semantic relation to the main verb. Our use of 'absolute' here is more general. For a plea that absolute constructions in Indo-European be regarded as a type of subordinate clause, see Berent (1973). Givón (1990:ch.19) refers to these clauses as participial adverbial clauses, and Haspelmath (1995:3) uses the term *coverb* for the verb in such clauses: 'A coverb is defined here as a nonfinite verb form whose main function is to mark adverbial subordination.'

- (106) a. *Having* told a few bad jokes, Harvey proceeded to introduce the speaker
 b. *Seeing* me, Jamie hid behind his mother's skirt

In Latin (Greenough *et al.* (1903)) and in Classical Greek, the verb in the absolutive clause appears in its participial form and is then case-marked according to the following convention: if the subject of the participial subordinate verb and the subject of the main clause verb are understood to be the same, the participial verb agrees with that subject in case, number, and gender; if the subject of the participial subordinate verb is not the same as that of the main verb, then the participial verb and the nouns dependent on it appear in the ablative case (Matthew Dryer (p.c.)). Here is an example of each of these two situations from Latin:

- (107) Ab oppid-o duct-a femin-a prope
 from town-ABL lead(PAST.PART)-NOM woman-NOM near
 templ-um habita-ba-t
 temple-ACC live-IMPERF-3SG
 'Having been brought from the town, the woman lived near the temple'

- (108) Caesar, accept-is litter-is, nuntium
 Caesar(NOM) receive(PAST.PART)-ABL letter-ABL messenger(ACC)
 misit
 send-3SG.PERF
 'The letter having been received, Caesar sent a messenger'

In Ngizim (Schuh (1972)), a clause may be nominalized by postposing its subject, deleting its auxiliary, and replacing the finite verb with a verbal noun, which is marked by the possessive suffix. It can then function as an absolutive clause:

- (109) Kalaktayi-gaa ná təfə-n-gaa ii mänduwa
 return-1SG.POSS 1SG.PERF enter(PERF)-totality-ASSOC to house
 'Having returned, I entered the house'

Languages that illustrate the second strategy for marking an absolutive clause as subordinate, using a multifunctional subordinating morpheme, include Luiseño and Yaqui, in the Uto-Aztecan family, and Godié from the Kru subgroup of Niger-Congo. First, some examples from Luiseño, illustrating the subordinator *qala*, which can only be used when the subjects of the main and subordinate clauses are different (Davis (1973)):

- (110) a. ?ó:nu-pil ney wultú?-ya ?i:k nu-htí?a-qala
 he-REMOTE me(ACC) angry-REMOTE there(DAT) my-go-SUBORD
 ‘He got angry at me when/because I went there’
 (literally ‘He got angry at me, my having gone there’)
- b. ?ári-n-up póy ?óy pu-?ári-qala
 kick-FUT-IMPERF him(ACC) you(ACC) his-kick-SUBORD
 ‘Kick him when/if he kicks you’
 (literally ‘Kick him, his having kicked you’)
- c. Wám?-ta nó naxánmal ?i:qal pumó:m-i tów-ma
 now-CONTRAST I old.man just they-ACC look-HABIT
 pum-péla-qala
 their-dance-SUBORD
 ‘Now that I’m old I just watch them while they’re dancing’

In Godié (Marchese (1976)), the general subordinator is *nA*, which can appear with clauses which are introduced by an initial subordinator, as well as by itself in absolutive constructions:

- (111) ɔ yi mɔ Dakpaduu' nA gbesi ɔ tla a
 he came to Dakpadu SUBORD traps he set recent
 ‘Having come to Dakpadu, he set some traps’

The interpretation of the relationship between the clauses in an absolutive relationship is entirely determined by inference, and may not be very specific. Greenough *et al.*’s Latin grammar (1903:264), for example, lists five types of clauses which the ablative absolutive can ‘take the place of’:

- (a) a temporal clause (= ‘when’)
- (b) a causal clause (= ‘because’)
- (c) a concessive clause (= ‘although’)
- (d) a conditional clause (= ‘if’)
- (e) a ‘clause of accompanying circumstance’

Absolutive constructions are used, then, when there is no need to specify more than that the clauses are closely related.

2.3 Summary

In this section, we have provided a survey of the types of adverbial clauses which can be found in languages of the world. We have discussed the types of semantic relationships which adverbial clauses signal, and we have indicated and attempted to explain some of the structural regularities which are found in certain of these clause types.

3 'Speech act' adverbial clauses

Some adverbial clauses in any language can be seen to relate not to the main clauses, nor to the preceding discourse, but to the fact that the act of communication is taking place. Examples from English would include such clauses as the italicized one in the following sentence:

- (112) *As I'm sure you're aware*, bananas have doubled in price since last year

Speech act adverbial clauses, although identical in form to the clauses we have been discussing, need to be recognized as a separate category because their function is not to modify or qualify the main clause in any way, but to modify or qualify, as it were, the speech act which the speaker is performing in uttering the main clause. A particularly clear illustration of this fact is an English sentence such as:

- (113) *If you're interested*, the Lakers just won

The 'if' clause in (113) in no way sets a condition on the Lakers winning; in fact, it is clear that they won whether or not 'you' are interested. Instead, this clause sets a condition on the hearer's appreciating the main clause, and might be paraphrased as: 'If you're interested, then consider the message that the Lakers just won'. Another example from English is:

- (114) Harry will be late, *because I just talked to his wife*

If the reason for Harry's being late is that I just talked to his wife, then the *because* clause is a reason clause like those discussed above in section 2.2.1. The more likely interpretation, however, is that in which the 'because' clause gives my reason for being able to make the assertion that Harry will be late; that is, I know he will be late because I just talked to his wife, who told me so. Illuminating discussions of speech act adverbial clauses in English can be found in Rutherford (1970) and Kac (1972).

4 Borrowed subordinators

In the description of the adverbial clause systems of certain languages, it is quite evident that the majority of subordinators are borrowed. Two striking examples are Yaqui (see Lindenfeld (1973)) and Isthmus Zapotec (Velma Pickett (p.c., and 1960)). It will be recalled that Yaqui is a Uto-Aztecan language spoken in Arizona and Sonora, Mexico, while Isthmus Zapotec is an Otomanguean language spoken in Oaxaca, Mexico. The majority of speakers of both languages are bilingual, and both languages have borrowed a number of subordinating morphemes from Spanish. For example:

Yaqui

kwando	‘when’
si	‘if’
paraka/pake	‘in order to’
porke	‘because’

Isthmus Zapotec

ora	‘when’
dede	‘until’
kada	‘each time’
ante	‘before’
para	‘in order to’
kumu	‘since’
modo	‘the way’
sinuke	‘but rather’
lugar de	‘instead of’
sin	‘without’

While no hard and fast conclusions can be drawn about the nature of subordination or of syntactic borrowing from these two examples, this phenomenon does suggest a basic question which further research might seek to resolve. That question is: why would a language borrow a number of subordinating morphemes from another language?

There are several factors to be considered in attempting to answer this question. One is the sociopolitical fact of language dominance. In the case at hand, we would want to consider to what extent the sheer fact of the dominance of Spanish speakers over Indian populations contributed to the borrowing of these subordinators into Yaqui and Zapotec. We might also hypothesize that influence from the more prestigious language might be greater in the area of complex sentence use, where there is somewhat greater opportunity for planning and exercising options in the presentation of information than in simple sentence use.

A second factor has to do with the semantic structure of the borrowing language itself. In Otomanguan languages less influenced by Spanish, such as Otomi and Trique – as mentioned above in section 1 (see Bartholomew (1973) and Longacre (1966)) – and therefore quite possibly in Zapotec as well, the ‘basic’ clause-connecting strategy is one of juxtaposition, with the semantic relationship between the clauses inferred rather than signalled explicitly. We might hypothesize, then, that when such a language comes into contact with one in which there are a number of clause-connecting morphemes which explicitly signal the relationship between the two clauses, there will be a tendency for a bilingual speaker to transfer the explicit signals into the language which

uses the less explicit strategy whenever a specific message is intended. Such an explanation for the borrowing of subordinating morphemes, though appealing, is less satisfying for Uto-Aztecan: both Yaqui and Luiseño, on which studies of adverbial clauses are available (Lindenfeld (1973) and Davis (1973)), have a fairly rich set of native subordinating morphemes.

Finally, a third factor may be a tendency on the part of bilingual people to create patterns in one of their languages which are structurally parallel to those found in the other. Thus, since, in Spanish, subordinating morphemes occur clause-initially, it would be natural for a Luiseño/Spanish bilingual to use a Spanish subordinator in creating an analogous subordinator-initial adverbial clause in Luiseño. Clearly, much more research needs to be done on the parameters of syntactic borrowing before firm answers to these questions can be provided.

One thing is clear, however. When conjunctions are borrowed from one language into another, it must not be assumed that the borrowed conjunction has exactly the same meaning in the borrowing language as it had in the source language. Semantic shifts characterize borrowing on most levels.

5 Summary and conclusions

In Part I of this chapter on adverbial subordinate clauses, we have shown how they can be distinguished from coordinate clauses and from other types of subordinate clauses, although the distinction is not clearcut in some languages and thus the clauses should be viewed as being on a continuum. We have discussed in detail the twelve types of adverbial subordinate clauses which we have found in surveying a number of unrelated languages, attempting to relate patterns of correlations between form and meaning from one language to another.

In Part II we will look at the function of adverbial clauses in discourse.

PART II ADVERBIAL CLAUSES BEYOND THE SENTENCE

0 Introduction

In chapter 7 of this volume, where he presents various models of sentence structure found around the world, Longacre mentions that, for many languages, sentences can be considered to consist of a *nucleus* with structural units called *sentence margins* draped around the edges. Sentence margins are considered to be functional slots whose fillers are typically adverbial clauses but which may be embedded sentences of complex internal structure. Positing such sentence margins is most useful when we find structures that are maximally detachable

and occur with many different sorts of sentence nuclei – as in English and other Indo-European languages, Philippine languages, and many languages of Mesoamerica. In some parts of the world where head-final chaining languages are found, we find that, although the model is initial link, medial link, and final link, the initial link is very often specialized for functions similar to those of a sentence margin in contemporary European languages. In head-initial chaining languages, however, a sentence margin may occur before the initial clause (for these chaining structures, see Longacre chapter 7, sections 4 and 5, in this volume).

Part of the usefulness of setting up sentence margins is seen on the sentence level itself, i.e., we assume that there are essentially fewer sentence types, because not every margin–nucleus combination constitutes a further sentence type; it simply reflects a further distribution of a given sentence margin. Sentence margins, however, are of much greater usefulness than simply for describing the internal structure of sentences themselves. We hope to show that, as sentence margins, adverbial clauses have considerable relevance to the structure of paragraphs and discourse.

In the typology of adverbial clauses in Part I, we have seen examples of those clauses that occur before the main clause, preposed adverbial clauses, and those after it, postposed adverbial clauses. While head-initial languages (usually with VO order) tend to exploit both positions, some strongly head-final languages only use preposed clauses in keeping with their tendency to end the sentence with the main clause, which is the head of a sentence with more than one clause. In languages of the former type, one wonders if there are functional differences between the two positions. If there are (this is indeed the case as we will see in section 4), we ask another question: what are the functional equivalents of postposed clauses in languages of the head-final type? The preposed clause primarily serves the text-organizing function of linking sentences and paragraphs together, sometimes marking a higher-level boundary. The postposed clause primarily serves a semantic function, similar to coordination, but giving a greater integration with the main clause at the local level. As it is the preposed clause that crucially functions at a level beyond the sentence, the focus in this part will be on those adverbial clauses that are preposed.

Part II consists of the following sections. Section 1 deals with adverbial clauses and discourse movement in general. While section 2 briefly looks at cohesive functions of adverbial clauses between paragraphs, section 3 discusses in depth cohesion within the paragraph, with illustrations of the different types of adverbial clauses described in Part I. Section 4 discusses functional differences between preposed and postposed adverbial clauses, followed by the conclusion in section 5.

1 Adverbial clauses and discourse movement

Adverbial clauses may be used to provide cohesion for an entire discourse by assisting to maintain the discourse perspective and by helping to articulate the sections of the discourse. This discourse-level function of adverbial clauses is more inclusive than the interparagraph and intersentential functions which are described under the next two sections. It is possible, therefore, that a given occurrence of an adverbial clause may be multi-functional.

We will use for illustration a travel book on Mexico (Castillo (1939)). While the material in this discourse is essentially descriptive, it is given in pseudo-procedural form, i.e., the discourse is given as if one were on a guided tour through the regions and towns mentioned. Thus, after a section of the discourse which describes Cuernavaca, a further section begins, *Leaving charming, tourist-ridden Cuernavaca . . .* Here an absolute clause, filling a time margin, serves to connect two sections of the discourse.

The portion of the discourse that we will be looking at in particular has to do with the trip from Cuernavaca to Taxco, including an aside to see the caverns of Cacahuamilpa, and some description of the town of Taxco itself.

By skilful use of adverbial clauses in various functions, the author of this discourse is constantly reminding the reader of the 'you're-on-a-journey' perspective of the entire discourse. Thus, in the middle of the visit to the caverns a paragraph begins, *As you walk through these huge chambers decorated with the great icy-looking columns . . .* This, of course, has the function of binding the paragraph which it introduces to the previous paragraph, which describes stalactites, stalagmites, and columns. It seems, however, that a further overriding function of the adverbial clause just cited is to maintain the discourse perspective.

After the section concerning the caverns, there occurs a paragraph which acts as stage to the section which deals with the trip to Taxco. This stage consists of a one-sentence paragraph which begins, *After seeing this underground fairyland . . .* The balance of the sentence tells us, *you get back into your car again, travel back to the main highway, and start for Taxco, the most picturesque village in central Mexico.* Here the adverbial clause serves to separate the part of the discourse that deals with the caverns from the part of the discourse that deals with the trip to Taxco.

After a paragraph about reaching the town of Taxco itself and one which tries to picture one's initial impression of the town, there's a paragraph which begins, *As your car moves on . . .* This adverbial clause seems again to function in maintaining discourse perspective. A few paragraphs on, a paragraph begins with, *In a few seconds (you reach) . . .* There follows a series of five paragraphs in which reminders of discourse perspective are absent. Then comes a paragraph

which begins, *Wherever you go in Taxco . . .* which is an adverbial clause (locative margin) which again serves to maintain the discourse perspective. The following paragraph continues in the same vein in that it begins, *As you browse about the village . . .* Two paragraphs following, one finds a similar clause which begins a paragraph, *As you prowl up and down the narrow streets . . .*

Thus, we see that what is essentially a descriptive discourse is given a pseudo-procedural perspective and this perspective is maintained through the discourse largely by use of adverbial clauses in the first sentences of various paragraphs. Such clauses also occasionally function to delineate portions of the discourse from each other.

Another device used to maintain discourse perspective in the Mexican travel discourse, in addition to the use of adverbial clauses, is the use of the pronoun *you*. In purely descriptive parts of the discourse both devices are dropped. The overall framework of the discourse can be readily seen in compiling an abstract of the parts which couple the pronoun *you* with various motion verbs, whether in main clauses or in adverbial clauses. I submit the following abstract of this discourse to show the importance of both adverbial clauses and the pronoun *you*:

- (115) *Leaving charming, tourist-ridden Cuernavaca, you continue your journey south-westward . . . Then, after a time, your guide suggests that you leave the main road and go to see the famous caverns of Cacahuamilpa . . . After seeing this underground fairyland, you get into your car again to go back to the main highway, and start for Taxco . . . Now your upward climb grows more exciting . . . Your driver is taking a series of curves . . . Although he sounds his horn at every turn . . . Meanwhile your road winds upward . . . You take another sharp curve or so; and suddenly, you see before you the quaint, picturesque village of Taxco . . . As your car moves on, you see . . . Your driver takes the narrow, rough streets on high as he drives by . . . In a few seconds you reach the level, well-shaded plaza . . . Wherever you go in Taxco . . . As you browse through the village, you will visit a number of shops . . . As you prowl up and down the narrow streets . . . But you will enjoy Taxco most if you will sit under the famous laurel trees . . .*

2 Cohesion between successive paragraphs

By 'paragraph', we mean a coherent stretch of discourse which is usually larger than a sentence and smaller than the whole discourse; the term can be used for

either spoken or written language. A new paragraph typically introduces a new topic.

Now, a further function of adverbial clauses is to provide cohesion between successive paragraphs of a discourse. Notice that this is a more specific relation than that referred to above, where the function of the adverbial clause is to maintain discourse perspective relative to the discourse as a whole. Here the function is narrower, simply that of relating successive paragraphs. A very frequent device used here is what might be referred to as *tail-head linkage*, i.e., something mentioned in the last sentence of the preceding paragraph is referred to by means of back-reference in an adverbial clause in the following paragraph. Thus, one paragraph may end with *So saying, Rutherford gave up the struggle and went home for the night*. The next paragraph can begin, *When he reached his front door . . .*

Since Longacre first noted this in material from the Philippines, we quote here some earlier work (Longacre (1968: vol. I, 8–9) in which tail-head LINKAGE through adverbial clauses and related elements is described. Notice that he posits devices which separate one paragraph from the other. Nevertheless, these devices are accompanied by those which also provide cohesion among the successive paragraphs of the discourse:

The first device (tail-head linkage), with S_n of paragraph_i linking S_1 of paragraph_j, is the same device used for intraparagraph narrative linkage. This device is reported in Atta by Claudia Whittle. The narrative in question recounts in first person a man's story of his wife's death by drowning. In the first main paragraph of the discourse, the story is told of the wife and son getting in the boat, crossing the river, and returning – with the boat overturning in the water. The paragraph concludes with *When the boat had overturned with them, the mother and child were then swimming in the middle of the water*. The next paragraph reintroduces the woman's proper name (not mentioned since the first sentence of the preceding paragraph) and follows with a gerund construction *pakanunnuk* 'swimming' which recapitulates the verb *mannunnunnuk* 'they were swimming' of the concluding sentence of the preceding paragraph: 'Therefore (as far as what Ikenia was doing) (as they swam), the child swimmer was exhausted from carrying his mother.' The new paragraph is clearly distinguished from the former by the portion of the sentence which mentions the proper name Ikenia but is linked to the preceding paragraph by the next portion of the sentence (which repeats the verb 'swim').

Similarly, in Botolan Sambal, Harriet Minot reports the use of tail-head linkage several times in a text about a monkey and a turtle. Thus, one paragraph concludes with 'They both planted.' The next paragraph begins with a particle which often functions as a paragraph marker 'Now', followed by a recapitulatory phrase 'when they had both planted . . .'. Thus, both paragraph boundary and paragraph linkage are secured. In other cases where linkage of this sort is found, paragraph boundary is covert, i.e., the typical slot class structures into which the sentences fall require separate paragraphs.

¶	Sentence	Margin	Nucleus
1	1	Rice farmer	... his work
	4		... go to work
	4		... his work
	5		... he must be tired in what he does
2	6	First thing he does	...
	8		... he scatters <i>his seed</i> ...
3	9	(Time) While his seedlings grow	← ...
4	12	(Condit) If his seedlings have grown	...
	15	... if he's <i>finished planting</i> his paddy	He is happy
5	16	(Concess) But even tho he's <i>finished</i> and has his <i>planting</i> done	← he still has work
	19	... if <i>rice heads</i> are appearing	←
6	20	(Time) When <i>rice heads</i> have become a little yellow	He is happy
	22	... if he tastes the fruit of his tiredness	it can be <i>harvested</i>
7	23	(Condit) if the <i>rice heads</i> are mature	←
8	27	(Time) When the rice is all <i>harvested</i>	← ...
9	32		That is the story of the rice farmer

Figure 5.1 Interparagraph linkage in Botolan Sambal

Similarly, in Ilianen Manobo (Narrative Discourse II, paragraphs 3 and 4) one paragraph ends with '(Ukap) he returned to his mother', and the following paragraph contains the recapitulation 'When the mother of Ukap saw that her child had returned home ...' Nevertheless, a paragraph boundary is signalled by the particle complex *hune ve su* 'and then ended' which precedes the recapitulatory stretch and which, according to Hazel Wrigglesworth, 'marks progress from episode to episode'.

Very similar to tail-head linkage is *summary-head linkage*, i.e., the first sentence of a successive paragraph has a clause which summarizes the preceding paragraph. Thus, we may have a paragraph involving description of a variety of activities. The next paragraph may begin, *When he had done all this*, or something to that effect.

Tail-head linkage and summary-head linkage are characteristic not only of narrative (i.e., telling a story), but also of procedural discourse (i.e., telling how something is done). In figure 5.1, we adapt from earlier materials (Longacre (1968, vol. I: 25) a diagram which shows graphically the use of time, conditional and concessive clauses in interparagraph linkage in a procedural text from Botolan Sambal, spoken in the Philippines (¶=Paragraph).

The material in the margin column, which can be seen as the 'ground' against which to view the nucleus, or 'figure', is typically old information, i.e., what is given, while the material in the nucleus column is the new event or state which ensues.

Not all sentences of the component paragraphs are given, but only the first and the last, which are relevant to the linking mechanism. New paragraphs begin with sentences 6, 9, 12, 16, 20, 23, 27, and 32. In some cases in the diagram the linkage is a further type of linkage, head-head; thus, sentence 20 seems to relate to sentence 23 and both are related by virtue of initial adverbial clauses.

3 Cohesion within the paragraph

Maintaining the cohesion within the paragraph by means of adverbial clauses and similar elements is so important that we are convinced that a theory of paragraph cohesion could be centred around such phenomena. We state here in germ such a theory and then proceed in the balance of this chapter to talk more particularly of intraparagraph connections via adverbial clauses.

(a) Thesis

Lexical overlap is the primary mode of intersentential connection, i.e., a sentence_j may include in it part of sentence_i or a paraphrase of all or part of sentence_i.

This overlap may be via a sentence margin filled by an adverbial clause. Typical introducers of such clauses are the elements *when, while, after, although, because, in that, since, in order to, if, even if*. A sentence margin (especially a time margin) may, however, be filled by a noun phrase or a time phrase of some sort.⁵

(b) Corollary 1

In some parts of the world verbs of highly generic meaning such as 'do' and 'be' (and sometimes 'say') are used as back-reference via adverbial clauses in a highly stylized and reduced manner so that they become in effect conjunctive elements. This is seen in Cayapa, Paez, Guanano, Inga (all in South America), and to some degree in Kosena, a language of New Guinea. See section 3.4 below.

⁵ Overlap linkage may also be via a part of the sentence nucleus itself. Thus, the first part of a coordinate sentence may repeat or allude to part of a previous sentence, as in the following example:

- (a) With Eugene the first sign of trouble is usually smouldering resentment. He cherishes some real or imaginary hurt for several days, and then . . .

Likewise, the first base of an antithetical sentence may embody a back-reference to the preceding sentence:

- (b) Johnnie has made some progress in social relations recently. He apparently is adjusting somewhat better to his peer group, but . . .

The second base of a reason sentence (i.e., the part of the sentence introduced by *for*) may have a similar function:

- (c) Mac was tired, bone tired from the experiences of the past 48 hours. He slept the clock around for he was completely exhausted.

(c) Corollary 2

Instead of a sentence margin or a conjunctive element as described above in (a) and (b), a language may use a true conjunction (i.e., a particle without verbal or nominal structure). See section 3.5 below.

(d) Corollary 3

A conjunction may be an affix. We will not feature this corollary in the present chapter but will confine ourselves to (a–b) as outlined above.

3.1 *Linkage via adverbial clauses in sentence margins*3.1.1 *Adverbial clauses in prior-time margins*

This is the standard linkage in narrative and procedural paragraphs in a typical Philippine language. The units so linked are sentences or embedded paragraphs. Instances involving the latter are a more complex variation of relatively simpler structures, of the sort illustrated here in which each successive sequential thesis (ST) of the paragraph is a separate sentence which carries forward the event line. In such simpler structures, sentence_j has an initial time clause or a time phrase that is a back-reference to sentence_i – much as described as tail–head linkage in section 2 above. Note the schema presented in figure 5.2, where A, B, C, and D represent successive events (or event complexes). Such a structure could be either narrative or procedural and might better be termed somewhat more neutrally ‘sequence paragraph’ (see Longacre (1996:ch.4) for paragraph analysis). The form of the back-reference or recapitulation differs considerably from language to language.⁶ The commonest form is a nominalized construction (a non-focus verb). Back-reference may, however, be via an adverbial clause (much as in English) with an introducer meaning something of the order of ‘when’ or ‘after’. In some Manobo dialects a special tense form (irrealis or dependent tense) characterizes clauses in this function (Longacre (1968: vol. 1, 61)). Finally, all the Philippine languages contain certain conjunctions or conjunctive complexes that supply narrative movement and, in effect, are substitutes for the occurrence of a back-reference margin.

It is also important to note the relations which occur between the element in the preceding sentence and the back-reference in the following sentence. We may have simple repetition or paraphrase (often contracted) of the element of the preceding sentence. Thus, a preceding sentence can have a clause, ‘and he chopped down five trees’. The next sentence may begin with a back-reference, ‘After chopping (them) . . .’ On the other hand, the relation may be one of ‘reciprocal coupling’. Thus, the preceding sentence may be, ‘They

⁶ In previous work (Longacre (1968:vol. 1, 56–63)), Longacre has summarized some of the variety of grammatical linkage found in Philippine languages – devices which embody sequential back-reference of this sort.

Margin	Nucleus	
	he A'd	ST ₁
having A'd when he had A'd after A-ing	he B'd	ST ₂
having B'd etc.	he C'd	ST ₃
having C'd etc.	he D'd	ST _n

Figure 5.2 Linkage via preposed temporal elements in sequence paragraphs

said, “Why not let us be the ones to build it?”” And the following sentence may begin, ‘When they heard this . . .’ Just as frequently, a back-reference may proceed along an expectancy chain and encode ‘script-predictable’ information so that the action which is referred to in a back-reference is really an action which would naturally succeed the action which is referred to in the preceding sentence. Thus, the preceding sentence might have, ‘They killed a wild pig, cut it up, and cooked it’, and the next sentence could begin, ‘After eating it . . .’

Back-reference of this sort is endemic for many Philippine languages. Thus, the following short paragraph from Itneg (Walton, in Longacre (1972)) shows a regularity which would be difficult to duplicate in English, and, if duplicated, would probably be considered to be stylistically ineffective (this paragraph and some others below are shown without diagrammatic representation in the interest of space-saving).

(116) Sequence linkage in an Itneg paragraph

- a. He went. (ST₁)
- b. *When he arrived in the forest*, he chopped the trees. (ST₂)
- c. *When he had chopped them*, he shaped them. (ST₃)
- d. *When he had shaped them*, he went home again. (ST₄)

Such regularity of back-reference is also characteristic of many structures in New Guinea. It is, of course, more characteristic of the oral style than of the written style. In the written style there is sometimes a certain reluctance to write in back-reference with this frequency, a reluctance especially observable in the new literates. Nevertheless, once literacy and writing are firmly established in a community, people frequently return to the resources of the oral language to enrich the written style. Consequently, we suspect that extensive back-reference

Margin	Nucleus	
	It was a good cake, and no one had any fault that it was no bigger than was needed.	Setting
When it was all cut up	there was a large slice for each of the children, but nothing left over: no coming again.	ST ₁
	<i>The slices soon disappeared, and every now and then a trinket or a coin was discovered.</i>	ST ₂ : Paraphrase ¶ Thesis
	Some found one, and some found two, and several found none; for that is the way luck goes, whether there is a doll with a wand on the cake or not.	Paraphrase
<i>But when the cake was all eaten</i>	there was no sign of any magic star.	ST _n

Figure 5.3 Sequence linkage in an English paragraph (with ST₂ expounded by an embedded paraphrase paragraph)

will probably not be confined to oral style, but also, in at least some languages, will characterize written literature as well.

English, which has a wealth of conjunctions, does not use back-reference nearly as often as do the languages of the Philippines and New Guinea. Nevertheless, examples of the sort illustrated in figure 5.3 (Tolkien (1969:20)) can be found and appear to be stylistically effective. The first sentence functions as setting to the entire paragraph, introducing the cake and giving some idea of its adequacy. The first sequential thesis (ST₁) reported in sentence two simply tells us that the cake is cut up and passed out among the children. The third sentence (which initiates a short embedded paragraph which here fills the slot of the second sequential thesis) is a coordinate sentence, the first conjunct of which is, *The slices soon disappeared*. The fourth sentence, as the second sentence of an embedded paragraph, simply expands on the material found in the former sentence. In this sentence the event line of the paragraph does not move forward. The final sentence of the paragraph, however, tells us of the outcome of it all and, therefore, can be regarded as the final and climactic outcome of the whole paragraph (ST_n). It begins with *But when the cake was all eaten*, which seems to be clearly a paraphrase of *The slices soon disappeared*. As such, this back-reference binds the end of the paragraph to the preceding material.

Another such example from English is from the travelogue discourse which we referred to earlier (Castillo (1939)). There is a paragraph which begins, *Even more interesting is the guide's story of the Empress Carlota's visit to Cacahuamilpa*. The next sentence states: *When she visited the caves in 1866, she wrote on one of the walls 'Maria Calota reached this far.'* The clause at the onset of the second sentence is a recapitulation and back-reference to material in the previous sentence.

3.1.2 Adverbial clauses in concurrent-time margins

A rather clear example of this device is again from our Mexican travelogue discourse (Castillo (1939)). The entire paragraph from which this example is taken consists of four sentences, the first of which is:

- (117) *As you prowl up and down the narrow streets, you must not fail to see the public washing basin, which looks more like a small outdoor swimming pool than anything else.*

This introduces the topic of the paragraph, namely *the public washing basin*. The paragraph likewise ends with an element which refers back again to the topic: *Even though you cannot understand a word that is said, you will find the public washing place a fascinating spot*. In between occur two sentences which apparently express simultaneous actions:

- (118) *Here the women and girls of the village come to wash their family clothing on the concrete washboards built along the basin's four sides. As they dip the water from the basin in their colorfully painted gourd bowls, these native housewives chatter among themselves combining their gossip with their work.*

The initial adverbial clause in the second sentence is a back-reference to the preceding sentence. While the first sentence simply refers to washing the family clothing on the washboards, the adverbial clause in the second sentence refers to an inevitable concomitant activity of that process, namely dipping the water from the basin and pouring it over the clothes. Therefore, the first sentence and its recapitulatory back-reference in the adverbial clause of the second sentence constitute a generic-specific paraphrase, i.e., the whole process of washing clothes is referred to in the first sentence and part of the process is referred to in the recapitulation of the second sentence. The recapitulation serves to tell us (by use of the subordinator *as*) that the activity of the first sentence is to be construed as simultaneous with the activity reported in the balance of the second sentence, namely, *these native housewives chatter among themselves*. Lest we fail to get the point, the rest of the second sentence says, *combining their gossip with their work*.

The above example encodes the notion of coterminous overlap. The situation is somewhat different when an adverbial clause and the balance of the sentence encode span–event overlap, i.e., a span of activity during which an event takes place. Note the example from Tboly (Doris Porter, in Longacre (1968:vol. 1, 59)):

- (119) Span–event overlap in Tboly
- a. *When it was almost the middle of the morning* then I returned and stopped by to eat some young coconut on the path. (ST₁)
 - b. *While (igò) I was still eating the young coconut*, I just saw Awey coming from downstream carrying a small bag over his shoulder. (ST₂)

In span–event overlap as illustrated in (119), the events reported in the sentence nuclei are really successive, i.e., we are told that, presumably after the ‘stopping’ stated in the first sentence, a further event occurs: ‘I just saw Awey coming from downstream . . .’ We are given, however, the additional information, in the adverbial clause at the onset of the second sentence, that the speaker was still eating the coconut when he saw someone coming.

3.1.3 *Adverbial clauses in reason margins*

Within a single sentence a reason margin may express efficient cause relative to a result which is expressed in the nucleus of the sentence. Thus, in the sentence *I went downtown because I was bored*, the reason margin *because I was bored* expresses efficient cause relative to the nucleus *I went downtown*. If we have a two-sentence sequence in which the reason margin is paraphrased or is a paraphrase of one of the sentence nuclei, then there is an extrapolation of this relationship to the paragraph level. Thus, we may take the above sentence and add a further sentence which paraphrases the reason margin of the former: *I went downtown because I was bored. I just couldn’t stand being around them anymore*. The reason–result relationship is now spread over the two sentences.

The structural possibilities include at this point, however, not one but two paragraphs, the first of which expresses reason in its second sentence and the second of which expresses result in its second sentence. The two paragraphs can be called reason and result paragraphs respectively. Figure 5.4 summarizes these structures (the linear order of margins and nucleus is irrelevant).

The two structures schematically sketched are extremely common in Philippine languages. We will illustrate both of these in this section. Note in (120) the example of a reason paragraph from Dibabawon (Janette Forster, in Longacre (1968:vol. 1, 76)) where the reason margin appears after the nucleus:

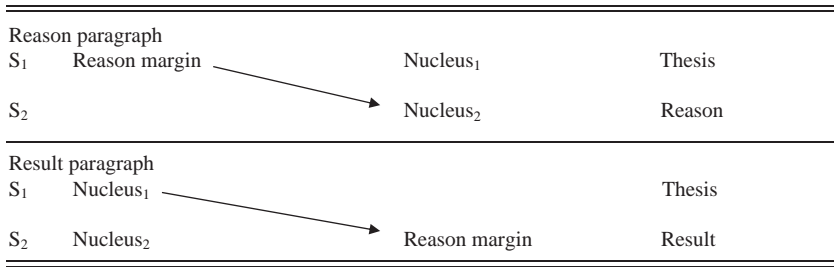


Figure 4.4 Reason and result paragraphs

- (120) A reason paragraph in Dibabawon
- a. But it was the same as if he had recovered from his illness
because he became famous by riding in an airplane. (Thesis)
 - b. There is no other old man who has ridden in an airplane; he's the only one. (Reason)

Note that in the above example the reason margin of the first sentence is paraphrased as the nucleus of the second sentence, i.e., 'he became famous by riding in an airplane' is explained in more detail: 'There is no other old man who has ridden in an airplane; he's the only one.' Thus, while we might argue that we are told everything in the first sentence itself, the paraphrase of the reason margin in the second sentence serves to spread the relation over both sentences and thus results in an extrapolation of the result–reason relationship to the paragraph level.

That such examples are not limited to the Philippines, but occur in English, is readily deducible, not only from the fact that the translations of these paragraphs make good English, but also from examples readily documentable in English itself. The rather long and complex example in figure 5.5 is from a medical writer (Garn (1961)). Here the first sentence begins with a reason margin, *Since races are natural units reproductively isolated from each other and with separate evolutionary histories through time.* This is paraphrased in the initial absolute clause of the second sentence, *Considering the unique history behind each race, and the geographical and ecological uniqueness of its successive homelands.* All this is summed up rather skilfully in the nucleus of the third sentence – especially in the last part of that sentence, *each race represents a cumulative succession of accidents that could never be duplicated in millions of years.* Here *isolated* and *separate* in the first sentence, *uniqueness* in the second sentence, and *could never be duplicated in millions of years* in the third sentence all continue the same lexical chain. The first two sentences constitute an embedded paragraph, not only by virtue of the paraphrase relationship between their reason margins, but also by virtue of the paraphrase found in the nuclei themselves.

Margin	Nucleus	
Since races are natural units reproductively isolated from each other and with separate evolutionary histories through time,	it is not surprising that they differ from each other in a great many gene-determined respects.	Thesis: Paraphrase ¶ Thesis
↓	↓	
Considering the unique history behind each race, and the geographical and ecological uniqueness of its successive homelands,	lack of differentiation would be remarkable indeed.	Paraphrase
↘	↘	
	Particularly in the random loss or chance acquisition of genes each race represents a cumulative succession of accidents that could never be duplicated in millions of years.	Reason

Figure 4.5 Paraphrase of the reason margin with *since* in the third sentence

Thus, we are told that *it is not surprising that they differ* in the first sentence, and in the second sentence that *lack of differentiation would be remarkable indeed*. This is a negated antonym paraphrase, i.e., *it is not surprising that they differ* is paraphrased by a stretch which in effect means ‘It would be surprising if they didn’t differ’. Therefore, the first slot of this paragraph is filled by an embedded paraphrase paragraph. The marginal elements in the two sentences of this embedded paragraph are paraphrased and developed yet again in the nucleus of the third sentence. The third sentence fills a reason slot in respect to the two preceding sentences.

We have been looking at situations in which a reason margin in the first sentence in a paragraph is paraphrased as the nucleus of the second sentence. We can also have the opposite situation in which the nucleus of a *first* sentence is paraphrased in a reason margin of a *following* sentence. (Again questions of relative order of margin and nucleus within a sentence are not relevant here.) This is what we are calling a result paragraph in figure 5.4.

We begin again with a Philippine example since structures of this sort are especially common in that part of the world. The following example is also from Dibabawon (Forster, in Longacre (1968:vol. 1, 121)):

- (121) Nucleus of a first sentence paraphrased in a reason margin of a second sentence in Dibabawon
- a. Wow, what a beautiful place that is at Nasuli. (Thesis)
 - b. No wonder they chose to live there *because it is really a beautiful place there at Nasuli*. (Result)

Here the nucleus of the first sentence ‘Wow, what a beautiful place that is at Nasuli’ is closely paraphrased in the reason margin of the second sentence ‘because it is really a beautiful place there at Nasuli’. Again we can note that the second sentence is a fairly self-contained unit and that the addition of the preceding sentence is what extrapolates the reason–result relationship from the sentence level to the paragraph level.

For an English example of this we turn to the writings of the Christian apologist Schaeffer (1969:120).

- (122) An English example of a reason margin that paraphrases a preceding sentence in a result paragraph
- a. They are my kind; they are my people; they are not something else; they’re that which I am. (Thesis)
 - b. I can really understand them *because I am who they are*. (Result)

Here the reason margin, *because I am who they are*, is a succinct contraction paraphrase of the nucleus of the preceding sentence.

For an example of a reason clause with the subordinator *since* in the same function, we turn again to the medical writer (Garn (1961)) quoted above.

- (123) A *since* clause paraphrasing a preceding sentence with the addition of some new information⁷
- a. In the female the homozygote develops early Kuru whereas the heterozygote develops late Kuru.
 - b. Among the males the homozygotes die of early Kuru while the heterozygotes survive as do homozygous normals.
 - c. *Since most of the heterozygous females live through the reproductive period and even those homozygous for Kuru (married early in life) manage to have children*, the continuation of the abnormal Kuru gene is therefore assured.

Note that in this example we have a coordinate paragraph which compares female and male as to Kuru genes. Then in the third sentence (which expresses result), the reference is to the first sentence, ignoring the data presented in the second sentence which is largely irrelevant. Again the *since* clause is a paraphrase and elaboration of material found in the nucleus of the first sentence.

3.1.4 Adverbial clauses in conditional margins

There are several functions that ‘if’ clauses perform in paragraph structure. To begin with, ‘if’ clauses figure in a paragraph structure that is essentially a two-sentence or more enlargement of a conditional sentence, so that we have in effect a conditional paragraph. These clauses may also figure in successive

⁷ See Longacre (1996:ch.3), in which he suggests seven varieties of paraphrase, one of which, amplification paraphrase, adds new information while repeating information already given.

Margin	Nucleus	
	Carleton Gajdusek, the outstanding American authority on Kuru, observes that 'leprosy and yaws are less frequent here (in the Fore) than in many surrounding populaces who do not suffer from Kuru'.	Protasis
Obviously, if the Kuru gene protects against either disease,	it could counteract the loss of genes due to Kuru.	Apodosis

Figure 4.6 The enlargement of a conditional sentence into a conditional paragraph

sentences in stating alternatives, i.e., in a binary alternative paragraph. Finally, 'if' clauses may function in what may be called a counterfactual paragraph structure.

Thus, to return to the medical writer quoted above, we find the paragraph in figure 5.6 which illustrates the first function of 'if' clauses, i.e., enlargement of a conditional sentence into a conditional paragraph. Note that in this example the first sentence broaches the possibility of some connection between the low incidence of leprosy and yaws and the incidence of Kuru. The 'if' clause of the second sentence makes this connection a bit more explicit by suggesting that maybe the Kuru gene actually protects against one of the diseases. This is in keeping with the theory of paraphrase assumed here, namely, that paraphrase is not an exact semantic reproduction of the original material, but may involve loss or gain of information. Note that, in this two-sentence paragraph structure, a lot of the background for the 'if' condition within the conditional sentence proper is given in the previous sentence and, therefore, is not repeated in the 'if' clause of the conditional sentence. Again, we conclude that the two-sentence sequence is essentially an extrapolation from the second sentence by the addition of a former sentence that gives extra background and explanation.

We can think of more colloquial, everyday examples which are parallel to the above, such as the following:

- (124) I'm wondering if you would be interested in coming to my house for supper Thursday night along with three students from the National University. *If you are*, please let me know.

'If' clauses may also be used to express alternatives on the paragraph level. The Tbody paragraph in figure 5.7 (Doris Porter, in Longacre (1968:vol. 1, 97)) is an apt illustration. In this example, the 'if' clauses in the margins express,

Margin	Nucleus	
	A well-loved person they put in a coffin so that his relatives can visit him.	Thesis
If they make it long	the coffin stays in the house for 29 days.	Alternative step 1
If they make it short	it is only seven so that those who loved him can visit him.	Alternative step 2

Figure 4.7 ‘If’ clauses expressing alternatives on the paragraph level

along with the following nuclei, alternatives relative to the topic ‘viewing the dead in a coffin’ that is expressed in the first sentence.

Such examples are not at all difficult to multiply for English, as in the following:

- (125) a. *If you want to eat downtown*, I’ll meet you at Perkins Restaurant at 5.00.
 b. *If you want to eat at home as usual*, then we’d better delay supper until 6.30.

Still another use of ‘if’ clauses on the paragraph level is to encode some kind of counter-consideration. The example from Atta Negrito in (126) (Claudia Whittle, in Longacre (1968:vol. 1, 120)) is apt:

- (126) A counterfactual ‘if’ clause
 a. Domi, the nephew of Uncle Inggie, he also came to visit. (Thesis)
 b. *If Domi hadn’t (come)*, they wouldn’t have known about the coming serenade. (Counter-consideration)

This paragraph in some ways appears to be an extrapolation of a counterfactual sentence on the paragraph level. In the first sentence the information is given that Domi came to visit. This is put counterfactually in the second sentence, ‘If Domi hadn’t come’, with the consequence stated ‘they wouldn’t have known about the coming serenade’. It is evident that ‘if’ clauses are rather versatile in their functions on the paragraph level in many languages.

3.1.5 Adverbial clauses in purpose margins

Adverbial clauses with *in order to* (or its equivalent *lest* in a negative clause) in a purpose margin may occur in sentence; and be paraphrased in the nucleus of sentence; thus providing a further variant of the thesis–reason structure which is illustrated above in respect to other sorts of sentence margins (see Thompson (1985) and Hwang (1995) for further discussions on purpose clauses in

English and Korean respectively). This presents another instance of a reason paragraph of the sort shown in figure 5.4. The following example from Schaeffer (1968:129) is illustrative.

- (127) Thesis–reason structure in a hortatory discourse
- a. It is unpleasant to be submerged by an avalanche, but we must allow the person to undergo this experience *in order that he realize that his system has no answer to the crucial questions of life.* (Thesis)
 - b. He must come to know that his roof is a false protection from the storm of what is, and then we can talk to him of the storm of the Judgement of God. (Reason)

In this example the purpose margin is quite carefully paraphrased in the first base of the second sentence. Thus, we have in the purpose margin *that he realize* which is parallel to *He must come to know*. We have also the stretch *that his system has no answer* which is parallel to *that his roof is a false protection*, and finally the stretch *to the crucial questions of life* which is parallel to *from the storm of what is*. The coordinate sentence, which is the second sentence of this paragraph, goes on to add a further clause which brings in new material. This is a typical function of coordinate sentences, i.e., to attach an additional but parallel element to some systematic paraphrase which occurs in the regular development of a paragraph.

3.1.6 Adverbial clauses in concessive margins

The role of *although/though* clauses in paragraph structure is not clear at the present time. Two examples, however, in our present data have to do with incidental back-reference in the course of bringing paragraphs to a close. Perhaps some sort of summary or outcome is expressed. Perhaps all that is intended is a reiteration of the main topic of the paragraph.

Note the following example (again from the medical text by Garn (1961)):

- (128)
- a. Mediterranean Fever is a ‘periodic’ disease.
 - b. Once the symptoms, the fever and malaise, have begun, they recur sporadically and unpredictably during the individual’s lifetime.
 - c. At the least there is fever, lasting a day or two, joint pains, and chest and abdominal pain.
 - d. In advanced cases, there is a joint involvement, decalcification of the bone and kidney insufficiency.
 - e. *Though most of the affected individuals are not permanently or seriously disabled*, about 10% of cases studied to date succumbed to renal complications.

It appears in the above paragraph that the purpose of the first sentence is to introduce the topic *Mediterranean Fever*. The next sentence sounds somewhat like a fresh beginning in that the words *Once the symptoms, the fever and malaise, have begun* begin that sentence. Sentences (c–d) express the course of the disease from light to heavy cases. Sentence (e) begins with the adverbial clause *Though most of the affected individuals are not permanently or seriously disabled*. This sentence seems to hark back two sentences to the sentence which says *At the least there is fever, lasting a day or two, joint pains, and chest and abdominal pain*. The remaining part of the last sentence of the paragraph, i.e., *about 10% of the cases studied to date succumbed to renal complications*, seems to take off from the preceding sentence, i.e., *In advanced cases, there is a joint involvement, decalcification of the bone and kidney insufficiency*. It appears, therefore, that this last sentence is some sort of summary which expresses the possible outcomes of the disease.

We now cite here the whole paragraph from the Mexican travelogue discourse which is cited partially in section 3.1.2 of this part.

- (129) *As you prowl up and down the narrow streets, you must not fail to see the public washing basin, which looks more like a small outdoor swimming pool than anything else. Here the women and girls of the village come to wash their family clothing on the concrete washboards built along the basin's four sides. As they dip the water from the basin in their colorfully painted gourd bowls, these native housewives chatter among themselves combining their gossip with their work. Even though you cannot understand a word that is said, you will find the public washing place a fascinating spot.*

It is evident that the last sentence is a reiteration of the topic which is stated in the first sentence as the *public washing basin*, referred to briefly as *basin* in the next two sentences and now referred to as the *public washing place*. Also note that the word *you* occurs in the first and in the last sentence of this paragraph, but does not occur in the two intervening sentences. There is a return in the last sentence to the viewpoint of the reader as observer. It is, then, not unexpected that this last sentence begins with the adverbial clause, *Even though you cannot understand a word that is said*. This clause obviously refers back to the previous sentence, *these native housewives chatter among themselves combining their gossip with their work*. Apparently we have here an incidental reminder that the housewives are talking in a foreign language and the tourist (whose viewpoint is adopted here) cannot expect to understand them. In spite of the handicap, he will still find the public washing place a fascinating spot.

3.2 *Balanced or parallel clauses in successive sentences*

When clauses in prior-time margins may be balanced in successive sentences to make a contrast paragraph. In the medical text from which we have been quoting, the author quotes from someone else as follows (Garn 1961):

- (130) To quote Beutlar, Robson, and Bittenweiser, 57: ‘*When Primaquine was administered to non-sensitive subjects* there was no change in their red cell GSH (reduced glutathione) level. *When Primaquine was administered to a sensitive subject*, there was an abrupt fall in the GSH content of the red blood cell to about one half of the original already abnormal value.’

The two sentences within this quotation clearly contrast with each other. An initial *but* or *however* (the overt sign of a contrast paragraph) would clearly fit in the second sentence. In the parallel *when* clauses, the administration of Primaquine to *non-sensitive subjects* is balanced over against its administration to *sensitive subjects*. In the accompanying nuclei of the sentences, *no change* in the GSH content of red blood cells is balanced against *an abrupt fall* in the GSH content. This is the two-pronged contrast that is typical of many ‘but’ structures in various parts of the world (cf. Longacre (1996:ch.3)).

In the Mexican travelogue text there is a paragraph, the first two sentences of which begin with concessive margins. Presumably, the occurrence of the concessive margins – initial in both sentences – and the similarity in content of the nuclei of the two sentences, as well, establish these two sentences as items in a coordinate paragraph. There are no elements of contrast as in the above example. Rather, the first and second sentences simply assert that the caverns are believed to be as marvellous as Carlsbad Caverns, and that they are very large. What is germane to our present discussion, however, is the role of the proposed concessive clauses in establishing this balancing and coordination:

- (131) a. *Although these caves have not yet been properly explored*, many people believe that they are as marvelous as our own Carlsbad Caverns in the State of New Mexico.
 b. *Even though nobody can be sure of their size and quality*, it is known that they are large, for they have been found to connect with another system of caves nearly twenty miles away.
 c. They are the largest known caverns in all Mexico.

3.3 *Adverbial clauses for local background*

It needs to be emphasized that all the above constructions involving adverbial clauses in intraparagraph cohesion involve some sort of paraphrase relation of

the adverbial clause with something else in the paragraph, i.e., they involve lexical overlap. Otherwise, an adverbial clause simply contributes local background to the sentence in which it occurs. In all the texts which we have been drawing examples from, there are numerous examples of adverbial clauses in such localized intrasentential function which have no relevance to any information outside the sentence itself. Thus, we have, for example, adverbial clauses which function as asides to the reader, those similar to ‘speech act’ adverbial clauses discussed in Part I, section 3. In the medical text just cited, the writer says in one place: *As the reader of this book undoubtedly knows*. Similar to these asides are bibliographical references such as: *As X (date) has shown* or *As X and Y (date) have observed*. It is hardly necessary to multiply examples on this point. We content ourselves with the following paragraph in the Mexican travelogue text:

- (132)
- a. It was Cortes who discovered the silver and started the mines going which made this village thrive and still keep it going.
 - b. *While prospecting for tin and copper to use in making cannon*, he made his rich discovery.
 - c. Later, *when he thought that the King of Spain might come to visit him in Mexico*, Cortes had a tunnel built through one of his mines near the plaza of the village *so that the king might see for himself how rich the region was*.
 - d. *So that his visitor might be comfortable during his trip through the mines*, Cortes had the tunnel made deep enough for a man to ride through it on horseback!

Notice that sentence (b) begins with an adverbial clause (in concurrent-time margin), *While prospecting for tin and copper to use in making cannon*. The rest of the sentence, i.e., *he made his rich discovery*, is a paraphrase of the first part of sentence (a). The initial adverbial clause of sentence (b) is, however, paraphrased nowhere in the paragraph; it brings in new and relevant information but serves no cohesive function. Notice also that sentence (c) has a preposed *when* clause in prior-time margin and has a postposed *so that* clause in the purpose margin. Both of these items have information of relevance mainly to the sentence itself. Likewise, the last sentence of the paragraph begins with a purpose clause *So that his visitor might be comfortable during his trip through the mines*. There is no other reference anywhere in the preceding sentences to Cortes’s concern for the comfort of this royal visitor. Presumably, then, this purpose clause also is of relevance mainly to the sentence in which it occurs – although the last two sentences are united by references to the expected visit of the king of Spain.

3.4 *Lexical overlap as conjunctival element with generic verb*

We have tried in the above section to establish the thesis that lexical overlap is the primary mode of intersentential connection. A corollary of that thesis is that a lexical overlap – especially when it is a back-reference – can become stylized and reduced until it becomes similar to a conjunction. Thus, instead of the specific repetition of a verb in back-reference, the subsequent allusion may be by virtue of a verb of highly generic meaning such as ‘do’, ‘be’, or ‘say’. In the parts of South America where this stylized conjunctival back-reference is encountered, the verb is often combined with a demonstrative stem. The verb is either uninflected or minimally inflected, resulting in what has sometimes been called a mini-clause.

Thus, in Cayapa (Wiebe (1977)) narrative, forms consisting of a demonstrative plus ‘be’ plus a few inflectional elements form the most common conjunctival element: *Tsej-tu* (with *tu* indicating same subject in the verb of the preceding sentence as in the verb to follow in the sentence being introduced); *Tsen-nu* (with different subject indicated); *Tsen-nu-ren* (with *-ren* indicating that the main verb of the sentence will be an important event); and *Tsen-bala-n* (with *bala* ‘when’ and *-n* indicating role reversal or frustration). All these forms sum up a previous sentence ‘So being then . . .’ but contribute bits of information such as might be found in any dependent Cayapa verb. Often they are best translated simply as ‘and then’.

Cayapa also uses forms of demonstrative plus ‘do’ as in *Tsangue’* (with *-’* marking same subject), ‘having done this’, or again simply ‘and then’, or ‘next’; and forms of demonstrative plus ‘say’ as in *Tsandi’* (with *-’*) meaning ‘on so saying, then’.

The situation is not greatly different in several other Chibchan languages (Paez, Guambiano, and Colorado), as well as in Tucanoan languages, where the ‘mini-clause’ is the commonest conjunctival element. As such, in its various forms, the mini-clause is a reduction and stylization of the adverbial clause.

3.5 *Lexical overlap as conjunction (particle)*

As a second corollary of the main thesis discussed above, it remains to note that initial back-references to a preceding sentence, or a stylized and reduced reference, can be substituted for (in many languages) by a true conjunction, i.e., an element that is a particle or a particle complex.

Then picture a sentence such as *Tom mowed the grass* followed by another sentence *He put the lawnmower away*. The second sentence could begin with an explicit back-reference *After mowing the grass, he . . .* or with a stylized back-reference (much like Cayapa) *After doing that, he . . .* or simply with *Then he . . .* On this basis it could be argued that adverbial clauses exemplify the basic

mood of intersentential cohesion, while such a reference can become stylized and conjunctive (as in Cayapa), or be simply substituted by a conjunction.

This is true of other types of back-reference in English as well. Thus, consider the following two pairs of sentences:

- (133) a. He's sick. *Since he's sick*, I won't bother him
 b. He's sick. *Therefore/so*, I won't bother him
- (134) a. He's sick. *Even though he's sick*, I've got to see him about this matter
 b. He's sick. *Nevertheless*, I've got to see him about this matter

In (133b) above, the back-reference *since he's sick* is substituted by *therefore* or *so*. Similarly, in (134b) the back-reference *even though he's sick* is substituted by *nevertheless*.

However, it was not from a consideration of English but from a germinal comment of Maryott's (1967) regarding Sangir (a Philippine language of Indonesia) that it first became clear that many if not all intersentential conjunctions could be considered to be substitutes for adverbial clauses in the same function. For example, Maryott posited three temporal margins: a prior-time margin with a conjunction meaning 'after', a concurrent-time margin with a conjunction meaning 'while', and a subsequent-time margin with a conjunction meaning 'until'. He then went on to observe that the Sangir conjunction *tangu* 'then' could substitute for any of the temporal margins. He also posited three margins in logical function: a cause margin with adverbial introducer 'because', a concurrent logical margin with an introducer meaning 'since', and a result margin with an introducer which means 'with the result that'. He then suggested that any of these margins can be substituted simply by the word *diadi* meaning 'therefore'.

3.6 Adverbial clauses as topics

At the level of the individual sentence, we can say that an adverbial clause whose role is to maintain cohesion within the discourse as a whole is functioning as a *topic* with respect to the sentence to which it is attached.⁸ Let us look briefly at some of the grammatical ramifications of the topicality of adverbial clauses which are serving this linkage function.

Some of the general characteristics of topics are: (a) they appear in sentence-initial position, (b) they are discourse dependent, (c) they need not be arguments of the main predication, (d) they are definite, and (e) they set a 'spatial,

⁸ This discussion owes much to input from Russell Schuh, Velma Pickett, Robert Hetzron, Lynell Marchese, and John Haiman. See also Marchese (1977, 1987) and Haiman (1978).

- (137) a. A: Is he coming?
 B: (Yes)
 A: Well, then, I'll stay
- b. A: You know Ahmed?
 B: (Yes)
 A: Well, he's very busy

(For further discussion, see Haiman (1978); Keenan and Schieffelin (1976a, 1976b); Li and Thompson (1976b); and Marchese (1987).)

But conditionals are not the only adverbial clauses which may be marked as topics: in many languages, a variety of clause types may be so marked.

Chao (1968:81, 113) points out that clauses of concession, reason, time, and condition may all occur with the four topic/interrogative particles in Chinese. Here is just one example, showing a concessive clause, a question, and a topic sentence with the final particle *a*:

- (138) a. *Concessive*
 Suiran wo xiang qu *a*, keshi ni bu rang wo
 although I want go but you NEG allow I
 'Although I want to go, you won't let me'
- b. *Interrogative*
 Ta shi nali-de ren *a*?
 he is where-GEN person
 'Where is he from?'
- c. *Topic*
 Zheige ren *a*, ta yiding shi yige hao ren
 this person he certainly is a good person
 'This person, he must be a good person'

In Godié, the Kru language of the Ivory Coast which we looked at earlier, the 'non-final' morpheme *nΛ* occurs at the ends of adverbial clauses functioning as topics (Marchese (1977, 1987)):

- (139) $\bar{\lambda}$ tΛ nɔ̄ kaa nɯ $\bar{\lambda}$ yi ɔ̄ 'ni
 I look.for(COMPL) him long.time and I POT him see
 $\bar{\lambda}$ ni ɔ̄ nΛ nɯ ɔ̄ yii ku buɬu
 I see(COMPL) him and he (POT)me up take
 'I looked for him until I found him . . . *When I had found him,*
 he took me . . .'

The italicized clause in the above section of a narrative is an example of what we discussed above as an 'absolute clause'. Notice that it ends with the marker

n_{Λ} , and that it has all the characteristics of topics that we listed above: it occurs sentence-initially and does not function as an argument of the main clause predicate; its discourse role is to link the preceding clause with the clause to which it is attached and, at the same time, it sets a temporal framework within which the following predication holds; finally, in recapitulating already-mentioned material, it is definite. Further evidence that n_{Λ} is a topic marker comes from a dialect of Godié in which single nouns which function as topics may be followed by the n_{Λ} marker:

- (140) Zozii n_{Λ} , o y Λ ma guu cicici
 Jesus he healed sickness of.all.kinds
 'Jesus, he healed all kinds of diseases'

In Isthmus Zapotec, adverbial clauses may take an optional final particle *la* (which one language consultant calls a 'comma'). It is found only on those clauses which are initial and definite:

- (141) Kumu wara be *la*, naa uyaa'
 since sick he (COMPL)go I
 'Since he was sick, I went'
- (142) Laga kayuni be nga *la*, bedanda hnaa be
 while (PROG)do he that (COMPL)arrive mother his
 'While he was doing that, his mother arrived'

A clause which represents new information, such as the result clause in (143), cannot take *la*, then, because it is not the topic:

- (143) Dede ma ke ganda saya' (**la*), tantu ja ndaane'
 till I not (POT)can walk so.much full my.belly
 'I am so full I can't walk'

We also find *la* with initial noun phrases which are functioning as topics, but, as expected, never with focused initial noun phrases:

- (144) Ngiiu-ke *la*, bigapa ba'du-ke
 man-that hit child-that
 'That man, he hit the child'
- (145) Tu bi'ni ni? Betu (**la*) bi'ni ni
 'Who did it? Betu did it'

In Lisu, a Tibeto-Burman language, adverbial clauses functioning as topics are marked with the same marker *nya* which is used for NP topics (see Hope (1974:64) and Li and Thompson (1976b)):

- (146) Ame thæ nwu patsi-a dye-a ŋu bæ-a
 yesterday TIME you plain-to go-DECLAR FACT say-DECLAR
 nya nwu nya asa ma mu-a
 TOP you TOP Asa not see-Q
 ‘When you went to the plain yesterday, didn’t you see Asa?’
 (Literally ‘Assuming that it is a fact that you went to the plain
 yesterday, . . . didn’t you see Asa?’)

Thus, we see that in some languages, the discourse-cohesion role played by certain adverbial clauses is signalled explicitly by marking them as topics.

4 Preposed versus postposed adverbial clauses

So far we have seen the cohesive function of mostly preposed adverbial clauses linking paragraphs together (section 2) and sentences together (section 3). Apparently, all languages, regardless of their basic word order, have preposed adverbial clauses. However, the distributional pattern among the world’s languages is not the same for postposed clauses. Strongly verb-final languages, such as Korean and Japanese, tend to use very few postposed clauses; they are severely restricted only to conversational data. Functional differences according to the position of the adverbial clause are described in section 4.1, and section 4.2 suggests functional equivalents to postposed clauses that a strongly head-final language might exploit.

4.1 *Functional differences between preposed and postposed adverbial clauses*

Using English data, several studies report that there are functional differences for adverbial clauses according to their position relative to the main clause (Chafe (1984); Thompson (1985); Ramsay (1987); Givón (1990); Ford (1993); Hwang (1990, 1994)). Thompson (1985) shows how drastically different the scope and function of initial and final purpose clauses are in written English, referring to them as ‘two quite different constructions’ sharing the same morphology. The initial purpose clause states a problem raised by the preceding discourse, while the final one states a purpose for the action named in the main clause.

The thesis that the preposed clause has a textual function of wider scope than the postposed clause has been supported by subsequent research by others. In sections 1–3 above, we have shown how the cohesive function of preposed adverbial clauses may work at different levels, from the whole discourse to inter-paragraph and intersentential levels, not only in English but also in other languages. The intersentential function can be considered a local back-referencing function of tying two sentences closely together, as compared to the higher-level

function of marking the episode boundary or thematic discontinuity. Whether local or global, their function is bidirectional, linking what has gone before to what is to come. Semantic information encoded in preposed clauses tends to be less significant, often repeating or giving predictable information from what has already been stated.

The postposed adverbial clause, on the other hand, is often unidirectional, primarily relating to its main clause, already stated. It conveys information which is more integrated with the main clause at the local level, and it tends to 'appear at *paragraph medial* positions, i.e. in the middle of a tightly-coherent thematic chain' (Givón (1990:847), his emphasis). Semantically, the information encoded in it may be significant, closely parallel to that encoded in clauses in coordination. The two passages below are from English texts, the first about a snake and an Indian youth, and the second, the three little pigs.

- (147) a. The youth resisted awhile, but this was a very persuasive snake with beautiful markings.
 b. At last the youth tucked it under his shirt and carried it down to the valley.
 c. There he laid it gently on the grass, *when suddenly the snake coiled, rattled and leapt, biting him on the leg.*
 d. 'But you promised . . . ,' cried the youth.
 e. 'You knew what I was *when you picked me up,*' said the snake *as it slithered away.*
- (148) a. Next morning the little pig set off at four o'clock.
 b. He found the apple tree.
 c. He was up in the tree, picking apples, *when the wolf came along.*

In both texts there occur the cohesive preposed adverbial clauses in other parts of the texts; but why are those above postposed? While the two postposed clauses in (147e) exemplify the integrated function, those in (147c) and (148c) are more detached from the main clause, as shown by the comma. They encode information of greater significance than that in the respective main clause, which states the routine sequential action or condition expected from the previous sentence. We suggest the following functions of the postposed clauses in (147c) and (148c):

- a. To maintain the agent line (thematic participant) intact
- b. To reflect iconic time sequence in the order of clauses
- c. To create a dramatic surprise by hiding in some sense the significant event in the *when* clause, which occurs after the noneventful information given in the main clause
- d. To convey globally crucial information and mark a turning point or peak

Thus, some postposed clauses function not only to integrate information stated in the two clauses (main and adverbial) together, but also to mark a turning point at some critical point in discourse.

Ford's study (1993) of temporal, conditional, and causal clauses in English conversational data reveals a higher frequency of postposed clauses than preposed ones (135 vs. 48 tokens), a distributional pattern certainly due to the oral style. She even claims that the postposed, final position is the default location for adverbial clauses in conversational data. Much more cross-linguistic work on the use of adverbial clauses in conversation is needed to conclude whether the functional difference between the preposed and postposed clauses is parallel to that in written and monologue data. Similar studies can be done even for strongly head-final languages that normally do not tolerate postposed adverbial clauses, where the postposed position is usually allowed only in conversation.

4.2 *Functional equivalents to postposed clauses in head-final languages*

If some strongly head-final languages do not tolerate postposed adverbial clauses, at least in their written style, what other structures are used to take over the functions that are generally relegated to the postposed clause? The assumption behind this question, of course, is that all languages have some means of expression to accommodate communicative needs that arise in human interaction. This kind of question is especially essential in translation across typologically distinct languages.

Looking at the data from Korean and Japanese, Hwang (1994) reports that the position of the main clause subject and the choice of the nominative and topic particle interact with each other to create an effect equivalent to that of a postposed adverbial clause in another language. Example (149) is taken from a well-known Korean short story (where MOD = Modifying ending; a literal translation is provided to reflect the Korean structure, with the implied information in parentheses):

- (149) Sim Pongsa-nun, *Sim Chengi-ka payt salam-tul-ul ttala*
 Shim Bongsa-TOP Shim Chung-NOM sea person-PL-ACC follow
cip-ul ttena-l.ttay-ey-ya, piloso cwukum-uy kil-lo
 house-ACC leave-when-at-only finally death-GEN way-to
 ttenanta-nun kes-ul alkeytoyessupnita
 leave-MOD fact-ACC came.to.know
 'Shim Bongsa, when Shim Chung was leaving home with the seamen,
 finally realized that (she) was going to die'

The intervening temporal clause placed between the subject and the rest of the main clause is functionally equivalent to the postposed clause in a language like English. The temporal clause has its own subject marked nominative by *-ka*,

while the main clause subject at the beginning of the sentence is marked by the topic particle *-nun*, clearly indicating that it is the topic of the whole sentence as the subject of the main clause.

Another functional equivalent to the postposed clause, especially when the two clauses are causally connected, is found in an equational sentence in which two clauses are joined by a copula. For the English sentence taken from a story, *I daren't open the door because I thought you'd come for the rent*, a roughly equivalent Korean sentence would be: 'That (I) didn't dare to open the door was because (I) thought you'd come for the rent.' The equational structure might actually be in two sentences in Korean, as in (150):

- (150) a. Sunim-un tanghwanghaytta
 monk-TOP was.embarrassed
 'The monk was embarrassed'
- b. Suto-ha-nun mom-ulo kyelhonhalswu-ka ep-ki
 asceticism-do-MOD body-as can.marry-NOM not.exist-NZR
 ttaymun ita
 reason is
 '(It) is because (he) cannot marry (her) as a person who is
 practising asceticism'

Instead of stating the reason for his embarrassment in an adverbial clause, a separate sentence is used in (150b) to keep the natural information flow in this context.

The more global function of creating a dramatic surprise in postposed clauses in VO languages like English represents skewing from the normal pattern of encoding events in main clauses and nonevents in dependent clauses. No skewing of this kind is necessary in OV languages like Korean, where conjunctions (like 'when' and 'as') occur at the end of the clause. Clause-final conjunctions do not give the sense of setting like clause-initial conjunctions in English. The Korean equivalent to the English sentence (147c) would be: '*On the grass (he) put (it) gently-when*, the snake suddenly coil-and, rattle-and, leap-and, bit his leg'. The order of clauses is iconic to the chronological order of events as in English, but the status of the main and adverbial clause is reversed in Korean. As expected in a regular coding pattern, the event reported in the final clause is the most crucial information, while the preceding events are stated in medial clauses in the chain (whose verbs are not usually inflected for tense and mode). Thus, there might be several structures in strongly head-final languages that are functionally equivalent to the postposed adverbial clauses.

5 Conclusion

We have tried to show in this part of the chapter that adverbial clauses may be of relevance to a stretch greater than the sentence in which they occur, that they may provide cohesion for an entire discourse, or they may provide cohesion for some paragraph within it. The data and evidence that we have accumulated appear to be sufficient to suggest that the fundamental device of intersentential connection is lexical overlap which involves grammatically definable parts of the sentence. The thesis is that one grammatically definable part of a sentence (sentence margin or a clause within the nucleus of a sentence) refers in some way to all or part of another sentence in the surrounding context. Such references are systematic, can be codified, and can be used to develop a theory of the structure of discourse and paragraph. Taking lexical overlap in grammatically definable parts of sentences as a fundamental device of intersentential cohesion, it can further be shown that in some languages conjunctions are essentially a combination of verbal and demonstrative elements that have developed from such an overlap. Finally, even in languages where such a development cannot be traced, conjunctions can often be shown to be a substitute for the use of such overlap. Adverbial clauses are a frequent grammatical codification of such overlap and are therefore crucial to the understanding of cohesion in discourse.

6 Suggestions for further reading

Interest in adverbial clauses has grown, with regards to syntax and discourse, along with more research on clause combining in general. Two edited volumes include articles on adverbial clauses: Haiman and Thompson (1988) and Tomlin (1987). Corum, Smith-Stark, and Weiser (1973) and Brugman and Macaulay (1984) contain many papers presented at parasessions on subordination at the Chicago Linguistic Society and the Berkeley Linguistics Society respectively. Books on syntax and typology (e.g. Payne (1997); Whaley (1997)) often include a chapter or section on adverbial clauses. See Givón's (1990) chapter entitled 'Interclausal coherence', which provides a good discussion of a variety of clause-combining devices on the continuum from coordination to subordination.

For information on the ordering of adverbial clauses relative to the main clause, see Thompson (1985), Ramsay (1987), and Diessel (2001). You can also find papers dealing with specific types of adverbial clauses, often in relation to their functions in discourse context, for example temporal (Declerck (1996); Hwang (2000)), conditional (Haiman (1978, 1983); Traugott *et al.* (1986)), concessive (Thompson and Mann (1987)), and purpose

(Thompson (1985); Hwang (1997)). For adverbial constructions in the languages of Europe, see Kortmann (1997) and van der Auwera (1998). For interactional functions of adverbial clauses in English conversations, see Ford (1993) which deals with three commonly used adverbial clauses ('when', 'if', and 'because' clauses) in terms of their prosody and positions, initial versus final.

6 Discourse structure

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0 Introduction

In this chapter we discuss the following questions: how may discourse structure and the interaction between discourse participants shape the kind of syntax that a language has, but also how may the syntactic structure of a language constrain the interactional practices engaged in by its speakers?

We will examine here a selection of pertinent discourse phenomena with a view toward cross-linguistic comparison and will thereby draw from two main areas of inquiry, namely discourse–functional (or functional) linguistics and conversation analysis. In discourse–functional linguistics, what is common to the rather diverse areas of study is that they try to uncover functional motivations for the organization of forms and structures in grammar and language use (see Cumming and Ono (1997)). More recently, many of the scholars in functional linguistics have begun to adopt the research methodology and findings of ethnomethodological conversation analysis, which is originally a sociological line of inquiry concerned with the interactional organization of social activities and the role of talk in social processes (see, e.g., Sacks (1992 [1967–8]); Heritage (1984:232–92); Schegloff, Ochs, and Thompson (1996)). Linguists of this orientation aim toward expanding our understanding of grammar as an interactionally shaped phenomenon. A growing number of contributions now examine the ways in which the dialogic nature of language use is associated with particular grammatical structures. The position adopted in all the studies to be discussed here, then, is that linguistic structure is viewed above all as a tool for interaction between conversational co-participants.

So far, such study has been heavily biased toward English, and it is not until quite recently that interactional studies of languages other than English, with some cross-linguistic comparison, have begun to emerge (see collections like

The order of authors has been drawn by lot. The overall authorship of this chapter is shared jointly, but the main responsibility for writing the sections lies as follows: section 2, Elise Kärkkäinen; sections 1 and 3, Marja-Leena Sorjonen; and section 4, Marja-Liisa Helasvuo. We would like to thank the following people for insightful comments and constructive criticism: Auli Hakulinen, Makoto Hayashi, Anna Lindström, Yoshi Ono, Sandy Thompson, and, most of all, Tim Shopen.

Selting and Couper-Kuhlen (2001); Ford, Fox, and Thompson (2002b)). These studies aim at uncovering the extent to which languages are shaped by being used as tools for interaction, and to what extent interaction draws on grammatical structures differently depending on language type (see Couper-Kuhlen and Selting (2001)). Because this work is still in its infancy, we cannot offer a full-fledged typology of discourse structure as it impinges on the structure of different languages of the world. What we can offer at the moment are glimpses into a few languages that have been relatively well studied, in addition to English: namely Finnish, German, Japanese, Indonesian, Spanish, and Swedish.

In the rest of this introduction, we will first elaborate on conversation as the focus of our study (0.1), on the view of linguistic structure as emerging from interactional patterns of use in natural discourse (0.2), and on speech as essentially residing in conversational turns that are incrementally constructed in real time for the current recipient(s) (0.3). The subsequent sections will then offer more detailed studies of four types of interactional organization or practice, and their linguistic correlates. Section 1 discusses two types of organization that are basic in constructing conversational interaction: the organization of turn-taking and the organization of sequences in conversation. Section 2 focusses on subjectivity as an important organizing principle in language use and syntax, and as essentially arising from the speaker–recipient interaction. Section 3 examines ways in which speakers repair troubles in their talk in the same turn where the trouble occurs. Finally, section 4 deals with co-constructions, or constructions jointly produced by two or more participants.

0.1 Conversation in focus

By ‘discourse’ in this chapter we mean language use, more specifically language as it is used in naturally occurring spoken interaction. Yet we wish to emphasize that spoken interaction is not a monolithic whole but is made up of many types, such as conversation among friends and family members, or talk at a doctor’s consultation or at the grocery store or in a meeting at work. In the following, we focus mainly on one type, namely everyday conversation. Conversation is the most basic of all genres, the primordial site of language use (Schegloff (1996)). Throughout our lives we spend more of our time in conversational interactions with friends, family members, colleagues, and the like, than in any other types of spoken interaction. Conversation is also the first interaction type to be learnt by children. Looking at conversation brings out many different types of uses of language, and in this way one pervasive bias in linguistics, namely the bias toward narrative data, let alone the even more longstanding written language bias, is avoided (even though conversation contains storytelling as well).

We will, however, include examples of other types of interactions below, e.g. examples from doctor–patient interactions representing the more institutional end of spoken interaction. With only a few exceptions, the examples in this chapter are drawn from studies based on audio- or video-recordings of naturally occurring interactions.

0.2 *Linguistic structure emerging for and from interaction*

A long-established fact in linguistic literature is that the grammar of spoken language is different from that of written language. Also, the idea that grammar emerges or conventionalizes from frequent patterns of (spoken) discourse use is not new but is in fact a mainstay of functional linguistics (see Hopper (1987); Du Bois (1987); Thompson and Mulac (1991a); Chafe (1994); Bybee and Hopper (2001)). The focus in such studies is on local collocational patterns, rather than more global ones. Grammatical categories then turn out to be very much like our everyday categories; they are constructions that the speakers themselves are sorting, categorizing, and storing (Thompson and Hopper (2001:51–2)). This will be exemplified in section 2, where we examine those linguistic patterns that index the speakers' subjective beliefs, attitudes, and evaluations, and which turn out to have major implications for the syntactic structures prevalent in everyday conversational discourse.

A somewhat newer line of linguistic research goes deeper into the elaboration of what exactly the impact of social interaction is on grammatical structure (see Ford and Wagner (1996); Ochs, Schegloff, and Thompson (1996); Selting and Couper-Kuhlen (2001); Ford *et al.* (2002b)). Such scholars view grammar as an interactionally shaped phenomenon, and structure as emerging not only from frequent discourse patterns, but from the contingencies proceeding from the here-and-now world between discourse participants (Bybee and Hopper (2001:7)). In other words, grammar is tightly intertwined with the interactional activities that people are engaged in. If we indeed examine talk as always directed to some recipient(s), within the sequential context of the turn-by-turn unfolding talk, it is inevitable that clauses and other linguistic elements are studied not only as products of the individual speaker's planning, but as context-dependent and context-renewing elements of a situated interaction (see Heritage (1984:242); and section 0.3 below). Language structures 'must be thought of in a more situated, context-sensitive fashion as actively (re)produced and locally adapted to the exigencies of the interaction at hand' (Couper-Kuhlen and Selting (2001:4–5)). Within this view, to be elaborated in the next section, subjectivity as exemplified in section 2 becomes a dynamic interpersonal concept produced in response to some prior action and within the course of some current action and larger activity.

0.3 *Speech as process*

A central unit of all interaction is a turn at talk. With a turn, we accomplish actions through which we participate in the ongoing interaction with the current recipient(s): we ask questions and answer them, make requests and invitations, announce news, request clarifications, display agreement with or empathy toward our co-participants, complain about our lives or about what somebody has done to us, tell stories, and so on. Turns at talk form a natural environment for clauses and other grammatical units of language in interaction. It is no wonder, then, that the grammatical constructions that we use can be seen as fitted to the action and, at the same time, as constituting the action that is being carried out in the turn.

When building up her turn, the speaker proceeds temporally from one element of the turn to another. Schegloff (1996) points out that in the incremental construction of the turn, there is a general underlying factor, namely the directionality of the talk, that has an impact on how speakers construct their turns and how recipients monitor them. Thus, both the speaker and her recipient(s) orient to the ongoing talk as something that is developing toward a possible (turn) completion and toward a possible speaker shift that the completion then makes relevant.

Furthermore, every turn is produced at a specifiable place in interaction. This means that a turn at talk is uttered after a certain type of prior turn (e.g. a request) by a co-participant, and this prior turn and the speaker's current turn are possibly located within a larger activity (e.g. talking about how to organize a birthday party). The turn, then, stands inevitably in a relation to the turn by the co-participant. It is further directed to and constructed for the current recipients, and its design usually singles out one participant as the actual recipient. This is termed 'recipient design' by Schegloff and Sacks (1973).

An important analytical principle in conversation analysis is that communicative actions can be seen as doubly contextual (Heritage (1984:242)). Accordingly, every action is, first, context-shaped in that its contribution to the activity in which it occurs cannot be adequately understood without reference to the context in which it occurs, including especially the immediately preceding actions. Second, every action is also context-renewing: by reference to the prior action, it creates the context for the yet-to-come next action (1984:242). The current action thus offers an understanding of the prior action and this understanding forms the context for the next action.

That a turn is produced with respect both to the prior turn and to the possible ongoing larger activity has an impact on the kinds of grammatical structures that are available for use when constructing the turn (e.g. when constructing a turn that is responsive to the request just made within the larger activity of, say, planning a party). On the other hand, the bit-by-bit grammatical

construction of talk shapes the specific action that is being carried out with the turn (e.g. what kind of response is being offered to the request). Each next element of a turn-in-progress may, then, be oriented to by the recipient(s) with respect to:

- (i) its realization (how it contributes to what the prior talk made relevant);
- (ii) its re-direction (how it modifies what the prior talk made relevant); and
- (iii) its projection (what kind of next course of action it makes relevant and when there will be a place for responding to it, i.e. when it will possibly be complete) (Schegloff (1996)).

In this sense, as Schegloff (p. 56) states, 'grammar stands in a reflexive relationship to the organization of a spate of talk as a turn'.

Because, as we have seen, conversational discourse is produced over time and its structure is incrementally achieved, aspects of the linear organization of syntax (such as word order or order of elements within a phrase) are perhaps more apparent than in the analysis of written discourse. This becomes particularly clear when we analyse self-repair (section 3) and co-constructions (section 4).

Finally, the importance of prosody is increasingly being acknowledged in interactional studies of language, and the body of research is growing in this area (see Couper-Kuhlen and Selting (1996)). For example, Auer, Couper-Kuhlen, and Müller (1999) focus on the realization of rhythm in conversation. Their analyses of speaker transition in English, German, and Italian conversations show that in a large number of cases there is a rhythmically regular sequence that spans speaker change. That is, the current speaker establishes a clear rhythmic pattern just prior to a possible place for speaker transition (transition relevance place, see section 1) and the next speaker prolongs this rhythm by placing the first prosodic prominence of the new turn on the next projected rhythmic pulse (Auer *et al.* (1999:202)). And in a study of co-constructions in English data, Local (2000) shows that collaborative completions are integrated with prior talk in terms of both pitch and rhythm (see section 4).

1 Turn-taking and sequentiality as building blocks of the organization of interaction

Talk in interaction has organizing features that are so basic that we may not even come to think about them: we talk with our co-participants by taking turns; we and our co-participants do not just produce random turns one after another but, with our turns, we form coherent sequences of action; and there are often problems in producing, hearing, and understanding talk that we also deal with when we talk. In this section, we briefly discuss the mechanisms through which participants in interaction take turns and construct sequences of action. The discussion is mostly carried out by reference to research on English

conversations but we will suggest some areas for future research here and also take up some examples from Japanese and Finnish.

1.1 Turn-taking organization

Research on interaction has demonstrated that participants in interaction are able to manage the turn-taking so that turns often switch from one participant to another smoothly, without any overlap or gap. There are, however, occasions when the participants talk simultaneously or there is a gap between the end of a turn by one participant and the start of one by another. In these cases, however, talking at the same time as another participant or starting one's turn after a delay has specific interactional motivations. First, there are some actions that are typically done by talking simultaneously, such as greeting somebody who is entering the room or congratulating somebody. Second, two recipients may start a turn simultaneously after the speaker has come to a possible completion of her turn, but has not indicated any specific recipient as the one who should talk next. Third, the recipient can start her turn in overlap with the speaker's turn as a way, for example, of displaying that she can already recognize what the speaker is saying (see Jefferson (1973)). And lastly, starting one's turn after a silence can, for example, be a way of foreshadowing that the recipient is on her way to produce a response that is dispreferred (e.g. a disagreement with the prior speaker, see, e.g., Pomerantz (1984)).

Usually there are smooth transitions, without overlaps and gaps. How are these smooth transitions possible, for example, regardless of who the people are who are talking or what the topic of talk is? Based on their work on English conversations, Sacks, Schegloff, and Jefferson (1974) laid out the basic elements that make turn-taking possible and govern its workings. This pioneering work has led to a wealth of research in this area since the early 1980s. Most of the work deals with English (e.g. Ford and Thompson (1996); Ford, Fox, and Thompson (1996); C. Goodwin (1979, 1981, 1995); C. Goodwin and Goodwin (1987); Schegloff (1996)) but turn-taking organization has also been explored, for example, in languages like Danish (Stensig (2001)), Finnish (Tiittula (1985)), German (Selting (1996, 1998a, 1998b)), and Japanese (Tanaka (1999)). The basic elements introduced by Sacks *et al.* (1974) have proved to be relevant for these other languages.

In their article, Sacks *et al.* state that the turn-taking mechanism must be generic enough to allow it to be used regardless of, for example, who the interactants are, how long the conversation takes, and what the topic of the conversation is. But it should also be specific enough to allow it to be managed (i) by the participants in the given conversation; (ii) locally, that is, dealing with one turn and one turn transition at a time; and (iii) in an interactive fashion, that is, the mechanism should be sensitive enough to allow the turn transfer

between the current participants. Sacks *et al.* lay out two components that form the building blocks of the mechanism: the *turn-constructural component* and the *turn-allocation component*. The turn-constructural component describes the resources that the interactants can use for building a turn, and the turn-allocation component specifies how the opportunities for talking (taking a turn) are managed.

A central part of the turn-constructural component is the *turn-constructural unit*. By this unit, Sacks *et al.* mean units of talk that can form a possibly complete turn, that is, they form a possibly complete action in the current place in the current interaction. These units vary in their structure: they may be words, phrases, clauses, or consist of several clauses. In the following example, the participants make use of different kinds of grammatical resources to construct their turns. In the examples, the source of the example is indicated in parentheses after the example number. For the present chapter as a whole, the transcription of some of the examples has been slightly modified. The most important transcription symbols will be explained briefly when they appear in the examples for the first time, and are also listed in the appendix. Line 2 shows that there is a gap of one second between the turns in lines 1 and 3. The question marks indicate rising intonation and the periods falling intonation; they are thus not used as orthographic signs in the transcription lines of the examples to follow, but as markers of intonation.

- (1) (Sacks *et al.* (1974:702))
 1 Anna: Was last night the first time you met Missiz Kelly?
 2 (1.0)
 3 Bea: Met whom?
 4 Anna: Missiz Kelly.
 5 Bea: Yes.

Anna's turn in line 1 is a clausal turn-constructural unit, as well as Bea's turn in line 3 (or, alternatively, depending on one's understanding of the syntax of English, this could be described as a phrasal turn-constructural unit, consisting of a VP). Anna's turn in line 4 exhibits a phrasal turn-constructural unit, and Bea's turn in line 5 a lexical turn-constructural unit.

An important feature of instances of unit-types (clausal, phrasal, lexical) is that they allow the speaker and the recipient to project the unit-type that is being constructed and the possible completion place of the unit. The possible completion place of a turn-constructural unit forms a *transition relevance place*: a place where another participant may start talking. We get information on ways in which recipients orient to possible completion places and to the kinds of grammatical constructions they treat as complete by looking at where exactly they take a turn:

- (2) (Sacks *et al.* (1974:702))
- 1 Desk: What is your last name [Lorraine.
 2 Caller: [Dinnis.
 3 Desk: What?
 4 Caller: Dinnis.

Here, the caller begins her turn at line 2 after having heard the word *name*, thereby treating this place, a possible end of the NP (and the clause), as the possible completion of the turn. The square brackets show that the caller says *Dinnis* simultaneously with the desk's *Lorraine* (a left square bracket is a symbol widely used in interaction studies to indicate the onset of overlapping talk, and a right square bracket is used to indicate the end of the overlap). Similarly, by starting a turn at line 3, the desk displays that the phrasal turn-constructional unit produced by the caller in line 2 (*Dinnis*) was a possibly complete turn. Finally, starting a turn where she does in line 4, the caller shows that the phrasal unit in line 3, the question word *what*, was also a complete turn: she does not wait for the desk to produce a clause. The clause is thus only one of several relevant grammatical units in interaction.

Sacks *et al.* state that, initially, a speaker is entitled to one turn-constructional unit: each possible completion of a turn-constructional unit forms a possible transition relevance place. However, participants can also construct a turn-constructional unit together, and we will discuss some ways of doing that in section 4 below on co-constructions. Furthermore, there are actions, such as stories, that typically require a more extended space for a speaker, and languages have practices with which the participants can relax the turn-constructional-unit-by turn-constructional-unit operation of the turn-taking system so that the speaker can use an extended talking space (see, e.g., Sacks *et al.* (1974); Sacks (1992) [1967–8]; Schegloff (1982, 1996)).

The second component of the turn-taking system, the turn-allocation component, specifies how the opportunities for talking are managed at each transition relevance place (for the turn-allocation component, see Sacks *et al.* (1974); also Levinson (1983:298)).

Sacks *et al.* discuss the grammatical construction of turn-constructional units as the central resource which the participants use for projecting an upcoming completion of the turn but they also recognize intonation as a projecting device (1974:721). Subsequent research has specified further the resources that the speakers and recipients use when projecting the completion, and this work has started to show the intricate interplay between grammar, prosody, and pragmatic action characteristics of talk in turn construction (e.g. Ford and Thompson (1996); Ford *et al.* (1996); Schegloff (1996); Selting (1996, 1998a, 1998b)). This work has also begun to specify the different resources that are available

in different languages for constructing possible completion places (e.g. Tanaka (1999)).

Ford and Thompson (1996), who have analysed English conversations, use the term *complex transition relevance place* to refer to places where the speaker uses all the three resources – syntax, intonation, and pragmatic resources – to show that she has reached a possible completion place. By ‘pragmatic completion’ they mean that, at that point, the utterance forms a possibly complete action in its context (e.g. question, answer, request, informing, etc.) and the intonation also indexes completion (falling or rising terminal contour for English).

Ford and Thompson (1996) found that, in their data, most of the speaker changes occurred at complex transition relevance places. There were, however, many such places where the talk was possibly complete syntactically, but where the speaker did not use the other resources to index a completion. Intonational and pragmatic resources thus selected from syntactic completion places those that were possible places for a speaker change. The following segment provides an example. Cindy is Vera’s best friend and only a recent friend to Ken, who is Vera’s boyfriend. Ken and Vera are visiting Cindy’s apartment just after visiting Vera’s father in the hospital; Vera’s father has just had a knee operation. In the segment, Ken is complaining that Vera is negatively affected by her mother. He also displays a negative stance toward the mother as a source of information (line 13). The slash (/) marks a possible syntactic completion, a period (falling contour) or a question mark (rising contour) shows intonational completion places, and the double greater-than sign (>>) indicates a possible pragmatic completion place. At line 18 Cindy begins her turn with a *w*-initial word but cuts it off immediately (this is indicated with the dash -). Underlining is used for indicating emphasis.

- (3) (from Ford and Thompson (1996:167))
- 1 Ken: It was like the other day / uh.
 2 (0.2)
 3 Vera was talking / on the phone / to her mom/?>>
 4 Cindy: Mm hm/.>>
 5 Ken: And uh she got off / the phone / and she was incredibly
 upset/?>>
 6 Cindy: [Mm hm/.>>
 7 Ken: [She was goin’ god / do you think they’re performing
 unnecessary surgery /
 8 on my Dad/.> or something / like that /?>>
 9 (0.2)
 10 Ken: Just cause of something her mom had told her /.>>
 11 (0.5)

- 12 Ken: It was really amazing. /.>> (&S all) you know like Nazi
experiments /.>> or
13 something /.>> (that) God / he wouldn't be in there / if
he didn't need it /.>>
14 ya know /?>>
15 Cindy: Ye [ah/.>>
16 Ken: [If it wasn't something real/>> ya know/>>
17 (0.2)
18 Cindy: W- Have you met his doctor/?>> ((addressed to Vera))

There are several noteworthy features in the segment above. First, there are cases of a complex transition relevance place (marked with /?>> or /.>>) where the recipient takes a turn; the turn most often consists of a response token (lines 4, 6, and 15). Second, the recipient does not take a turn at every possible syntactic completion place (marked with /). Third, there are complex transition relevance places where the recipient does not take a turn (lines 8, 10, 12, 13, and 16).

What happens in this segment when the recipient does not take a turn at a complex transition relevance place? Ford and Thompson (1996) point out that those are places where the prior talk makes relevant a display of affiliation or agreement by the recipient, in this case by Cindy to whom this telling is directed. However, Ken's talk, with its negative stance toward Vera and Vera's reaction to her mother's report, presents a problematic interactional situation for Cindy (Vera's best friend). Cindy deals with this by giving minimal responses (lines 6 and 15) or withholding a response altogether (lines 8, 10, 12, 13, 16). The absence of a response results in a further pursuit of a response, and Ken does that by adding an increment, a grammatical continuation, to the turn-constructive unit that he just produced. For example, at line 8, he adds the increment *or something like that* that both downgrades the epistemic strength of the prior utterance and offers a place for the recipient to display her stance to what has been told (cf. section 2 on epistemicity and stance). In line 16, Ken extends his prior talk with an *if*-clause, which re-specifies what he had said in the *if*-clause in lines 13–14. The extension may be responsive to the fact that although Cindy's *Yeah* at line 15 provided a response, it did not display any affiliation with the strong negative statement presented by Ken (see Ford (1993:109–10) and Jefferson (2002) on affiliative responses).

In example (3), the primary speaker extended his prior turn construction with an increment, a grammatical continuation (lines 8 and 16). These increments stood in different grammatical relations to their prior talk, the first one being a phrasal increment and the second one a clausal increment. In this example, increments were used for pursuing a response from the recipient (on increments and extensions, see, e.g., C. Goodwin (1981); Auer (1992); Schegloff (1996, 2000); Ford, Fox, and Thompson (2002a)).

The reader may want to examine example (3) by looking at each syntactic completion place marked and analyzing the detailed syntactic structure of the unit and its grammatical relation to the immediately preceding talk and the talk that follows. It would then be useful to consider in which fashion that syntactic unit contributes to the construction of the action done and stance displayed by the speaker and how it might be responsive to what the recipient did or did not do. There may well be differences between languages in constructing something as a grammatical continuation of prior talk, and this is an area where we hope to see more research conducted in the future. The prosodic relation of the increment to its prior talk also awaits research (but see Walker (2001) for work on English).

In Ford and Thompson's treatment, turn transition is characterized by a syntactic completion of talk along with prosodic and pragmatic completion of talk. This, however, does not seem to apply to all languages. Tanaka (1999) finds that in her data from Japanese conversations, syntactic completion places were less frequent, and they matched more often with intonational and pragmatic completion places, than in Ford and Thompson's English data. According to Tanaka, there were also pragmatic completion places that were not complete syntactically, and they were also often places where a speaker change occurred. Japanese speakers, then, do not use syntactic completion as an index of an utterance completion. What appears to be typical for Japanese is orderliness toward the terminal boundary of a turn. Thus Tanaka found that over half of the turns that were syntactically, intonationally, and pragmatically complete contained certain types of utterance-final elements (e.g. copulas, final suffixes, and final particles); other types of turn-ending devices were recompleters and specific truncated elements; recompleters are elements that the speaker produces after a possible end of a turn-constructional unit and that 'recomplete' the turn under construction (see Tanaka (1999:87)). Turns that were pragmatically and intonationally complete but not syntactically complete, by contrast, contained different kinds of turn extensions.

Consider example (4) from Tanaka's study (1999:92–5) which comes from a conversation where speaker Eri has been complaining about her marriage, and the participants are discussing the possible cause of the problem. In the extract, a co-participant, Mai, proposes one possible cause by asking Eri whether it is the institution of marriage itself that is to be blamed (lines 1–5). In line 6 Eri starts to formulate her answer (lines 6–27) the gist of which is that it is not the institution that is to be blamed, but that it is too late to do anything about her situation as she has missed her opportunity. In this answer, there are several elements that are indicative of a disagreeing response (hesitations, pauses, rephrasings, and restarts). Eri also makes use of constructions which Tanaka identifies as devices for turn extension (in lines 8, 12, 14, 16 and 26, given in boldface in the example). With the help of these turn extensions Eri

is able progressively to build up an argument, while circumventing a possible transition relevance place where others could take the turn. As in example (3), a syntactic completion is indicated with a slash (/) and a pragmatic completion with a double forward pointing arrow-head (>>); intonational completion is indicated with a question mark for rising intonation and with a period for final falling intonation. The colons ':' indicate sound lengthening (e.g. lines 4 and 8), '.hhh' is used to mark an audible inhalation (e.g. line 8), and the equal sign '=' indicates that there is no silence between two adjacent utterances (lines 3 and 4). See the explanatory list of glossing symbols at the beginning of the volume. In the free translation line, double parentheses are used to indicate an element which is not expressed in the original Japanese but is needed for an idiomatic English translation (for example, in line 3 there is no element expressing first person, but it is needed in the English translation in order to be idiomatic).

(4) (Tanaka (1999:92–4))

- 1 Mai: Nantonaku rifujin na kanji ga shi masu?/>>
 somehow unjust feeling NOM do SFX
 Does ((it)) somehow seem unjust?
- 2 sono (.)
 the (.)
- 3 kekkon seido sono mono tte iu ka,=
 institution of marriage itself QUOT say or
 should ((I)) say, the institution of marriage itself or
- 4 =ma:: nan te iu ka,
 AP what QUOT say or
 uhm what shall ((I)) say
- 5 [() dōkyo sono mono ga./>>
 living together itself NOM
 [() living together itself
- 6 Eri: [Ss seido,
 institution
 [the institution
- 7 (1.0)
- 8 ((slowly)) ssseido sonomono to iu:: .hhh (1.3)
 institution itself QUOT say
 ((rather than?)) the institution itself .hhh
- 9 datte ma: .hhh
 because after all well
 because after all, well .hhh

- 10 ssssss: (.)
- 11 seido no mondai yori (.)
institution GEN problem more.than
more than ((it being)) a problem of the institution (.)
- 12 min'na ga kojīn kojīn no mondai **dakara**
everyone NOM individual GEN problem because.so
[ne? .hhh
FP
because ((it))'s an individual problem for everyone,
so you know .hhh
- 13 Mai: [Nnnnnnnnn./>>
[Mmmmmmm.
- 14 Eri: kō ga yoi tokakō ga warui toka yuenai
this NOM good e.g. this NOM bad e.g. can't.say
kara,
because.so
because ((one)) can't say if this way is good or that way
is bad so
- 15 atashi wa seido sono mono no mondai .hhh
I TOP institution itself GEN problem
as for me, as for the problem of the institution of marriage
itself .hhh
- 16 mukashi wa (.) atta **kedomo** [ne? (0.7)
past TOP existed although FP
although ((I)) did have that problem in the past, but
((you)) know
- 17 Mai: (((nodding)))
- 18 Eri: ima wa (3.0)
now TOP
as for now
- 19 seido sono mono- (.)
institution itself
((as for)) the institution itself (.)
- 20 (ra) atakushi jishin to shite wa ima wa, .hhh
I myself QUOT do TOP now TOP
as for me, at this point in time .hhh
- 21 sss: (.) seido sono mono yorimo,
institution itself more.than
more than the institution itself

- 22 (1.0)
- 23 Mai: Nnnn
AP
- 24 (2.8)
- 25 Eri: ((looking at Mai)) Ma::: yappari .hhhh (.)
AP after.all
after all .hhhh well
- 26 oso sugita **to iu ka** .hhh
too late QUOT say or
that it was too late, should ((I)) say, or that .hhh
- 27 jiki o [shishita **to iu ka**.>> ((closes mouth))
timing ACC missed QUOT say or
the chance was [missed, should ((I)) say, or
- 28 Mai: [((nodding))'N::./ 'N::./
Mm Mm
- 29 Mai: Osoku umareta hiai mitaina desu ka?/>>
late born woe like COP Q
Is it something like the woe of having been born late?

According to Tanaka, Eri's lengthy answer (lines 6–27) contains no syntactic completion points (there are no slashes that Tanaka uses for indicating syntactic completion). Instead, she makes recourse to constructions used for turn extension, namely conjunctive particles *dakara* ('you know', line 12), *kara* ('so', line 14), and *kedomo* ('although', line 16), and the quotative particle *to + iu* 'say' (line 8) and the quotative particle + 'say' + conjunctive particle *to iu ka* (line 26, glossed as 'should I say or . . .' by Tanaka), while incrementally extending her turn without any syntactic completion points. With the use of these conjunctive and quotative particles Eri is able to extend her turn and circumvent a possible transition relevance place where the other participants could take the turn. In line 27 she uses a syntactically incomplete construction; however, the utterance is judged as pragmatically complete (marked with '>>') and, furthermore, it is uttered with a final falling intonation. Simultaneously, Eri closes her mouth thereby providing further display that she has finished (Tanaka (1999:95)). This is followed by a speaker change (line 29).

There is also work that concentrates on the specification of the role of prosody in indexing completion versus continuation, and that work suggests that we encounter differences between languages and varieties of languages here, too. One prosodic feature that has been taken up in the literature is creaky voice. It has been shown that creaky voice is implicated in the turn-taking system of London Jamaican English (Local, Wells, and Sebba (1985)) but not in Tyneside

English (Local, Kelly, and Wells (1986)). In Finnish, one of the functions of creaky voice is to index a transition relevance place (Ogden (2001)).

The current research suggests that grammar is not the only – and perhaps not even the decisive – factor in projecting a transition relevance place, and there is need for further work here on different languages. There are studies that explore the interplay between the grammatical and interactional construction of utterances in German (Auer (1996)), Danish (Steensig (2001)), and Swedish (J. Lindström (2002a, 2002b)). These studies make use of field models and topological word order models, together with conversation analytic findings on turn construction (see Schegloff (1996) for a discussion), to capture different kinds of fields or positions for different kinds of grammatical and interactional elements in the linear progression of utterances. They also show how certain positions can form a preferred locus for grammaticalization processes (such as the pre-front field in German, see Auer (1996)). We see this line of work as an important avenue for future research. Moreover, further investigations on the impact of the prior turn on the grammatical shape of an utterance would be important. For example, do turn-initial utterances that begin a sequence and topic have a different kind of projection from utterances that have been produced as a response to the prior turn? Another area for further work is the interplay between the position of a turn-constructional unit in a turn and its morphosyntactic structure in multi-unit turns (see Schegloff (1996)): are there, for example, grammatical resources that at least partially relate to the status of a turn-constructional unit as the first turn-constructional unit or as the last in a turn?

1.2 *Sequence organization*

Another constitutive element in the construction of language in interaction is sequence organization (see Sacks (1992 [1967–8]) and Schegloff and Sacks (1973) for the foundational work here; see Levinson (1983:303–8) and Heritage (1984:245–90) for overviews). By this we mean that participants in interaction do not just produce their turns randomly, just one turn after another, but in such a fashion that the turns form coherent larger units of action, sequences of actions. A fundamental apparatus for forming sequences is an adjacency pair, which Schegloff and Sacks (1973:295–6) formulate as follows.

Adjacency pairs are sequences of two turns that are:

- (i) adjacent;
- (ii) produced by different speakers;
- (iii) ordered as a first part and second part; and
- (iv) typed, so that a particular first pair-part makes relevant a particular second pair-part (or range of second pair-parts); e.g. question requires answer, greeting requires greeting, request requires acceptance or rejection, etc.

Types of adjacency pairs include sequences of actions such as question–answer, request–acceptance/rejection, offer–acceptance/declining, greeting–greeting, etc. Even though, for example, not all interrogatives are used for asking a question and not all questions are done with an interrogative, there appears to be highly conventionalized ways of doing first pair-parts in languages.

The adjacency pair organization is deeply related to the turn-taking organization of conversation. Producing a first pair-part is one way of selecting somebody else to talk: the possible completion place of a first pair-part forms a transition relevance place, thereby making a response by another participant relevant. A first pair-part thus sequentially implicates and makes conditionally relevant the production of a second pair-part (Schegloff (1972 [1968])). Whatever is said by the co-participant after the second pair-part is inspected against this relevance, and a second pair-part can also be understood to be ‘officially’ absent in some cases, as in the following example (notice the gaps in lines 2 and 4, one second and one and a half seconds, respectively):

- (5) (Atkinson and Drew (1979:52), taken from Heritage (1984:248))
- 1 Alice: Is there something bothering you or not?
 2 (1.0)
 3 Alice: Yes or no?
 4 (1.5)
 5 Alice: Eh?
 6 Betty: No.

In this example, Alice’s question fails twice to get an answer from Betty (lines 2 and 4). In the absence of an answer, the questioner first repeats (line 3) and then re-repeats (line 5) the question, until she finally gets the answer at line 6. In so doing, she shows an orientation to the fact that there is an answer missing. A first pair-part thus sets normative constraints on what should happen after it.

Notice that the repetitions are neither identical with the initial question nor with each other but, instead, they get more and more truncated. By truncating the question, Alice, as Heritage (1984:248) states, proposes that Betty had in fact heard the initial question, and also marks the question as a subsequent action: this is not the first time that this question is being asked. Notice also that the first pair-part and the second pair-part are not produced immediately after one another here, they are not ‘physically adjacent’. However, the relevance of the second pair-part is sustained by the participants until the second pair-part is offered by the recipient.

An important notion related to adjacency pairs is that of preference organization. Not all possible second pair-parts are equal as responses to a particular first pair-part. Instead, some of them are preferred and some others dispreferred. For

example, an acceptance is a preferred response to a request whereas a rejection forms a dispreferred response. The notion of preference here is not one of psychological dispositions but, as Levinson (1983:307) aptly puts it: 'it is a structural notion that corresponds closely to the linguistic concept of **markedness**. In essence, preferred seconds are **unmarked** – they occur as structurally simpler turns; in contrast dispreferred seconds are **marked** by various kinds of structural complexity.' Preferred second pair-parts are typically structurally simple and they are produced without any delays. In the following example, we find a rejection as a response to an invitation:

- (6) (from Heritage (1984:266))
- 1 Mary: Uh if you'd care to come over and visit a little while
this morning
- 2 I'll give you a cup of coffee.
- 3 Amy: hehh Well that's awfully sweet of you,
- 4 I don't think I can make it this morning,
- 5 .hh uhm I'm running an ad in the paper and-and
- 6 uh I have to stay near the phone.

This example exhibits many of the general features of dispreferred second pair-parts. The refusal is delayed by a short outbreath (*hehh*), by the particle *well* which often prefaces dispreferred second pair-parts in English and by an appreciation of the invitation (*that's awfully sweet of you*). Furthermore, the refusal itself is presented in a mitigated form (*I don't think I can . . .*). And finally, the speaker gives an account for turning down the invitation (*I'm running an ad . . .*).

The construction of first pair-parts and second pair-parts (both preferred and dispreferred ones) is an area where we expect comparative research based on naturally occurring interactions to reveal new aspects of grammatical constructions. Are, for example, the English epistemic stance markers such as *I don't think* at line 4 above typically associated with certain kinds of activities? We will take up this issue in the next section on subjectivity. We may also ask how different languages construct dispreferred responses (or, for that matter, preferred responses) – are they using certain kinds of utterance types for doing these responses and to which extent are languages and cultures similar to and different from each other here?

Quite a lot of research exists on ways in which an adjacency pair can be expanded with expansion sequences, especially in English (see, e.g., Schegloff (1990); Levinson (1983)). Some of these expansions appear to be managed with rather conventionalized utterance types, for instance, in English, Finnish, or Swedish. For example, there are pre-announcement sequences which a speaker can initiate in order to request permission from the recipient to proceed to

the main action, to the announcement (Terasaki (1976); Schegloff (1990); Sorjonen (2001a:211–13, 2002)). One way of initiating such a sequence is to use a generic pre-announcement utterance such as *guess what* in English or *arvaa mitä* ('guess'+IMPERATIVE+SG2 'what'+PTV) in Finnish, which serves to display that the speaker has an announcement to make without, however, revealing the specifics of the announcement. A preferred response by the recipient is a 'go-ahead' (e.g. the repetition of the question word *what* in English or utterance of the particle *no* in Finnish).

An adjacency pair can also be expanded from within: the recipient can initiate an insertion sequence (Schegloff (1990); Levinson (1983:304–6)) in order to, for example, check a detail she needs for producing the second pair-part or to initiate a repair on something in the first pair-part. And finally, an adjacency pair can be expanded afterwards. This is the case when, for example, the speaker of the first pair-part assesses the answer she just got from the co-participant to her question.

A topic about which we do not know enough yet is the grammatical construction of responsive turns: how do languages indicate that a turn-constructive unit and a turn is offered as a response and as a certain kind of response to what the prior speaker just said? Are certain kinds of grammatical constructions typically used in responses (see Linell (2002) on responsive constructions in Swedish)? Already some research exists on ways of giving an answer to polar (yes/no) questions in interaction in different languages. For example, a basic way of offering a positive response to a yes/no interrogative in English is the particle *yes* (*yeah*) (Raymond (2000)). Finnish, by contrast, uses either a repetition of the finite verb in the question or the particle *joo* as a way of giving a positive answer to an interrogative utterance that questions the entire proposition. When the answer is constructed as a repetition of the finite verb in the question, it is offered as one that provides new information; the particle *joo* offers the answer as one that the questioner could already have inferred, for example from the prior talk (Raevaara (1993); Sorjonen (2001a, 2001b)). By repeating the finite verb but not the subject or any other core argument in the question, the recipient constructs her utterance as a second action, as an answer. This forms one typical context for the (elliptic) absence of the subject constituent from clauses in Finnish, and it is made possible by the fact that finite verbs contain the person ending showing person and number. Of course, however, the answerer can choose to repeat the subject or some other elements in the question (e.g. the infinitival verb form) but in that case there are specific interactional reasons for doing so (see Hakulinen (2001)).

Raevaara (2001) suggests that in Finnish doctor–patient interactions, the patients use the negative verb followed by the participial form of the main verb to index that the answer provides new information. In contrast, the mere negative verb, without the participial form of the main verb, is used to index that

the doctor was asking something that was already in some way present in the context: it indexes that the answer is inferrable from the prior talk, from the physical context, or from the documents concerning the patient. The following examples illustrate this. As in prior examples, the punctuation marks in the Finnish original indicate intonation. Thus the commas in lines 1 and 7 in example (7) indicate that the questions are produced with level terminal intonation; the period in example (8) at line 1 indicates that this question is produced with a final fall.

- (7) (Raevaara (2001:54–5))
- 1 Doctor: on-ko päänsärky-ä,
be+3SG-Q head ache-PTV
is there head ache, ('Do you have a head ache?')
- 2 Patient: hhh ajoittain on mutta (0.3) ei se-kään oo
at.times is but NEG it-either be
mitenkään semmos-ta
at.all such-PTV
hhh at times there is but (0.3) it hasn't been so
- 3 paha-a ol-lut.
bad-PTV be-PTCPL
bad either.
- 4 (0.8) ((Doctor writes))
- 5 Doctor: joo,
yeah
- 6 (1.0) ((Doctor writes))
- 7 Doctor: on-ko turvotuks-i-a,
be+3SG-Q swelling-PL-PTV
are ((there)) swellings ('Do you have swellings?')
- 8 Patient: ei o.
NEG+SG3 be
no ((there)) aren't.
- (8) (Raevaara (2001:56))
- 1 Doctor: mi-ltä-s se tuntuu nytte se.
what-ABL-CLI it feels now it
how does it feel now?
- 2 (0.5)
- 3 Patient: no e:-n mä tiitä.
well NEG-SG1 I know
well I don't know

- 4 Doctor: eh heh .hhh on-ko kipe-e.
 be+3SG-Q sore-PTV
 eh heh .hhh is it sore ('Does it hurt?')
- 5 Patient: e:i.
 NEG+SG3
 no
- 6 Doctor: .jooh (.) kato-ta-an
 yeah look-PASS-PERS
 yeah (.) let's have a look

In example (7) line 8, the patient constructs his turn as an answer through using the negative verb and participial form of the main verb but without a subject NP in the clause. By using the participial form of the main verb (*o*) he displays that he is now offering new information to the doctor. In example (8) line 5, by contrast, the patient uses the negative verb only as the answer to the doctor's question that concerns the patient's broken arm, thereby displaying that the answer is something that could have been inferred by the doctor. What Raevaara's study suggests is that, in Finnish, the use of the negative verb with the participial form of the main verb forms a counterpart to the use of the repetition of the finite verb when giving a positive answer to a polar (yes/no) question, and the use of the mere negative verb corresponds to the use of the particle *joo* as a positive answer.

A further example of the grammatical construction of verbal actions, also from Finnish, is Hakulinen's (1993) study on the structure of the caller's first turn in telephone calls (for English, see Schegloff (1979a, 1986); Dutch, Houtkoop-Steenstra (1991); Swedish, A. Lindström (1994)). Hakulinen found that, in Finnish telephone calls, the first turn of the caller typically consisted of the following elements – the elements in the parentheses are optional:¹

particle (+ greeting) (+ locative adverb + V) + name of the caller (+ locative adverb)
 + greeting

The turn does not form a clause and it has no tight syntactic structure in a traditional sense. Its elements do not stand in any hierarchical relation to each other and do not project the possible next element in the same sense as the elements in a clause. Rather, they exhibit 'flat' syntax with (non-random) variability in the order of the elements. Moving from one increment to another forms a change of action, for example a change from greeting to an identification of oneself.

¹ Hakulinen's data come from the late 1980s and from the beginning of the 1990s, from the time before the extensive use of mobile phones. The beginnings of mobile phone calls await research.

Example (9) shows the syntactically maximal turn: an initial particle, followed by an existential clause; the initial particle *no* is left untranslated below. Example (10) exhibits the most minimal turn type.

(9) (Hakulinen (1993:160))
 No *tää-llä* on Mikko hei.
 PRT here-ADE is first.name hi
 Hi, this is Mikko

(10) (Hakulinen (1993:158))
 Anja hei
 first.name hi
 (This is) Anja, hi

Hakulinen (1993) shows that the greeting can be placed either at the beginning of the utterance, following the utterance-initial particle, or utterance-finally. The verb is typically the copula, and the other slots each have a number of alternatives. A relevant dimension, for example, in the choice of the greeting item is the degree of formality. Hakulinen also shows that the locative adverb – which has been derived from the demonstrative pronoun stem *tä-* (*tämä* ‘this’) – can be either in the outer local case (example (9), *tää-llä* ‘here’, adessive case, cf. *täällä on kylmä* ‘it is cold **here**’) or in the inner local case (*tä-ssä* ‘in this’, inessive case, cf. *tässä on virhe* ‘**here** is a mistake’; not shown in the examples). Finnish callers can deploy the case marking to index how they interpret the relationship between the answerer and themselves so that the inner local case is used to index intimacy, whereas the outer local case indexes a more formal relationship.

1.3 Summary

In this section we have introduced two fundamental types of organization which the interactants rely on when producing and understanding each other’s talk: the turn-taking organization and the sequence organization which the interactants deploy when constructing coherent larger activities. We have seen that interactants use the grammatical resources available in a language and construct their turns out of unit-types that may be not only clausal but also lexical or phrasal – the clause is thus only one type of grammatical unit relevant for the use of language in interaction. These unit-types allow the speaker and the recipient(s) to project a possible completion of the unit and consequently a possible place for a speaker transfer. Two other central resources for displaying and projecting a possible completion are prosody (e.g. terminal intonation, creaky voice) and pragmatic resources. Pragmatic completion refers to those aspects in an utterance that make it a possibly complete action in its context. A

central organization on which the interactants rely here is sequence organization, that is, ways in which turns at talk by different participants form larger units and construct a context for the next action. The interactants inspect the ongoing utterance against the context constructed by the prior turn (and its larger context that may consist of several turns) to understand when the talk forms a possibly complete action.

Languages appear to differ in terms of the weight they put on the different resources (grammar, prosody, and pragmatic resources) for indexing a possible completion of a turn at talk: syntax is more central for some languages (like English) than for others (like Japanese). We expect comparative research on naturally occurring interactions to reveal new aspects of grammatical constructions in different types of languages, with respect to, for example, how a possible completion of a turn is incrementally projected, how different types of verbal actions are constructed, and how the grammatical construction of utterances may be intertwined with the position of the utterance in a multi-unit turn.

2 Subjectivity and the syntax of conversation

2.1 *Subjectivity in linguistics*

What is meant by the notion of subjectivity and why should it be important for the description of the syntax of naturally occurring language, especially conversation? We can find a good initial definition of subjectivity from Finegan (1995); see also Lyons (1982), Iwasaki (1993), and Scheibman (2001) for further definitions: ‘expression of self and the representation of a speaker’s (or, more generally, a locutionary agent’s) perspective or point of view in discourse – what has been called a speaker’s imprint’ (Finegan (1995:1)).

Subjectivity, then, refers to the phenomenon that the speaker, her attitudes and beliefs, are present in the utterances that she produces, in other words the speaker leaves a mark on what she says, rather than simply presenting an objective statement. This is reflected in the actual language choices of the speaker, and we then commonly talk about the expressive use of language.² If we look at the following example from Mushin (2001), we can see a distinct difference in encoding the same piece of news in two different ways.

² The terminology used for this aspect of language has indeed not been very well established (cf. *subjectivity, expressive use of language, egocentricity, point of view, perspective, stance*). On the other hand, scholars may differ in their definitions of a given term, such as *subjectivity* itself.

- (11) (Mushin (2001:3), invented examples)
(Two colleagues meet in a hallway)
- a. Guess what! I heard he got it! Isn't that great!
 - b. Eric got a job.

Essentially the same information is conveyed in both utterances, but the form of the utterance in (a) conveys many cues concerning the subjective stance of the speaker toward the information offered, and toward aspects of the speaking situation, which are absent from (b). According to Mushin (2001:4–5), such cues include the exclamation *Guess what!*, conveying the speaker's emotional state, her excitement over the upcoming piece of news, but also the speaker's opinion that the hearer will be interested in the news. The hearsay (or evidential) form *I heard* overtly indicates how the speaker has obtained the information. Further, the use of *he* suggests that the speaker presupposes that the hearer already knows something about Eric's situation and that the hearer is able to decode who the pronoun refers to. And, finally, the rhetorical question *Isn't that great!* is a subjective display of excitement and happiness, which at the same time invites the hearer to share these feelings. In contrast to these subjective choices in the delivery of the news, the utterance in (b) does not in any explicit way index what the speaker's position or perspective is toward the news or its recipient. Section 2.2 below is devoted to establishing that clauses like *Eric got a job* are in fact rare in everyday speech, while section 2.3 will show that we need to go further and conceive of subjectivity as not solely a speaker-based category but one that essentially arises from the immediate speaker–recipient interaction within certain conversational actions or larger activities. In other words, it is really an interpersonal notion and part of the intersubjective understanding between speakers and recipients.

It is very easy for us to imagine other encounters throughout the day with our family members, friends, and colleagues, during which we engage in talk that resembles the utterances in (11a) rather than the one in (11b). Yet, strangely enough, the focus in linguistic inquiry has not been on utterances like (a). Until recent times the focus has been on (b)-like statements of objective propositions, or on the propositional and referential function of language rather than on its expressive use. The uncontested claim underlying much of (western) linguistic theory has been that language is primarily used as a neutral conduit for communicating objective information and ideas, not for sharing the speakers' subjective beliefs, attitudes, or evaluations. Subjectivity has thus not been a precise notion for linguistic investigation, except in some rather exceptional cases, as in Traugott's work on subjectivity from the diachronic perspective ((1989, 1995), showing that subjective meaning represents the last stage in semantic change), Langacker's approach to subjectivity within his theory of cognitive grammar ((1985) and later), and Benveniste and the French school on first person pronouns (e.g. (1971)).

Another exception is the extensive work that has been done in different languages on evidentiality and epistemic modality as important manifestations of subjectivity. Evidentiality refers to how speakers encode their source of knowledge and the kind of evidence that they have for their claims (e.g. *I heard he got it* above), while epistemic modality indexes the speakers' state of knowledge or belief or opinion about the propositions that they state (e.g. *I think Eric got a job*) (for English, see, e.g., Chafe (1986), Biber and Finegan (1989), and Biber *et al.* (1999); for other languages, see immediately below; for a summary of work on evidentiality in various fields of linguistics, see Fox (2001)). It has already been well established that evidential meanings especially may sometimes acquire grammatical marking in languages of the world. In such a case, speakers have to choose an evidential marker from a set of paradigmatic choices if they do not want to run the risk of being ungrammatical (see Palmer (1986) and Willett (1988) for typologies of grammaticized evidential systems). This is the case in many Amerindian languages like Wintu, Tuyuca, and Quechua, as well as in languages like Makah, but generally not in European languages (see Mushin (2001); Fox (2001)). Indeed, grammaticization of evidentials takes place only in a subset of languages (Palmer (1986)), while, for many languages, 'it is unclear whether a true grammatical contrast has developed to distinguish types of information source or whether information source is merely a conversational implicature' (Mushin (2001:19)).

In contrast to the mainstream of western linguistics, Iwasaki (1993:2) presents an overview of studies in Japanese linguistics since 1908 that have occupied themselves with the expressive function and subjectivity. Japanese has not just lexical but also morphosyntactic outlets for encoding the speaker as the centre of evaluation, attitude, and affect. Iwasaki gives as one example an adversative passive construction (i.e. a negative effect passive), which is a means to express the affected feeling of a person encoded as the subject of the clause.

(12) (Iwasaki (1993:9–10), invented examples)

- a. kamisan ga nige_{ta}
 wife NOM escape+PST
 My wife fled
- b. ore wa kamisan ni nigerare_{ta}
 I TOP wife DAT escape+PASS+PST
 I was abandoned by my wife

In the utterance in (a), the speaker makes a statement of fact with the intransitive verb *nige(ru)* 'escape', while in (b) the indirect passive adds to the meaning the adversity felt by the subject referent. Iwasaki concludes that many Asian languages are subjective: as one of these, Japanese indeed has a rather central grammatical construction, a passive, which encodes the meaning of adversity or grief felt by the subject. Further, there is a grammatical/linguistic difference

in Japanese between relating the speaker's internal state and the experiences of other sentient beings. Such a distinction may acquire obligatory morphological marking on the predicates, for example. Thus, one and the same morpheme acquires a different interpretation in the following:

- (13) (Iwasaki (1993:13), invented examples)
- a. boku ga ikoo
 I NOM go:PRES
 I will go
- b. jon ga ikoo
 John NOM go:PRES
 I think John will go

The presumptive suffix *-oo* is used with the first person subject to indicate that speaker's intention, but it cannot be used similarly with a third person subject, where it is ungrammatical. Its meaning (even though slightly archaic according to Iwasaki) is now to express the speaker's conjecture about the third person's future action, hence *I think* in the translation.

Recently, there has been a sudden upsurge in the interest shown by linguists in subjectivity. In fact it is beginning to be seen as a major organizing principle in much of language use and is becoming a focal area in discourse-functional studies of language, as it can be held to influence a wide range of aspects of linguistic form (see Hopper (1991); Iwasaki (1993); Finegan (1995); Dahl (1997, 2000); Bybee and Hopper (2001); Scheibman (2001, 2002)). Research is beginning to show not just that grammatical categories like mood, modality, and evidentials are indices of speaker attitude, but that our everyday language use is inherently subjective at many if not most levels. In this vein, Biber *et al.* (1999:859) observe that conversation is characterized by a focus on interpersonal interaction and by the conveying of subjective information. And Bybee and Hopper (2001:7) state that most utterances are evaluative in the sense that they either express a judgement or present the world from the perspective of the self or an interlocutor. The authors go as far as to suggest that natural discourse is preeminently subjective.

If natural discourse and especially conversation is preeminently subjective, how does this manifest itself in the syntactic structure of clauses spoken by speakers in everyday speech? It is to this that we now turn.

2.2 *Patterns of subjectivity in natural discourse*

We will start out by exploring what kind of sentences or clauses are common in everyday spoken interaction, especially conversation. Du Bois has argued (1987, 2003a, 2003b) that there is a very strong tendency in spoken discourse to avoid more than one lexical core argument per clause core or intonation unit

(the latter often being coextensive with simple clauses). He termed this the ‘One Lexical Argument Constraint’.³ This finding, i.e. that spoken discourse shows very few clauses with two full noun phrases (NPs), has been shown to be valid for many languages of the world, albeit primarily in spoken narratives (see Du Bois (2003a) for an overview). Focussing on Swedish conversation, Dahl (1997, 2000) found that in his database there is not a single *John loves Mary* type of sentence with two proper nouns, which has traditionally been the favourite linguistic example of a transitive sentence and has formed the basis for many theories of the grammar of English and other languages. Exploring transitivity in conversational language, Thompson and Hopper (2001:51) further state that ditransitive clauses like *Pat faxed Bill the letter* are ‘vanishingly rare’, constituting only 2 per cent in their database of 446 clauses from everyday conversation between friends and family members. Similarly, Scheibman (2001:82) found no sentences like *Robin turned on the lights, sat down by the fire and ate two pieces of pizza* in her data from nine everyday conversations. What types of clauses then do occur? Thompson and Hopper (2001:39) find that the vast majority of clauses in English conversation are either one-participant clauses or two-participant clauses with very low transitivity. This finding, the authors observe, has also been confirmed by conversation-based research on languages like Cirebon Javanese (Ewing (1999)), Finnish (Helasvuo (2001a)), Japanese (Ono and Sadler (ms.)), and Russian (Turk (2000)). The most frequent grammatical constructions in conversational English turn out to be the following one-participant clauses (Thompson and Hopper (2001:37–9)):

verbal predicates with one participant (i.e. intransitive verbal clauses)

I’ve been sleeping for 10 hours

I forgot

I don’t remember

copular clauses

it was confidential

I’m excited about it

that’s the whole point

she’s still at home

epistemic/evidential clauses

I dunno if it’s worked

I guess we are

I remember I was talking to him . . .

I don’t think it’s workable

³ He also postulates a further constraint, the simultaneous avoidance of lexical arguments in the A role, or in the transitive subject position in the clause. The pragmatic dimension or significance of this Preferred Argument Structure (PAS) is that new referents introduced in discourse generally do not appear in the transitive subject position. PAS has been shown to hold in many languages of the world (see Du Bois (1987, 2003a), especially in narrative data (but see, e.g., Kärkkäinen (1996) for conversational English).

Similarly, Scheibman's study (2001) on conversational American English shows the pervasiveness of subjective subject–predicate combinations. Her frequency counts reveal three global trends (pp. 70–84). First, third person singular subjects (*s/he, it*, a full NP, and *that* being the most common) are the most frequent subject type in the corpus, first person singular subjects (*I*) are the second most frequent, while second person singular subjects come third (*you*). It is worth noting that the third person subjects conflate several subtypes, such as *it* in evaluative expressions like *It isn't fair*. Second, the most frequent verb types are (in descending order) relational (*be, get, be like*), material (*do, go, take, teach, work, use, play, come*), cognitive (*know, think, remember, figure out*), and verbal (*say, talk, mean, tell, ask*, quotative *go* and *be like*). Third, the majority of predicates are in the present tense. Scheibman concludes that the prototypical structures of English clauses are not geared toward objective relating of events. Instead, 'what we find most commonly in interactive discourse are those subject–predicate combinations that permit speakers to personalize their contributions, index attitude and situation, evaluate, and negotiate empathetically with other participants' (p. 86).

It has been amply shown, then, in recent research that the syntax of conversational English indeed reflects the expressive function of language, or the expression of subjective attitudes, beliefs, emotions, and the like. Dahl (1997, 2000) shows that the same holds for Swedish conversation: his data display a high frequency of egocentric expressions (by which he means not just first person but also second person pronouns and generic pronouns), clustering with mental verbs (*tro* 'believe', *tycka* 'think', *tänka* 'think', *minnas* 'remember', etc.), but also with verbs relating to external appearance (*verka* 'seem', *se ut* 'look, appear') and with copular verbs (*vara* 'be', *bli* 'become'). For Dahl, these patterns are evidence of the very basic character of looking at things from our own point of view.

To move on to the syntactic micro-level, we may further take a look at complementation as a linguistic category that may be called into question if some complement constructions are examined in view of the recurrent discourse patterns that they form in conversational discourse. Kärkkäinen (2003b) examines the recurrent linguistic and discourse patterns of epistemic stance in a body of American English conversations. She shows that the most common type of epistemic marker is a cognitive or perception or utterance verb (see Givón (1993) for such P-C-U verbs) with a first person subject, with no complementizer *that* following. A paradigm example of this is *I think*, indeed by far the most common marker of epistemic stance in her data. Mental verbs like *think* have traditionally been termed parenthetical verbs in linguistic research (e.g. Urmson (1963); Lyons (1977)) and have primarily been examined within a synchronic perspective. Now Thompson and Mulac (1991a, 1991b) have clearly shown that *I think* has in fact grammaticized into an epistemic phrase that acts

in the same way as adverbs, i.e. as adverbials, and behaves much like epistemic morphemes in other languages.

In more recent work, Thompson (2002) goes on to argue that we might term not just *I think*, but also other frequent ‘complement-taking predicates’ (CTPs) such as *I thought*, *I guess*, *I remember*, and *I know/knew*, as epistemic/evidential/evaluative fragments, rather than main clauses obtaining a complement clause. What has been termed the ‘main clause’ simply serves as a frame for the clause that it occurs with. Such fragments can be used and reused by speakers as entire turns or parts of turns. The epistemic/evidential/evaluative fragment provides a stance toward the actions, i.e. the assessments, claims, counterclaims, and proposals, being done in the associated utterance (for the use of *I mean* as a repair initiator, see section 3 below). Thompson further argues that the most frequent CTP phrases become relatively fixed epistemic formulae (e.g. *I think / I don’t think / I thought / I didn’t think*), notably with first person subjects, while the less frequent ones show more diversity of form (e.g. *make sure, tell, be interesting*). Scheibman (2001:70–1, 76) also found that there are highly frequent formulaic collocations of first person singular subjects and, especially, verbs of cognition (*I guess, I don’t know, I think*) in her data. This finding is corroborated in Biber *et al.* (1999:667–9). Similar observations have also been made by Weber and Bentivoglio (1991) on the discourse patterns of the Spanish verbs of cognition, *creer* ‘believe’ and *pensar* ‘think’, in spoken data.

In the same vein, Tao (2001) examines the discourse patterns of another complement-taking verb, *remember*, in a corpus of spoken English. He finds that its subjects are overwhelmingly first person (*I can’t remember exactly the story*), second person (*how can you remember all of them?*), or null subjects (*Remember?*). Further, the verb itself is almost always in the simple present tense and occurs in a large number of negative statements (especially in the first person: *I can’t remember*), imperatives (*Remember, we talked about once an idea is out there that it’s common property*), and interrogative utterances (*Do you remember . . .*). Very rarely does *remember* take a complement clause in spoken English, and Tao indeed concludes that its status as a complement-taking cognitive verb should be called into question as far as spoken English is concerned. Instead, *remember* is best analysed as an epistemic marker indexing the speaker’s epistemic stance and functioning as a metalinguistic device that directly regulates the interaction between conversational participants.

Englebretson (2003), finally, argues against complementation as a grammatical category in Indonesian conversation, showing that three construction types typically regarded as complements in typological studies are not really grammatical complements in this language. His study then goes on to show that a fourth construction, formed with the suffix *-nya* cliticizing with lexemes that are cross-linguistically taken to function as complement-taking predicates, namely those indicating modality, perception, utterance, or cognition, are in fact one

of the most common ways of providing epistemic framing and indicating subjectivity in Indonesian. Such constructions fulfil some of the same discourse functions that complementation does in other languages. They typically indicate source of knowledge, assessment of interactional relevance of an utterance, and stance, as in the following examples:

(14) (Englebretson (2003:175))

D: Dia kan ketemu cowok cakep katanya
 SG3 PRT NONVOL-meet guy handsome word-NYA
 She said she met a good-looking guy

(15) (Englebretson (2003:185))

L: Pokoknya berat itu lho kayaknya
 main-NYA heavy that.DEM PRT like-NYA
 The thing is, that seems really difficult

We can thus see that subjectivity may have consequences for how we might best represent the syntactic structure of clauses in conversation. Yet those consequences will vary from one language to another, and much cross-linguistic research is still needed in this area.

Another relevant phenomenon to examine here is zero or missing subjects in some languages. Dahl (1997, 2000) observes for Swedish that subjectivity, or in his terms egocentricity, is so pervasive a principle in conversation that two verbs that in his data appear as a 100 per cent egocentric (i.e. always co-occur with a first or a second person subject pronoun), *hoppas* ‘hope’ and *undra* ‘wonder’, allow zero subjects much more easily than other verbs in Swedish, but are then always interpreted as having the speaker as subject:⁴

(16) (GSM 3:5)

MK7: *undrar faktiskt vem det är som lyssnar på sådan här musik*
 wonder actually who it is that listen on such here music
 I actually wonder who it is that listens to this kind of music

(17) (GSM 6:1)

HM3: *hoppas att det inte är någon rättstavningskontroll det här*
 hope that it NEG is any spell-check it here
 I hope that this is not a spell-check, this

Dahl’s point is that even a language like Swedish, which generally does not allow subjects to be dropped, allows zero subjects in maximally egocentric contexts. The same happens with the Finnish verb *tuntua* ‘seem’ in certain declarative

⁴ Examples (16) and (17) are provided by courtesy of the GSM Project on ‘Language and Music Worlds of High-School Students’, carried out in 1997–9 at the University of Gothenburg. The data, collected by Karolina Wirdeñäs, represent group projects in which the speakers were asked to express their opinions on various topics. The first digit of the title refers to tape number, the second to a particular phase in the interview (nine phases in all).

constructions like *Ø tuntuu olevan* ‘seems to be’ and *Ø tuntuu et(tä)* ‘seems that’ (see below); they regularly appear without a subject pronoun, yet have the speaker as their subject. Indeed, we can see this happening in English as well. Givón (1993:38) observes of ‘epistemic quantifiers’ (cf. epistemic phrases) that the subject pronoun is so specific to particular verbs that it is often dropped in rapid speech, as in:

- (18) (Givón (1993:38))
 (I) think she’s there.
 (I) guess you were right.

Traugott (1995:39) similarly points out about *I think* that ‘the subject is losing referential (objective) properties, and becoming simply the starting point of a perspective’. She further suggests that the first person pronoun may eventually become eroded, in which case only a discourse particle would remain (in the same way as *please* is a reduced form of *if you please*). Yet it is always the speaker who is interpreted as being the subject in these cases.

Finally, we can observe a pragmatic development of the missing subject in Finnish conversation. In Finnish syntax there is regularly the possibility of a zero person (\emptyset), and semantically its referent is then a non-specific, arbitrary person in a generic frame (Laitinen (1995, 1996); see also Hakulinen and Karttunen (1973)). Yet, its referent may in fact be negotiated in the actual conversation. Laitinen takes issue with the popular claim in Finnish linguistics, in line with a cultural stereotype of the Finns as a reserved, silent, and unpretentious people, that the zero person is automatically an indirectness strategy used to avoid personal reference (i.e. to the speech-act participants) in delicate contexts, for example. She shows that \emptyset can often be interpreted quite specifically as one of the speech-act participants, very often the actual speaker of the turn at talk. This is the case in the following example, where the participants have been talking about how time passes rapidly after retirement. One speaker, Jaakko, summarizes the discussion by using the \emptyset -subject (lines 1–2): one cannot say that life is tedious now.

- (19) (Laitinen (1995, 1996))
- 1 Jaakko: mut että ei oikeastaan voi sanoo että
 but that NEG+3SG in.fact can say.INF that
 But \emptyset can’t really say that
- 2 täs pitkäks on toi aika, mitenkään käynny.
 here long.TRANSL is that time anyway become-PTCPL
 it seems to have been that long anyway.
- 3 Kaisa: nii-i.
 yeah

- 4 Jaakko: nii.
yeah
- 5 Kaisa: [e:i, silloin kun alkaa pitkästyttään niin
NEG then when begin. SG3 make.tired.INF then
käyp maate]
lie.SG3 down
No, when Ø begins to become bored, then Ø goes lie down,
- 6 Jaakko: [jotain aina voip tehäkkinn tällases,]
something always can.SG3 do.INF-either such.INE
Ø can always do something in a cottage
- 7 Kaisa: [(hehehehe) vetää muutaman tunnin unet ja taas]
(laughing) take.SG3 some.GEN hour.GEN nap.PL and again
Ø takes a nap for a couple of hours, and again.
- 8 Jaakko: [tällases oma-, näin mökis,]
such.INE own, so cottage.INE
of Ø's own or somewhere like that,

Laitinen's point is that in the overlapping turns in lines 5–6 and 7–8, respectively, both speakers, Kaisa and Jaakko, simultaneously step into the place of the Ø-person and in effect make contrasting interpretations of the preceding summary made by Jaakko (Kaisa saying that you can spend time by sleeping, and Jaakko that you can do it by occupying yourself with some chores in the cottage), and none of the speakers in any way hides her- or himself. As we can see, then, subjectivity and the speaker's own point of view can be a natural interpretation even for something that is completely missing in the syntax, like a zero person (see also section 4 examples (62) and (64), on unexpressed subjects in Japanese and Finnish conversation; see also Leinonen (1983, 1985) who compares Russian and Finnish generic zero subject and impersonal constructions). Yet the Finnish zero construction is said to be inherently dialogic (Laitinen (1996), cf. also Sorjonen (2001a:134–6)): it opens up an indexical site for the co-participant(s) to identify with, in effect inviting them to fill in the open site with relevant referents and to identify with the experience. Such a view can then encompass the face-saving function commonly posited for this construction: participants may choose to opt in and identify themselves with this referential role (e.g. in the case of a doctor who uses the zero person when giving advice to a patient and intends the patient to be the filler of the referential slot), or opt out and not do so.

We have seen evidence, then, of some recurrent syntactic patterns in everyday conversation that can be regarded as manifestations of the speakers' imprint on what they are saying. At the syntactic macro-level, we have seen the prevalence of certain clause structures (e.g. one-participant clauses and subjective

subject–predicate combinations), while at the micro-level certain argument structures clearly prevail over others (e.g. syntactically the English verbs *remember* and *think* do not really act as complement-taking predicates but as epistemic phrases or clause fragments indexing speaker attitude). We have even seen that subjectivity has such a pervasive ‘presence’ in spoken language that its overt indexing, in the form of the first person pronoun, may not be necessary at all (cf. ‘zero person’). What we have presented above on the recurrent discourse-grammatical patterns in different languages strongly supports the following claim made by Bybee and Hopper: ‘If grammar is emergent from commonly used sequences, it is natural to expect that such sequences will comprise the core of grammaticized structures, and therefore that grammar – the internalized aggregate of formations from usage – will move into increasingly subjective spheres’ (Bybee and Hopper (2001:7)). Having demonstrated that subjectivity is a notion that strongly influences which formations of usage come into being in conversational discourse, we go on to elaborate on subjectivity as an interactional notion, or why speakers should concern themselves with expressing their subjective beliefs, attitudes, and evaluations in the first place.

2.3 *Widening the picture: subjectivity as arising from the interaction*

Naturally enough, most of the studies that we have referred to above have treated subjectivity as a speakers’ category (even though we have seen indications of a more dialogic view in the studies of Dahl and Laitinen, for example). Thus, Iwasaki ((1993), cf. also Finegan (1995)), in his treatment of subjectivity in Japanese, examines the *speaker* as the centre of deictic elements, the *speaker* as the centre of evaluation, attitude, and affect, and the *speaker* as the centre of epistemological perspective (see also Langacker (1985) and many others). Yet, we do not express our evaluations, attitudes, or affective states in a vacuum. As Hunston and Thompson (2000:143) point out, ‘the expression of attitude is not, as is often claimed, simply a personal matter – the speaker “commenting” on the world – but a truly **interpersonal** matter in that the basic reason for advancing an opinion is to elicit a response of solidarity from the addressee’ (emphasis added). Similarly, C. Goodwin and Goodwin (1987, 1992) view assessments as structured interactive activities, whereby the co-participants show heightened involvement and participation within the assessment activity. Kärkkäinen (2003a) also discusses stance-taking as an interactive activity: she focusses on the linguistic and interactional practices that participants employ when they negotiate a joint stance toward aspects of a conversational story upon its completion.

Thus, the emphasis in linguistic research seems to be shifting from subjectivity of an individual speaker's contribution to intersubjectivity between speakers and recipients. Going back to Mushin's example in section 2.1 above, we may go much deeper into the interactional organization of the news delivery in utterance (11a) (cf. interactional studies on English regarding the telling of good news and bad news in conversation, e.g. Maynard (1997)). The beginning *Guess what!* is an example of a 'pre-announcement' as it has been identified in conversation analytical research (see Schegloff (1980, 1990); Levinson (1983)). It is very likely that the speaker thereby seeks not only to engage the recipient's interest and attention, but also to ensure that she will have a chance to produce the actual news without having to compete for the turn at each transition relevance place. A slot is created for the recipient to come in by giving some go-ahead and indication of interest (e.g. *What?*). As also stated by Mushin, the actual telling of the good news, *I heard he got it!*, then heavily relies on the recipient's prior knowledge of some earlier job prospect of the referent *he*, as well as who *he* is. Finally, the explicitly subjective display of affect, *Isn't that great!*, invites a similar positive assessment and appreciative reception of the news from the recipient.

Our intention here, then, is to throw some light on subjectivity as a phenomenon that derives from the basically interactive nature of speech, as talk always directed to some recipient(s), within the sequential context of the turn-by-turn unfolding talk. Within such a view, subjectivity is no longer regarded as a more or less static mental state of the speaker, but as a dynamic concept constructed in the course of some action, i.e. subjectivity is an integral part of the interaction between conversational co-participants.

Scheibman (2001:77, 79) indeed also points out that speakers situate their utterances in relation to those of other speech act participants. She uses the term *interactive subjectivity*: for example, the second person singular utterances (e.g. *you can use this for your muffins* (p. 77)) reflect an interactive or empathetic subjectivity because speakers frequently mediate direct assertions about other speech-act participants by using modal elements (*can*). It is also possible to view the frequent discourse patterns of epistemic stance-taking established in Kärkkäinen's study (2003b) as manifestations or adaptations of the speakers' concern for their recipients. A highly recurrent pattern in her data is that epistemic stance is predominantly expressed initially, i.e. before the actual issue or question at hand (which is expressed in the proposition or the associated clause or utterance, or sometimes in an extended sequence; see also Biber *et al.* (1999:971) and Thompson (2002) for initial framing). Epistemic stance markers as a class show great unity in the way they pattern in the data in relation to a relevant unit of social interaction, namely the intonation unit, or a stretch of speech uttered under a single intonation contour: they are predominantly

placed at the beginnings of intonation units. In the following example, Rebecca, a lawyer, is preparing a female witness, Rickie, to appear in an upcoming trial:⁵

- (20) (Kärkkäinen (2003b: 118))
- 1 Rebecca: because their experience would be totally different.
 2 (H) if a man exposes [himself],
 3 Rickie: [(SNIFF)]
 4 Rebecca: which,
 5 . . a man would never do that.
 6 [Be]cause,
 7 Rickie: [Mhm].
 8 [2(SNIFF)₂]
 9 Rebecca: [2(H)₂] number one they pick out,
 10 . . **I think** . . more vulnerable people.
 11 Rickie: Mhm.

Rebecca produces a claim in lines 9–10 that exhibitionists are not likely to choose men as their victims, but ‘more vulnerable people’ instead. We have good reason to suspect that Rebecca designs her utterance on the fly, to avoid bluntly referring to the fact that Rickie belongs to the category of vulnerable people (and therefore ended up as a victim), as that would constitute an evaluation of her. Rickie was in fact just seen in the immediately preceding talk to be quite vulnerable: she has just expressed extreme emotional anxiety over her experience, has been very upset and cried, and can still be heard sniffing throughout this extract. While already producing the utterance, Rebecca then chooses to preface the potentially face-threatening *vulnerable people* by *I think*. There is some evidence that she re-designs the utterance here: the whole turn-so-far has been said in fluent rapid speech, but there are two micropauses (indicated by two sets of dots) in line 10, both before and after *I think*, indicating some hesitation before the upcoming troublesome item. Her turn design is successful in that it acquires an immediate acknowledgement from Rickie, *Mhm.* in line 11. Such examples can be taken as evidence for what C. Goodwin (1979:104) has claimed to be a pervasive feature of conversational interaction: ‘a speaker in natural conversation has the capacity to modify the emerging meaning of

⁵ The data in examples (20) and (21) come from the Santa Barbara Corpus of Spoken American English (Du Bois (2000)), collected in the Department of Linguistics, University of California at Santa Barbara. This large database is transcribed into intonation units, such that each line represents one intonation unit (cf. Du Bois *et al.* (1993)). Due to this choice, another feature has been introduced in the Santa Barbara notation: overlapping speech is indexed with numbers, which makes it easier to visualize who/what overlaps with who/what. Other specialities to be seen in the above examples include marking pauses with ‘. . .’ (long and medium; number in parentheses indicating duration in seconds) or ‘.’ (micropause), and marking inbreath with ‘(H)’.

his sentence as he is producing it in accord with the characteristics of its current recipient'.

Example (20) comes close to same-turn self-repair as exemplified in section 3, where examples (27) and (28), especially, show cases in which the speaker repairs her own speech by adding a subjective element, a comment adverbial like *luckily* or a lexical repair initiator like *I mean* in initial position in the clause (but the turns also show other indications of repair such as redirection of talk, repetitions, and so on). Marking epistemic stance before the issue at hand can then in itself be seen as interactionally motivated: as speakers mark their subsequent talk as sensitive by displaying uncertainty and/or hesitation, this helps the recipients to align themselves to what is coming and to design their own subsequent turn at talk accordingly.

In the following example we have a case where one participant shows disagreement with the prior turn and prefaces her turn by *I think*. However, this utterance simultaneously constitutes a first pair-part in an adjacency pair that clearly requires a certain kind of agreeing response as a second pair-part. The topic is growing basil from seed; *that* in line 1 refers to basil.

- (21) (Kärkkäinen (2003b:147))
- 1 Doris: . . . Isn't [that] what you gave the neighbor one time?
 2 Sam: [I-] –
 3 Doris: . . . You gave him some [₂kind of herb₂].
 4 Sam: [₂Did I give him some₂] –
 5 . . I gave him a red pepper.
 6 Doris: . . . (1) **I think** y- –
 7 **I think** you gave him . . . some . . . herb of some
 [kind].
 8 Sam: [I may have] given-given him some basil,
 9 [₂yes₂].
 10 Doris: [₂Yeah₂],

Doris is in effect telling the recipient, Sam (who despite the name is also a female participant), something that she should already know but does not recall; there is evidence that Doris is not quite sure either, as the utterances in lines 1 and 3 are formulated as a negative question and by leaving open the actual identity of the herb, respectively. Sam's response in line 5, . . . *I gave him a red pepper*, rejects or corrects Doris's earlier utterance (in line 3), as red pepper is not a herb. Doris, who still pursues her own argument, starts in line 6 by inserting the personalized speaker perspective *I think* y- –, with clear primary stress on *I*, by now expressing a fair amount of certainty about the upcoming utterance. Inserting it a second time in *I think you gave him . . . some . . . herb of some kind* in line 7 adds weight to this assertion. In all, the assertion produced over two intonation units in lines 6–7 contains an array of prosodic and linguistic cues

that are clearly used to pursue a certain kind of preferred response from the recipient, namely an acceptance of the proposed item *herb*, but these multiple cues make the action less abrupt and direct. An alternative way to formulate this second assertion might have been something similar to the utterance in (11b) above, stating only the naked proposition: *No, you gave him some herb*. This might have received a much less favourable response, however, whereas here Doris gets the desired response from Sam in line 8 almost at its earliest opportunity, soon after the last use of the word *herb*.

We have shown in examples (20) and (21) that subjectivity, in this case stance-taking through epistemic modality, is essentially interactively organized. It is a dynamic interactive activity, an interactional practice engaged in by co-participants in conversation, rather than an isolated mental position of an individual speaker. Displaying subjectivity is engendered by what happens between the co-participants in prior talk, and stance displays conform to and manifest aspects of interaction such as recipient design or pursuit of a preferred response. Indeed, *I think* as one type of stance marker can be shown to arise from the immediate speaker–recipient interaction in certain recurrent sequence types.

2.4 Summary

In this section we have taken a look at subjectivity and the expressive use of language. It was shown that subjectivity is present in the structure of conversation at both macro- and micro-levels and has many implications for the prevalent syntactic structures and the organization of grammar of conversational discourse. Yet, even though it has not been customary in linguistic research to view subjectivity as an interactional notion (in large part because of the long-standing focus on single speakers' contributions, the term *subjectivity* of course reflecting this bias), it is clearly necessary to regard it as such. It is very much part of interaction, of speakers responding to prior turns and designing their talk to current recipients. This work is still in its infancy and much remains to be done on languages other than English or a couple of others mentioned in this section. And it is then important to view already well-recognized linguistic categories (such as evidentiality or epistemicity) from an interactional viewpoint, paying close attention to such elements in their sequential and activity environments.

3 Self-repair and syntax of conversation

3.1 Self-repair as a syntactic and interactional phenomenon

Try to speak in your next encounter with a friend without searching for any word or verbal description for some thought you have, without changing or modifying the shape of the utterance you are on your way to produce or have just

produced, or without asking for clarification of what your friend just said. You will soon find yourself in trouble. In all interactions, participants have recurrent problems in producing, hearing, or understanding talk, and all languages have developed means for dealing with these problems. Without them, we would have no intersubjective understanding among us.

In this section, we will concentrate on linguistic resources a speaker can use to repair something she has just said herself in the turn that she is on her way to produce. We will term this phenomenon *same-turn self-repair* (but often use the shorter term *self-repair*). Self-repair is an extremely common phenomenon in everyday conversation (Sparks (1994) found that 20 per cent of all turns in his American English corpus exhibited self-repair; Blackmer and Mittons (1991) found self-repair every 4.8 seconds in their corpus). Moreover, self-repair appears to be universal. However, the practices for doing same-turn self-repair seem to be associated with the kinds of grammatical practices a given language has, and self-repair can inform us about the syntactic practices there are in languages.

Practices for dealing with problems in producing, hearing, and understanding talk in conversation have been one of the central areas of research in conversation analytic work and related fields since the classical article by Schegloff, Jefferson, and Sacks in 1977. Schegloff *et al.* use the terms *repair* and *repair organization* to refer to practices that the participants in interaction use to tackle problems they encounter in speaking, hearing, and understanding talk. These include, for example, problems in finding an appropriate word, and hence the term *repair* is used instead of the more narrow term *correction*.

Repair organization is one of the constitutive organizations of spoken interaction: without it, interaction would not be possible, since anything can be a potential 'repairable'. It is as central as the turn-taking organization and the sequence organization (see section 1 above).

Repair can be viewed as a process that provides as its outcome a solution to a problem in talk-in-interaction. It has a beginning and an end so that we can talk about a repair segment with recognizable boundaries (Schegloff *et al.* (1977), Schegloff (1984), Fox, Hayashi, and Jaspersen (1996)). The segment is recognizable because it stops the ongoing talk to deal with the problem. For example, the speaker can stop the syntactic progress of her talk in order to repair something she just said:

(22) (Schegloff *et al.* (1977:366))

Naomi: But c'd we- c'd I stay u:p?

Here, Naomi begins her turn with an utterance that she is building up into a request in the form of a yes/no interrogative. She, however, cuts off her utterance just when she has produced the subject *we*, marked with a dash. This cut-off functions as a repair initiator which indicates to the recipient that the speaker has possibly started a repair segment in order to deal with some problem in

her utterance so far. However, the initiator does not display what exactly the problem is. Following the cut-off and instead of producing the next element that the modal verb and the subject syntactically project (an infinitival verb form), Naomi reproduces the modal verb *c'd* 'could' with which she started her interrogative. She then utters the first person singular pronoun *I* which now is understood to replace the plural subject pronoun *we* in her prior talk. At this point, the repair segment is possibly complete. Next, Naomi produces the element that her talk projects syntactically, the infinitival form *stay* that was projected by the modal verb and the subject.

Central aspects of the repair organization and repair as a process are: (i) the trouble source, (ii) the initiation of repair, and (iii) the outcome of the repair. The repair can be initiated both by the speaker of the trouble source and by the recipient, and the trouble can be repaired by both of the participants, too. Schegloff *et al.* (1977) show that it is preferred that the speaker of the trouble herself both initiates the repair and brings it to completion (see also Levinson (1983:339–42) for a description of the arguments for this preference).⁶

There is also a preference order related to the place where the repair segment is initiated with respect to the trouble source. Thus the first opportunity for initiating the repair is within the same turn-constructive unit that contains the trouble source. In this slot, as in example (22) above, it is the producer of the trouble source, the speaker herself, who initiates the repair and provides the solution to it. This is the most preferred place for initiating repair, and this preference relates to the turn-taking organization of conversation. Recall that the possible completion of a turn-constructive unit forms a possible completion place, and thus the recipient can take a turn there. If the speaker wanted to repair something in her utterance, the best chances for doing that are before the turn-constructive unit that contains the trouble is brought to completion. (For later opportunities for initiating repair, see, e.g., Schegloff, *et al.* (1977); Levinson (1983), Schegloff (1992).)

Our knowledge of issues such as the practices of initiating and carrying out the repair by the speaker herself and by the recipient, the position of repair with respect to the trouble source, and the interactional functions of repair, has increased crucially since the 1980s. The relationship between repair and syntax, which concerns especially same-turn self-repair, however, has received relatively little attention (but see especially, e.g., Schegloff (1979b); C. Goodwin (1981); Levelt (1983); Fox and Jasperson (1995); Jasperson (1998, 2002)). Furthermore, comparative research on repair in different languages has only

⁶ Preference here comes close to markedness in linguistic tradition so that preferred means 'unmarked' and dispreferred 'marked'.

recently become an object of study; we have research with a comparative orientation on languages such as English (Hayashi (1994); Fox *et al.* (1996)), Japanese (Hayashi (1994); Fox *et al.* (1996)), and German (Uhmann (2001)). We will use this research, together with our observations and ongoing research on self-repair in Finnish conversations (Laakso and Sorjonen (in preparation)), as a way of introducing some phenomena that point at potentially interesting issues for further research. In the following section, we will first discuss the means for initiating repair. We will then take up the possibility of morphological repair in languages and, finally, we will consider the association between syntactic resources of a language and the practices for carrying out the repair.

3.2 *Initiation of same-turn self-repair*

Same-turn self-repair appears to be initiated in different ways even within a language, and languages appear to exhibit differences in their resources for initiating repair. A repair initiation can be indexed either non-lexically or lexically. A non-lexical way of initiating a repair found in many languages is a cut-off of a word, typically manifested as a glottal stop (on phonetic and phonological aspects of repair-related glottal stops, see, e.g., Jaspersen (1998, 2002) for English, and Ogden (2001) for Finnish). A cut-off only initiates a repair but it does not locate the repairable element in detail, nor does it specify what kind of repair operation is to follow, that is, what the speaker will do in response to the trouble. Most often, however, a cut-off initiates repair on something that the speaker has already said. This stands in contrast to repair initiators such as *uh* in English which typically index that the trouble is ahead (e.g. the speaker is searching for a word). The following examples show repair sequences initiated with a cut-off in four languages; the cut-off is marked with a dash and the word that has been cut off is in boldface.

(23) Japanese (Fox *et al.* (1996:207))

T: tteyuuka koko denwa **kaket-** kakete kite sa,
I.mean here telephone call- call come FP
I mean, (they) ca- called us here,

(24) German (Uhmann (2001:390))

X: also der kinder warn **na-** die kinder warn natürlich n
PRT the children were of- the children were of.course
ansatzpunkt
starting.point
well the children were of- the children were of course a starting point

(25) English (Jasperson (1998:249))

M: I: thought it was pretty- (0.4) -interesting sca:m that's being **exp-**
 <was expo:sed this week on NBC's Da:teline.

(26) Finnish (Sorjonen (1997:116))

T: . . . ja sit selvästi **n-** oma nimi e päällä ja se paljonko haluaa.
 and then clearly n- own name on and it much-Q want-SG3
 and then clearly (one's) n- one's own name er on (it) and how much
 one wants

In example (23) from Japanese, after the cut-off, the speaker continues with the element she cut off, that is, the syntactic trajectory of the talk does not change. In the German example (24), after the cut-off, the speaker reproduces her prior talk from the beginning of the NP but replaces the article *der* with *die*. The definite article *der* that the speaker originally produced could be initiating a singular NP in the nominative (*der Vater*), in the genitive (*der Mutter*), or in the dative (*der Mutter*). In the plural, it could only initiate an NP in the genitive such as *der Kinder* (e.g. *der Kinder wegen* 'because of the children'). After the cut-off, the speaker replaces the article with *die* and marks the NP as nominative plural. Thus, with the change in the definite article, the syntactic structure of the clause changes.⁷ In the English segment (25), the cut-off leads to a change in the verbal elements of the clause. Here, the speaker cuts off the passive construction. She then replaces *is being exposed* with *was exposed*, thereby reconstructing the tense and aspect of the passive construction from present progressive to simple past. She thus preserves the overall syntactic construction she was producing, the passive construction, but changes its internal structure. This repair recasts the time-frame of the event that the speaker is evaluating in her utterance. Finally, in the Finnish example (26), the cut-off *n-* (possibly the beginning of the word *nimi* 'name') also leads into a local change in the clause being constructed but this time the speaker inserts a pre-modifier to an NP (*oma* 'own'), thereby specifying what exactly the recipient should write on a bucket she needs to take to the local beekeeper for getting honey. In each of these examples, the repair sequence initiated by the cut-off is slightly different in terms of the extent to which the repair changes the syntactic construction of the utterance so far and the extent to which the speaker goes back in her utterance when repairing (cf., e.g., examples (24) and (25–26)). These examples show some of the range of operations that can be performed within repair sequences initiated by a cut-off – continuing the line of talk (23), replacing something in the prior talk (24–5), or adding something into the prior talk (26) – but at this stage, it is too early to make claims about differences between languages here (see Schegloff (1979b),

⁷ We would like to thank Susanne Uhmann for helping us with this example.

Sparks (1994), and Jasperson (1998) for other operations performed with repair in English conversations).

A cut-off is a central way of initiating a same-turn self-repair in several languages, as shown by research on Dutch, English, French, German, and Japanese (Schegloff *et al.* (1977); Levelt (1983); Bredart (1991); Jasperson (1998, 2002)). However, the glottal stop may be phonemic in the language, as it is in Quiche, and thereby may not be usable as a repair initiator (Schegloff (1987)). Other non-lexical ways of indexing that a repair has possibly been initiated include pauses, sound stretches, and search sounds like *uh* in English or *öö* in Finnish. These indices differ from cut-offs in that they often initiate a repair on an element that the speaker has not yet started to produce and that should come next in the syntactic development of talk: they prototypically initiate a search of some kind.

There may also be prosodic ways other than glottal stop that indicate that a repair has been initiated or is going to be initiated. In the following Finnish example, the rise in pitch at line 2, marked with an upward pointing arrow, at the beginning of the adverbial *onneks* ‘luckily’, may be a way of indicating that this adverbial is added to the beginning of the clause the speaker just started. The question in line 1 concerns how the recipient managed the snowstorm in Finnish Lapland (the Finnish original is produced with a falling intonation, marked with a period at the end of line 1):

(27) (Telephone call)

1 Sami: Oho, no mi-ltä-s (.) miten-kä-s selv-is-i-tte.

PRT well what-ABL-CLI how-CLI-CLI manage-PST-PL2

Oh boy, well how (.) how did you manage?

2 Pekka: Me ol-t-i-in ↑*onneks* me ol-t-i-in men-ty

we be-PASS-PST-PERS luckily we be-PASS-PST-PERS go-PTCPL

We had luckily we had gone

3 vähän niinku vi:kaan –

a.bit like astray

a bit astray –

Here the rise in pitch at beginning of the adverbial *onneks* ‘luckily’ (indicated with an upward pointing arrow in the Finnish original) may function as the first sign that a repair is coming. After this adverbial the speaker repeats the subject NP and the finite verb with which he started his answer, and at this point it is clear that the utterance is recast as one that has a sentence adverbial (comment adverbial) in the initial position. In principle, this adverbial could also occur in-between the finite verb and the participial form (*me oltiin onneks menty* ‘we had luckily gone’). However, the repetition of the subject and the finite verb suggests that the speaker did not initially plan to include it in his utterance but is adding

it there afterwards and adding it to the initial position of the clause. With this repair, he provides a contextualization cue for the recipient (Gumperz (1982)). He gives more information about the way in which the recipient should listen to the answer: going astray should be heard as a positive thing in the context of the telling he has started, and not primarily as a description of the poor navigation skills of the speaker and his friends in the trip (see also section 2 for the prevalence of initial marking of stance).

In addition to non-lexical means for initiating repair, languages may also make use of lexical devices for initiating same-turn self-repair. These include different kinds of particles and also syntactic constructions. For example, English speakers make use of the construction *I mean* that consists of a first person singular subject pronoun and a finite verb (the carat signs around *I mean* indicate that *I mean* is said faster than the surrounding talk):

(28) (Jasperson (1998:101))

L: . . . We could pa:y the: >**I mean**< the cushion at the institute
would- (.) would- (0.1) -duh: g:o up significantly if . . .

Here, the speaker initiates a repair with *I mean* after she has just started an object NP with a definite article (*the:*). The repair leads into an abandonment of the turn-constructural unit and the syntactic construction that was being constructed when the repair was initiated. Jasperson ((1998:101) states that when a same-turn repair is initiated with a lexical initiator such as *I mean* in English, the subsequent talk does not typically continue the syntactic construction and turn-constructural unit that was on its way. Instead, the previous syntactic construction and line of talk is abandoned by the speaker. When the repair operates on the turn-constructural unit in progress – when the speaker either replaces something she said with another element or inserts an element into the construction – the repair is typically initiated with a cut-off in English.

There may well be differences between languages in the extent to which they make use of non-lexical versus lexical initiators of repair, and in the way they deploy lexical repair initiators. Thus, in contrast to English, Finnish contains a number of particles that are used for initiating same-turn self-repair. Furthermore, it is particles that are used as lexical initiators of repair in the language. Subject-verb constructions of the type *I mean* in English are used only rarely in Finnish, and, when they are used, they seem to co-occur with a particle or several particles that act as repair initiators. In addition and in contrast to English, lexical initiators operate also on specific elements of the turn-constructural unit in progress in Finnish.

The lexical repair initiators used in Finnish include the particle complex *eiku(n)*, in which the first part *ei* is the negation word and the latter part *ku(n)* is used in other contexts as a conjunction with causal, contrastive, and

temporal meanings ('as', 'when', 'while'). The use of the negation word, as in example (29), appears to be rare in other languages but it is mentioned, for example, as a way of initiating repair in Dutch (Levelt (1983)). Here is a Finnish example:

(29) (Doctor–patient consultation)

Doctor: *Alote-ta-a vaikka nyt näi-stä lukemi-sta mi-tä*
 begin-PASS-PERS PRT now these-ELA value-ELA what-PTV
tässä nyt
 here now

Let's now begin for example with these values that have then

sitte on ol-lu (.) eilen ei-kun tossa te- seittemä-s päivä.
 then is be-PTCPL yesterday no-PRT there seven-ORD day
 been here (.) yesterday ***eikun on the te- seventh.***

In example (29) above, when announcing the checking of the patient's blood pressure measurements, the doctor begins a repair sequence with *eiku* after a time adverbial, and the repair leads into a replacement of the time expression just produced with another.

There are also other particles in Finnish used as same-turn repair initiators: *tai* (30), which is also deployed as a conjunction with the meaning 'or', and the particle *siis* (31) which is used as a marker of inference ('so', 'then', 'therefore', 'consequently', 'that is to say', 'because', 'since'). In example (30), the doctor and the patient are discussing the videotaping of the consultation for research purposes. Here the utterance-initial NP *tämmöstä haastattelua*, marked with the partitive case, is followed by *tai* which ends up with a glottal stop (marked with the - sign). After a short silence the doctor produces a noun marked with the partitive. This noun can be heard as replacing the head of the prior NP: replacing the description of the research for which the taping is done as an interview (perhaps a prototypical type of research for this speaker) with the description *seuranta* 'follow-up'.

(30) (Doctor–patient consultation)

Doctor: *Juu, tämmös-tä haastattelu-a tai- (0.2) seuranta-a*
 yeah this.kind-PTV interview-PTV PRT follow-up-PTV
 Yea:h, this kind of interview ***tai- (0.2) follow-up ((study))***
teh-dä-än näi-stä lääkäri-n ja potilaa-n
 do-PASS-PERS these-ELA doctor-GEN and patient-GEN
 is being conducted on these
välis-i-stä asio-i-sta
 between+ADJ-PL-ELA thing-PL-ELA
 dealings between doctor and patient

In the following example, when giving instructions to the patient, the doctor begins the repair sequence first with cutting of a word (*o-*) and then producing the particle *siis*.

(31) (Doctor–patient consultation)

1 Doctor:

... niin pyri-t pitä-än se-n d̥ieti-n #e:# edelleen semmose-na
 so aim-SG2 keep-ILL it-ACC diet-ACC still such-ESS
 ... so you aim at keeping the diet er still as one

2 et [tä että e: e-t sinne rasva-a **o-** **siis näi-tä .hh**
 that that NEG-SG2 there.to fat-PTV ? PRT these-PTV
 that that e: you don't ((let)) there fat **o- siis these .hh**

3 Patient: [Mm?,

4 Doctor: **tämmös-i-ä, (0.4) semmos-i-a rasvo-j-a** päästä
 this.kind-PL-PTV that.kind-PL-PTV fat-PL-PTV let
these kinds of (0.4) that kind of fats let

5 **m- missä kolesterolia on** elikkä kasvis-rasva-t-han
 where cholesterol-PTV is PRT vegetable-fat-PL-CLI
w- where there is cholesterol in other words vegetable fats

7 on,= et ni- nii-ssä ei oo kolesteroli-a ja ...
 is that they-INE NEG+SG3 be cholesterol-PTV and ...
 are y'know,=so th- they don't have cholesterol and ...

Here the doctor replaces the object NP (*rasvaa* ‘fat’, line 2) with a more complex one. She uses the same head of the NP as before but now in plural (‘fat,’ line 2 → ‘fats,’ line 4), and the NP contains pronominal pre-modifiers and a relative clause. With the repair the doctor makes sure that the patient understands her advice correctly: it is not all fats that should be avoided but certain kinds of fats.

Laakso and Sorjonen (in prep.) suggest that in Finnish, with the selection of the repair initiator, the speaker can indicate the type of repair she has initiated, that is, what the recipient is to expect from the repair. Thus the particle complex *eiku* projects that the speaker will replace something she has said, or will abandon the line of talk and syntactic construction she has been building up, a function arising from the negation word. The particle *tai*, on the other hand, projects that the speaker will replace something she just said but the element replaced will still remain as an alternative to the new element. This kind of use of *tai* is associated with its use as a conjunction (‘or’). Finally, the particle *siis* typically projects that the repair is done in order to specify further or explain something the speaker just said. Within the Finnish system, the cut-off is the

most general way of initiating a repair segment: it does not project any specific type of repair process.

We see as one avenue for further cross-linguistic research the study of ways of initiating same-turn self-repair: the exploration of the kinds of initiators used (lexical vs non-lexical, and their subtypes) and the possible association of the initiator chosen with the type of repair operation being done.

3.3 Morphological repair

Languages differ from each other in the kinds of elements that can be a target of repair. Presumably all languages have repair that operates on a level of words (e.g. replacing a word with another). Morphological repair, however, is not found in all languages. The possibility of having morphological repair appears to be related to the character of the morphology of the language: to the segmentability of its morphemes and their degree of semantic complexity. For example, languages like Japanese and Finnish have types of morphological repair, for example replacement of a bound morpheme with another, that are not found in a language like English.

(32) Japanese (Fox *et al.* (1996:202))

K: ja nanji goro ni **kuridashi- soo?**
 then what.time about OBL go.out
 then about what time (shall we) go out?

(33) Finnish (modified from Hokkanen (2001:155))

mutta nyt **selvi-tä-än,** **-te-tä-än** nämä marka-t,
 but now manage-PASS-PERS CAUS-PASS-PERS these mark-PL
 but now let us manage, sort out these marks,
 että minkälais-i-sta summ-i-sta on kysymys
 so what.kind-PL-ELA sum-PL-ELA is question
 so what kinds of sums we are dealing with
 (literally 'it's the question')

In the Japanese example (32), the speaker cuts off the verb and then replaces the inflectional ending of the verb with another. The citation form of the verb is *kurida-su*, containing the 'conclusive' ending *-su* (Fox *et al.* (1996:202) refer to Shibatani (1990), for the use of the terms they employ). K first produces the form *kurida-shi*, which has the 'adverbial' ending *shi*. In this context, *-shi* was likely to be followed by some auxiliaries and/or particles. K, however, cuts off the verb and replaces *-shi* with the cohortative ending *soo* ('let's do X', 'shall we do X').⁸

⁸ We would like to thank Makoto Hayashi for helping us with the Japanese grammar in this example.

In the Finnish example (33), the speaker begins the utterance by using the verb form *selvitään*, which is a passive form of the intransitive verb ‘to manage, to cope with’. However she immediately changes the verb into a transitive one, that of *selvitetään* ‘sort out, make clear’. These two verbs are derived from the same adjective, *selvä* ‘clear’, and the speaker makes use of that fact in the repair. Instead of uttering the entire verb when repairing, she produces only that part that needs to be changed: the causative derivational affix *te*, followed by the passive morpheme *tä* and its person ending *än* – *selvi/tään* → *selvi/te/tään*.

Japanese and Finnish, then, make it possible to have as the repairing element a bound morpheme on its own. This stands in contrast to languages like English. Fox *et al.* (1996:202) state that they did not find in their English conversations any instances equivalent to the Japanese example above, that is, there were no examples of the type *she looked- s at the table*, where the past tense morpheme *-ed* is replaced by the present tense morpheme *-s*. Fox *et al.* attribute this difference between the languages to differences in the English and Japanese verb morphology. They suggest that the relevant aspects here are: (i) whether the suffixes in the language are full syllables – and thus pronounceable as units on their own – or not; (ii) the degree of semantic complexity of the suffixes; and (iii) the extent to which the suffixes are agreement markers, that is, whether they are tightly bonded to the verb or stand more in an adverbial relation to it. Thus the Japanese verb endings tend to form syllables of their own, have a single grammatical meaning, and are not agreement relevant, which makes it possible to have them as a separate target of repair. English verb endings, by contrast, are often not full syllables and can be both semantically complex (e.g. express the tense and subject–verb agreement) and agreement relevant. Finnish resembles Japanese in that the bound morphemes often form syllables of their own and carry a single grammatical meaning. Finnish has a set of suffixes that are agreement markers (person endings) that occur as the final element in the finite verb. These may become a target of a self-repair of their own, as in the following, where the speaker replaces the first person singular ending *n* with the first person plural ending *mme*:

- (34) (provided by Tapio Hokkanen)
 kun tässä Pietari-ssa **ole-n, mme** nyt puhu-nee-t
 when here St Petersburg-INE be-SG1 PL1 now talk-PTCPL-PL
 when here in St Petersburg I have, we have talked

However, instances like this are rare, and most often repair which is targeted at a bound morpheme and done by producing the replacing morpheme only, concerns the inflection of nouns in Finnish (Hokkanen (2001)). This may result from the facts both that person endings do not necessarily form a syllable of their own (like the first person singular ending *-n* and the second person singular

ending *-t*) and that a repair that would concern the grammatical person of the clause is perhaps not an obvious change to be made.

3.4 Same-turn self-repair and the syntactic structuring of talk

3.4.1 Delaying the next noun due

One type of repair segment is one in which the speaker delays the production of an element, for example, for the purposes of searching for the appropriate description of a referent. In delaying the element, speakers deploy resources that the structure of the language makes available. When what is delayed is a noun in a prepositional phrase, English speakers make use of the repetition of the prepositions and the possible article to delay the head noun (Fox *et al.* (1996)), as in the following two examples:

(35) (Fox *et al.* (1996:204))

- a. M: on the back of his pickup truck **with a, (0.4) with a** jack
 b. K: .hh So I'm going to start just- very simply **with- with** number one

Fox *et al.* state that the recycling of the preposition and the possible article is used as a way of delaying the head noun of the phrase for purposes such as searching for an appropriate word, requesting the recipient's gaze, and/or constructing a dispreferred response. They also suggest that this kind of procedure can be used for delaying other kinds of elements, too (e.g. modifiers and verbs).

Japanese speakers, by contrast, have other kinds of resources available for delaying the next noun. As Japanese is a postpositional language and case particles follow the nouns, they cannot be used as a delay strategy. Instead, Japanese speakers can use a demonstrative pronoun and a case particle as a way of delaying a noun, as in the following segment which also contains the search sound *u:* before the head noun:

(36) (Fox *et al.* (1996:205))

- M: .hh maa sonna::: **are ga::::** (1.5) u:: meedosan ga iru yoona:
 well like that SUBJ uhm maid SUBJ exist such
 ie ya nai kara:,
 family be not because
 because, like, we are not the sort of family to have that, uhm a maid,

The possibility of using different kinds of recycling, then, differentiates languages like English and Japanese. In both languages, however, it is also possible to use search sounds, such as *uh* in English, for delaying a forthcoming element in the talk. Search sounds are also used by Finnish speakers for the same purposes (*öö; ää; ee*). Finnish, like Japanese, is a postpositional language and its extensive inflectional morphology is suffixing, and therefore the type of

recycling used in English is not available in Finnish. Instead, and resembling the Japanese procedure, Finnish speakers can, for example, make use of pronominal pre-modifiers to delay the production of a noun. Finnish has a set of demonstrative pronouns and pronominal adjectives that function as pre-modifiers. The demonstrative pronouns used as pre-modifiers serve to index, for example, that the referent is recognizable to the recipient (*se* 'it; that; the'; this is developing into a definite article, see Laury (1997)) or that it is focal (*tää* 'this') or non-focal (*tuo* 'that') in the talk to follow (Etelämäki (1998); Seppänen (1998)). The pronominal adjectives (e.g. *semmonen* 'such') are often used to introduce new referents and they can also index that the description of the referent is not a full description. These pre-modifiers, especially in combination with the lengthening of the final sound, can be used as a way of delaying a noun. In the following example, the speaker delays the production of the proper noun with the pre-modifier *ton* that contains a lengthening of the final sound (line 2):

(37) (Telephone call)

1 Tiina: .hh Ja tota vo-isi-t sä anta-a mu-lle
 and well can-CON-2SG you give-INF I-ALL
 .hh And well could you give me

2

to-n: **.mhhth to-n** Eeva-n puhelin-numero-n
 that-GEN that-GEN Eeva-GEN phone-number-ACC
 ku se –
 since it
ton:mhhth ton Eve's phone number since she –

Notice here that the pre-modifier *ton* is recycled by the speaker after an inbreath (.*mhhth*), and the proper noun is produced immediately after that. As Finnish pronominal pre-modifiers each carry a meaning of their own, they are not used only for repair purposes and are hence not 'empty place-holders'. However, they lend themselves to be used for that purpose as 'natural' elements of talk, as elements that are frequently used in talk for various purposes.

3.4.2 Scope of backing up in the utterance when repairing

In doing the repair, a central task for the speaker is to indicate clearly enough to her recipient what exactly in the utterance she is repairing. In locating the target of the repair and the operation that is being done for the element (e.g. replacing, adding, abandoning the prior talk altogether), the speaker may need to back up a little bit in her utterance in order to show the exact place of the repair.

Existing research suggests that languages differ in terms of the scope of recycling when self-repair is performed: there may be differences in the extent to which speakers in different languages go back in their utterance when they

repair something in their prior talk after the repair initiator. Furthermore, this difference is associated with and informative of the kinds of syntactic resources the respective languages have. In their research on English and Japanese conversations, Fox *et al.* (1996) found that, in English conversations, the scope of the backing up was either the constituent that was being constructed when the repair was initiated (NP, PP, VP) or the clause produced so far. The speakers thus did not go back to just any random word in the prior talk when doing repair. The following three examples illustrate this. They all contain cases where the speaker stops her utterance but the repair initiator does not lead to any replacement or insertion of an element. Instead, the speaker recycles the same word or same phrase she was producing when she initiated the repair.

(38) (Fox *et al.* (1996:206))

B: in this building- we finally got **a- .hhh a** roo:m today **in- in the leh- a lecture** hall,

Example (38) contains three repair segments. The first segment is initiated after an NP has been started with the indefinite article *a*. When continuing her talk (after an inbreath), the speaker goes back to that part of the NP she had produced so far. The second repair segment is initiated after the speaker had started a prepositional phrase with the preposition *in*. Again, when continuing, the speaker repeats only the beginning of the prepositional phrase she had started. In the last instance, the speaker initiates the repair segment in the middle of the head noun of the prepositional phrase (*leh-*). When continuing her talk, she goes back to the nearest constituent boundary, to the beginning of the NP she has produced so far and replaces the definite article with an indefinite one.

In example (39), the speaker also initiates repair after she has started a noun phrase. However, when continuing, she goes back to the beginning of the clause produced so far and not just to the beginning of the NP:

(39) (Fox *et al.* (1996:206))

K: Plus once he got- (0.8) **some um** (1.3) **he got some** battery acid on. (0.2) on his trunk or something.

Conjunctions and connectors do not always appear to be counted as elements of a clause in Fox *et al.*'s examples, as in (40) where the speaker does not back up to *because*:

(40) (Fox *et al.* (1996:206))

M: Okay, well we could- do it from that angle then, because **I don't- I don't** really .hh encounter that concept problem (0.3) in any of the problems.

Fox *et al.* found that Japanese differs from English in that Japanese speakers back up only constituent-internally, and there was no clausal backing up in their Japanese data, that is, no counterparts to examples (39–40) above:

(41) (Fox *et al.* (1996:207))

M: tteyuuka koko denwa **kaket- kakete** kite sa,
I.mean here telephone ca- call come FP
I mean, (they) ca- called us here,

(42) (Fox *et al.* (1996:207))

T: . . . mukoo no **sutahhu- sutahhu** mo sa: yuushuu.
the.other GEN staff staff also FP excellent
. . . their stff- staff is also excellent.

(43) (Fox *et al.* (1996:207))

M: sorede sa, ne **atashi wa- atashi wa** sa, sokede sa, koitsura
then FP FP I TOP I TOP FP then FP these.guys
karakatte yare toka omotte sa,
tease do QUOT think FP
Then, I, I then thought, ‘let’s tease these guys.’

Fox *et al.* suggest that the differences between the two languages in the scope of recycling is motivated by the different syntactic practices used for managing interactional needs in these languages. English clauses require an overt subject and exhibit an SV(O) structure. Clausal turn-constructional units, after a possible discourse marker (e.g. connective) or a response word (like *yeah*), start typically with a subject which begins a tight syntactic structure which could be schematized as [S + V + O (+ PP/ADV)]. Thus the English clauses have a clear beginning, the subject. Consequently, the recipient(s) can use this tight syntactic structure of the clause to project what the possible syntactic organization of the utterance will be and when it will possibly be complete, that is, when there will be a possible place for a speaker transfer. For speakers, it provides – in addition to the local constituents such as NPS – a possibility to use the beginning of a clause as the point to which they back up when doing the repair.

In Japanese, all referring nouns can be marked for case, the verb often comes at the end or near the end of a clause, and the order of nouns before the verb is flexible (see, e.g., Tanaka (1999)). Furthermore, subjects and objects are often not expressed in a clause but must be inferred from the elements of the utterance and its sequential context. As a result, a clausal turn-constructional unit in Japanese often begins with a connective or a response word, followed by adverbials, or nouns indicating a setting, followed by a verb and ending with a final particle. Utterances thus do not have such tight syntactic organization as in

English: the core arguments like the subject and the object can be unexpressed and, instead, only the peripheral elements are overtly mentioned – the beginning of a clausal turn-constructive unit is often loosely tied syntactically to what comes next. The projection of the organization of a clausal turn-constructive unit is, then, done incrementally and more locally in comparison to English, and there may also be non-syntactic means for projecting the development of the utterance of which we do not yet know enough. This kind of structuring makes the beginning of a local constituent but not the beginning of a clause the relevant point for indicating what the self-repair is about.

Fincke (1999) found that Bikol, a West Austronesian language of the Philippine type spoken on the southern peninsula of Luzon, is more similar to Japanese, in that the clause only rarely organizes repair in Bikol. Fincke relates this to the fact that, like Japanese, Bikol clauses lack consistency in form and consequently the type of projectability allowed by consistency.

Finnish comes close to Japanese and Bikol, as the most common practice in Finnish appears to be to stay within the local constituent when backing up. Finnish word order allows for many kinds of grammatical permutations for discourse purposes. The syntactic function of elements in a clause is indicated with morphological means, especially with the case-marking of nouns and the agreement morphology of verbs, rather than, say, word order (see, e.g., Vilkuna (1989); Helasvuo (2001a)). Furthermore, the modifiers, which precede the head, typically agree in case and number with the head of the NP. The organization of Finnish clausal turn-constructive units can, then, be projected from the beginning item-by-item, and the grammatical function of each local element is shown by its structure. It is thus enough to back up the minimum number of elements when showing the target of the repair and projecting the type of next talk. In the following, the speaker (line 2) backs up to the beginning of the word and constituent she had just started, not to the beginning of the entire clause.

(44) (Laakso and Sorjonen in prep.)

1 Doctor:

Et kahdeksan .hh j: a ja kahdentoista välillä
 so eight and and twelve between
 noi-ta koke-i-ta
 those-PTV test-PL-PTV

So it is in between eight and twelve that the tests

2 ote-ta-an m- se syö-mä-ttä oo-t a- illa-sta
 take-PASS-PERS ? it eat-INF-ABE be-SG2 morning? evening-ELA
 are taken ? it you are without eating ((from)) m- evening onwards

3 .hhh kymmene-stä ja tuota (0.2) tietenki . . .
 ten-ELA and well of.course
 .hhh from ten and well (0.2) of course

However there may be specific circumstances in which the speaker backs up to the beginning of a clause. In the following example, the doctor initiates repair with the search sound *öööh* at a point after which there is a place for the possible final element of the clause, the nominal complement of the verb *sopia* ‘fit’ in the inner local case illative.

(45) (Doctor–patient consultation)

1 Doctor:

et (0.4) tossa näköjään ol-i et se vo-is **sopia (0.2)**

so there seemingly be-PST that it can-CON fit

so (0.4) there ((in the documents)) seemed to be

that it could fit (0.2) the

2 se luu-ydin-näyte *öööh* et se anemia

the bone-marrow-sample+NOM that the anemia+NOM

bone marrow sample er:: that the anemia

3 **vo-is: sopia** vuoto (0.4) anemia-an

can-CON fit bleeding anemia-ILL

could fit a bleeding (0.4) anemia

4 on-k-s su-lla mitään maha-oire-i-ta.

is-Q-CLI 2SG-ADE any+PTV stomach-symptom-PL-PTV

>do you have any stomach symptoms?

After the repair initiator *öööh* (line 2) the speaker backs up to the beginning of the complement clause and to the complementizer *et* ‘that’ even though the primary operation of the repair is to replace the head of the dislocated NP, *se luuydinnäyte* ‘the bone marrow sample’ (line 2) with the noun *anemia* ‘anaemia.’ Notice however that the overall syntactic structure of the clause is modified: the repairing segment does not contain a right dislocation anymore.

The existing literature also suggests that when the speaker backs up within a constituent that she has just been producing (e.g. NP) and that constituent has internal structure (e.g. pre-modifiers), speakers may back up differently in different languages. Fox and Jasperson’s work (1995) shows that in English conversations, speakers can either go back to the very beginning of the constituent (46), or they can just replace that element that is the target of the repair (47):

(46) (Fox and Jasperson (1995:102))

K: Now I’m going to look (0.5) **at my (1.1) at this,**

[

C: Yeah

(47) (Fox and Jasperson (1995:102))

D: They get- their g- teeth keep gro:wing rou:nd from the **fron-back** to the front.

German appears to differ from English in this respect. In Uhmman's (2001) data speakers tend to back up to the beginning of the constituent (to its functional head in her terms):

(48) (Uhmman (2001:383))

X: **im geben- im gegensatz** zu kIEl und KOblenz
in com- in contrast to Kiel and Koblenz

is das doch EIgentlich wirklich direkt vor der TÜR sozusagen
it's actually really just next door so to speak

Uhmman suggests that this practice is associated with the structural features of German. By virtue of the relatively free word order and the varying positions of the finite verb, there is no single typical syntactic schema, such as SV(O) in English, that the recipients can use to project the development of the turn-constructional unit and, consequently, the possible place where they could take a turn. For example, almost any grammatical element may come early in the turn-constructional unit (subject, direct object, adverbial, etc.). Nouns are marked for grammatical gender and there is also a rich case morphology in German, and this information is provided especially in the pre-modifiers. There are, then, good reasons for the speakers to back up to the beginning of the constituent in order to show what exactly is being repaired and what kind of syntactic construction will be constructed by the speaker in her talk to come.

Finnish comes closer to English in its practices for backing up when the target of the repair is the head of the constituent. In Finnish, speakers can either replace the head of the NP immediately, without going back to the beginning of the constituent, or they can back up to the beginning of the constituent. The more typical practice appears to be to replace the head immediately, as in the following two cases.

(49) (Doctor–patient consultation)

1 Doctor: Tai no (.) sano-ta-an että oo-n kuu-llu mutta
or well say-PASS-PERS that be-SG I hear-PTCPL but
Or well (.) let's say that I have heard but

2 se on taas ihan semmone **spe- erikois-tapaus**.
it is again just such special specific-case
it is then just like a **specia- specific case**.

(50) (Doctor–patient consultation)

Patient: ... että mu-n **pal- pää-paikka** ol-i niinku
so I-GEN service-place? head-place(NOM) be-PST like
... so my **ser- head quarters** was like

Turku viis vuot-ta.
Turkes five year-PTV
Turku for five years.

In example (49), the doctor cuts off the head noun of the predicate nominal *spe-* and in the repairing segment following replaces this directly with the noun *erikoistapaus*, without going back to the pronominal pre-modifiers *ihan semmone* that initiated the NP. The doctor is here in effect replacing the word *spesiaali*, which is a loan word in the language, with a more colloquial word with a Finnish origin, *erikois*, presumably in order to make his disagreeing turn clear to the patient. Also in example (50), where the target of the repair is the subject NP of a predicate nominal clause, the head of the NP is replaced immediately. The NP is started by a genitive modifier (*mun* ‘my’) but the speaker replaces the head noun immediately, without going back to the beginning of the constituent. Similar to German, Finnish exhibits a relatively free word order and it has a rich case morphology. Unlike German, however, the information concerning the grammatical function of the constituent is provided both by the pre-modifiers and by the head in Finnish: in most cases, the pre-modifier and the head show agreement in case and number. And for the grammatical function of the constituent it is the morphology of the head that is the crucial one, as in example (50), where it is the nominative case of the head and not the genitive case of the pre-modifier that makes the NP into a subject.

However, speakers may also back up to the beginning of the NP in Finnish. This may be due to the distance between the target of the repair and the repairing element(s). In the following case, the speaker (line 3) backs up to the pre-modifier *niissä* of the NP when repairing the head noun of the NP. Here the first repair initiator, the cut-off, is followed by a micropause, the specifying *eiku*, and the apologizing *anteeks* ‘sorry’, and only after them does the speaker provide the repairing elements. Moreover, in the repairing segment, the determiner *niissä* has a vowel lengthening at its end (indicated by colons; # indicates creaky voice) which suggests that the repairing head noun is not immediately available but needs to be searched for, and the determiner is apt for giving time for the search.

(51) (Doctor–patient interaction)

((talking about the patient’s cough:))

1 Patient: Ei-kä meinaa loppu-a ei ollen[kaa.

NEG-CLI intend stop-INF NEG at.all

And it won’t go over at all [l.

2 Doctor:

[Nii:, oo-tte-ko te käy-ny nyt

[yeah be-PL2-Q you go-PTCPL now

[Yeah, have you been now

3 (.) **nii-ssärönt-** (.) **eiku** **anteeks** **nii-ssä#:#** **laboratorio-koke-i-ssa**

them-INE X-ray PRT SORRY them-INE laboratory-test-PL-INE

(.) to **the X-ray-** (.) **eiku** **sorry to the laboratory tests** again,

- 4 uudestaa, vai ol-i-k-s ne sillon vaa,
 again or be-PST-Q-CLI they then just
 or were they just then,

Thus the target of the repair and the repairing elements are not immediately adjacent here, and this may be the reason for the speaker's backing up to the beginning of the NP. The intervening material between the target of the repair and the repairing segment is often of a certain kind: elements that either treat what happened as an error that should not have happened (as above) or elements that indicate that the speaker needs more time for finding the appropriate wording (as when the repair initiator is followed by a clause like 'how was it he said it').

3.5 *Summary*

In this section, we have introduced practices for initiating and doing self-repair as one area that is relevant for all spoken interaction and for all languages. The omnirelevant character of self-repair suggests that practices for doing self-repair should be considered as part of a description of the morphosyntactic organizational features of languages. We have brought attention to the fact that ways of initiating and doing self-repair in a given language seem to be deeply intertwined with the kind of morphosyntactic practices the language users have available. As examples, we have used ways in which speakers of different types of languages can: (i) delay an element (a noun); (ii) make use of morphological repair; and (iii) vary the scope of recycling an element or elements they were producing before they initiated the repair. We have taken up interactional functions of repair in some of the examples (what speakers do when doing a certain type of self-repair in a certain type of context), and we want to emphasize the necessity of combining the morphosyntactic and interactional analysis when studying self-repair.

4 **Co-constructions in a cross-linguistic perspective**

4.1 *What is a co-construction?*

In this section, we discuss co-constructions, i.e. clauses that are produced collaboratively by the conversation participants (see Sacks (1995 [1967–8]:647–55); Lerner (1991, 1994, 1996); Ono and Thompson (1996)). In very elementary terms, they provide a syntactic resource for doing something together that is normally done by one participant only. Thus, they are essentially social in nature. For the syntactician they offer a perspective on syntactic structuring as an interactive and dynamic process.

There is a considerable literature on co-constructions, but most of it is based on English data (Sacks (1992 [1967–8]); Lerner (1991, 1994, 1996); Ono

and Thompson (1996); Local (2000); Szczepek (2000a, 2000b)). There are, however, studies on co-constructions in Japanese (Ono and Yoshida (1996); Hayashi and Mori (1998); Lerner and Takagi (1999); Hayashi (2000)) and Finnish (Helasvuo (2000, 2004)). At this stage then, we are not offering any cross-linguistic generalizations, but, rather, suggesting some lines of investigation for further research.

The structure of co-constructions can be illustrated with the following broad schema (52).

(52) (Helasvuo (2004:1316))

Speaker A:	<i>we produce</i>	← preliminary component
	(.)	a pause or an element indicating word search (optional)
Speaker B:	<i>a syntactic construction together.</i>	← final component

In schema (52) Speaker A produces the preliminary component of the co-construction, which Speaker B then brings to a completion by producing the final component. In between the two components there may be a pause or an element indicating word search, thus creating a possible slot for the co-participant to come in and complete the utterance A has started.

Lerner (1991, 1994, 1996) has observed that collaborative constructions are especially common in contexts that involve what he calls ‘compound turn-constructional units’. These units are two-part constructions which include a preliminary component by one speaker and a final component by another speaker. The preliminary component typically projects the possible form for the final component of the turn-constructional unit (Lerner (1996:240)). In terms of turn taking, it is typical of these compound turn-constructional units that only the end of the final component of the compound is a transition relevance place, whereas the end of the preliminary component is usually not. However, the completion of the preliminary component typically allows for a projection of the final component, thus making speaker change possible, even though it is not a typical place for speaker transition. A commonly cited example of a compound turn-constructional unit is an *if-then* compound, where the preliminary *if*-part allows the co-participant to make a projection for the following *then*-part.

- (53) (Lerner (1991:445))
 1 David: so if one person said he couldn't invest
 2 (.)
 3 Kerry: then I'd have to wait

In example (53), David produces the preliminary component of a compound turn-constructional unit. According to Lerner (1996:445), the 'turn-so-far' projects an upcoming slot for a specifiable final component, i.e. the *then*-clause, which is produced by Kerry. Note also that David does not continue right away after producing the *if*-clause, but instead, there is a micropause (line 2), after which Kerry completes David's compound construction (cf. the schema in (52)).

Although there has been a slight emphasis in the literature on co-constructions of compound units, co-constructions are in no way limited to multi-clause units but may occur in simple constructions as well (see examples below and Helasvuo (2004)).

Co-constructions have been studied from a variety of perspectives. In his lectures on conversation, Sacks (1992 [1967–8]) discusses them under the heading of 'collaboratively built sentences'. Lerner (1991, 1994, 1996) calls them 'sentences-in-progress', which is a term that very well reflects the dynamic and interactive nature of the process of collaboratively producing a clause or a sentence. Both Lerner and Sacks emphasize the social nature of collaborative sentences, whereas Ono and Thompson (1996) focus on the syntactic aspects of the phenomenon, using the term 'co-construction' to describe it. Szczepek (2000a, 2000b) and Local (2000) employ a broad term, 'collaborative production' that is neutral as to the nature of the phenomenon.

In this chapter, we employ the term 'co-construction' to describe this phenomenon. We will focus on how co-constructions are jointly produced by the conversation participants in an interactive process. Our aim is to show how the grammar of the language under study sets certain constraints on the kinds of co-constructions that there can be in the language.

4.2 *Typical conversational contexts for co-constructions*

Lerner (1991) identifies typical contexts where co-constructions occur. These include the above-discussed *if x – then y* format, quotations, parenthetical inserts, and list constructions. In addition to these contexts, co-constructions may occur in assessments and in sequences where speakers are duetting. We will discuss these contexts in more detail and provide examples of each.

In quotations, the two components of the co-construction consist of the quote and the author attribution, but it depends on the language in which order these two typically occur: for example in Japanese, the quote usually comes before the matrix clause containing the author attribution, whereas in English the ordering

of the two is reversed. Example (54) illustrates a case where the preliminary part consists of the quote and the final part carries the author attribution. The example is from Japanese. Before the excerpt shown in the example, speaker Lisa has told the other participants Naomi and Marie about someone who had misconstrued some Chinese characters on a menu in a Chinese restaurant, mixing the Chinese character which means ‘additional’ with the character for *so* in *miso*. Example (54) begins with Naomi suggesting what this person might have been thinking. The suggestion takes the form of attributed thought, and Lisa and Marie complete it with the author attribution. The completion is produced in overlap with Naomi’s continuing talk. In the translation, those items that have no overt expression in the Japanese original but are needed for an idiomatic English translation are indicated with double parentheses.

(54) (Lerner and Takagi (1999:60))

- 1 Naomi: *ajiga koku tsuiteru* [*mitai ni*, [(o)[*motta no kamo ne::*.
 taste strong seasoned like thought N perhaps FP
 ((The dish)) is more strongly seasoned than usual [or something
 like that, (((she)) th[ought perhaps
- 2 Lisa: [soo so. [*o*][*motta no*<, *omotta*
 yeah thought FP thought
 [Yeah. ((She)) seems to have [th[ought.
- 3 rashikute.
 seem
- 4 Marie: [(*omotta no*) *kamo ne::*.
 thought N perhaps FP
 (((she)) thought perhaps.

In example (54) line 1, Naomi makes a contribution to Lisa’s story by suggesting a possible way the person who misinterpreted the characters might have thought. This interpretation is presented as reported thought. Naomi continues with an evidential marker *mitai ni*, but at the point where the attributed thought is completed, Lisa produces first the acknowledgement tokens *soo so* (on line 2), and then continues with the attributing predicate *omotta*. It is noteworthy that Naomi, Lisa, and Marie almost simultaneously provide the same attributing predicate – although in slightly different forms – to complete the reported thought construction. Lerner and Takagi (1999) take this to suggest that the place and the form of the final component of the co-construction have been strongly projected.

Example (55) illustrates how parenthetical inserts can be used as a resource in co-constructions.

- (55) (Lerner (1991:447))
- 1 Dan: it seemed to be
 2 (.)
 3 to Ken at least
 4 (.)
 5 Roger: the wrong kind.

According to Lerner (1991), the parenthetical insert *to Ken at least* (line 3) does not change the trajectory of the turn, but, rather, suspends its progress to completion. The end of the insert thus provides a place from which the already projected turn unit can resume. At this point, the co-participant, Roger, completes Dan's utterance (line 5).

In addition, conversational lists provide a typical context where co-constructions occur. Jefferson (1990) has studied lists in English conversation, and she has shown that conversation lists regularly exhibit a three-part structure, and, furthermore, that both speakers and recipients of lists orient to a three-part structure. This is evidenced *inter alia* by the fact that co-participants may come in after the second part of the list and provide the third and final part. Consider example (56), which comes from Spanish.

- (56) (Sánchez-Ayala (2003))
- 1 Leo: No eso no me lo conta-ste-s.
 NEG that NEG SG1.DAT SG3.ACC tell-PAST-SG2
 No, we didn't talk about that
- 2 *Yo habl-é con-tigo,*
 SG1 talk-PST.SG1 with-SG2
 We talked
- 3 la última vez que yo habl-é con-tigo tú
 DEF last time that SG1 talk-PST.SG3 with-SG2 SG2
 estaba-s,
 be-IMPERF-SG2
 last time we talked you were
- 4 que lo había-s escri-to
 REL SG3.ACC have-SG2.IMPERF write-PAST.PTCPL
 you had written it
- 5 lo había-s mand-ado
 SG3.ACC have-SG2.IMPERF send-PAST.PTCPL
 you had sent it
- 6 Lola: Sí,
 Yes,

- 7 Y no me hab-ía contesta-do nadie.
and NEG SG1.DAT have-SG2.IMPERF answer-PAST.PTCPL nobody
and nobody had answered [the advertisement]
- 8 Bueno,
Anyway,
- 9 pues me contest-ó uno solamente,
so DAT.SG3 answer-PAST.SG3 IND.MSC.SG only
Then, only one guy answered.

In (56), Leo provides the first two items of a list (lines 4 and 5). They serve as a reconstruction of a story Lola had told last time Leo and Lola had talked. On line 6 Lola responds to Leo's list so far with an agreement token⁹ and then proceeds to provide the third and final item of the list (line 7).

Co-constructions can be used as a resource when formulating assessments in conversation. Assessments occur in a variety of sequential contexts, for example in orienting segments of stories and as extended sequences when stories or topics are brought to completion. C. Goodwin and Goodwin (1987:49) discuss the function of assessments and note that, through assessments, speakers can collaboratively build within the talk itself an interpretive context that can be utilized for the analysis of subsequent talk and action. Speakers may collaborate in formulating the assessment term (i.e. the characterizing NP). Assessments often take the form of characterizing clauses (predicate nominal clauses, see example 57) or characterizing NPs (example 58).

Example (57) comes from a Finnish telephone conversation between a mother and her daughter. The recording was made in November, and the mother Tintti has told the daughter how she has started preparing for Christmas, *inter alia* by buying two bottles of liqueur. The raspberry-strawberry liqueur (on line 1) is the second item she mentions that she has already bought.

(57) (Helasvuo 2004:1323–4)

1 Tintti: sit mää ost-i-n, m-. . vadelma-mansikka-likööri-i.
then I buy-PAST-SG1 raspberry-strawberry-liqueur-PTV
Then I bought, stra-. . raspberry-strawberry liqueur.

2 Leena: aha.
Uhhuh.

3 (0.5)

4 Leena: jaa jaa.
yeah yeah
I see, I see.

⁹ Lerner and Takagi (1999) use the term *pre-positioned agreement or acknowledgement token* and note that these can be found in English and Japanese anticipatory completion.

- 5 (0.7)
- 6 Leena: no niin.
well so
That's it.
- 7 Tintti: ne on,
they be-SG3
They are,
- 8 Leena: suur-hankinna-t.
big-purchase-PL
large-scale purchases.
- 9 Tintti: ne on sievä-t tuol kirja-hylly-n pää-l.
they be+SG3 cute-PL there book-shelf-GEN top-ADE
They are cute there on top of the book shelf.

Tintti has been telling about her purchases for Christmas. She moves on to an evaluating sequence (on line 7) by beginning a characterizing clause (grammatically a predicate nominal clause). With *ne on* 'they are' Tintti initializes a characterization of the things she has bought. The pronoun *ne* 'they' refers anaphorically to the items she has mentioned (before this sequence and on line 1). With her contribution on line 8, the daughter Leena comes in and co-constructs the characterization. The characterizing phrase is an NP functioning as a predicate nominal, which shows the same number (plural) as the subject NP *ne* 'they' that Tintti produced on line 7. On line 9, Tintti rejects Leena's characterization by recycling the whole construction from the beginning and replacing the characterization with a different characterizing phrase which recasts the purchases in a very different way (as pieces of decoration) from the co-constructed characterization (which considers them more from an ironic angle).

Example (58) illustrates the co-construction of a characterizing phrase (the 'assessment term' in C. Goodwin and Goodwin's (1987) terminology).

- (58) (C. Goodwin and Goodwin (1987:10))
- 1 Paul: Tell y- Tell Debbie about the dog on the golf course today.
- 2 Eileen: eh hnh [hnh ha has [ha
- 3 Paul: [hih hih [heh heh.hh hh
- 4 Eileen: .h Paul and I got to the first green,
5 (0.6)
- 6 Eileen: .hh And this beautiful, ((swallows))
- 7 Paul: I[rish Setter.
- 8 Eileen: [Irish Setter
- 9 Debbie: Ah:::,

- 10 Eileen: Came tear [in up on to the first gree(h)n,=
 11 Paul: [Oh it was beautiful
 12 Eileen: =and tried to steal Pau(h)l's go(h)lf ball. .hh
 13 Paul: Eh hnh hnh.
 14 Eileen: .hheh .hh

In example (58), line 1 Paul asks Eileen to tell a third person about an experience they share from earlier that day. Eileen starts to tell the story on line 4, then pauses (line 5) and starts a descriptive phrase that serves to introduce the main character of the story (line 6). She stops to swallow, and at this point, Paul comes in and provides the head noun of the NP Eileen has started to produce. Note that, ever since the beginning of this segment, it has been clear that the story will be dealing with a dog; when co-constructing the descriptive phrase with Eileen, Paul provides the name of the specific breed of dog they are dealing with. Debbie participates in the assessment activity and produces an appreciative response token *Ah:::* (line 9).

Examples (57) and (58) illustrate cases where speakers co-construct assessments together. In example (57) a co-participant completes an assessment by offering a characterizing NP, whereas in (58) the participants work on the co-construction of a characterizing phrase, the NP *this beautiful Irish Setter*.

One further conversational context where co-constructions occur is assisted explaining or storytelling (Lerner (1992); Lerner and Takagi (1999)). In assisted explaining and storytelling, speakers may participate in the conversation as duets. Falk (1980:18) defines a duet as a multi-party conversation where two (or even more) persons may participate as though they were one, talking in tandem about the same thing. Example (59) illustrates this. It comes from a conversation between two married couples. Kanji and Yurie both explain to the other couple their experiences in trying to find a wedding dress to rent for Yurie. Colons ':' indicate lengthening of the preceding sound. Double parentheses are used in the free translation to indicate elements that are not expressed in the Japanese original but are needed for an idiomatic translation into English.

- (59) (Hayashi (2000:183))
 1 Kanji: saizu: ga: ne:: (.)
 size SUBJ FP
 The ((right)) size, ((you)) know, (.)
 2 ano yappa chicchai kara[:]
 uhm as.expected small because
 uhm, ((you)) see, since ((she's)) small,
 3 Shoko: [u:]::::n.
 Uh huh

- 4 Yurie: [(na)i: n desu yo:.....]
 not.exist N COP FP
 isn't there.
- 5 Kanji: [sentakushi ga:, kagira]retete.
 options SUBJ be.limited.and
 ((our)) options were limited, and,

In example (59) line 1, Kanji starts an utterance about the size of the wedding dress by producing an NP *saizu* 'size' marked with the subject particle *ga*. After a micropause he adds a *kara* 'because'-clause in which he presents Yurie's being small as a reason for something. The wife of the other couple, Shoko, responds to this with an acknowledgement token (line 3), and Yurie joins in and produces a predicate for the subject NP Kanji has produced on line 1 (*saizu: ga: ne:: + (na)i: n desu yo:.....*: 'There's no ((right)) size' (lit: 'the size doesn't exist')).

Assisted explaining may become relevant in contexts where speakers encounter problems in the progression of the talk, *inter alia* in finding the right words, as in example (60), which is from Swedish.

- (60) (from Bockgård (2001:4))
- 1 Astrid: och han (.) han eh bo:r (.) i: eh:>
 and he he live in
 and he (.) he uh lives (.) in uh
- 2 Cilla: gamla [stationsh[us-et.]
 old station.house-DEF
 the [old station b[uilding].
- 3 Astrid: [# [gamla] eh station,
 old station
 [((creak)) [old] uh station,
- 4 (0.4)
- 5 Astrid: .h ja: (0.2) jätte-fint,
 yes super-great
 .h yeah (0.2) great.

In example (60) line 1, there are several signs indicating that Astrid is encountering word-finding difficulties: there are micropauses and sounds indicating search (translated here with the English *uh*). Astrid constructs an intransitive predication with the verb *bo* 'live' and proceeds to produce the preposition *i* 'in' required by the verb. At this point, Cilla comes in and completes the prepositional phrase. Astrid responds to the completion with a partial repeat of the final part of the co-construction.

Co-constructions in assisted explaining and storytelling make it particularly apparent how problematic it is to assume a strict division between the role of

speaker and recipient. These roles are constantly being negotiated, and in their talk speakers express their understanding of their own and co-participants' roles in the conversation.

4.3 Grammatical constraints on co-constructions

There is a considerable literature on the kinds of conversational contexts in which co-constructions typically occur. In contrast, the literature on grammatical patterns found in co-constructions is quite limited. It is evident that the grammatical characteristics of the language under study set certain constraints on the kinds of co-constructions that can exist in that language. With regard to co-constructions, constraints on linear organization (especially word order) are of course particularly relevant. Also relevant are the grammatical means by which co-participants are able to project the future trajectory of the turn. We will offer some initial observations.

Japanese exhibits several syntactic features that are relevant to the formation of co-constructions. Most importantly, Japanese is a verb-final language and it is a postpositional language. These grammatical features set certain constraints regarding the structure of co-constructions. Hayashi (2000) shows that several syntactic practices in Japanese result in 'incremental' turn construction, i.e. a turn is 'produced in a bit-by-bit fashion, where each increment provides only limited projectability for the future course of the emerging turn' (Hayashi (2000:325)).

For example, in Japanese a speaker can use a postposition in utterance-initial position in order to latch grammatically onto a particular element in the prior speaker's ongoing or just completed utterance, and then utilize that element as part of the construction of his or her own utterance. Example (61) illustrates this in line 12 with the quotative particle roughly meaning 'they say'. It comes from a conversation among four women who meet in the house of one of the conversation participants, Akiyo. She has recently remodelled her house. In lines 1, 3, and 6 she makes reference to the company that was in charge of the remodelling. Intertwining with this are Takie's turns (lines 2, 4, and 7) in which she attempts to display her recognition of the name of the company. In line 9 she goes on to say that the same company remodelled her house as well. At this point, a third participant, Kaori, requests clarification (line 10), and Takie and Akiyo both respond to this (lines 11 and 12).

(61) (Hayashi (2000:233–4))

1 Akiyo: .hhhhh tookyuu san:::: no na=
Tokyu TL GEN FP
.hhhhh Tokyu's

2 Takie: =u:[.n.]
Uh huh.

- 3 Akiyo: [too]kyuu [ani:-]
Tokyu Ani:-
- 4 Takie: [<tookyuu-<]
Tokyu-
- 5 (.)
- 6 Akiyo: animek [kusu san.]
animekkusu TL
Animekkusu.
- 7 Takie: [>ANIMEKKU]SU<
>Animekkusu<
- 8 Akiyo: U: [:N.]
Yeah.
- 9 Takie: [u::]:n. uchi mo soo.=
yeah my.family also so
Yeah. Our house, too.
- 10 Kaori: =nani sore.
what that
What's that?
- 11 Takie: tookyuu animek [kusu (tte)
Tokyu Animekkusu QUOT
Tokyu Animekkusu
- 12 Akiyo: [tte yuu kaisha.
QUOT say company
A company called ((Tokyu Animekkusu)).
- 13 Takie: = [kaisha.]
company
Company
- 14 Kaori: = [a:::]:.
oh
Oh:::.....

Hayashi (2000:234) argues that Kaori addresses her question (line 10) to Takie through her gaze direction, and Takie initiates a responding turn (line 11). Hayashi argues further that Kaori's question shows that she does not recognize the name of the company that was in charge of the remodelling (Tokyu Animekkusu). Therefore a mere repetition of the name does not provide Kaori with information as to what it is or what it does. This is, however, the way Takie initiates her response (line 11). At this point Akiyo comes in and produces a postposition-initiated utterance that utilizes Takie's response and makes it part of a more extended response that provides Kaori with the information she needs.

With the use of a postposition-initiated utterance (*-tte* on line 12), Akiyo is able to establish a grammatical link to the NP in Takie's response (line 11) and to use it as a point of departure for her utterance, thus treating Takie's response as a legitimate contribution and developing it into a more informative answer to Kaori's initial question (line 10).

The subject – and sometimes other nominal arguments as well – are often unexpressed in Japanese, and have to be inferred from the context. With regard to co-constructions, this means greater flexibility in the use of certain syntactic constructions: since the person of the subject is most often not expressed, there does not have to be any special marking in constructions involving speech act participants, even though the 'you' and 'me' change in the course of the co-constructed utterance. Consider example (62) where Sanae is telling a third participant about the volunteer work that Ryoko, a co-participant, has been doing. Kamagasaki is a place they all know where there are many homeless people.

(62) (Hayashi (2000:87))

1 Sanae: soo ryoko chan nanka ippai sonna n shite:. = ano::
so Ryoko TL like a.lot such N do.and uhm
Right, Ryoko does that kind of thing a lot, =uhhm

2 .hhh (0.3) kama:- kamagasaki no:,
Kamagasaki LK
.hhh (0.3) in Kama:- Kamagasaki,

3 Ryoko: u:n.
Uh huh

4 Sanae: takidashi toka mo[:
food.drive etc. also
. . . a food drive, also,

5 Ryoko: [u::n. [ikkai itta:.
once went
Uh huh. ((I)) went too, once.

6 Sanae: [itta n ya tte.
went N COP QUOT
((she)) went too, ((I)) heard.

Sanae starts up a clause (lines 2 and 4) which Ryoko completes with a construction consisting of an adverb *ikkai* 'once' + past tense form of the verb 'to go' *itta*. It has to be inferred from the context that Ryoko refers to herself, since there are no linguistic elements that would pin down the personal reference. Simultaneously with Ryoko's completion, Sanae completes the clause herself (line 6). In her completion Sanae uses a slightly different construction

(past tense form of the verb ‘go’ + nominalizer + copula + quotative) which is, however, similar to Ryoko’s completion in that it also lacks elements that would explicitly express the personal reference. Again it has to be inferred from the context who the speaker is referring to. The quotative particle *tte* reveals that the speaker is not referring to herself.

Helasvuo (2004) discusses the grammar of co-constructions in Finnish. Word order is often characterized as being relatively free in Finnish (see Vilkuna (1989)), but if we look at word order in spoken discourse data, there is a very clear preference for subject–verb ordering, as over 90 per cent of subjects precede the verb (Helasvuo (2001a)). Furthermore, the finite verb shows agreement with the subject in person (first, second, and third) and number (singular vs plural). However, Finnish allows for several kinds of subjectless constructions. (For more discussion, see Helasvuo (2001a.)) Helasvuo (2004) discusses the ways in which these grammatical constraints feature in co-constructions in Finnish conversational data, showing that in cases involving the co-construction of simple clauses the subject and the finite verb always appeared together in the preliminary part of the construction. Example (63) illustrates this pattern:

- (63) (Helasvuo 2004:1321)
- | | | |
|----------|--------------------------------|--------|
| 1 Olli: | [nythän] sä voi-t ostaa [nyt,] | |
| | now you can-SG2 buy now | |
| | [now] you can buy [now,] | |
| 2 Pekka: | [niiny,] | [nii,] |
| | so now | so |
| | [so now] | [so] |
| 3 Tor: | toise-n-ki pullo-n. | |
| | another-ACC-CLI bottle-ACC | |
| | yet another bottle. | |

Olli and Tor produce a transitive construction together, with Olli providing the subject pronoun *sä* ‘you’, the modal auxiliary *voit* ‘can’ which is inflected in the second person singular as required by the subject, and the transitive verb *ostaa* ‘buy’, and Tor producing the object NP *toisenki pullon* ‘yet another bottle’. The object NP is coded with the accusative case as required by the transitive construction initiated by Olli (line 1).

Helasvuo (2004) shows that in Finnish co-constructions the subject and the finite verb are expressed in the preliminary part. Thus, the personal deixis is pinned down in the preliminary part, and the final part is usually produced so that the personal deixis remains the same as in the preliminary part. Example (64) illustrates how ellipsis of the subject and other structural processes can be exploited to accommodate this general constraint on co-constructions.

In example (64), Tintti (mother) and Leena (daughter) are speaking on the phone. Before this segment, Leena has told a lengthy story about a friend's mother, telling how very decent she had been, saving money all her life, but toward the end of her life she had bought herself some luxury items, including pieces of art. Leena has pointed out that this is something that Tintti and the other mother have in common: both have invested in art. She has thus made a comparison between the two mothers, and to this Tintti responds by saying that otherwise she has not been like the other lady.

(64) (Helasvuo (2001b:34–5))

- 1 Tintti: minä-hän se oo-n ollu, (.) helveti-n synt-inen vast. hah ha
 SG1-CLI it be-SG1 been hell-GEN sinn-ADJ just
 I sure have been a hell of a sinner. hah ha
- 2 Leena: mut silti pan-nu raha-t levee-ks.
 but nevertheless put-PTCPL money-PL broad-TRANSL
 but nevertheless spent all that money.

Tintti's clause in line 1 is complete as it is. It is produced with a falling intonation contour (marked with a period in the transcript), which does not build up an expectation for a continuation. However, Leena uses Tintti's utterance as a starting point and creates a contrast. The contrast is produced as a compound construction using the contrasting conjunctions *mut silti* 'but nevertheless'. Syntactically Leena's clause is tied to the preliminary component of the compound construction through the ellipsis of both the subject and the finite verb. This could be schematically presented as in (65).

(65)

PRELIMINARY COMPONENT			FINAL COMPONENT			
Subj	Aux+Participle	predicate adjective	Conj	Subj	Aux	Participle Obj
SG1	SG1			(zero)	(zero)	
<i>minähän</i>	<i>oon ollu</i>	<i>helvetin syntinen</i>	<i>mut silti</i>	<i>pannu</i>	<i>rahat</i>	<i>leveeks</i>
'I sure have been a hell of a sinner.'			'but nevertheless spent all that money.'			

As we can see from the schema in (65), neither the subject nor the auxiliary is overtly expressed in the final component. This kind of ellipsis is a regular syntactic process in clause combining (conjunction reduction) in Finnish, which tightens the syntactic bond between the two components of the co-construction. The ellipsis is interesting from the point of view of person deixis: in the preliminary component Tintti uses first person singular reference (coded in the

subject pronoun and the person marking on the auxiliary), and with the speaker change the deictic centre changes as well. Yet, in the final component there is no overt expression of person deixis, as the subject is not expressed and nor is the auxiliary which would code the person and number of the subject.

4.4 *Prosody of co-constructions*

Local (2000) discusses the prosody of co-constructions in English, showing that co-constructions exhibit intricate prosodic patterning. He observes that collaborative completions are integrated with prior talk in terms of both pitch and rhythm. Consider example (66).

- (66) (Local (2000))
- 1 Kelly: once those cameras start flashing particularly with the
 infants
- 2 (0.2)
- 3 Cay: hhh it puts them off
- 4 Kelly: it puts them of [f
- 5 Cay: [yeh
- 6 Kelly: and i[t it's such [a shame]
- 7 Cay: [yeh uh (.) [people were] doing that last Wednesday

Kelly and Cay produce a co-construction together in lines 1–3. Local (2000) shows that the final part by Cay (line 3) is produced more quietly than Kelly's talk and it has a narrow pitch range as compared to Kelly's utterances in lines 1 and 4. Kelly's line 4 is a lexically exact redoing of Cay's collaborative completion. However, Local's acoustic measurements show that Cay's utterance (line 3) is produced much faster than Kelly's redoing of it in line 4 (616 milliseconds as opposed to 1,263 milliseconds).

Local (2000) notes that it is typical of lexically exact redosings of collaboratives by the speaker of the preliminary part that they are timed so that they are placed after (and not in overlap with) the collaborative. Furthermore, the final part of the co-construction typically has a narrow pitch range and is produced faster than the surrounding talk. It is also produced more quietly than, or with the same loudness as, the surrounding talk, but not louder (Local (2000)).

4.5 *Summary*

In this section we have examined co-constructions in conversation. We have seen that they occur in various conversational contexts, including quotations, parenthetical inserts, list constructions, and assisted explaining and storytelling. We also discussed various grammatical constraints on co-constructions, and showed that the grammar of the language sets certain constraints on the kinds of

co-constructions that can exist in the language. We can conclude that languages supply speakers with different kinds of grammatical possibilities for use when producing co-constructions.

5 Conclusion

We have here presented some pertinent interactional phenomena and conversational practices that are fundamental for the study of language as it is used in interaction. Existing research on such phenomena is restricted to only a small minority of mainly western languages, with Japanese as the only notable exception, and there is clearly scope for further research in many areas and on many languages before we can even begin to make cross-linguistic generalizations. If linguists take seriously the challenge that talk resides in interaction and in turns spoken in actual contexts to actual recipients, proceeding incrementally in the here-and-now and from turn to turn, we may begin to accumulate a body of knowledge of how linguistic elements and linguistic structure emerge from such interactions in different languages of the world.

Phenomena to study in a given language may include aspects of the very basic organization of conversational discourse, namely its turn-taking system, the specific way in which speaking turns form sequences of actions, how preferred and dispreferred turns are constructed, and how conversational repair (including repairs other than self-repair) is organized in that language. Another little-studied area that awaits further investigation is: what are the different manifestations of the speakers' subjective imprint, or stance, in discourse? As it now seems, subjectivity may have more overarching implications for syntax than has hitherto been believed. What is more, indices of what has been termed subjectivity are in fact better conceived of as manifestations of intersubjectivity between conversational co-participants. It is further possible to look at interactional practices that are somewhat more local in scope. For one, what kind of preferences do speakers of different languages show for initiating and carrying out self-repair during the ongoing turn, and how is such work reflected in the grammatical construction of the turn, i.e. how does the syntactic structure of a language constrain the performance of self-repair? Furthermore, what kind of syntactic resources does a language offer and do its users employ for doing co-constructions, or in other words clauses and other syntactic constructs produced jointly by two participants – to what extent does the grammar of the language constrain the use of such constructions and how is it done in terms of clause constituents, word order, and prosody?

Clearly then, a great deal of work needs to be done by linguists here, as the above research areas and topics have implications for all traditional areas of linguistic inquiry: phonetics/phonology, prosody, morphology, syntax, and

semantics/pragmatics. We hope to have shown what the prospects and payoffs of such research efforts might be.

6 Appendix

Key to transcription symbols

.	falling intonation
,	level intonation
?	rising intonation
?,	slightly rising intonation
↑	rise in pitch
<u>word</u>	emphasis is indicated with underlining
:	lengthening of the sound
-	dash indicates a cut-off of a word
#	talk surrounded by #-signs is said with a creaky voice
< >	talk inside is done with a slower pace than the surrounding talk
> <	talk inside is done with a faster pace than the surrounding talk
<	an arrow-head pointing left indicates that the preceding word is finished a little bit abruptly, but it is not done as a clear cut-off; glottal stops are indicated in this way, e.g. <i>I saw it<</i>
h	the letter <i>h</i> (or several of them) indicates an audible aspiration
.h	a period + the letter <i>h</i> (or several of them) indicates an audible inhalation
(0.5)	silences timed in seconds
(.)	a micropause of less than two-tenths of a second
=	no silence between two adjacent utterances
[utterances starting simultaneously
]	point where overlapping speech stops
()	item in doubt
(())	comment on transcription or translation

7 Sentences as combinations of clauses

Robert E. Longacre

0 Introduction

In discourse, whether dialogue or monologue, simple predications combine into larger units. Clauses – the surface structure units which correspond most closely to individual predications – combine into clusters of clauses which are distinguished in most languages as sentences versus paragraphs. Sentences are tighter bundles than paragraphs. They commonly have more cross-reference between their component parts (clauses) and more ‘closure’ (i.e., it is somewhat easier to tell where one stops and another starts) than is the case with combinations of sentences which we call paragraphs. Although paragraphs encode essentially the same relations (see section 2) as those found in sentence structures, they are looser and more diffuse. Paragraphs typically do not have as many overt grammatical ties between their component sentences as do the parts of the sentence itself. Nor do paragraphs usually have grammatical closure (see, however, Foré in section 4.1).

In this chapter I feature the sentence with only passing attention to the paragraph. The sentence is considered here not as a unit consisting of a predicate and nouns related to it (a simple clause), but rather as a combination of such units (clauses) into still larger structures of the sort here summarized. This chapter describes the notions encoded in these combinations of clauses and goes on to describe and illustrate the formal features of sentences thus defined in languages around the world.

1 Definitions and distinctions

Before proceeding further, it is essential to define a few terms which are useful in describing sentence structures, and to posit a few distinctions.

1.1 *Nucleus, base, and margin*

Three useful terms in distinguishing the parts of a sentence are: *nucleus*, *base*, and *margin*. Take the following sentence: *When they heard the news, Mary was*

Table 7.1 *Sentence margins and sentence nuclei*

Part (a)	Part (b)
When they heard the news	{ Mary was elated but John was sad and thoughtful { Mary was elated and so was John { Mary was so elated that she danced a jig

elated but John was sad and thoughtful. The stretch *Mary was elated but John was sad and thoughtful* sets off this sentence as typologically distinct from other sentences such as *Mary was elated and so was John* and *Mary was so elated that she danced a jig*. On the other hand, the stretch *When they heard the news* can attach indifferently to many divergent types of structures. For example, it can also attach to the latter two sentences above: *When they heard the news, Mary was elated and so was John* and *When they heard the news, Mary was so elated that she danced a jig*. In summary, these distributional observations could be correlated as in table 7.1.

In keeping with such observations as above, it is useful to consider that part (a) is a ‘sentence margin’ and part (b) illustrates three kinds of ‘sentence nuclei’. The nucleus¹ of a sentence is its most characteristic part and is, furthermore, independent of the margin. The margin, on the contrary, goes with a variety of nuclei and is thus non-characteristic and, in addition, it is subordinated to the rest of the sentence (see section 1.2 below).

Many languages have a variety of ‘sentence margins’; these are the adverbial clauses described in chapter 5 of this volume. Thus in English we have not only temporal margins as in the *when* clause above, but margins of other sorts: conditional (introduced by *if*), concessive (introduced by *although*), purpose (introduced by *in order to*), and cause (introduced by *because*).

Sentence nuclei contain the distinctive features of sentence types as described below in further sections of this chapter. In the examples summarized in table 7.1, sentences with medial *but*, *and*, and *so . . . that* illustrate some distinctive nuclei. The parts of a sentence nucleus consist of (a) a conjunction and (b) bases (although conjunctions are not present in all types). The term *base* is here used to describe a functional subpart of a nucleus. Thus, in table 7.1 the following are all bases: *Mary was elated*, *John was sad and thoughtful*, *so was John*, and *she danced a jig*. Bases may be elliptical or may contain substitutes. Thus *so was John* refers back to *elated*, with *so* acting as a substitute.

The term *base* is needed because a functional part of a nucleus need not be a single clause. Note the following expansion of the first sentence referred to

¹ Besides the sentence nucleus and its margins there is also a sentence periphery, which consists of such functional elements as exclamations, vocatives, and sentence adverbs.

above: *When they heard the news, Mary was elated and danced a jig, but John fell into a moody silence, paced the floor, and swore softly under his breath.* Here each base of the nucleus is filled by an embedded sentence of coordinate structure (with regular non-recurrence of identical subject in subsequent clauses). The *but* separates the two main parts of the nucleus; each subpart has its own sentential structure.

Such recursive occurrence of sentence within sentence is endemic in the sentence structure of most languages around the world. Note the following more extreme example: *Had they sent for him or in some way acknowledged his existence he probably would have summoned enough pride to reject their offer, but this endless waiting finally wore him down.* To begin with, this sentence is a bipartite structure hinging on the word *but*, each part being a base. In turn, however, the first base of this *but* sentence is itself complex – it is a contrafactual sentence: *Had they sent for him or in some way acknowledged his presence, he probably would have summoned enough pride to reject their offer*, whose first base is also complex – an *or* sentence.

So we see that not only may a nucleus be complex but a margin may be complex as well, i.e., we may in effect subordinate a sentence rather than simply a clause. The following example is relevant: *When Napoleon dominated the continent and only England held out against him, a child was born in an obscure village in northern Scotland.* Here the sentence *Napoleon dominated the continent and only England held out against him* functions as sentence margin when subordinated by the introducer *when*.

1.2 Coordinate and subordinate clauses

The nucleus/margin distinction which is illustrated above ties into a broader concern of ‘coordinate’ versus ‘subordinate’ relationships of units. Subordinate clauses are clauses which function as noun phrases, as modifiers of nouns, and as modifiers of verb phrases or entire propositions. Clauses which function as noun phrases are found in nearly all languages as sentential expansions of subject/object slots. These are called complements in this book and are discussed in chapter 2. Clauses which are modifiers of verbs and propositions are adverbial clauses which function as sentence margins (see chapter 5). Finally, most (but not all) languages have subordinate clauses, called relative clauses, which serve to modify a noun phrase. The ways in which this function is realized are the topic of chapter 4.

1.3 Co-ranking and chaining structures

Sentence structures around the world may be conveniently divided into two main types called ‘co-ranking’ and ‘chaining’ structures. These two structures

are very distinct. In co-ranking structures, such as those found in contemporary European languages, it is possible to have several verbs of the same rank, commonly referred to as independent verbs. Thus, we can speak of a sentence as consisting of a coordination of independent clauses. In English the conjunctions *and*, *but*, and *or*, plus a few others, join such independent clauses into sentence units (Longacre (1970)). In a chaining structure, on the other hand, it is simply not possible to join two such verbs of the same rank in the same sentence. A sentence either ends in a dominating verb of fuller structure than that of the preceding verbs, or, alternatively, begins with a dominating verb of fuller structure than that of the following verbs. In the former case, the preceding verbs of restricted structure are often referred to as medial verbs (or as participles, gerunds, or even coverbs) while the dominating verb at the end is referred to as the final verb. In the latter case, the following verbs of restricted structure are referred to as consecutive (or sequential) verbs while the dominating verb at the beginning is referred to as the initial verb. In the former case we speak of medial–final chaining; in the latter case we speak of initial–consecutive chaining.

Thus, in a sentence such as *Kawa left and the patrol officer arrived*, in a co-ranking language the verbs *left* and *arrived* are of the same rank and differ in no way inflectionally. In a chaining structure, however, *left* and *arrived* would necessarily be different types of verbs. In a medial–final chaining structure *arrived* would be a fully inflected verb, marking, for example, tense, mood, and aspect, while the verb *left* would not only be deficient in certain of these categories but might also indicate in its verb morphology whether the subject of the following clause is to be the same or different from the subject of its own clause. The following data from Selepet, a language from the Eastern Morobe district of Papua New Guinea (data from McElhanon), are illustrative. Firstly, as simplex sentences we have:

Kawa ari-op
 Kawa left
 ‘Kawa left’

and

kiap ya taka-op
 patrol.officer that arrived
 ‘That patrol officer arrived’

However, when put together in the same sentence we get:

Kawa ari-*mu* kiap ya taka-*op*
 ‘Kawa left and that patrol officer arrived’

Here *-mu*, which indicates ‘third person singular, subject switch’ has replaced *-op*, which indicates ‘third person singular, remote past tense’.

The structure would be quite different for a language with initial–consecutive structure. The word *left* would be a verb in a clause which indicates tense, aspect, and mood, while *arrived* would be in a clause which was deficient in one or more of these categories.

It is important to note that chaining structures consisting of one or more clauses of morphologically deficient verbs accompanied by a fully inflected verb in the dominating clause are not parallel to structures consisting of independent and subordinate clauses in contemporary European languages. Such languages as the latter offer a choice between saying *When John had chopped the tree into firewood, he carried it into his house* and *John chopped the tree into firewood and carried it into his house*, i.e., we can express what happened in a subordinate–main clause combination or, alternatively, in a combination of two coordinated independent clauses. No such choice exists in a language exclusively of chaining structure; the happening can be expressed only in a medial–final chain or in an initial–consecutive chain according to which type is found in a given area.

1.4 *Methods of cohesion*

Various degrees of cohesion between sentence bases are posited here. Cohesion effected by a sentence-medial conjunction is both explicit and loose. Thus *and*, *but*, *for*, and *so* in sentence-medial position in English explicitly mark differing relations. But, on occasions at least, *and*, *but*, and *so* may occur in sentence-initial position where they serve to bind sentences into the less tightly knit connections of the paragraph. Furthermore, the decision to opt for one sentence or two when *and* and *but* are involved is sometimes delicate, if not arbitrary. For these reasons we may consider that cohesion via sentence-medial conjunction is somewhat loose.

Cohesion may also be via juxtaposition with a non-final pause in sentence-medial position and overall unifying phonology. Here also some lexical features (e.g. repetition and/or paraphrase) reinforce the unity. Probably the very absence of conjunction in sentences that employ juxtaposition necessitates a tighter unity – which is signalled by phonological and lexical means.

The tightest degree of cohesion between clauses is found in sentences in which the component clauses overlap each other and are mutually dependent, as in a ‘merged sentence’ (commonly described under the rubric ‘complementation’). Take the following sentences: *I intend to tell her, They made John walk, They let him go*. The first part of each sentence is incomplete, *I intend . . .*, *They made . . .*, and *They let . . .*. The second part of each sentence is not only incomplete but does not contain a finite verb. Furthermore, the status of *John*

and *him* is somewhat uncertain in the last two sentences. Do *John walk* and *him go* make plausible groupings? Or is *John* object of *made* and *him* object of *let*? *They made John* is an intelligible stretch only if John is a robot or papier mâché statue. *They let him*, like *they made John*, is incomplete without something of the sort which follows above.

The answer to all these problems seems to lie in assuming the constructions to be composites in which two clauses are present but overlap. In sentence one *I* is subject of both the clause which expresses 'having an intention' and the clause which expresses 'going to tell her'. In the second sentence *they* is subject of the first clause while *John* is some sort of 'object' of the same; but *John* is also the logical subject of the second clause. Similarly, *him* can be construed as object of the first clause of the third sentence and subject of the next clause. In spite of the composite nature of such sentences, they have very tight surface unity.

2 Notions that encode within sentence structure

While an understanding of the formal devices of sentence structure is crucial to the understanding of a sentence, it is equally crucial to understand what notions are encoded within such structures.² To begin with, we note that apparently the sentence level exists for the purpose of encoding combinations of predications, i.e., relations within the domain of the propositional instead of the predicate calculus. Nevertheless, surface structure sentences are not necessarily confined to such elements. As we see below in treating juxtaposed sentences in certain languages, sometimes elements from the predicate calculus such as instrumentality or benefaction are encoded by means of a pair of clauses, one of which has become grammaticalized in special function. Ignoring these complications, I now proceed to give, in abbreviated form (cf. Longacre (1976:98–163, 1983:ch. 3, and 1996:chs. 3 and 4)), the notions which underlie sentence structure. It should be noted that the same notions also underlie paragraph structure in most languages – although the particular division of functional load between paragraph and sentence is often language-specific. The notions presented are, therefore, of general relevance in describing relations within discourse; they

² This is a summary of more detailed material which has been presented elsewhere (Ballard, Conrad, and Longacre (1971a, 1971b); Longacre (1972:51–92, 1976:98–163, 1983:77–149, 1996:51–122)). Furthermore, various people besides myself have endeavoured to give such summaries, and the varying notional catalogues make an interesting comparison. Of special interest is Beekman's catalogue (Beekman and Callow (1974)), in that he attempts to classify notions of the sort that I present here according to those which are main-line to discourses and those which are supportive propositions. This seems to me to be an especially fruitful line of inquiry. Grimes (1975) also forms an interesting comparison with the catalogue of notions given here, as do Hollenbach (1975:Appendix) and Mann and Thompson (1987b). All but the latter are to varying degrees influenced by Fuller (1959). Somewhat divergent is the work of Halliday and Hasan (1976) which attempts to classify interclausal relations in English according to surface structure conjunctions.

are not limited to sentence structures. I will not illustrate materials from paragraph and discourse structure in this section but will confine the examples to the encoding of the various notions here listed as sentence structures. In order of presentation I discuss (as basic to the structure of discourse) conjoining, alternation, temporality, and implication. Then (as elaborative devices in discourse) paraphrase, illustration, deixis, and attribution. Finally, I discuss frustration, which is a further relation imposed upon many of those listed.

2.1 Conjoining

Under conjoining I distinguish coupling, contrast, and comparison.

2.1.1 Coupling

Coupling may be defined as a non-temporal underlying *and* relation. This is commonly expressed in the surface structure in some sort of coordinate or parallel sentence.

Coupling with the same first term is seen in *She's big and (she's) tall*. We also may have parallel coupling in such a sentence as, *I spit on your coat; I spit on your hat; and I spit on your dress*. In English it is not usual to repeat the full clause structure as in the above example. Presumably the preceding example has special motivation of emphasis (and spite) to account for its fullness of structure. In English it is more common in sentences in which the noun is varied from clause to clause to put the nouns into a coordinate noun phrase as in *The men, women, and children talk English*. Nevertheless, in some parts of the world, noticeably in the Philippines and Papua New Guinea, a fuller structure such as 'The men talk English, the women talk English, the children talk English' is definitely preferred.

2.1.2 Contrast

We deal here with underlying *but* relations. While coupling involves varying activities and varying participants, the notion of contrast requires paired lexical oppositions. Contrast, in fact, must be two-pronged; i.e., there must be at least two opposed pairs of lexical items.

Contrast may be expressed by means of positive and negative values of the same predicate accompanied by differing participants: *I went downtown, but she didn't*. It is obvious, of course, that in such an example as the one above, one or the other predicate in positive or negative value can be substituted for by a synonym. Contrast may also proceed by means of antonyms: *I went downtown, but she stayed home*. Contrast may sometimes be entirely within the terms (with the predicate unchanged) as in *Bill works outside during the day and inside at night* where *outside* and *inside* are contrasted and so are *day* and *night*. The above varieties of contrast are very commonly expressed in English and in many languages in some kind of antithetical sentence.

A further variety of contrast is exception. Thus, we can have a sentence such as *Grandfather didn't go to sleep, but everybody else did*. Here the universal set minus *grandfather* is contrasted with *grandfather* and *didn't go to sleep* is contrasted with 'going to sleep'. While this may be expressed as above in an antithetical sentence, it is expressed more commonly in English in a single clause with an *except* adjunct, i.e. *Everybody went to sleep except grandfather*.

2.1.3 Comparison

We have here comparisons of equality and inequality as is common in Indo-European languages, i.e. *Bill is as big as John* and *Bill is bigger than John*. The number of participants expressed in this sentence does not materially alter the situation. Thus, we can have *John loves Mary less than Bill loves Jane*. It seems that such a notion is a useful construct in English whereas it is not useful in such an area as Papua New Guinea. Comparison in Papua New Guinea is not expressed within a single sentence, but by a pair of sentences within a paragraph. It is, furthermore, really not comparison, but contrast. In Safeyoka (a dialect of Wajokeso), for example, we find pairs of sentences such as 'The black man's boats are small. The white man's boats are huge'. There is no direct way of saying 'The black man's boats are smaller than the white man's boats' or 'The white man's boats are bigger than the black man's'.

2.2 Alternation

We deal here with underlying *or* relations of roughly two sorts. The first sort of statement of alternation involves only two possible alternatives, or at least the presuppositions of the sentence envision only two alternatives. Examples are *Either he did it or he didn't*, *Is he dead or alive?*, *Are you going to your village by plane or by canoe?* In the second sort of sentence expressing alternation we find that the number of alternatives is open or at least more than two: *Either John will come, or Mary will come, or Sue will come*. It is evident again that, in a language such as English, telescoping and deletion are preferred, as in *Either John will come, or Mary, or Sue*.

2.3 Temporality

A variety of temporal relations are expressed in any language. These can be roughly grouped under overlap and succession.

2.3.1 Overlap

Overlap encodes underlying *meanwhile* and *at the same time* relations. Overlap may be to all practical purposes coterminous, i.e. two actions are considered to start and stop at roughly the same time, as in *As he walked along, he prayed*. Bases of such sentences are entirely reversible: *He prayed as he walked along*.

Overlap may also be punctiliar–continuous or vice versa, that is, continuous–punctiliar. We can say *He glanced back as he walked on* or *While he was walking, he stumbled*. In either case there is a continuum of activity during which another activity takes place. Finally, overlap may be punctiliar–punctiliar, i.e. two punctiliar events may be reported as timed at the same instant: *As I brought up my head, she tossed the knife*.

2.3.2 Succession

Succession is an underlying *and then* relation. While the terms punctiliar and continuous are used above to refer to actions involved in overlap, the terms *span* and *event* are used here for actions involved in succession. The purpose of this terminological distinction is simply to keep track of whether we are involved in overlap or succession. A sentence may report span–span, for example *They played tennis for an hour, then swam for another hour*. It may also report event–span, for example *He put the wood in the stove and then sat there for an hour*. Likewise, it may report span–event: *He lived in Paris for seven years, then moved to Spain*. Finally, of course, succession may report event–event: *He sat down, took the book, and opened it*. The events reported may involve reciprocity on the part of the participants, such as *He gave her some water and she drank it* where the indirect object of the first clause is subject of the second clause.

Note that this summary of temporal relations is by no means complete. We find, for example, sentences in which there is a series of events taking place during a given span as in *While I was downtown, my nephew picked the lock on my study door, entered the room, and searched it*.

It is important to note that underlying temporal succession is cognitively and experientially ordered as well. This may lead to a surface structure restriction in some languages (e.g. those of Papua New Guinea) whereby clauses must be linearly ordered according to time succession. In most languages, however, there exist devices whereby the order of presentation in the sentence can be different from that of the temporal occurrence of events, in which case special surface features such as the use of ‘before’, ‘after’, and so forth are used to keep track even of inverted chronology.

2.4 Implication

By this term is meant any *if . . . then* notions. I group under this heading conditionality, causation, counterfactuality, and warning. I will discuss the first three of these here.

2.4.1 Conditionality

The simplest sort of conditionality encountered in languages is hypotheticality, the unweighted *if* relation. Thus, in *If he comes, I'll go* or *If he doesn't go, I won't go either*, there is nothing implied as to the outcome of the situation. In

the first sentence the person may or may not come. All that is stated is that my going is contingent on his coming.

Sentences which involve a universal quantifier in the first base are a further type of conditional. Here, we have sentences such as *Wherever you go, I'll be thinking of you* which resolves itself into a condition such as *If you go any and all places, I'll be thinking of you*. The universal quantifier may go on any element in the first base, so we can have sentences such as: *Whoever we sent got lost; Whatever road you take, you won't get there; However you do it, I'm opposed*; etc. In English, such structures are expressed by an interrogative structure suffixed with *ever* or by such words as *everyone* in *Everyone who goes there gets lost*. In a typical Philippine language, such structures are expressed by a preposed concessive margin with an interrogative, i.e., 'Even if we sent whom, he gets lost' or 'Even if you go where, I'll be thinking of you'.

A further type of conditionality involves a temporal referent such as *You have to pay before you can occupy the room*. This can be called contingency.

2.4.2 Causation

Causation differs from conditionality in that in causation there is a given, which is the antecedent event. Coupled with the given is its consequent: something else is implied by the antecedent and that something else took place. Thus, in the sentence *You stayed home because you were afraid*, it is given that you were afraid and it is further asserted that fear resulted in your staying home.

Aristotle distinguished, among his four types of causes, efficient cause and final cause. Final cause is usually called 'purpose'. Nevertheless, there are certain advantages in calling both varieties 'cause', the chief advantage being that they are often expressed by very similar surface structures (see chapter 5, part 1, section 2.2.4, for discussion).

A further variety of causation is circumstance. This is a relation which means *in the circumstance that*. Many languages distinguish circumstance from cause in their surface structure. In English we have, as observed above, special adverbial introducers *since* or *in that* to mark circumstance: *In that he still is convalescing, let's leave him alone*.

2.4.3 Counterfactuality

Counterfactuality, like causality, involves a given. The sentence *Had he come, I would have come*, takes as its given, 'he didn't come'. It further expresses an implication, namely, 'My (possible) coming was conditional on his coming'. With these two, we would have the meaning of causality rather than counterfactuality. The distinctive feature of counterfactuality is its double implication. Something further is implied in the above sentence, namely, 'He didn't come and, because he didn't come, I didn't come either'. In the surface structures of the world's languages, counterfactual conditions may be very similar to other sorts of conditions or may be structurally very distinct (see chapter 2).

2.5 Paraphrase

Communication flow in most situations and information distribution in discourse requires that certain elements of discourse be repeated. Typically, this repetition is not exact and information is gained or lost in the repetition. It is in this sense that 'paraphrase' is used here. I distinguish here two varieties of paraphrase in which there is very little noticeable loss or gain of information, then two varieties of paraphrase in which there is gain of information in the second base as opposed to the first base, and finally two varieties of paraphrase in which there is loss of information in the second base as opposed to the first base.

2.5.1 Paraphrase without noticeable gain or loss of information

Often a sentence will use two items which are very close synonyms in two successive clauses, such as *He's prejudiced; he's just plain bigoted*, or *I went home; I went to the house* where *home* and *house* are all but indistinguishable in contemporary usage. A further variety of paraphrase that amounts to even closer lexical equivalence is 'negated antonym paraphrase'. With a pair of antonyms and negation of one of the two members, we get a very close paraphrase, as in *It's not black; it's white* or *He's not rich; he's poor*.

2.5.2 Paraphrase in which there is gain of information in the second base

This is done basically by two devices: either by using more specific lexical items in the second base, or by adding in the second base modifiers, further phrases, or qualifying clauses. The two are not necessarily exclusive. Thus, in the sentence *He cooked the bananas, he fried them* it appears that the device used is what could be called 'generic-specific paraphrase'. In the sentence *He sang, he sang two songs* (called a 'recapitulation sentence' in the surface structure of English below), a noun phrase is added in base 2. In the following sentence translated from Ibaloi, we have the causer specified in the second base, but not in the first: 'He was unconscious; Dabonay, a woman, had knocked him unconscious'. This sort of paraphrase may be called 'amplification paraphrase'. It needs to be underscored, however, that both generic-specific and amplification paraphrase may together characterize a second base as opposed to the first. To go back to the first example above, we can say *He cooked the bananas, he fried them in vegetable oil*, where both the more specific term *fry* in base 2 and the additional phrase *in vegetable oil* are used.

2.5.3 Paraphrase in which there is loss of information in the second base

This is accomplished by two devices, each of which is the converse of the two described just above under section 2.5.2: first, by using more generic lexical terms in the second base, or, second, by dropping in the second base items which occurred in the first base. The former may be termed *specific-generic*

paraphrase, and the latter *contraction paraphrase*. Again, the two devices are not necessarily exclusive. Possibly some kind of summary is implied when either or both of these devices are used. Thus, we can say *He fried the bananas in vegetable oil; he cooked them* – where not only is a more generic term found in the second clause, but also where *in vegetable oil* is dropped as well. Perhaps in both these sentences there is something summary in the use of *cook*. The thrust may be ‘They didn’t eat them raw’. Pure contraction paraphrase gives a somewhat implausible sentence: (?) *He fried the bananas in vegetable oil; he fried them*. Contraction paraphrase with use of a close synonym in the second base is more plausible: *I’m going home to see Mama, I’m going to the house*.

2.5.4 Other kinds of paraphrase

This is not meant to be an exhaustive summary of paraphrase. There are further kinds of paraphrase, such as negated higher gradient paraphrase in *It’s not hot, but it’s warm*; negated extremes paraphrase in *It’s neither hot nor cold, just warm*; and summary paraphrase as in *John works at the saw mill, Jim works at the repair shop – that’s what they’re all doing*. In the last example, the clause after the dash serves as a summary paraphrase of the previous parts of the sentence.

2.6 Illustration

I assume here that the basic devices of illustration, which are very important in achieving clarity and appeal in discourse, are simile and exemplification.

2.6.1 Simile

Simile involves an explicit comparison. I believe this is a basic device behind most figures of speech and metaphor, but that there are surface structure devices whereby similes can be deleted and telescoped to form metaphors. Here again, however, languages differ radically. To express a comparison in Trique, a simile must be used, and the simile must be very explicit. It must involve the particle *ro?* ‘like’ between the two bases of the comparison and the verbs of both bases must be identical: for example ‘Like does this, so does that’; ‘Like goes this, so goes that’; ‘Like is this, so is that’; ‘Like appears this, so appears that’. Therefore, if one were to compare a woman to a rose, one would have to say ‘She is like a rose is’. English here characteristically uses *like* as a preposition: *She is like a rose; He acts like a baby; A pretty girl is like a melody*.

2.6.2 Exemplification

In this structure a set is mentioned, and one or more members are taken as exemplary of the set, as in *Take any common garden vegetable, for example, spinach*.

2.7 *Deixis*

Under this heading are grouped various devices for introducing or identifying a participant or prop which figures in a sentence. Needless to say, such devices are of great importance in initiating discourses, where the structures here exemplified may stretch over several sentences or paragraphs. Such structures may start by introducing a participant or prop and making a statement about him or reporting an action in which he is involved. Alternatively, a structure may begin by reporting an event or situation involving a certain participant or prop and then may identify him later on in the sentence or paragraph; we will refer to this as an identification sentence.

Structures of this sort are very important in Ibaloi. The following sentences are translations from Ibaloi but make good English. The Ibaloi introduction sentence is exemplified by the Ibaloi equivalent of the following: 'There was an old cow that died from the cold; we boiled it and ate it'. The next example is a translation of an Ibaloi identification sentence: 'The Spanish picked him up on their way, and he was the one who showed the Spanish the way for the rest of their journey', but in the second half of the Ibaloi sentence the construction is topicalized, i.e., 'he was the one who showed the way up here'. What this is doing in effect is taking a person picked up on a journey and then revealing what his role is to become in subsequent portions of the discourse. In the same way, the example 'Kimboy got a hammer and that was what they used' says more than just 'Kimboy got a hammer and they used the hammer'. It is saying that Kimboy got a hammer and the hammer became an important prop. The situation here is somewhat curious in that topicalization is evidently a surface structure and yet is well motivated in the underlying structure of the discourse. A further example of deixis occurs in the sentence: *There was a man called Peter; he was an electrician*. Here Peter is introduced by name and is further introduced by occupation. The first clause is existential; the second is equational. Yet another example is *Peter was an electrician, he worked for Thomas Smuthers*, where the first clause is equational and the second is predicational.

2.8 *Attribution*

Attribution occurs in various ways: speech may be attributed to a person, or awareness may be attributed to him, or a term may be introduced and defined. Many of these work out as quotations in the surface structure of languages.

Speech attribution is considered to be the notional counterpart of surface structure quotation. The surface structure may, of course, be direct or indirect and it may be construed in various ways in different languages. In some languages, a quotation is clearly construable as object of the verb 'say'. In other languages, it is awkward to construe it as object of the verb 'say' and it is much

simpler to presume that we have some kind of quotation formula followed by a quotation (Elkins (1971); Longacre (1970)). In the latter case we handle quotation on the sentence level, whereas in the former case, we handle it on the clause level.

There may be awareness attribution. The basic verb here is the verb 'know'. Other verbs can be used such as 'feel', 'see', 'understand', etc. Examples in English include: *I knew that something was wrong; I saw that she was in a bad mood.*

Somewhere, one must account for metalanguage and definition. Possibly it is not different in principle from quotation. Thus, we have sentences such as *This is called žaka in Trique*. Take also Bloomfield's rather well-known definition of a morpheme: 'A linguistic form which bears no partial phonetic-semantic resemblance to any other form is . . . a morpheme.'

2.9 Frustration

The key notion in frustration is expectancy reversal. There is an action, event, or state which implies or normally calls for another action, event, or state as its sequel or concomitant. This $P \supset Q$ relation is, however, not followed through in this structure. Rather – whether stated or unstated – there is a blocking circumstance or consideration (R) which results in Q_{β} , that is Q with the opposite (positive/negative) of the intended value. There may also be a stated surrogate (S) which is there resorted to as a substitute for the intended Q.

2.9.1 Frustration involving temporal notions

Frustration may involve overlap, as in *He drives down crowded streets, but doesn't look out for pedestrians*. Here it is expected that a man who drives down crowded streets (P) will look out for pedestrians (Q) but, in the case in point, this man does not (Q_{β}). One can go on to state the possible consequence(s). *He drives down crowded streets, but doesn't look out for pedestrians, so he struck a child the other day*. There may also be frustrated succession as in *They started out for Paris, but someone slipped a time bomb into their car, and so they never arrived*. Here it is expected that normally setting out on a trip (P) is followed by arriving at the destination (Q). But here there is a blocking circumstance (R), the time bomb, and the opposite of the expected activity, namely, *they never arrived* (Q_{β}).

2.9.2 Frustrated implication

We may have here frustrated hypotheticality: *Even if she comes, I'm not going to go with her*. This sentence signifies that the expected implication, *If she comes, I'll go with her*, is not going to carry through. There may be frustrated contingency: *Even when I have the money, I'm not going to marry her* – which is

a denial of *When I have the money, I'm going to marry her*. Frustrated efficient cause is seen in a sentence such as *She was poisoned, but didn't die* where poison is expected to cause death. Frustrated final cause figures in *He came, but didn't get a meal*, where it is presupposed that he came expecting to get a free meal.

2.9.3 Frustrated modality

Many varieties of frustration seem to amount to what might be called frustrated inertial guidance systems or (less grandiosely) frustrated modality. Thus, granted intent, obligation, and facility as modalities, frustration may be expressed in relation to any of the three: *I intended to go, but some friends dropped in, so I didn't*. Here the intent to go would normally be followed by going. Some friends dropping in is the blocking circumstance, and the opposite outcome, *so I didn't*, is indicated. There may be frustrated obligation, as in *I should have gone, but I didn't* or *I shouldn't have gone, but I did*. There may be frustrated facility, as in *I could have promoted him, but I didn't*.

2.10 Organization of what follows

Having finished looking at the various semantic notions that are encoded in sentence structure, in the following sections of this chapter I take the co-ranking versus chaining distinction as primary and discuss various systems of sentence structure under each. The languages and language groups chosen for summary presentation reflect a variety of sentence-building strategies and illustrate the distinctions sketched in this section. English is described first, largely for the convenience of the reader in passing from relatively familiar to more 'exotic' materials.

3 Co-ranking structures

3.1 English

3.1.1

English sentence structure makes extensive use of medial conjunctions in building sentence nuclei (Longacre (1970)). Thus, we have 'coordinate' sentences with a medial *and*, an open-ended number of sentence bases, and certain possibilities for omitting repeated elements. Among the latter is the well-known omission of the identical subject in non-initial clauses as in *I went downtown, walked around the streets for a while, and went into a bakery shop*. We also find omission of the repeated verb: *Mary bought a hamburger, Susan a hot dog, and Anthony fish and chips*. The 'antithetical' sentence is different not only by virtue of having a medial *but*, but also by being strictly binary in structure. The

‘alternative’ sentence with a medial *or* may be binary (in the case of antonymic structures which indicate excluded middle) or open. Thus, we can say *Is he dead or alive?* but we can also say *He’s going to the store, or to the theatre, or to the office, or who knows where.*

Granted that *and*, *but*, and *or* are coordinators (medial links) *par excellence* in English, there are other conjunctions which also seem to set up nuclear patterns within the sentence (rather than introducing adverbial clauses in sentence margins). Thus, the conjunction *for* seems to function as the medial link in a ‘reason’ sentence, while the conjunction *so* functions similarly in a ‘result’ sentence. In the former the element encoding efficient cause is last; in the latter the element encoding efficient cause is first.

3.1.2

Certain regular patterns of juxtaposition characterize English sentences. Thus, we have a recapitulation sentence, the purpose of which is apparently to create a certain mild suspense and emphasis, in such sentences as *I went home, I went to see what was really going on*, or *Fred was the one, Fred was the one who stole the officer’s badge*. We also use juxtaposed sentences to express paraphrase in English: *He’s a monster; he’s a brute*. In both these sentence types there is rejection of any medial conjunction. Instead, we find a phonological feature, i.e. (non-final) pause. English also occasionally omits the medial conjunction in coordinate and antithetical sentences, giving such structures as *I came, I saw, I conquered* and *It’s not black, it’s white*. We can compare the latter structure with such sentences as *It’s not black but, on the contrary, it’s white* and *It’s not black, but white*. Certain common proverbs built on antithesis also omit the medial conjunction: *Old men for council; young men for war* and *Man proposes, God disposes*.

3.1.3

English also contains ‘direct quotation’ sentences which consist essentially of a quotation formula plus a quote. In spite of the superficial similarity of such structures to clauses with object complements, the quote part of a quotation sentence does not plausibly construe as the object. Take, for example, the following three sentences:

- (a) McDougall replied ‘On the contrary, Mary doesn’t resemble Jane.’
- (b) ‘On the contrary’, replied McDougall, ‘Mary doesn’t resemble Jane.’
- (c) ‘On the contrary Mary doesn’t resemble Jane’, replied McDougall.

It might with some plausibility be argued that the quote patterns as an object complement if all quotations were structured like (a) above. But, unfortunately, (b) and (c) also occur. In (c) the order object-verb-subject occurs, and in (b) the so-called 'object' is split by the verb + subject sequence. Furthermore, the subject + verb or verb + subject moves as a cohesive block in the above permutations. As such, it is not a normal immediate constituent grouping for English where verb plus object forms more of a unit than subject plus verb. In brief, the quote as 'object' complement acts very differently from other non-suspect objects in the language. A further consideration is that the quote may be almost any length, so that *John said . . .* can introduce a long and involved discourse.

It seems plausible, therefore, that the quotation sentence re-works the structure of the English clause on a higher level of structure (the sentence). At this higher level a bipartite structure, the quotation formula plus the quote, appears, with certain possibilities of linear permutation and accordion-like expansion of the material in the quote slot.

3.2 *Ibaloi (Philippines)*

The range and variety of Ibaloi³ (Ballard *et al.* (1971a, 1971b)) sentence types are at least as great as if not greater than, what we encounter in English – both in respect to sentence types which employ medial conjunction and in respect to sentence types which are built upon juxtaposition. Ibaloi thus offers a fruitful comparison with English. Ibaloi also has a system of sentence margins which are not, however, strikingly different from those found in English and are not presented here.

Ibaloi has a wealth of sentence-medial conjunctive links which determine a considerable variety of sentence types. Not only are there 'and', 'but', and 'or' sentences but there are further sentence-medial conjunctions which express simultaneous actions, actions in sequence, 'tacking on' a further idea, result, and surprise; there is also a pair of conjunctions which express temporal contingency.

The Ibaloi coordinate sentence couples two or three sentence bases by means of *tan* 'and' between each pair of bases. This sentence type does not imply

³ Sources of information about Philippine languages other than Ibaloi are papers (published and unpublished) by Ruth Lusted (Atta Negrito (unpublished)), Roy Mayfield (Agta (1972)), Janice Walton (Itneg (unpublished)), Stewart Hussey (Aborlan Tagbanwa (unpublished)), Jean Shand Dawson (Ilianen Manobo), William Hall (Siocon, Subanon (1973)), Lawrence Reid (Central Bon-toc (1970)), Gordon and Thelma Svelmoe (Mansaka (1974)), Richard Elkins (Western Bukidnon Manobo (1971)). The data here referred to are summarized in Longacre (1968), along with data from a number of other Philippine languages.

temporal relations, paraphrase, or contrast; it simply encodes coupling. The clauses that are linked with *tan* typically are from the same lexical domain. This often results in a certain parallelism of content which is sometimes reinforced with *eshom . . . eshom* ‘some . . . others’ in the two bases.

Enshi’y kenen ko *tan* ayshi’y panbaljan ko
 none eat I and none place.to.live my
 ‘I have nothing to eat and no place to live’
 Etoling i eshom *tan* ediyag i eshom
 dark some and cross-eyed some
 ‘Some were dark-skinned and some were cross-eyed’

It is evident that the Ibaloi coordinate sentence is somewhat more restricted in use than the English coordinate sentence. The Ibaloi addition sentence which ‘tacks on’ something further by means of the conjunction *jet* ‘and’ absorbs some of the functions of the English coordinate sentence. The wide range of this sentence type semantically is seen in its encoding of the following notions (described in section 2 of this chapter): succession, efficient cause, paraphrase, coupling, and introduction. While most of these can be expressed in an *and* sentence in English, it is of interest that the encoding of a paraphrase relationship in English rejects any medial conjunction while Ibaloi can use *jet* ‘and’ in an addition sentence or a paraphrase sentence.

Binoshasan sha sota kapi *jet* indaw sha’d San Fernando
 harvested they the coffee and took they.to San Fernando
 ‘They harvested the coffee and took it to San Fernando’

(*succession*)

Ka di pangotkot ni dokto shima despag shima inon-an
 you here dig camote at.that below at.that saw
 tayo *jet* mengan kito *jet* on-oli kito’n emin
 we and eat we and return we all
 ‘Go dig camote down at that (place) we saw, and we will eat, and
 we will all return (home)’

(*succession*)

Inandabos kono *jet* ingkal to’n emin i baro to
 naked hearsay and removed she all clothes her
 ‘She was naked (they say); she had removed all her clothes’

(*paraphrase*)

The Ibaloi antithetical sentence is quite parallel to the English sentence type of the same name. In both languages this sentence type encodes (in terms

of the categories in section 2) contrast, frustration, and negated antonym paraphrase.

The most characteristic conjunction in the Ibaloi antithetical sentence is *nem* 'but'. A further conjunction *jeý* 'while, but' is also used here, and there is occasional absence of conjunction (juxtaposition). The choice of *nem/jeý/∅* depends on the notional structures (varieties of contrast, of frustration, and of negated antonym paraphrase). All the examples below are chosen from situations in which *nem* is used, since this is the most characteristic of this sentence type.

Ekakmet ninemanemat i baliw niyay ja shanom *nem*
 not.I (EMPH) try crossing of.the river but
 si-kato'y kaonbaliw ni olay kaonsabi son si-kak
 she crossed always reach me
 'I never once tried to cross the river, but she was the one who
 always crossed to come to me' (contrast)

Kinedked ko'y bokdew ko, *nem* keak etey
 cut I throat my but not.I die
 'I cut my throat but I didn't die' (frustration)

Jet eg kono inanpigning ni inkaysepa to shima bajibisan,
 and not hearsay tilted landing its at.the under.caves
nem inandeteg kono
 but straight hearsay
 'It was not tilted when it landed under the caves, but it was straight'
 (negated antonym paraphrase)

The Ibaloi alternative sentence is also much like its English counterpart. It may encode alternation with only two possible alternatives, or more open situations where several choices are possible. There is frequent ellipsis in the second base. The alternative conjunction is *ono*.

Jet kaon-an to nem binediw ni daki *ono* binediw ni bii
 and way.to-see if crossed the boy or crossed the girl
 'And we will see if the boy crossed the river, or the girl'

Mayrodoy, *ono* enshi?
 continue or not
 'Shall we continue or not?'

There is also an Ibaloi result sentence which is broadly parallel to the English sentence of the same name. The conjunctive link 'therefore' may be (*jet*) *isonga*,

(*jet*) *nakol ni*, or \emptyset . When (*jet*) *nakol ni* occurs, the sentence refers to some sort of difficulty.

Etey emola ira *isonga* eg ali sha on-ondaw
 died probably they therefore not here they come
 ‘They probably died, that is why they’ve never come back here’
 Taka kapanngi-ngii ni ayshi’y asawam; *nakol ni* si-kam i
 I.you laughing-at none wife.your therefore you
 emengiloto ni moka kena
 cooking you eat
 ‘I am laughing at your not having a wife; as a result you are the one
 cooking your own food’

While the above Ibaloi sentence types are as a whole parallel to English, except for the occurrence of two types to express coordination, there are other Ibaloi types that are less parallel. Several of these express temporal relations, which are structurally highlighted in Ibaloi to a degree not characteristic of English. The simultaneous sentence encodes overlap (with occasional use to express close temporal succession – ‘about as soon as A, then B’ – and close logical connection). In the simultaneous sentence, *jey* ‘at the same time, while, meanwhile’ is a genuine coordinate link, not a subordinator. In cases of permutations of the order of clauses, *jey* does not travel with the clause that it precedes but is simply a medial link:

Eg metakwaben *jey* nandabos kita
 not be.opened while naked we
 ‘No one opens (the door) when we’re naked’
 Kaonnanginangis *jey* kaotiyetiyed ja ondaw da nodta
 kept.crying while climbing go to
 baley shi Bayojok
 house of Bayojok
 ‘He kept on crying as he was climbing up to the house of Bayojok’s
 family’

There are two conjunctive sentence types which express temporal succession. The first type with a medial *asan* ‘and then’ link is limited to sentences in which the bases have the same subject. Furthermore, *asan* attracts to itself any subject pronoun in the following base. Tense is usually progressive in the following base and special morphophonemic rules apply. Sentences with *asan* are open-ended – although in actual text the longest example found has five bases with four intervening *asan* links.

Esolokan tedo'n polo'n akew *asan* shaka ibka
 more three tens days and.then they bury
 '(The mummifying) would go more than thirty days, and then they
 would bury him'

Menongpitak nin *asan* naka kaleta'y kemkenti
 whistle.I first and.then I bite firefly
 'I'll whistle first and then I'll sting the firefly'

Another type of sentence expresses temporal contingency rather than simply succession, i.e. the second event is conditioned on prior occurrence of the first. This sentence also employs a medial *asan* but has a sentence-initial *ampet* 'unless, until'.

Ampet edagboan ka *asan* ka masi-met
 unless paid you then you enthusiastic
 'You have to be paid before you are enthusiastic'

'*Ampet* memshit ka *asan* moka olopa
 unless feast you then you take.along
 'First you must celebrate *peshit*, and then you can take her along
 with you'

Ibaloi also has a surprise sentence regularly marked by medial link *ngaran ni* 'what do you know!' It has no regular structural counterpart in English. The second base always expresses some unexpected and rather unpredictable development.

Kowan ko nem pampamaayan i bagto; *ngaran ni*
 say I that soft.touch trial what.do.you.know!
 agpayso gayam
 true after.all

'I thought that the trial [by ordeal] was something easily deceived;
 what do you know, it really works!'

Jet kimawak ja kowan ko ey nak iarew iya saleng ko;
 and went.I say I I light this torch
ngaran ni apil gayam – botatew
 what.do.you.know different after.all botatew
 'And I went to light my torch; but what do you know, it was
 different; [it was] a botatew [spirit]'

Ibaloi also has a wealth of sentence types that employ juxtaposition; they encode the semantic notions coupling, paraphrase, temporal succession,

introduction, and identification. I do not illustrate them here (see Ballard *et al.* (1971a, 1971b)).

Ibaloi has a somewhat more complex system of quotation sentences than English. The direct quote, which is as a whole parallel to English, can have up to two quotation formulae (the second of which must be the verb *kowan* ‘say’). Unlike English, direct quotations have a quotative word, *ey*.

Binistigar toak; kowan to *ey* Kaspangariganey kapture-en sha
 quizzed he.me say he supposing capture they
 koyo ni guerilla niman, ngantoy pesing mo’n jay solat?
 you guerillas now.what do you this letter?
 ‘He quizzed me; he said to me “Supposing the guerillas capture you,
 what will you do with this letter?”’

The Ibaloi indirect quotation sentence has some uses parallel to English (indirect speech and awareness) and others that are less parallel (intent, naming, mistaken idea). I illustrate only the latter three here.

Kowan to *ey* shi Kabayan i pengibotan to ni kabajo
 said he that Kabayan place.to.steal he horse
 ‘His intent was that Kabayan be the place for him to steal a horse’
 (*intent*)

[Sota kabisiljana ma’n] kowan sha *ey* si Agajap
 the leader.their then say they that Agajab
 [ebadeg ga too]
 big man
 ‘[Their leader], whom they call Agajab, [he was a big man]’
 (*naming*)

Kowan ko *nem* wara’y toka adibja mango
 say I that is she visits mango
 ‘I thought (wrongly) that she had someone to play with’
 (*mistaken idea*)

Notice in this last example that *nem* (associated with contrast and frustration – cf. antithetical sentence above) occurs as the quotative word rather than *ey*.

3.3 *Chichauxtla Trique (Mexico)*

Trique is an example of a language that makes extensive use of juxtaposition as a sentence-building device⁴. The Trique conjunctions *sa³ni⁴* ‘but’, *da³d_i³⁴?*

⁴ Trique has an intricate tonal structure in which five tone levels (with 1 the highest, and 5 the lowest) occur, either isolated or in combination (‘glides’)

*si*³ ‘because’, and *ni*⁴ ‘and’ (except as members of pairs of conjunctions) mark onset of a new sentence; they do not occur as sentence-medial links.

Quotations in Trique may be direct or indirect. The quotation formulae of direct quotations are usually postponed, while the formula of quotation is itself one of the juxtaposed sentence patterns which are described below:

‘Gá⁴/á⁴h re⁵’ ga³ta³⁴h si³ gu³ni²¹
 go you said he heard.I
 ‘“Go” he said to me’

Indirect quotations employ *si*³*si*⁴ ‘that’; the quotation formula is invariably preposed:

Ga³ta³⁴h re⁵’ gu³ni²¹ si³si⁴ ga⁵/á⁵
 said you heard.I that should.go.I
 ‘You told me to go’

In Trique we do not find such sentence types as coordinate and antithetical, which we encounter in Indo-European languages and in the Philippines. These relations are expressed in a sequence which involves two or more sentences; i.e., they are expressed in paragraph structures. Rather, on the sentence level, we find contrasting patterns of juxtaposition, with many subtle features which are structurally contrastive from type to type. In this respect, Trique reflects a situation that is typical of the Otomanguean languages of Mesoamerica. Chatino (Pride (1965)) is another such typical language, as is also Mesquital Otomi (Lanier (1968)). In the latter, however, Spanish loan conjunctions are being borrowed and inserted at the seams of juxtaposed bases in many sentence types. Often the old juxtaposed construction exists along with a parallel construction which contains the Spanish loan conjunction.

In Trique there occur patterns of juxtaposition in which we find some of the relations that we encounter in languages that have sentence-medial conjunctions. We also find, however, pairs of clauses which, in effect, are doing the work of single clauses in a typical Indo-European language. We also occasionally find combinations of clauses that appear to express something almost modal or aspectual in thrust. Furthermore, some of these patterns of juxtaposition – most of which are tightly bound phonologically – involve an ambivalent noun at the seam of the two clauses. In this respect certain of the juxtaposed sentences discussed in the three languages under consideration are similar to what I have called ‘merged sentences’ in English.

Two of the juxtaposed sentences in Trique are parallel in certain respects to the juxtaposed sentences of English. There is a paraphrase sentence and there is a recapitulation sentence. For the former we have examples such as:

Na⁴çi³ni⁴ta³ žu³ku³ (,) zi⁴ ga³/a^h³⁴ ni⁴ya⁴ žu³
 will.turn.up animal not gone lost it
 ‘The animal will turn up, it’s not really lost’

The recapitulation sentence in Trique, as opposed to English, is a device for avoiding hanging too many nouns on the same verb. Thus, rather than saying, ‘That woman went to the mountains to see her cattle and horses’, it is more natural in Trique to say:

Ga³/a^h³⁴ zi³ ža⁵na⁵ da^h³ ki^h³ (,) ga³/a^h³⁴ ni⁴ya³
 went woman that mountain went see-she
 da^h³ tro² nga⁴ da^h³ gwa²yu³
 animal-her cattle with animal-her horse
 ‘That woman went to the mountains, she went to see her cattle and horses’

It is noteworthy that these two sentence types in Trique, which are the most parallel to juxtaposed sentences in English, permit internal pause (,) at the seam of the two bases when they have complicated internal structure. This is not true of the other juxtaposed sentence types where, if anything, one picks up speed at the seam of the two bases, and pauses somewhere internally within one base rather than at the seam of the two.

Temporal succession and temporal overlay are expressed in two further juxtaposed sentences of Trique, the sequence sentence and the simultaneous sentence, respectively. They are binary structures; even in the sequence sentence one cannot express a long sequence of actions, rather one combines in such a sentence two actions which are typically associated as parts of the same process or as part of an expectancy chain. Thus, we have a sequence sentence such as:

Gi³ri^{35/} ni³ ži³lu²¹ li³h ža²³ ni³
 found they worms little ate they
 ‘They found some little worms and ate them’

The noun phrase ži³lu²¹ li³h ‘little worms’ at the seam of the two clauses is object of the verbs which both precede and follow it.

The simultaneous sentence requires that the predicate of the first clause be continuative in aspect. This gives the feeling of ‘as they . . .’. Thus, we have a sentence:

A³ga^{34/} ni³ ya²h ni^h³ / a³di³ya³⁴ ni³ ri³a³⁴ ni²ma³
 beat they drum precede they before corpse
 ‘They beat a drum as they walk before the corpse’ (where ‘/’ separates the two clauses)

The simultaneous sentence is also used to express the lexical concepts 'bring' and 'take'. Thus, we have also sentences such as:

Ni³ka³⁴h ni³ ča³ / ga³/na³⁵' ni³ yu³h na³h
 had they tortillas came they place here
 'They brought tortillas here'
 Ni³ka³⁴h ni³ ča³ / ga³'a³⁴h ni³ yu³h ma³h
 had they tortillas went they place there
 'They took tortillas over there'

Final cause (purpose), which is usually expressed within a purpose margin of Indo-European languages, Philippine languages, and some other languages of Mesoamerica, is expressed in Trique in a juxtaposed purpose sentence. The second base of such a sentence must have a verb in the anticipatory mood.⁵ The second base may occur twice: i.e., there may be two purpose constructions in the same sentence. Thus, we have sentences such as:

Ri³ki²³ si³ ča³ / ža⁵h
 gave he tortilla will.eat.I
 'He gave me tortilla for me to eat'

Purpose occurring twice in a sentence is seen in an example such as:

Ni³ko³⁵' ne³h po³li³sya²³ / gi⁴da³/a³⁴ ni³ / ga⁴či⁴ ni³
 followed the police will.seize they will.put they
 du³gwa²ga³
 jail
 'The police followed him in order to seize him and put him in jail'

When such a purpose sentence occurs with both verbs in the anticipatory mood, it is impossible to distinguish it from a sequence sentence with both verbs in the anticipatory mood: i.e., a sentence such as, 'He will-grab it he will-eat' can be either 'He'll grab it in order to eat it' or 'He'll grab it and eat it'.

The suggestion sentence in Trique is weakly conditional in thrust and mildly hortatory. It has some rather specialized constraints: namely, the first clause must have a verb in second person, and the second clause must have a verb in first person plural inclusive of second person. Thus, we have sentences such as:

⁵ The anticipatory mood is marked by a complicated pattern of tone lowering which differs according to the tone class to which a verb belongs. It combines the functions of a future tense, a subjunctive, and a command form. Thus *ga³/na³⁵'* 'came', in the anticipatory mood, is *ga⁵/na⁵'*, which, according to context, can be variously translated as 'will come', 'would have come', and 'come'.

Ga⁴di³ǎ³⁴ re^{5/} / gǔ^{4/}
 go.ahead you will.go.we
 ‘You go first and we’ll go’
 Du⁴gu^{3/}nǐ^{2/} re^{5/} / du⁴gwa³čǐ^{2/} go³čē²³ da³h
 hurry you will.pass.we car that
 ‘You hurry up and we’ll pass that car’

The identification sentence in Trique is a deictic device. A statement is made in the first clause and a participant indicated in that statement is identified in the second clause. This gives us a sentence such as:

Ne^{34/} ne⁵h ma³h gi³nga³h ngo⁴ žu³ma⁴ǎ⁴³
 over side there lay a village
 / gu^{4/}na³ ‘zi³-ri^{3/}nǐ^{3/}’ zi³-nu⁴gwa^{4/} mu^{3/}ǔ^{2/}
 called.it foot-of.ash.tree language-of us
 ‘Over there was a village which was called “the foot of the ash tree”
 in our language’

Most of the remaining juxtaposed sentence types in Trique can be considered to be essentially a predication spread over two clauses. Thus, a cause sentence brings in a causer, i.e., a further participant, in the second clause. The first clause is often a meteorological expression, but it can be an intransitive or equative clause as well. In a Trique meteorological clause such as *ga³ma^{35/}* ‘rained’, there is no expressed subject; rather the construction is considered to be complete without a subject. When put into a cause sentence, we get a sentence such as:

Ga³ma^{35/} / gi^{3/}ya³h ya^{3/}ǎ⁴³
 rained made God
 ‘God caused it to rain’

We also see the same construction in a non-meteorological expression such as ‘Got baptized the baby in the church caused the priest’ or, more freely, ‘The priest baptized the baby in the church’.

The ‘audition’ sentence in Trique is a device for expressing the addressee; i.e., the construction which is usually handled as an indirect object in an Indo-European language. Thus, instead of saying, ‘John said to Mary’, Trique says:

Ga³ta³⁴h Juan / gu³nǐ³ Maria
 said John heard Maria
 ‘John said to Mary’

The direction sentence expresses the object of a verb of emotion by resorting to the verb 'see'. Consequently, instead of saying, 'I'm angry at you', Trique says:

A^{3'}mā³ ru³wa²h / ni^{3'}i²¹ re^{5'}
 warm inside.I see.I you
 'I'm angry at you'

The emphatic sentence in Trique is a way of achieving focus on some participant within the next clause, but the emphatic word is itself a verb in Trique. There is a class of verbs *we*², *se*², *ni*³*ta*⁴*h*, and *gi*³*zi*²*h* which can be translated 'Lo, it is', 'Lo, it isn't', 'There is/are none', and 'Tallies up to', respectively. Thus, we have sentences such as:

Se² gwi³⁵⁴ / w.i³
 lo.not person was.he
 'He really wasn't a person'
 Gi³zi²h ga⁵a³h zna²du³ / gu³zu³ma²³
 tallied four soldiers arrived
 'All told, four soldiers arrived'

The remaining Trique juxtaposed sentence type, the conative type, may be compared with such English sentences as *He attempted to learn how to swim*, *He struggled to be good*, and *He's learning to ice skate*. Thus, we have Trique sentences such as:

Ču³⁴ ni³ a^{3'}mi³⁴ ni³ na³⁴ zdi²la³
 learned they talk they language Castilian
 'They know how to talk Spanish'
 Gu³nu⁴kwa³h zi³ gu³či^{35'} zi³ du³kwa² zi³
 managed he arrived he house his
 'He managed to arrive at his house'

4 Medial-final chaining structures

I discuss here and in section 5 a type of language that is radically different in surface structure from those illustrated above. Medial-final chaining is discussed and illustrated here; initial-consecutive chaining is described somewhat briefly in section 5. We shall see, however, that, in spite of the striking differences in surface structure between co-ranking languages and chaining languages (James (1970)), the same relations – coupling, etc. – are found and sometimes are overtly marked.

What is the geographic distribution of medial-final chaining structures here described? I believe that the portion of the world in which they are the most

fully and, one might say, remorselessly developed is the island of New Guinea – including Papua New Guinea and Irian Jaya; broadly similar structures are also found in South America, specifically in Colombia, Ecuador, and Peru. Just how far they extend through the rest of the South American continent, I do not know. Structures broadly characterizable as ‘chaining’ are also found in Ethiopia, Indic, and Turkic, and indeed in a belt of languages extending through Central Asia as far as Korean and Japanese in the extreme east. Chaining structures also occur in the southwestern United States; it seems clear that northern Pomo (data from J. Ravenhill) and Crow (data from R. Gordon) can be so characterized. All medial–final chaining systems reported to date have verb–final clause structures. Just as subject, object, location, and other elements precede the predicate in their own clause, so also quasi-subordinate clauses of various sorts may precede the main clause and be ‘chained’ to it.⁶

In this section, I confine myself to the consideration of such structures from Papua New Guinea and northern South America.

4.1 *The distinctive features of medial–final clause chaining*

The distinctive features of medial–final clause chaining are as follows; of these features, the first is the most basic and diagnostic, while the other two features are frequently found and characterize the languages of Papua New Guinea and South America that are especially discussed here.

- (i) There is a final clause that has a verb of distinctive structure that occurs but once in the entire chain, while the other non-final clauses have verbs of different and more restricted structures (Elson (1964)). The final clause is like an engine that pulls a string of cars.
- (ii) Each non-final clause is marked so as to indicate whether the following clause has same subject or different subject from itself. This is commonly referred to as a ‘switch reference system’. Switch reference is sometimes extended to anticipatorily mark in the medial verb the subject of the verb in the following clause; consequently, in such systems, the medial verb is dually marked both for its own subject and the subject of the clause which is to follow. In some languages of South America, the marking of switch reference is not relative to the reference of the next occurring clause but relative to the final clause itself.

⁶ While my immediate reference in this section has been to my own summary (in Longacre 1972), I acknowledge as sources of data (besides those otherwise noted): Gibson, McCarthy, and Harris (Kanite (unpublished)); Graham Scott (Foré (1973)); Alfred and Dellene Stucky (Ek-Nii (unpublished)); James Parlier (Managalasi (unpublished)); Ellis Deibler (Gahuku (1973)); Elaine Geary (Kunimaipa (unpublished)); Velma Foreman (Yessan-Mayo (1974)); Doreen Marks (Kosena (unpublished)); Ken McElhanon (Selepet, Kate (personal communication)). The Deibler and Foreman studies which were available to me when I wrote my summary were preliminary drafts.

- (iii) A further characteristic of chaining can be attention to temporal relations such as chronological overlap ('while', 'at the same time'), versus chronological succession ('and then'), which shade off into logical relations such as cause and effect, result, and so forth. Temporal relations appear to be central in these languages and are extended metaphorically in certain directions.

But although I am here discussing chaining in relation to sentence structure, it is necessary to proceed with caution at this point. In fact, the pronounced surface features of chaining can lead to two fallacious assumptions regarding such languages: first, that such a chain is necessarily a simple linear sequence; second, that such a chain is necessarily a sentence.

In regard to the first assumption it is only necessary to remember again that recursion is the rule rather than the exception in both sentence and paragraph structure around the world. Commonly, a sentence base may be expounded not only by a single clause, but also by a complex of clauses which is best considered to be an embedded sentence. For this reason we will probably find that certain chains are not simple linear sequences, but are recursive nestings of chain within chain. The chains may be on separate structural layers and even separate structural levels (sentence vs paragraph).

The second assumption requires more extended comment. The assumption that a chain is necessarily a sentence proves awkward in certain instances. Thus, in the Foré language in New Guinea (Scott (1973); Longacre (1972)), there clearly are chains on two levels. The most inclusive chain has its final verb marked for mood and occurs at the end of a sizeable stretch of discourse which can on occasion be as long as two or three pages. Within this larger chain, shorter chains occur which are (except for certain special devices) limited to same-subject chains. Such a chain runs on until there is a different subject introduced in the following clause, at which point a different-subject verb is used. A different-subject verb, which is very distinct morphologically from the sorts of medial verbs which precede it, may be considered to end a sentence (while the final verb can be considered to end the paragraph). If one wishes to end a sentence even though the next clause has the same subject (I would argue that there is some feeling for sentence length in languages), then one is able to use a special suffix which terminates the sentence. Thus, we have chains of medium length and chains of maximum length. It seems that the chain of maximum length compares well in distribution and length with a typical paragraph in an Indo-European language while the chain of medium length corresponds more to the sentence.⁷ This puts us in the rather unusual situation (by Indo-European standards) of having grammatical closure (that is, devices signalling the end of

⁷ Graham Scott, however, has in his more recent work apparently reverted to a more conventional analysis in which the distinction between chains analysable as sentences and those analysable as paragraphs is rejected. He seems to have adopted the position that all chaining, regardless of differences in length and structure, is on the sentence level.

a unit) both on the sentence and on the paragraph levels. It must be emphasized, however, that, while this is true of Foré, Kanite, and certain other languages in New Guinea, by no means are all the languages of the area structured in this way. In some languages, such as Wojokeso, the medial-final chain corresponds well to the sentence itself; i.e., it is the sentence which is marked with grammatical (as well as phonological) closure. The paragraph then becomes a cluster of such chains.

The following example of a Kanite (Papua New Guinea) sentence (Longacre (1972:5–6)) should serve to illustrate some of the points made in this section (DS = different subject, COMPL = completed):

- (1) is-u'a-ke-'ka
do-we-DS-you
- (2) naki a'nemo-ka hoya ali-'ka
so women-you garden work-you
- (3) naki ali ha'noma hu-ne'atale-'ka
so work finish do-COMPL-you
- (4) inuna kae-'ka
weeds burn-you
- (5) popo hu-'ka
hoe do-you
- (6) inuna kae-'ka
weeds burn-you
- (7) naki ha'no hu-talete-ke-ta'a
so finish do-COMPL-DS-we
- (8) naki viemoka-ta'a keki'yamo'ma ha'noma nehisi-ana
so men-we fence finish do-it-CONJ
'If we do this, you women work the garden, when it is finished hoe
and burn the weeds, when that is finished we men will finish making
the fence'

This sentence is a series of eight clauses, of which the verbs are the most important structure in each clause. The last clause, (8), ends with a conjunctive marker *-ana*, which binds it into the broader framework of the paragraph, even though it ends in a final verb. The subject of the first clause is *-u'a* 'we'. This morpheme is followed by *-ke*, a transition marker which tells us that there will be a different subject in the clause which is to follow. The final morpheme of the first form, *-ka*, tells us that there will be a second person subject in the following clause. This second person subject is the subject of clauses (2–6); in each verb the suffix *-ka* tells us that the next clause will also have a second

person subject. In (7), again we have an occurrence of the transition morpheme *-ke* which tells us that there will be a different subject in the following clause, and the person and number of this subject is indicated in the final morpheme *ta'a* 'we' of the verb form in (7). So we find that in clause (8), 'we men' is the subject of the clause. It is important to note, however, that even in this example the eight clauses do not compose a simple linear string, in spite of the chaining of clause to clause by means of the indication of same (unmarked) versus different subject in the following clause:

- (i) it is evident that there is a cluster of clauses (4–6);
- (ii) that (6) is a repetition of (4); and
- (iii) that Base 1 is probably something of special structural importance (cf. English conditional margin).

There is only one final verb in this sentence, i.e., *nehis-i-ana*. All other verbs are medials. Furthermore, even the final verb is morphologically modified (*-ana*) to fit into the longer chain which is the paragraph.

4.2 *The germinal notions and their development (in Papua New Guinea)*

I return now to the two considerations of marking of same versus different subject and marking of temporal succession ('and then') versus temporal overlap ('while', 'at the same time'). These notions are elaborated with considerable range and variety in Papua New Guinea. The two parameters, each with two values, give us a two-by-two scheme with four possible values. This is the ideal scheme. Although it is rarely found in such stark simplicity, it does characterize a few languages, for example Kanite, Ek-Nii, and Kate, as sketched in table 7.2.

The following Kate forms, in which ss and ds represent same subject and different subject respectively, illustrate (a), (b), (c), and (d) (SIM = simultaneous, SEQ = sequential):

- (a) Fisi-*huk* na-wek
arrived-he(SIM) ate-he
'As he arrived, he was eating'
- (b) Fisi-*rq* na-wek
arrived-he(SEQ) ate-he
'He arrived, then he ate'
- (c) Mu-*ha-pie* kio-wek
spoke-DS-they(SIM) wept-he
'As they spoke, he wept'
- (d) mu-*ø-pie* kio-wek
spoke-DS-they(SEQ) wept-he
'After they spoke, he wept'

Table 7.2 *Kanite, Eki-Nii, and Kate*

	Overlap	Succession
Same subject	(a)	(b)
Different subject	(c)	(d)

Table 7.3 *Managalasi*

	Overlap			Succession			
Same subject	-i'i			fut	past	pres	Delayed
				-Na sequence			Undelayed
Different subject	fut	past	pres	fut	past	pres	

Characteristically, the verb morphology cuts up the semantic space in all sorts of arbitrary ways, so that scarcely two languages in highland New Guinea show us precisely the same structure in regard to the implementation of these two parameters. Thus, for example, in the Managalasi language, while the main structural distinctions are still correlated with same subject versus different subject and with overlap versus succession, different subject in both overlap and succession is marked by distinct suffixes which also indicate tense. There are suffixes which mark future, past, and present different-subject overlap, and further suffixes for future, past, and present different-subject succession. Same-subject overlap is indicated by just one suffix, *-i'i*, while same-subject succession has three morphemes. Future, past, and present, when marked for same-subject succession, indicate what might be termed delayed succession (i.e., there is a bit of an interval between the two events referred to in this fashion) while *-Na* marks same-subject succession in normal undelayed sequence; cf. table 7.3.

But this is only the beginning. Gahuku, still another language, has two kinds of medial verbs. The regular medial verbs reflect the ideal scheme in respect to same-subject/different-subject overlap and succession, but there are reduced medial verbs in which only same subject is indicated, but overlap and succession are distinguished. Something of this sort in more complicated form is also found in Kunimaipa. In Yessan-Mayo there is a similar division of loose sentences and tight sentences. The loose sentences distinguish two kinds of overlap and three kinds of succession with same subject, but distinguish three kinds of

overlap and three kinds of succession with different subject. The tight sentences, which indicate only same subject, have two kinds of overlap and two kinds of succession. Foré brings in a type of structure in which overlap, succession, and association (as parts of the same process) are marked within the same-subject chain (which corresponds to the sentence). Different-subject chains cross sentence boundaries and do not distinguish overlap versus succession versus association. Instead, the morphology of the different-subject verb marks different subject in the next clause, along with the person, number, and tense of the chain that it closes. This is quite the opposite of the Safeyoka dialect of Wojokeso (called simply Wojokeso below). In Wojokeso there is a same-subject series sentence which does not distinguish overlap from succession, while different-subject sentences – and they alone – make this temporal distinction. In Golin there is same-subject overlap encoded within what is called the simultaneous sentence, and there is a sequence sentence which can be marked for same subject or different subject. Finally, Kosena has a simultaneous sentence in which same subject and different subject are not distinguished, and it has a same-subject sentence which marks only succession, while different-subject succession must cross sentence boundaries as in Foré. Kosena is somewhat similar to Foré in that the larger of two levels of chaining corresponds to the paragraph.

I have indicated here only a few of the many bewildering and varied possibilities. In brief, starting with the two parameters – same versus different subject and temporal overlap versus temporal succession – from language to language and from dialect to dialect within Papua New Guinea these are developed as a sort of ‘theme with variations’ (see Longacre (1972:16–25)).

4.3 *Relations superimposed over chaining (Wojokeso, Papua New Guinea)*

To illustrate how, in even such languages as these, there can be an overlay of structure which marks most of the (by now familiar) sentence relations which are described above for co-ranking languages, I present here the sentence system of Wojokeso (West (1973)).

It is impossible to understand the nature of the Wojokeso sentence without first of all knowing a few things about the verb morphology. While many of the details cannot be traced out here, the following should suffice.

Medial verbs have first order suffixes which indicate temporal relations and same versus different subject in reference to the clause which follows. The medial verb also has second order suffixes which are tense–person–number markers which correlate somewhat with the same-subject versus different-subject distinction. Specifically, if a medial verb has no first order suffix following its stem, it occurs in a same-subject series sentence which makes no distinction between overlap and succession. In the following Wojokeso

sentence, temporal succession is expressed. Medial verbs end in a second order suffix *-(o)ntae* ‘first person dual series non-future’, while the last and longest word of the sentence is the final verb (past tense, indicative). Medial verbs are marked only for future versus non-future and are not marked for mood; final verbs are marked according to a wide range of tense and mood.

Uhwonontae nowentae sosyo ife'nontae sikunofu lontae
 see.we go.we sosyo pick.we dark speak.we
 toho yohojontae toho hiyammo sofontae nopontae
 wood gather.we wood carry carry.we come.we
 nowentae toho nomo'nontae yafe lo'mo
 go.we wood carry.we (with rope from head) incline in
 pontae mijo lomo wekapmmalohwoyofoho
 come.we water in crossed.we(INDIC)

‘We looked and we went and picked some *sosyo* and we said “It’s getting dark”, and we gathered firewood and carried the firewood and came and went and carried the firewood by a rope hanging from our head and came down the incline and crossed the stream’

On the other hand, one of two long first order suffixes may occur on the medial verb: *-(a)honingk* which indicates different-subject succession, or *-(o)ntaningk* which indicates different-subject overlap. These markers (and their absence) distinguish the sequence sentence from the simultaneous sentence from the series sentence. Notice that the same-subject chain must perforce be a series sentence, and that different-subject chains must perforce be distinguished for succession versus overlap.

An example of a Wojokeso sequence sentence follows:

sikuno nome-honingk-i sukwo'miyomo hofantiso toho
 darkness came-SEQ-3SG(DS) night.in mosquitoes bite
 nelof-ahoningk-i kokoko u nakwo mempo saho
 us.bit-SEQ-3SG(DS) INTENSIFIER EXCL we outside sleep
 mafosyawosofo
 not.sleep

‘Darkness came and at night mosquitoes bit us an awful lot so (being) outside we couldn’t sleep’

This example is composed of three clauses. The long suffix *-(a)honingk* is here followed by the third person suffix *-i* (marking the clause’s own subject, not anticipating the subject of the next clause). The long suffix signals chronological succession and subject change. Thus, while ‘darkness’ is the subject of the first clause, ‘mosquitoes’ is the subject of the second clause, and ‘we’ is the subject of the third clause.

An example of a Wojokeso simultaneous sentence follows; there is an embedded series sentence (SER) in the first base:

Nakwo ango yokino y- \emptyset -ontone wantojo iku'yo sohwo
 we house bones do-SER-1PL(SS) wantojo leaf those
 loh'meemo lohof- \emptyset -ontone hwofe momof- \emptyset -ontone ole
 laid.on do-SER-1PL(SS) kunai put.on-SER-1PL(SS) this
 hume-*ntaningk*-uhwone musopee'u siko toho
 to.be-SIM-1PL(DS) girls.two they fire
 yohoj-*ontaningk*-i nakwo siwope humofohntof-uhwone
 brought-SIM-3DU(DS) we tobacco smoked-1PL

'We did the frame of the house and put *wantojo* leaves on and put *kunai* on and while we were there and while the two girls brought firewood we smoked'

Here the long suffix *-(o)ntaningk* indicates different-subject overlap. In its first occurrence the suffix is followed by *-uhwone*, first person plural; in its second occurrence it is followed by *-i*, third person dual. The whole first part of the sentence from *Nakwo* 'we' to and including *humentaningkuhwone* 'while we were there' is an embedded series sentence which functions as first base of the simultaneous sentence. The whole sentence might be paraphrased: 'We built the frame of the house and put *wantojo* leaves on it, and put *kunai* on it and were there; meanwhile the two girls brought us firewood; meanwhile we smoked'.

This three-way structural difference is reinforced further by the distribution of three series of tense–person–number markers. The three series are asymmetrically distributed relative to the absence of suffix, presence of different-subject succession suffix, and presence of different-subject overlap suffix.⁸

Thus, there is a different-subject non-future set of tense–person–number markers. This goes with either the sequence or the simultaneous sentence. There is also a same-subject non-future set of tense–person–number markers. This goes with the series sentence, provided that it is non-future. Finally, there is a third set of tense person number markers which are future whether the subjects be the same or different in the two clauses. Thus, whether we are in a sequence sentence, simultaneous sentence, or series sentence, if the tense indicated is future, then it will take the third set of markers; cf. table 7.4.

⁸ The three sets of tense–person–number suffixes are a study in themselves. No two cut up semantic space in the same way. Basically the sets involve singular, dual, plural versus first person, second person, third person. But all sets of tense–person–number markers in Wojokeso involve some collapsing of person–number categories together. Furthermore, the suffixes which mark tense–person–number in the counterfactual and in the future coordinate constitute two further sets which indicate two further ways of cutting up semantic space. Consequently, if we lay out in front of us these five sets of tense–person–number markers, no two of the five cut up semantic space in the same way, although the scheme of two parameters with three values underlies all five of them.

Table 7.4 *Wojokeso medial verbs*

+ verb stem	+ first order suffixes	+ second order suffixes (tense-person-number)																
A	<i>-ahoningk</i> DS SEQ <i>-ontaningk</i> DS SIM	DS non-future: <table border="1"> <thead> <tr> <th></th> <th>SG</th> <th>DU</th> <th>PL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>o</td> <td>uhwoyo</td> <td>uhwone</td> </tr> <tr> <td>2</td> <td>ino</td> <td>i</td> <td>ofi</td> </tr> <tr> <td>3</td> <td>i</td> <td>i</td> <td>ofi</td> </tr> </tbody> </table>		SG	DU	PL	1	o	uhwoyo	uhwone	2	ino	i	ofi	3	i	i	ofi
		SG	DU	PL														
1		o	uhwoyo	uhwone														
2	ino	i	ofi															
3	i	i	ofi															
N																		
Y																		
V	- \emptyset SS SER	SS non-future: <table border="1"> <tbody> <tr> <td>onji</td> <td>ontae</td> <td>ontone</td> </tr> <tr> <td>onji</td> <td>onji</td> <td>ontifi</td> </tr> <tr> <td>onto</td> <td>onji</td> <td>ontifi</td> </tr> </tbody> </table>	onji	ontae	ontone	onji	onji	ontifi	onto	onji	ontifi							
onji		ontae	ontone															
onji		onji	ontifi															
onto	onji	ontifi																
E																		
R																		
B																		
S		SS & DS future: <table border="1"> <tbody> <tr> <td>mo</td> <td>uhwasi</td> <td>uhwasi</td> </tr> <tr> <td>ohoji</td> <td>ohosisi</td> <td>uji</td> </tr> <tr> <td>uhwosi</td> <td>ohosisi</td> <td>uji</td> </tr> </tbody> </table>	mo	uhwasi	uhwasi	ohoji	ohosisi	uji	uhwosi	ohosisi	uji							
mo	uhwasi		uhwasi															
ohoji	ohosisi		uji															
uhwosi	ohosisi	uji																
T																		
E																		
M																		

Note: In this table, SG, DU, and PL stand for singular, dual, and plural numbers; while 1, 2, and 3 symbolize 1st, 2nd, and 3rd persons.

In summary, medial *Wojokeso* verbs tell us whether the clause following will have the same or different subject and whether the relationship with the following clause will be one of sequence, simultaneity, or neutrally marked (series). The medial verb further loosely indicates tense as non-future versus future relative to the fuller marking of tense in the final verb of the following structure. As already stated, these morphological features indicate three sentence types: series sentence, simultaneous sentence, and sequence sentence, all of which are open-ended or *n*-ary. Interesting varieties and subvarieties of these various sentences occur, but this is not the place to mention them.

A fourth sentence type, called the coordinate sentence, has the verb of its non-final base filled by what is essentially a modified indicative form rather than a medial form. To this degree, therefore, the *Wojokeso* coordinate sentence is more like a co-ranking structure. When, however, the future is called for, then the verb of the non-final base is a special medial verb form with a special set of future coordinate person-number markers. See table 7.5.

Table 7.5 *Future coordinate person-number markers in Wojokeso*

	SG	DU	PL
1	-me	-aso	
2	-iso		-fijoso
3	-oso		

The hallmark of the coordinate sentence is the presence of a suffix *-so* (coordinator, roughly translated as ‘and’). This suffix goes on the non-final verb whether non-future (modified final) or future (medial form). The following example is non-future:

Wojokesohwa mpe imentohof-*o-so* nakwo syoho’no
 (clan-name) buy do-they-and we work.for
 umentihwonefoho
 go.we (INDIC)
 ‘The Wojokeso bought (pigs) and we went to get work’

The next example is a future coordinate; it is embedded within a series sentence (the balance of which is not given here):

Humanti-*fijo-so* uhwoni-*fijo-so* mekino sihwo’*mno* nto
 be-3PL-and see-3PL-and bow black already
 umo’*naso* uhwoni ngk-*ø-uji* . . .
 become see-SER-3PL(FUT)
 ‘They will wait and they will look and when they see that the bow
 has become black . . .’

The coordinate sentence is a very elastic structure. While its essential idea seems to be to indicate coupling without regard to chronological considerations, it can encode hypotheticality and temporal succession as well. Apparently, when the latter two notional structures are encoded in this sentence pattern, they are somewhat de-emphasized. Thus, ‘I will go and they will be cross with me’ is a non-emphatic way of saying ‘If I go, they will be cross with me’.

Any of the four basic sentence types described above may be made an anti-theoretical (ANTI) sentence by addition of the prefix *ko-* to the medial verb. The resulting construction is binary, and encodes frustration (i.e., expectancy reversal) of some variety, for example ‘They worked hard but not much money was given them’. All the morphological features of the four basic sentence types are retained, even the suffix *-so* of the coordinate.

The following antithetical sentence is an overlay on a sequence sentence. It is, therefore, an antithetical sequence structure:

Ko-nejapowo'ni ngk-ahonink-i nakwo jomo mujo'njo
 ANTI-always.gives.us-SEQ-3SG(DS) we ask not.speak.to.him
 'He always gives us but we don't pray to him'

The next example is an overlay on a coordinate (non-future) sentence. It is, therefore, an antithetical coordinate sentence:⁹

Syoho yakumpohn'nyo *ko-imalog-o-so* hamnoyoho ergo
 work strong ANTI-do-they-and money much
 muyofoho
 not.give
 'They worked hard but not much money was given to them'

The four basic sentence types may be further modified by the suffix *-'manji* on the medial verb. The result is a (binary) conditional sentence which explicitly encodes hypotheticality, for example 'If I see him, I will tell him'. The morphological features of the medial verbs upon which this structure is built are retained except for the suffix *-so* of the coordinate sentence which is deleted on addition of *-'manji*.¹⁰ The two examples which follow illustrate a conditional simultaneous sentence and a conditional series sentence respectively:

Nopontaningk-uji-'manji fisyusy'i'ni tumayo
 come(SIM)-3PL(FUT)-IF go.find.them
 'If they will be coming, you go and find them'
Kako uhwoni ngk-uhwosi-'*manji* wakumasyono
 he see.it(SER)-3SG(FUT)-if intent.you.get(BENEFACTIVE.3SG)
 'If he sees it he will get it for you'

Finally, the four basic sentence types may be modified once more by the insertion of a free conjunction *kalohi* which expresses cause–result between the two clauses. Again the structure is binary, and again the coordinate suffix *-so* is deleted on addition of the cause–result conjunction.

The result sentence with medial *kalohi* can be rendered in various ways in English. Thus,

Jeko honta *kalohi* wohumantono'maho
 sunny time because/so will.stay.we.not

⁹ In any co-ranking structure with which I am familiar, 'antithetical' and 'coordinate' are opposed sentence types. Here, however, the two are seen conflated. This is interesting in view of Halliday and Hasan's (1976) contention that the English *but* includes the notion 'and'.

¹⁰ Note that *'manji* is added to medial verbs and overlays all the apparatus inherent in this distinction. Therefore, although 'if' clauses are sentence margins in some languages, this does not seem applicable here. Indeed, the co-ranking structure of margin–nucleus gives way in a chaining language to a distinct apparatus, medial base (repeated) + final base.

can be freely rendered as an English cause margin plus nucleus – ‘Because it’s not sunny we won’t stay’ – or as a result sentence – ‘It’s not sunny so we won’t stay’ – or even as a reason sentence: ‘We won’t stay for it’s not sunny’. Wojokeso, like New Guinea chaining languages in general, does not have a subordinate–coordinate contrast as in English. Furthermore, where English has two nuclear and coordinate patterns, the result sentence with *so* and the reason sentence with *for*, Wojokeso has here but one pattern. This pattern is the more ‘natural’ one in which cause precedes result.

In the following examples, since addition of *kalohi* is compatible with the retention of all the morphological distinctions between various sorts of medials, we have result series sentence, result simultaneous sentence, and result sequence sentence.

- Nop- \emptyset -onto *kalohi* imasofoho
 came-SER-3SG(SS) so did.he.it(INDIC)
 ‘He came, so he did it’
- Nop-*ontangink*-ofi *kalohi* imalefoho
 came-SIM-3PL(DS) so did.I.it(INDIC)
 ‘They were coming so I did it’
- Nop-*anhonink*-ofi *kalohi* imalefoho
 came-SEQ-3PL(DS) so did.I.it(INDIC)
 ‘They came so I did it’

It is important to remember that none of the typical morphological features of chaining are removed – even when the various affixes which indicate the above relations are superimposed. We still have (except for the non-future coordinate) a clear chaining structure in which the medial–final contrast in verb morphology is preserved, along with (partial) marking of same versus different subject in successive clauses, along with interest in distinguishing succession from overlap. These features remain basic in spite of the affixal overlay. Perhaps nothing more clearly illustrates the difference between chaining and co-ranking structures than such resort to overlay devices as here described. At the same time, the persistence of certain notional categories such as are discussed in section 2 can be observed as well.

Relationships of a sort we are accustomed to seeing in co-ranking languages – relations usually expressed by free conjunctions – are expressed here largely by means of verb morphology. Only one free conjunction¹¹ occurs in the entire language.

Besides the structures mentioned, there is, of course, a simple sentence, that is, a one-clause structure in which the only verb in the sentence is a final verb.

¹¹ There are other New Guinea languages, for example Telefol, which have a considerable inventory of such conjunctions, along with typical New Guinea verb morphology.

Table 7.6 *Counterfactual person–number markers in Wajokeso.*

	SG	DU	PL
1	-onti'mtentesi	-ontentasi	
2 & 3	-ontentesi		-ontifitentesi

There is also some evidence that, while no extensive system of sentence margins exists in such a language as Wajokeso, there is nevertheless a time margin. This is seen in that the base of a sentence often serves as a back-reference to the previous sentence and functions, therefore, as a time margin, as in '... and he came to our town. He came and ...'. The fact that in quite a few languages such time margins, when accompanying main clauses, are skipped in the reckoning of same-subject versus different-subject concord provides evidence for time margins in New Guinea languages (Longacre (1972:10–14)).

There also exists a counterfactual sentence structure of a very peculiar sort. There is a special set of counterfactual person–number markers. These are long suffixes running up to thirteen phonemes in length and not neatly analysable into component suffixes. This can be seen in table 7.6.

The presence of one these counterfactual (CF) person–number markers on the verb of a non-final clause, when followed by a clause whose verb is an unrealized subjunctive (suffix *-sohi*) marks the whole construction as a counterfactual sentence. It is very striking that, in language after language throughout New Guinea, there is a considerable specialization of verb morphology to mark one or both clauses of counterfactual conditions. An example of a Wajokeso counterfactual sentence follows:

N-ontentesi hwolaho mjohosi
 eat-2SG.CF vomit you.would.have.thrown.up
 'If you had eaten, you would have vomited'

4.4 *Medial–final clause chaining in South America*

I confine myself here to a consideration of medial–final chaining in Chibchan languages (Colombia and Ecuador) and in the Tucanoan languages (of the Valpes region in Colombia). But chaining in South America is much more extensive geographically than this. We know that it also characterizes Quechua, as well as Aguaruna and Cashinahua in Peru.

Clause chaining in South America has points of comparison and of contrast with clause chaining in New Guinea. Like clause chaining in Papua New

Guinea, there is a verb of distinctive structure that occurs just once in the entire sentence. Unlike in New Guinea, nothing quite as characteristic as medial verbs occurs. In Paez (Gerdel and Slocum (1976)) the medial verb is a rather stripped-down structure whose chief characteristic is that it contains a morpheme which indicates same subject (*-rra*) or different subject (*-te'*), relative to the following clause. In the following example, the Paez suffixes just indicated serve to keep track of three participants in a confused situation:

Pal case'jrra nasaty uyiitste', new'weya' u'tje'
 father coming.out(ss) people slapping(DS) to.defend going(DS)
 fyrūu yacrra angya's pecueya' yujte', fytū'sa' teech
 stick carrying me to.hit coming(DS) stick one
 señora e'su newerra, wenzhte', pala' iiwete uc
 woman from.behind deterring(ss) pulling(DS) father fell he
 'Father came out and was slapping people; as I went to defend them,
 he came carrying a stick to hit me; but a woman grabbed the stick
 from behind and she pulled, and he fell down'

Of interest here is (i) the unmarked participant (i.e., the narrator) versus the two named participants; and (ii) a constituent grouping which gives major breaks as indication of an oncoming different subject (as indicated clearly by the distribution of non-final pauses which follow different-subject verbs but do not necessarily follow same-subject verbs). The sentence is not, therefore, a linear string; rather same-subject sentences are embedded within the different-subject sentence (cf. Foré above, section 4.1).

Paez also has some co-ranking sentence structures – that is, coordinate, antithetical, and alternation sentences – where independent clauses with independent verbs are combined into sentence units. Of interest here is that the feature indicating same subject versus different subject is found in the coordinate sentence where the particles *sa'* 'and' (same subject) and *atsa'* 'and' (different subject) occur. I regard this as an extension of a feature normal in chaining structures to a co-ranking structure.

Guambiano of Colombia (data from Branks) and Cayapa of Ecuador (Wiebe (1977)) are also languages which have chaining structures similar to those illustrated for Paez.

In Tucanoan languages, we typically find two sorts of chaining structures, which can be called the implicit chain and the explicit chain, where 'implicit' and 'explicit' refer to identification of participants. In the implicit chain, the medial verbs are bare stems (or minimally affixed in some languages); same versus different subject is understood according to certain tacit speaker–hearer assumptions which are stated below. In explicit chains, there are overt markers to keep these matters straight. The matter of temporal overlap versus temporal

succession is a concern intertwined with the matter of subject reference – much as in chaining languages of Papua New Guinea.

Guanano (N. E. Waltz (1976)), a typical Tucanoan language, illustrates these two chaining structures quite aptly.

The implicit chain is a sentence structure which has essentially three slots: an initial link slot, a medial base slot which may occur several times, and a final base slot. The initial link slot, which may occur twice, consists of conjunctions or certain types of dependent clauses which recapitulate and refer back to a previous sentence. In effect, they could be considered to fill a temporal margin in a chaining structure much as in New Guinea. The medial base has a verb with no suffix at all while the final base has a regularly inflected verb. This surface structure can encode temporal succession or temporal overlap. In the former case the sentence is *n*-ary and can be considered to be a sequence sentence. In the latter cases, the sentence is binary and can be considered to be a simultaneous sentence. There are no surface structure clues to distinguish the one from the other, but there is a constraint that the *n*-ary sequence sentence is (except for its use in reporting dialogue; see below) a same-subject string, while the binary simultaneous sentence is invariably a different-subject string. In brief, a semantic assumption is made that, barring explicit marking, it is likely that a series of actions is performed by the same subject while actions which are performed at the same time are by different subjects.

When the implicit chain functions as a sequence sentence which encodes temporal succession, it is assumed that it is a same-subject string, as in the following example:

Wesepu	su	cjoha	cjohatini	tjuata,	cju	duha
field.to	arrive,	clean.up	clean.up.going,	return,	manioc	pull,
tjuhsu	wuja	tjua	wihi,	dahrechü,	dahrechü	tjuhsu,
finish	scrape,	return	arrive,	make.food,	make.food	finish
wipe,	wipe	tjuhsuchü	ñuco	co		
strain,	strain	when.finish(DS)	when.see.I(ss),	water		
waco	buhahi					
to.get(I)	went.to.the.river					

‘Arriving at the field, cleaning (it) up, going around cleaning (it) up, returning, pulling up manioc, finishing scraping (it), returning (home), making food, finished making food, straining, when I saw that the straining was finished, I went to the river to get water’

In the above example *buhahi* ‘(I) went-to-river’ is the final verb. Actually, the whole last stretch *wipe tjuhsuchü ñuco co waco buhahi* which is the last base of the sequence sentence, is itself an embedded explicit chain sentence (as witnessed by different-subject marker *chü* on ‘finish’ and same-subject

marker *co* ‘first person singular feminine’ on ‘see’). See immediately below for a description of explicit chain sentences.

Dialogue (Carolyn H. Waltz (1977)), however, may also encode within the sequence sentence: i.e., we may have something of the sort: (He) *said* [medial verb] ‘Hello’, (she) *said* [medial verb] ‘Hello’, (he) *said* [medial verb] ‘How are you?’, (she) *said* [medial verb] ‘Fine, won’t you come in’, *he-came-in* [final verb]. Here again, however, aside from the occasional occurrence of a pronoun or noun in the chain, the subjects, in this case the speakers, are unmarked. And, again, a semantic assumption enters in, the assumption that dialogue normally involves alternating speakers. Therefore, when dialogue encodes within the implicit chain, the sequence sentence is assumed to be a different-subject chain.

The sequence sentence is a very important structure in a Tucanoan language. It backgrounds information by putting it into the medial bases and foregrounds important actions and/or events by putting them into the final base of such sentences. When dialogue is worked into discourse, dialogue may be put almost entirely into the medial bases – thus at the same time adding vividness to the discourse while continuing an unbroken event line through the final bases of a series of sentences.

When this surface structure encodes temporal overlap: (i) it is binary; and (ii) it is assumed that it is a different-subject string: *Pjiha ta, chua niha* ‘From.jungle came, eating were (they)’, i.e. ‘When he came from the jungle, they were eating’. Here, the different participants need not be overtly identified if they are well established in the context. Obviously, the probability that two actions are simultaneous (and hence involve different subjects) rather than sequential (and hence same subject) is itself a contextual inference. In daily conversation, and at a given point of a monologue discourse, if contextual clues are insufficient, there is resort to the explicit chain, whose description follows.

The explicit chain has four functional slots: link, medial base, final base, and post-final base. The initial slot (link) is as described for the sequence sentence and is not specific to this sentence type. The medial base slot contains three formally distinct medial structures: the contingency dependent clause (‘if/when/since’), the concessive dependent clause (‘although’), and the concurrent dependent clause (‘while’), respectively. These are not, however, three sentence margins which occur in pre-nuclear position. The concept of sentence margin is better reserved for adverbial clauses which can occur with an inventory of differing sentence types and which are relatively detachable. The three structures here described are, however, specific to this sentence type. Furthermore, all contain the chaining feature (same- or different-subject marker) which cross-references to the other part of the nucleus. They act, therefore, like medial bases of a chaining structure rather than like sentence margins in a co-ranking structure.

One common filler of the medial base is the contingency dependent clause. It has verbs which are marked for same versus different subject. Same-subject markers distinguish first, second, third person; singular versus plural; and masculine versus feminine. The different-subject marker is just one suffix. The markers are: (i) same subject: *-cu* 1/2SG MASC, *-co* 1/2SG FEM, *-ro* 3SG MASC/FEM; *-na* 1/2PL, *-al-ga* 3PL; (ii) different subject: *-chu*. Here a nuclear base with a medial verb absorbs, in effect, the functions of temporal, conditional, and circumstantial margins in a co-ranking language, as in the following Guanano sentence:

Tiro waha-ro tjuatasi
 he.when/if/since goes-he(ss) (he) won't.return
 'If he goes, he won't return'

A second structure found in the medial base slot, the concessive dependent clause, has a verb form like that in the contingency dependent clause with the following modifications: namely, the verb stem is followed by the suffix *-pa* (concessive) plus the dependent contingency verb suffixes (same- or different-subject markers) seen above, plus the suffix *-ta* (specifier clitic). We get structures like:

To waha-pa-chu-ta, tina tjuasi
 he even-though-he-goes(DS) they won't.stay
 'Even if he goes, they won't stay'
 Yuhu waha-pa-cu-ta tjuasi
 I even-though-I-go(ss) (I).won't.stay
 'Even though I go, I won't stay'

The third structure, the concurrent dependent clause, expresses temporal overlap relative to the following sentence nucleus. It begins with *pu* 'until' or with the time-locative introducer *te* 'until' followed by the dependency contingency verb in the regular position in its clause:

Pu ti tqho to piihtichu, ata pisanocha
 until that bunch it finished.when just perched (he)
 'Until that bunch (of palmfruit) was finished he just perched there'

In looking at the above structures in the first medial base of this sentence type, it is interesting to note that same or different subject is very carefully marked, as opposed to the implicit marking which we found characterizing the structure which is common to the sequence and simultaneous sentence. It is evident, therefore, that if a speaker wants to be explicit in Guanano as to same-versus different-subject sequence, he resorts to the explicit chain sentence, not to the implicit chain (sequence or simultaneous). This is necessary whenever we have a sequence involving different actors rather than the same actor, or

when we have simultaneity involving the same person doing two actions at the same time.

In summary, in regard to the medial and post-final bases which occur with the final base of the explicit chain, it is interesting that there are just four formally distinguishable structures (as fillers in two slots) and between them they cover the ground which is covered by the fillers of temporal margin, conditional margin, circumstance margin, concessive margin, and concurrent temporal margin, in Indo-European or Philippine languages.

It is evident that we have here two interestingly contrastive structures. The implicit chain sentence (which encodes sequence and simultaneity) has uninflected verbs in its non-final bases and a regularly inflected verb in its final base. It proceeds by certain implicit conventions concerning whether we are to reckon same subject or different subject from base to base. The other structure, the explicit chain sentence, is even more a chaining structure than the former. It has special dependent verb structures which occur in slots preposed (and postposed) to the final base of the sentence. Furthermore, these dependent verb structures indicate same or different subject relative to the verb of the final base. Between them, these two sentence structures account for most of what is happening on the sentence level in a typical Tucanoan language.

Guanano also has a counterfactual sentence and a quotative sentence, neither of which is presented here.

4.5 *The problem of the 'endless' sentence*

With respect to Foré and certain other languages of New Guinea, we suggested above that the medial-final chain can be equivalent to the paragraph rather than to the sentence and that certain chaining structures may well characterize sentences within the paragraph. We thus challenged the assumption that the medial-final chain is necessarily limited to the sentence in structure. It is a shock to realize, however, that in some languages, in both New Guinea (e.g. Waffa) and South America (e.g. Aguaruna), we sometimes find chaining carried to such (by our standards) excessive lengths that the chain is plausibly neither a sentence nor a paragraph – unless we consider that the body of a discourse consists of just one sentence or one paragraph. While the latter is not impossible and, in fact, characterizes some shorter discourses, it is hard to believe that a text of seven or eight pages reduces to the structure of one sentence or even that the body of a text is simply one sentence.¹² It seems here that we must

¹² Obviously in a long so-called 'one-sentence' text, the narrator breathes several times in the course of delivering it. The phonology is not marked differently in this respect from an English discourse split into various sentences with intervening pauses. Clearly, then, at least a number of *phonological sentences* occur within the large chain. It is also plausible that, when a chain equals the body of a long discourse, there will be weakly delineated paragraphs within it.

take stock and realize again that chaining is a surface-structure phenomenon which is capable of being plugged into various functions. As such, we can expect it to confine itself neither to the sentence nor to the paragraph in all languages.

5 Initial–consecutive chaining structures

In some respects this type of chaining is the structural mirror image of medial–final chaining. While medial–final chaining has a dominating final verb of fully inflected structure as opposed to medial verbs of defective structure, initial–consecutive structures have a dominating initial verb of one structure followed by consecutive verbs which are of different structure. Medial–final chaining is found in *ov* languages where it patterns as a further feature of head–final structures, while initial–consecutive chaining is found in *vo* languages (*vso* and *svo*) where it patterns as a further feature of head–initial structures. Initial–consecutive chaining is not uncommon in Africa where it crops up apparently as an areal feature in languages of various stocks and families. This type of structure is relatively uncommon elsewhere.¹³

One noteworthy difference between medial–final chaining and initial–consecutive chaining is that while the final head–clause is regularly present in well–formed medial–final chaining structures, in initial–consecutive chaining the initial head clause is obligatorily present in some languages but present or absent in other languages, conditioned by the type of discourse in which the construction occurs. The consecutive directly bears the narrative storyline in some languages without any obligatorily preceding initial, but the consecutive has an obligatorily occurring initial in other discourse types. Thus, depending on the language, a consecutive may follow an imperative and continue the sense and function of the imperative in a hortatory discourse or may follow a static non–active verb in expository/descriptive discourse and continue the sense of what it follows. In narrative discourse, such consecutives can also follow non–storyline forms to continue their sense and function, thus, for example, allowing a consecutive to continue the sense and function of a pluperfect. There are many particular constraints in given languages but this is the overall picture.

Anywak (Northen Nilotic, data from Miles Reimer and Mary Lusted in Longacre (1990:88)) has a storyline which consists of clauses whose verbs are past and definite but which can be followed in the sentence by consecutive clauses whose verbs are unmarked for tense. As a typical Nilotic language, Anywak has a morphological distinction between definite and indefinite verbs. Clauses

¹³ Shin-ja Hwang has called to my attention the following non-African languages which are apparently characterized by initial–consecutive clause chaining: Huichol, Panare, Mbya Guarani, Tenapel, and certain Austronesian languages of South Vanuatu.

which contain definite verbs are strongly transitive; those which contain indefinite verbs are either intransitive or transitive with reduced transitivity. When an object occurs with an indefinite verb it is an oblique object introduced with the particle *ki*; the clause is sVO. Direct objects occur with definite verbs in SOV clauses, where apparently the definite object has been left-shifted. Consecutive clauses are typically introduced with the particle *ni* 'and'. This is illustrated in the following example:

aɔk rɛc mo bɛyo-bɛyo ajiere
 Achok (s) the.fish which good (o) past.chose.he
 ni buul mɔɔk, ni cam geni
 and roasted.(he) some(o), and ate.(he) them(o)
 ni kan moga
 and hid.(he) the.rest(o)
 'Achok chose the good fish and roasted them and ate some of
 them and hid the rest of them away'

Here we have a chain of Anywak clauses. The chain begins with a special initial SOV past definite clause and continues with consecutive clauses introduced with *ni* 'and' and of (s)VO structure. Sameness of subject referent is assumed and no further subject noun occurs. While the consecutive has a zero third person actor, tense is marked only once within the sentence, i.e., in the dominating initial verb.

Obolo (Lower Cross Group Niger-Congo, data from Uche Aaron) likewise has obligatory initials followed by consecutives in three sorts of storyline clauses which have functional distinctions within the paragraph, but the basic pattern is that of obligatory initial followed by consecutive. Furthermore, the consecutive form can follow an exhortative whose sense it continues. Tem (Kotokoli) and Yom (Pila-Pila), both of which are Gur Niger-Congo, also have obligatory initials followed by consecutives in storyline clauses; for both languages, further uses of the consecutive tense occur. Several Tem examples follow; in the first four the Tem consecutive tense follows the perfect on the storyline of a narrative; in the fifth example the consecutive continues the sense of a preceding exhortative within a quotation (data from Bob De Craene in Longacre (1990:134)):

- (1) mɔ́ɔgbɔ́ɔ Yelivɔ́ɔ níbááwɔ mɛ́ɔ́ɔ Wasáára-déɛ
 I.took(PERF) the.Yelivo road I.went to-Wasaara
 'I took the Yelivo road and went to Wasaara'
- (2) nge mɔ́ɔgbɔ́ɔ mɛ́gbená ɔ́ána
 and.then I.took(it)(PERF) I.went.with home
 'And then I carried it home'

- (3) máádási mɔ́ǵóǵɔ ki ki belé . . . háli mɔ́ǵoná ǵaána
I.added(PERF) I.held it thus until I.came.with home
'I kept on pushing it [bicycle] all the way home'
- (4) bídéé wíre bírbá bíkání ma
its day it-certainly(PERF) it.tired me
'That day I certainly got tired out'
- (5) tóó, mówo yúu imú ge mɔ́ǵbóó
[He said that] ! I.should.roast rat the is I.take
megéǵbéna cé mána menewáa dítóó
I.go.home.with here me.and my.little.brothers we.eat
'[He said that] I should roast the rat; I should take it home, and
my little brother and I should eat it'

As mentioned above, consecutive tenses are found in other languages where a preceding initial is not necessary. In these languages, the consecutive in and of itself constitutes the storyline. Nevertheless, the consecutive follows other verb forms where it simply continues the sense and function of such forms. Such languages include Sabaot and Jur-Luwo, both Nilotic, and Mündü, which is Eastern Niger-Congo. In Mündü (data from Dorothea Jeffrey), in any and all discourse types, the consecutive occurs as a mainline form, but except in narrative it must be preceded with the appropriate initial whose sense it continues. Notice the following example of consecutive functioning on the storyline in Sabaot (data from Iver Larsen in Longacre (1990:67)); all the verbs in the example are consecutive.

ku-ba kut *ku-choosyo*. *kōō-buur* ng'weny. *kw-oomiis*.
They-went until they-tired. They-sat down. They-ate.

ku-nam inee rwaanteet *n-ku-wiir-ta*,
He-took he(EMPH) stone and-he-threw away,

nto mōbōryēēnyii *ku-kunor*. *ku-wiir-ta*
but food.his he-kept. He-threw-away

leekweet nyeenyii
child his(EMPH) (food).

'They went until they were tired. Then they sat down and ate. He took a stone and threw it away, but kept his food. The child threw his food away'

Biblical Hebrew, which in certain typological respects groups with African languages, has two consecutive tenses, one for narrative and another for any kind of projected discourse, whether prediction, procedural, or instructional. Neither consecutive tense has an obligatory initial occurring with it (Longacre (1994)).

Before terminating this brief consideration of initial–consecutive chaining, I add a note to the effect that such chains are not necessarily coterminous with the sentence. Just as in medial–final chaining we may have a chain operating on a level above the sentence, so here also. Thus, in Jur-Möddö, the initial–consecutive chain seems to go with a participant span unit which is larger than the sentence (data from Andrew Persson).

6 Where sentence is not a separate level

There are languages in which it appears that the four levels – clause, sentence, paragraph, and discourse – are not needed to describe the structures involved, but that only three such levels are necessary. Thus, for certain aboriginal Australian languages (Mantjiltjara, Walmatjari, Wik-Munkan),¹⁴ we apparently have a situation something like the following: there is a simple (or complex) sentence which has a one-clause base and may have a rather full gamut of sentence margins attached to it. Beyond that there is not much point in distinguishing, for example, coordinate sentence from coordinate paragraph or antithetical sentence from antithetical paragraph; i.e., sentence and paragraph in effect collapse. There is, however, some evidence that sentence and paragraph should possibly be retained as thematization units (Kilham (1977)). This evidence may call for fresh evaluation of the whole question of structural levels in these languages.

7 Conclusion

An understanding of sentence structure around the world requires that we have some idea both of the sentence-forming devices and also of the various notions that are expressed through these devices. We also would hope to attain some idea as to which devices most commonly express which notions. The present chapter is meant to be a step in these directions.¹⁵

¹⁴ For data here I am indebted to: James Marsh (Manjiltjara (unpublished)); Joyce Hudson (Walmatjari (unpublished)); Barbara Sayers (Wik-Munkan (1976)).

¹⁵ I acknowledge here the help of Peggy Connett in preparing this revision of the chapter first published in 1985.

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