



The Structure of
Language

An Introduction to Grammatical Analysis

Emma L. Pavey

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Most of the time we communicate using language without considering the complex activity we are undertaking, forming words and sentences in a split second. This book introduces the analysis of language structure, combining both description and theory within a single, practical text. It begins by examining words and parts of words, and then looks at how words work together to form sentences that communicate meaning. Sentence patterns across languages are also studied, looking at the similarities and the differences we find in how languages communicate meaning. The book also discusses how context can affect how we structure our sentences: the context of a particular language and its structures, the context of old and new information for us and our addressee(s), and the context of our culture.

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An Introduction to
Grammatical Analysis

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For goodness' sake

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Notes for instructors and readers

This book is intended to be read in order, from chapter 1 to chapter 9, as each chapter builds on the content of previous chapters. It contains a large number of exercises, over one hundred in total; chapters 2 to 8 contain two sets of exercises, one set based on English and another set based on other languages. The degree of difficulty of each exercise is indicated with asterisks: exercises with two asterisks present more of a challenge than those with one asterisk. Several chapters include text-based exercises both to provide variety and to guide the reader towards a more realistic experience of linguistic fieldwork. There are also ‘mini-exercises’ in the text of each chapter, and additional exercises and resources are available on the web via Cambridge University Press. In addition, this book offers an extensive glossary (glossary items appear in the text in bold, small capitals at their first occurrence) and a list of the 200+ languages referred to in this book; the language list includes references where more information on each language may be found.

A native or advanced level of English is assumed of the reader, but only basic linguistic terminology is presupposed. As such, this book is ideally suited to a second-level undergraduate class. It is also appropriate for an introductory graduate-level class, particularly where the student is migrating from studying formal approaches to syntax to a more functional approach (chapters 3 to 9 in particular). Much of the syntactic framework used in this book comes from Role and Reference Grammar Theory. For more comprehensive detail concerning this theory, the reader is directed to consult Van Valin (2005) or Van Valin and LaPolla (1997).

Abbreviations

1	1st person
2	2nd person
3	3rd person
I	class/type 1
II	class/type 2
III	class/type 3 (etc.)
A	actor
AAJ	argument-adjunct adpositional phrase
ABIL	abilitative case
ABL	ablative
ABS	absolute
ABSOL	absolute
ACC	accusative
ADJ	adjective
ADN	adnominal modifier
ADV	adverb/adverbial
ADVR	adversative
AFF	affirmative
AFX	affix
AGR	agreement
AGT	agentive case
ALL	allative
AN	animate
ANT	anterior
ANTIP	antipassive
AOR	aorist
APPL	applicative
ART	article
ASP	aspect
ASRT	assertive/assertative
ASSOC	associative
ASSUM	assumed evidential
ATTR	attributive
ATV	active voice
AUG	augmented number

AUX	auxiliary
AV	agentive voice
BEL	belonging or association
BEN	benefactive
BV	borrowed verb
CAUS	causative
CL	clitic
CLF	classifier / class marker
CLM	clause linkage marker
CM	causee marker
CN	common noun
COLL	collective
COM	comitative
COMP	complementizer
COMPL	completive
CONJ	conjunct
CONSEC	consecutive marker
CONT	continuative aspect
CONTR	contrastive focus particle
COP	copula
CST	contrast
CVB	converb
DAT	dative
DCOP	deictic copula
DECL	declarative
DEF	definite
DEIC	deictic
DEM	demonstrative
DER	derivational affix
DES	desiderative
DET	determiner
DETR	detransitivizer
DEX	indexer
DFUT	distant future
DIM	diminutive
DIR	directional
DIR.EV	direct evidence evidential
DIRC	direct case
DISJ	disjunct
DIST	distal
DLMT	delimitative
DM	dependency marker
d-s	derived single argument
DSTR	distributive

DU	dual
DUB	dubitative
DUR	durative
EMPH	emphatic
EP	emphatic pronoun
ERG	ergative
EVID	evidential
EXCL	exclusive
EXIST	existential
EXT	extension particle
F	feminine
FIN	finite verb
FOC	focus
FRUST	frustrative
FUT	future
FV	final vowel
GEN	genitive
GIV	given
H	human
HAB	habitual
HORT	hortative
HSY	hearsay evidential
ID	identifiable
IF	illocutionary force
IMP	imperative
INAN	inanimate
INCL	inclusive
IND	indicative
INDF	indefinite
INF	infinitive
INFL	inflectional affix
INFR	inferred evidential
INGR	ingressive
INS	instrumental
INT	interrogative
INTR	intransitive
IPFV	imperfective
IRR	irrealis
ITER	iterative
IX	use of the index finger to point
LAT	lative
LDP	left-detached position
LIM	limitative
LNK	linker

LOC	locative
M	masculine
MIN	minimal number
MKR	marker
ML	male
MOD	modality
N	neuter
NASP	nominal aspect
NDU	non-dual
NEG	negation
NEUT	neutral
NF	non-final marker
NFUT	non-future tense
NH	non-human
NM	non-masculine
NMLZ	nominalizer
NOM	nominative
NP	noun phrase
NFPF	noun phrase final position
NPIP	noun phrase initial position
NPRS	non-present
NPST	non-past tense
NRL	non-relational prefix
NSG	non-singular
NUC	nucleus
NUM	number
NVIS	non-visual evidential
OBJ	object
OBJV	objective
OBL	oblique
OBLIG	obligation
OBS	observational
ONOM	onomatopoeia
OV	objective voice
P	preposition
PASS	passive
PAT	patient
PAU	paucal
PBL	possibility
PC	perfect converb
PFV	perfective
PL	plural
PN	proper noun
POCS	post-core slot

POL	polite
POSS	possessive
POST	posterior
POT	potential mood
PP	adpositional phrase
PTCS	pre-core slot
PRDR	predicator
PRED	predicate
PREP	preposition
PRET	preterite tense
PRF	perfect aspect
PRO	pronoun
PROB	probability
PROC	process
PROG	progressive
PROP	proper name
PROS	prospective aspect
PROX	proximal
PRP	present active participle
PRS	present tense
PSA	privileged syntactic argument
PST	past tense
PTCL	particle
PTCP	participle
PURP	purposive
Q	question marker/particle
QNT	quantification
QUAL	qualitative
RC	relative clause
RDP	right-detached position
REC	recent past
RECP	reciprocal
RED	reduplication
REF	referential
REFL	reflexive
REFLPOSS	reflexive possessive
REL	relative marker
REM	remote past
REMF	remote future
REP	reported evidential
RES	resultative
RL	realis
RP	reference phrase
RPRO	relative pronoun

1 Introduction

KEY TOPICS

- Language for communication
- The structure of this book

Most of the time, if not all of the time, we communicate with each other using language without considering the complex activity we are undertaking, forming complex words and sentences in a split second. We know immediately when someone uses language structures that are inappropriate or incorrect because we have learned the rules that govern the language(s) we use. In this book, we will look at the structures we use in more detail, in order to help us to understand the structures we find in languages that may be arranged in ways quite different from English.

There are many approaches to the study of language. Some linguists are more interested in discovering the basic, innate structures that we all have in our brains, regardless of which language(s) we speak. Linguists working in what is known as the **GENERATIVE** tradition seek to understand **UNIVERSAL GRAMMAR**, the structures that human languages have in common and that we may be born with the capacity to use. The generative approach focuses on the **FORMAL** characteristics of language structure, seeking to uncover the rules that ‘generate’ well-formed sentences. Other linguists take a more **FUNCTIONAL** approach, studying language use in context; in other words, what actually comes out of our mouths rather than what may be stored in our heads. Functional approaches seek to incorporate the meaning and broader context of language in order to fully understand language structure.

In this book I present a practical, functional approach to describing and explaining language structure. In chapter 2, I present a step-by-step approach to analysing the structure of words: the study of morphology. Chapters 3 to 8 draw specifically on Role and Reference Grammar theory (RRG) to help us understand the structure of sentences by looking at form (syntax), meaning (semantics) and function (pragmatics) (Van Valin and LaPolla 1997, Van Valin 2005). As well as being a functional theory interested in language as a means of communication, RRG theory seeks to be typologically adequate, to present a level playing field for the analysis of all languages. This book does not cover every aspect of RRG theory; for that, the reader is directed to the references. Rather, this book is an

introduction to the analysis of language structure, and I will make use of aspects of RRG theory as a useful tool for that purpose.

In order to study language you need to look both at the big picture and the small component parts of language. To take an analogy, consider psychologists and neurosurgeons. Both are ‘head doctors’, examining the way the brain works. However, while a neurosurgeon might cut you open and look at different parts of your brain, a psychologist is more likely to examine your behaviour and how you actually use your brain. Both are essential (as well as lots of other types of ‘head doctors’) for a complete understanding of the brain, and both do different things well to that end: however, the psychologist cannot help you much with a tumour, and a neurosurgeon cannot cure you of compulsively eating chocolate cake. In this book, I will ‘cut language up’ into component parts in each chapter in order to ultimately have a better understanding of how it functions as a whole, integrated thing in the minds, mouths and hands of speakers.

In the [next section](#) I will introduce some general features of language, and then move on to a description of the contents of the book.

1. Language for communication

1.1 A symbolic gesture

Onomatopoeia describes words that sound like their meaning, such as *buzz*, *click* and *meow*. Onomatopoeia is one type of **ICONICITY**; something is iconic in this sense if it resembles its meaning in some way. This: ... ✂ ... is an iconic sign because it resembles the thing it is representing. There is a direct relationship between the form of the word and the thing it represents.

However, for the vast majority of words in any language the relationship is arbitrary. The sound of a word bears no direct relationship to the meaning it represents. Thus *bird*, *oiseau*, *pájaro* and *ndege* are arbitrary sequences of sounds used to represent the idea of a bird (in English, French, Spanish and Swahili respectively).

Our ability to deal with arbitrary symbols means we can use language as an abstract system; we can talk about things that are not physically present because we can associate the word with the referent even though there is only an arbitrary connection between the form and the meaning. When we manipulate such arbitrary symbols, it is more than a Pavlovian response (Deacon 1997: 68). As an abstract system, we can also use language to talk about events in the past, events within events (e.g. *the man I saw last week is waving at me*) or even events in the imagination.

In terms of language structure, we also find some arbitrariness: some languages put the verb last in a sentence, while others put it at the beginning. At the same

time, as we will see in chapters 7 to 9 in particular, we do find some iconicity in the connection between certain sentence structures and the meanings they express.

1.2 Do you know what I mean?

If you hear someone speak, or watch someone sign, in a language that you do not know, what thoughts cross your mind? Can you tell where the words begin and end? Do you consider it borderline miraculous that another person could take any kind of meaning from that stream of sound or signs? The reality is that practically every human being gleans a great deal of meaning from such streams of communication in at least one language, and without a great deal of conscious thought about the structure of the words and sentences they are using.

One of the most central factors that governs all language structures and communication is the tension between understandability and economy. Essentially, this tension refers to the fact that we would like to get our message across as clearly as possible with as little effort as possible.

In addition, language speakers are constantly creating new language forms, primarily words but also structures. We can process and produce sentences we have never heard or spoken before, because we know how to interpret the words and structures we hear. We will examine in the [next section](#) how this is possible.

1.3 What it is and what it's for

When we study the component parts of a language, we are interested, then, in two things: what the parts do and what they look like; in other words, the **FUNCTION** and the **FORM**. Think of a pencil. We can describe the basic formal features of a pencil: it is a long, thin, pointed implement with a non-ink based marker enclosed in wood. Its basic function, on the other hand, is as an instrument for writing and drawing. So it is with language. The form of a word (or sign), for example, is its phonological shape. Its function is what we do with the word; in other words, how we use it to communicate.

We will see that it is important to be aware that we can use other things, things with a different form, to perform the same function. Instead of a pencil, for example, you could write with a pen or a piece of chalk or with paint. In addition, you could use your pencil for other functions, such as pointing to something or scratching your back. Once again, we can draw an analogy with language: in the examples in (1), we see the same 'form' *a tall student* being used in two different functions.

- (1) (a) A tall student stole my stapler.
(b) Norman is a tall student.

In (1a), the sequence of words *a tall student* has the function of picking out a particular **REFERENT**; in other words, it is used to tell us something about the

identity of the one who stole the stapler. In (1b), on the other hand, *a tall student* does not pick out a particular referent; instead, it gives us more descriptive information about the referent picked out by *Norman*. Do not worry if this distinction is not totally clear at this point; we will be returning to this difference in chapter 3.

In the sentences in (2), on the other hand, we see different forms performing the same function.

- (2) (a) That Norman stole my stapler saddens me.
 (b) Stealing saddens me.
 (c) Norman saddens me.

In every case, the function of the underlined element is to pick out the thing that saddens me, even though the form of the underlined element is different: we have a clause in (a), a verb in (b) and a noun in (c). We need to make sure we look not only at the shape or form of an element but also at the function(s) it can have in the sentence.

Section summary

In this section you have learned:

- the approach to analysing language structure adopted in this book,
- to understand the arbitrary relationship between words and meaning,
- to distinguish between form and function.
- **KEY TERMS:** generative, universal grammar, formal, functional, typological adequacy, iconicity, understandability, economy, function, form, referent

2 The structure of language – a preview

This book is designed to be read progressively, from chapter 1 through to chapter 9. The concepts we will encounter are supported and illustrated by data from over 225 signed and spoken languages. In addition, at the end of each chapter there are two sets of exercises, one set based on English and one with data from a wide variety of other languages. These are graded for their level of difficulty: one asterisk * indicates an easier exercise, while those with two asterisks ** are more challenging.

When we seek to analyse a language, particularly a little-known language, we do not always have access to lists of pre-selected data in nice, neat lists, as we see in most of the exercises in this book. In fact, it is advisable, in seeking to elicit ‘natural’ data, to record various types of texts rather than isolated sentences. In learning about language structures, it is best to begin by practising with neat sets of data, but I have also included text-based exercises so that you can practise both types of analysis.

2.1 The chapters

In this book I begin with the smallest meaningful units of language structure and move all the way through to examining complex sentences. In terms of the study of linguistics as a whole, we begin our linguistic journey on the outskirts of phonology (the study of sound patterns) and march right up to the borders of discourse (the study of how whole texts are structured). In this section, I will briefly introduce the topics of each chapter.

2.1.1 Chapter 2: the structure of words

In the next chapter, we will examine **MORPHOLOGY**, which is the study of parts of words. Many words can be divided into pieces (**MORPHEMES**), each of which conveys a different part of the meaning of the whole. For example, if you were to chop up the word *underfunded* you would probably end up with *under-fund-ed*, and you would no doubt also be able to describe the meaning of each part of the word as it contributes to the whole.

In this chapter we will learn how to ‘find’ various types of morphemes and how to describe the ways in which they fit together to form words in different languages.

2.1.2 Chapter 3: the structure of sentences

In chapter 3, we build on our knowledge of morphology to study **SYNTAX**, which is the study of sentence structure. We will see how the meaning of a sentence and the way it is expressed are closely connected and that there are certain core components that all languages have in common. We will also learn a way to represent the syntactic structures that we find.

We will look at the basic elements of the sentence that tell us about what happened and who was involved, and examine different ways that languages express these parts of meaning. In addition, we will look at the modifying elements that give more detail of various kinds, such as when it happened (tense) or indeed whether it happened or not (negation).

2.1.3 Chapter 4: the structure of meaning

If syntactic structure is one half of a coin, the meaning of a sentence is the other. This is the study of **SEMANTICS**, and we shall examine it further in chapter 4.

We will look at a way to describe the various types of events and situations that sentences describe, and a method for representing those types that can be used for any language. We will see that there is a close connection between the type of event and the roles of the participants in that event.

2.1.4 Chapter 5: integrating language structure

The background that we establish in chapters 3 and 4 will enable us to examine **GRAMMATICAL RELATIONS** in chapter 5. We will look at how languages express

who did what to whom in their morphology and syntax, and how this ties in with the meaning of the sentence and the roles of the participants.

We will find several general patterns across languages and will learn ways to describe and account for the patterns we find. We will also look at ways that languages play with their basic pattern, using **VOICE** constructions, for example, to focus on different participants in an event.

2.1.5 Chapter 6: the structure of phrases

In chapter 6, we focus particularly on the structure of two types of elements in language, **NOUN PHRASES** like *the blue balloon* and **ADPOSITIONAL PHRASES** like *on the roof* and *after many attempts*.

We will look at the different elements that can occur in noun phrases and the ways that languages express these. We will also look at the different semantic roles that adpositional phrases can have and the ways these too are expressed. This chapter also features a look at other types of phrases that modify the main event in some way.

2.1.6 Chapter 7: complex structures

With an understanding of basic sentences under our belts, in chapter 7 we turn to more complex structures, sentences that describe more than one event. We will examine the different parts of sentences that can be combined, and the different relationships between those connected parts.

We then take a closer look at two common types of complex constructions. We look at **SERIAL VERB CONSTRUCTIONS**, where a sequence of more than one verb is used to describe a single event, and also at types of **RELATIVE CLAUSES**, which tell us more about a noun, such as *who made this sweater* in *the child who made this sweater*.

2.1.7 Chapter 8: the structure of information

In chapter 8 we add a third string to our bow, a string that works alongside syntax and semantics in determining how we formulate our sentences: the study of **PRAGMATICS**, or information structure. The ‘new’ and ‘old’ information in what we want to communicate affects how we choose to express what we want to say. For example, it makes the difference between choosing to say *I spray-painted your cat* and *It was ME who spray-painted your cat*.

We will see how the structure of information affects how we describe participants (e.g. *he*, *that guy*, *Bob*, etc.) and how sentences are structured in all languages. In addition, we take a closer look at how languages form different types of questions and how they form commands.

2.1.8 Chapter 9: language structure in context

In the final chapter, we broaden the scope of our study to look at language in context, in the context of how we think and process, the context of the culture in which it is spoken, and the context of what we know about languages in general.

We look at ways of categorizing languages based on certain features that they have or do not have and how this leads us to place them into ‘families’. We also take a look at some examples of influences between the structure of a language and the culture in which it is spoken.

Finally we touch on aspects of language change, both processes internal to language and those prompted by contact with other languages.

2 The structure of words

KEY TOPICS

- Parts of words
- Analysing morphology
- Derivation and inflection
- Non-linear morphology
- Clitics

1 What is a word?

In this chapter we will look at the parts that words are made from: morphemes. We will learn to recognize them and will introduce some terms to describe them. In this section we discuss what we mean by a word, and how we might find words.

As members of a literate language community, we might think that defining a word is easy, but when we speak, of course, we do not mark word breaks. In a language that we do not know, we need a strategy for locating the boundaries between words.

In general terms, when we talk about a **WORD** we mean a separate, independent phonological unit.¹ However, when we talk we run our words together and, despite what written conventions suggest, there usually are not audible pauses between our words. So how can we determine where words begin and end?

One feature of words is that they can be said on their own, in isolation. A speaker of English would be happy to pronounce the sequence /hapi/ *happy* on its own and call it a word, but would almost certainly not feel the same about /v/ *ve* or /ə/ (as in *could've* or *coulda*).

Secondly, when we do pause during natural speech, that pause always occurs between words, not in the middle of phonological words, as illustrated in (1).

- (1) (a) You're just being . . . um . . . pedantic.
(b) ??You're just be . . . um . . . ing pedantic.

Thirdly, phonological words have to consist of at least one syllable each, so when you learn the permissible syllable structures in a language, you can

determine where those boundaries lie. There will also be other phonological rules that only apply within words, so examining where they occur in sequences of sounds can help to determine where word boundaries are. In this book I focus on morphology and syntax but, as you can see, phonology and morphology are not separate, mutually exclusive areas of study. There is a great deal of overlap, just as morphology also overlaps with syntax, and the more study we can do in all these areas, the more thorough our analysis will be.

2 Parts of words

2.1 Morphemes

Fill in the gaps in the sentences in (2) and (3). Use the correct form of the underlined word in the (a) examples.

- (2) (a) Henry only has one bleek.
 (b) Sally, on the other hand, has two _____.
- (3) (a) Today, Maria is happily pleeping.
 (b) Yesterday, Maria happily _____.

What is a *bleek*? Is it better to have one or two? And what is *pleeping*? Is it legal? And, more importantly here, how do you know how the word should look in the gaps? By changing the form of the word you are using your knowledge of English morphology. As a proficient speaker of English you know how the word needs to change to fit both its place in the sentence and its meaning; you know which parts of the word to chop off and which to add.

You probably had *bleeks* in (2b) and *pleeped* in (3b). You knew that *bleek* was a noun and needed a plural *-s* and that *pleep* was a verb and probably needed *-ed* in the past tense.² These smaller parts of words that we chop words into are called morphemes. Morphemes are defined as the minimal units of grammatical or lexical meaning in a sentence.

Minimal does not necessarily mean small; it means that the unit cannot be broken down further into meaningful pieces (in the sense described below).

Many morphemes are small, but some can have several syllables, such as *caterpillar*.

Meaningful: Morphemes give us grammatical or lexical information. They might, for example, tell us the name of a thing or action (**LEXICAL MEANING**). Alternatively, they might tell us how many of something there were or when something happened, like the *s* in *bleeks* or the *ed* in *pleeped* (**GRAMMATICAL MEANING**).

In this chapter we will look at both these areas of morphology in more detail.

English bound roots include *bapt* (*baptize, baptism*) *mit* (*submit, commit, admit*) and *ceive* (*deceive, receive, conceive, etc.*), none of which can appear without additional morphemes added. In some languages, such as Kwaza (unclassified, Brazil), all verb roots are bound morphemes. These verb roots are lexical but they cannot stand without inflectional affixes, as independent words: they are illustrated in (7) and (8) with the Kwaza verb roots *wady-* ‘give’ and *wā’wỹ-* ‘sleep’ (van der Voort 2004: 246, 253). An asterisk ‘*’ indicates that the word is impossible. You will also see an asterisk used to indicate that a sentence is ungrammatical. (See section 2.3 below for an explanation of the gloss line under the Kwaza data.)

- (7) (a) *wady (give)
 (b) wady-nā-hata-ki. ‘He/they is/are going to give (it) to you.’
 give-FUT-3SBJ.2OBJ-DECL
- (8) (a) *wā’wỹ (sleep)
 (b) wā’wỹ-Ø-ki. ‘He is/they are sleeping.’
 sleep-3-DECL

On the other hand, grammatical morphemes, which are often bound morphemes, may occur as free morphemes. In particular, prepositions (e.g. *on, under, at, before, etc.* in English) are a closed set of grammatical morphemes but they are free; they can (and do) stand alone as words.

2.3 How to present language data

This seems like a good time to mention a few points about how data is presented. When we write out data from languages other than English, the meaning, or **GLOSS**, is written directly underneath each morpheme, with the left edges of each morpheme aligned. If a morpheme has a grammatical meaning we write an abbreviation of the gloss in SMALL CAPITALS. There is a list of the abbreviations used at the front of the book.

If, on the other hand, the morpheme has lexical meaning, we write it in lower case letters. We may have to space the words out to fit the glosses in. You can use the tab key or insert a table to widen the gap between words. Finally, the free translation is written underneath the gloss. These conventions are illustrated by the Tongan example in (9) (Oceanic, Tonga; Hopper and Thompson 1980: 257).⁴

- (9) Na’e kai ‘e Sione ‘a e ika.
 PST eat SBJ John OBJ DET fish
 ‘John ate the fish.’

In the examples in (4), the main lexical morpheme stands alone, while the grammatical morphemes that have been added on are marked with ‘-’ (a hyphen) before or afterwards, depending on whether they are attached to the beginning or end of the lexical morpheme. If a morpheme carries more than one meaning (or

the meaning is glossed by more than one word) those meanings are separated by a full stop ‘.’. This convention is illustrated in (10) with examples from Gawri (Indo-Aryan, Pakistan), where the suffix *-an* carries both the imperfective aspect (see chapter 3) and indicates that the person shaking is masculine and singular (Baart 1999: 95).

- (10) (a) ǰāmāl kām-an-t.
 Jamal shake-IPFV.M.SG-PRS
 ‘Jamal is shaking.’
- (b) ǰāmāl kām -an -t.
 Jamal shake -IPFV.M.SG -PRS
 ‘Jamal is shaking.’

Sometimes the morphemes of a word are not separated out in order that the word breaks are clear, as in (10a). Elsewhere in the literature you may find that the morphemes in a word are spaced apart and each morpheme gloss is aligned under the morpheme itself, as shown in (10b).⁵ In this book I will use each of these methods at different times.

Section summary

In this section you have learned:

- to describe a morpheme,
- to understand the basic terms for describing morphemes,
- to present language data.
- **KEY TERMS:** morpheme, lexical/grammatical, open/closed set, affix, prefix/suffix, root, free/bound, gloss
- **EXERCISE:** A1, A2

3 How to find morphemes

We have seen that we can use our intuition to cut up nonsense English words into morphemes, making breaks where we think the morphemes begin and end. However, in identifying morphemes in a new language we need a systematic way of dealing with language data. Each decision we make about the identity of a morpheme is a best guess, or hypothesis, about the language. We want to make sure our hypotheses are tested and produce consistent results, and to be prepared to adjust them as new information comes along. In this section we will look at some helpful and practical steps that we will be able to apply in general to all our linguistic analyses.⁶

3.1 Identifying morphemes

Here is a simple six-step method for identifying morphemes in a set of data, and below we will go through an example. It assumes we have before us a list of forms to be analysed that share some similarities in meaning and form.

1. Number the data items.
2. Look for similar forms in the data which have some part of their meaning in common.
3. Mark off what is similar, using different colours perhaps, different styles of underlining, or drawing vertical lines to divide the words.
4. Start to make a list or table that includes columns for the item, the gloss, the word or morpheme type and the data number(s) where it occurs. Group together forms that have similar meanings or morpheme types. Good organization of data is half the battle in doing linguistic analysis.
5. In the data, mark all the other occurrences of the identified morpheme and also that part of the total meaning to which it corresponds. (The second part of this step might be tricky if there isn't a one-to-one correspondence between the data and the translation.)
6. Repeat steps (2–5) until nothing is left unmarked in the data.

Let us look at an example of this procedure. We will use a data set from Kham (Tibeto-Burman, Nepal) given in (11) (Watters 2002).

- (11) (a) umi:rə 'his eyes'
 (b) umi: 'his eye'
 (c) mi:rə '(the) eyes'
 (d) nəha:rə 'your(SG) teeth'
 (e) ŋaŋəihrə 'my heads'
 (f) yahmrə '(the) doors'
 (g) ŋazihm 'my house'
 (h) nəzihm 'your(SG) house'
 (i) uzihm 'his house'

The data items are already itemized (step 1). Steps 2 and 3 ask us to look for similar forms with similar meanings and to mark these. It is important at this stage to look at all the data so that we can 'chop' the words into morphemes in the right places.

Starting with (a), (b) and (c) we can see that they all include the meaning 'eye' and share the form *mi:* somewhere in the word. We can mark this in the data (step 3) wherever we see the form *mi:* and the meaning 'eye' (step 5). We will separate the form from the rest of the word with hyphens and assume that this lexical meaning forms the root to which the other elements attach. We will also begin our table as [Table 2.1](#) (step 4).

Table 2.1 *Kham data, version 1*

Form	Gloss	Word type	Examples
mi:	‘eye’	noun	(a), (b), (c)

Table 2.2 *Kham data, version 2*

Form	Gloss	Word type	Examples
mi:	‘eye’	noun	(a), (b), (c)
u-	‘his’	noun prefix	(a), (b), (i)

- (12) (a) u-mi:-rə ‘his eyes’
 (b) u-mi: ‘his eye’
 (c) mi:-rə ‘(the) eyes’
 (d) nəha:rə ‘your(SG) teeth’
 (e) ŋəŋəihrə ‘my heads’
 (f) yahmrə ‘(the) doors’
 (g) ŋəzihm ‘my house’
 (h) nəzihm ‘your(SG) house’
 (i) uzihm ‘his house’

Looking again at (a) and (b), we can see that, as well as ‘eye’, these data also share the meaning ‘his’ and share the additional form *u* at the beginning of the word, which appears to be a prefix. We will mark this form in (a) and (b) and also in (i) where we see the same form and meaning pair, using double underlining to distinguish it from *mi*:. We will also add it to the table, being careful to include a hyphen after *u-* to show it is a prefix.

- (13) (a) u-mi:-rə ‘his eyes’
 (b) u-mi: ‘his eye’
 (c) mi:-rə ‘(the) eyes’
 (d) nəha:rə ‘your(SG) teeth’
 (e) ŋəŋəihrə ‘my heads’
 (f) yahmrə ‘(the) doors’
 (g) ŋəzihm ‘my house’
 (h) nəzihm ‘your(SG) house’
 (i) u-zihm ‘his house’

We can now start to make hypotheses. The form *u-* ‘his’ has a (third person singular) possessive meaning. We have other possessive meanings in the data so we can hypothesize that these forms also occur as prefixes. We will keep this in mind, but for the moment we cannot say where the prefixes end and the roots begin. In the meantime, let us turn back to (a) and (c) one more time.

The remaining part of (a) and (c) that is unmarked is *-rə* and the remaining part of the meaning that is shared is the plural. So we will hypothesize that *-rə* is a

Table 2.3 *Kham data, version 3*

Form	Gloss	Word type	Examples
mi:	‘eye’	noun	(a), (b), (c)
-rə	PLURAL	noun suffix	(a), (c), (d), (e), (f)
u-	‘his’	noun prefix	(a), (b), (i)

Table 2.4 *Kham data, version 4*

Form	Gloss	Word type	Examples
mi:	‘eye’	noun	(a), (b), (c)
-rə	PLURAL	noun suffix	(a), (c), (d), (e), (f)
u-	‘his’	noun prefix	(a), (b), (i)

suffix that carries a plural meaning. Looking at the rest of the data, our hypothesis is supported by the fact that (d), (e) and (f) have the form *-rə* and are also plural. We will mark it with bold underlining.

- (14) (a) u-mi:-rə ‘his eyes’
 (b) u-mi: ‘his eye’
 (c) mi:-rə ‘(the) eyes’
 (d) nəha:-rə ‘your(SG) teeth(PL)’
 (e) ɲaŋəih-rə ‘my heads’
 (f) yahm-rə ‘(the) doors’
 (g) ɲazihm ‘my house’
 (h) nəzihm ‘your(SG) house’
 (i) u-zihm ‘his house’

Turning to (g), (h) and (i), we can see a shared meaning ‘house’ and a shared form *zihm*. Complete the row in Table 2.4 for that information; notice that we are starting to group together similar morphemes in the table. We will mark it the same way as ‘eye’ in the data since it is also a root.

- (15) (a) u-mi:-rə ‘his eyes’
 (b) u-mi: ‘his eye’
 (c) mi:-rə ‘(the) eyes’
 (d) nəha:-rə ‘your(SG) teeth(PL)’
 (e) ɲaŋəih-rə ‘my heads’
 (f) yahm-rə ‘(the) doors’
 (g) ɲa-zihm ‘my house’
 (h) nə-zihm ‘your(SG) house’
 (i) u-zihm ‘his house’

Now we are in a position to return to the matter of the possessive prefixes. We can see ‘my’ in (g) and ‘your(SG)’ in (h). Both these forms are also present in (e)

Table 2.5 *Kham data, version 5*

Form	Gloss	Word type	Examples
mi:	'eye'	noun	(a), (b), (c)
zihm	'house'	noun	(g), (h), (i)
-rə	PLURAL	noun suffix	(a), (c), (d), (e), (f)
ŋa-			
nə-			
u-	'his'	noun prefix	(a), (b), (i)

Table 2.6 *Kham data, final version*

Form	Gloss	Word type	Examples
mi:	'eye'	noun	(a), (b), (c)
zihm	'house'	noun	(g), (h), (i)
	'tooth'	noun	
	'head'	noun	
	'door'	noun	
-rə	PLURAL	noun suffix	(a), (c), (d), (e), (f)
ŋa-	'my'	noun prefix	(e), (g)
nə-	'your(SG)'	noun prefix	(d), (h)
u-	'his'	noun prefix	(a), (b), (i)

and (d) respectively. We will mark these two forms the same way as 'his' in the data and you can include them in [Table 2.5](#).

- (16) (a) u-mi:-rə 'his eyes'
 (b) u-mi: 'his eye'
 (c) mi:-rə '(the) eyes'
 (d) nə-ha:-rə 'your(SG) teeth(PL)'
 (e) ŋa-ŋəih-rə 'my heads'
 (f) yahm-rə '(the) doors'
 (g) ŋa-zihm 'my house'
 (h) nə-zihm 'your(SG) house'
 (i) u-zihm 'his house'

Finally, by process of elimination, we are left with three roots to mark and add to [Table 2.6](#).

- (17) (a) u-mi:-rə 'his eyes'
 (b) u-mi: 'his eye'
 (c) mi:-rə '(the) eyes'
 (d) nə-ha:-rə 'your(SG) teeth(PL)'

- (e) na-nəih-rə ‘my heads’
 (f) yahm-rə ‘(the) doors’
 (g) na-zihm ‘my house’
 (h) nə-zihm ‘your(SG) house’
 (i) u-zihm ‘his house’

At this point all the Kham data is marked and accounted for. Notice that there is an unmarked ‘(the)’ in the translation of (c) and (f). This part of the meaning is implied by the forms but it is not morphologically marked in Kham. It is important to remember to focus on, and account for, the language data, not on the English translation (although that can help, of course).

3.2 Identifying the order of morphemes

In most cases, affixes have a **FIXED ORDER** relative to the root. Another useful outcome of a morphological analysis is that we can start to see the order of the affixes emerge. In our Kham data we dealt with one prefix set and one suffix set. However, when roots can have more than one prefix or suffix we need a way of determining the order of those affixes relative to the root. In order to provide an example we will look at a new set of data from Hungarian (Uralic, Hungary) given in (18) (Spencer 1991: 58). The morpheme breakdown has been provided, so we can focus on the ordering of the morphemes.

- (18) (a) *fürdő* ‘bath’
 (b) *fürdő-k* ‘baths’
 (c) *fürdő-k-ben* ‘in baths’
 (d) *fürdő-ben* ‘in (a) bath’
 (e) *fürdő-m* ‘my bath’
 (f) *fürdő-i-m* ‘my baths’
 (g) *fürdő-nk* ‘our bath’
 (h) *fürdő-i-nk* ‘our baths’
 (i) *fürdő-i-nk-ben* ‘in our baths’
 (j) *fürdő-d* ‘your(SG) bath’
 (k) *szobá-k* ‘rooms’
 (l) *szobá-i-m* ‘my rooms’

We can represent what we find in a **POSITION CLASS CHART**. We need to start with the longest words we have – the one with the most affixes – to determine affix ordering relative to the root so we will put (18i) into Table 2.7 first and label the columns according to the meaning of each suffix.

Table 2.7 *Hungarian position class chart, version 1*

	ROOT	(-PLURAL)	(-POSSESSIVE)	(-LOCATION)
(i)	<i>fürdő</i>	-i	-nk	-ben

Table 2.8 *Hungarian position class chart, final version*

	ROOT	(-PLURAL)	(-POSSESSIVE)	(-LOCATION)
(i)	fürdő	-i	-nk (1PL)	-ben
(c)	fürdő	-k		-ben
(f)	fürdő	-i	-m (1SG)	
(h)	fürdő	-i	-nk	
(l)	szobá	-i	-m	
(b)	fürdő	-k		
(d)	fürdő			-ben
(e)	fürdő		-m	
(g)	fürdő		-nk	
(j)	fürdő		-d (2SG)	
(k)	szobá	-k		

The brackets show that, as far as we can tell from the data, all the suffixes are optional. We will assume at first that all affixes with similar meanings occur in the same position; in other words, we do not expect them to co-occur (**my your canoe*). It is a fair assumption to make, but it *is* an assumption and so would have to be checked.

We can now add in the four words that have two suffixes, and then those with one. Once we add in the other data, from the longest words to the shortest, we have the complete picture, as shown in Table 2.8. There appear to be two forms of the plural suffix, *-i* and *-k*, the latter appearing in possessive noun phrases. We would need more data to examine this further.

Not only do these two steps give us an understanding of the data we have, but we can use them in analysing further data (amending our hypotheses again if need be), and we can make educated guesses about how other words are structured which can help us in learning the language.⁷ For example, what would you hypothesize to be the Hungarian translation for the noun phrases in (19)?

- (19) (a) in my baths _____
 (b) your room _____
 (c) our rooms _____

Of course, this is a simple set of data with clear-cut boundaries between the morphemes, all of which carry only one meaning. It would not be fair to pretend that it is always this easy to analyse morphology. There are a number of complications when identifying morphemes that we should be aware of. Some of these are explained in the following sections.

Section summary

In this section you have learned:

- techniques for identifying and describing morphemes,
- a procedure for identifying the order of affixes.
- **KEY TERMS:** morpheme break, position class chart
- **EXERCISES:** B1, B2, B3

4 The function of added morphemes

We have learned how to analyse words into morphemes and how to describe those morphemes. In this section we will look more closely at the different functions or purposes the added morphemes can have.

Firstly, take a look at the data in (20) and (21).

- (20) (a) walk + -s VERB *He **walks** to work on Wednesdays.*
 (b) walk + -ed VERB *He **walked** to work last Wednesday.*
- (21) (a) walk-er NOUN *He **doesn't** cycle, he's a **walker**.*
 (b) un-walk-able ADJECTIVE *This path is too steep; it's totally **unwalkable**.*

Through looking at both the form of the words and their meanings, we can say that all the words in (20) and (21) are 'related' to each other and all based on the root *walk*. However, the affixes in (20) do a different kind of job from those in (21).

Essentially, the morphemes in (20) add grammatical information (in this case, tense and an indication of the person who performed the action) required by their context, and are called **INFLECTIONAL MORPHEMES**. In other words, in (20a), we want to communicate that the event currently happens on a regular basis and that the lone walker is third person; that is, not me (first person) or you (second person), but somebody else. All this information is carried by the inflectional suffix -s.

The affixes in (21), on the other hand, change the word 'walk' into a new word. These are called **DERIVATIONAL MORPHEMES**, because a new word is 'derived' that we would expect to have its own entry in a dictionary. The derived word may also be of a different word type. So, while *walk* is a verb, *walker* is a noun and *unwalkable* is an adjective, and all three are different words with different meanings, thanks to the derivational affixes added to the root *walk*.

To take an analogy, imagine a small engine. That is our 'root'. If you attach that engine to two wheels, you 'derive' a motorbike. If you attach it to four wheels, you 'derive' a car. You can 'derive' two different vehicles that are nonetheless both engine driven. On the other hand, depending on the terrain over which you drive your vehicle, you may be required to add chains to the tyres for snow, fog

Describe the difference between the function of the affixes in (20) and those in (21).

Table 2.9 *Yatê personal prefix paradigm*

1ST PERSON SG	i-tfe	‘my father’
2ND PERSON SG	a-tfe	‘your(SG) father’
3RD PERSON SG	e-tfe	‘her/his father’
1ST PERSON PL	ja-tfe	‘our father’
2ND PERSON PL	wa-tfe	‘your(PL) father’
3RD PERSON PL	t ^h a-tfe	‘their father’

lights for bad weather, or mud flaps for mud – these ‘inflectional’ variations are determined by the driving context.

4.1 Inflection

Forms created by adding inflectional affixes have the same basic meaning as the bare root. It is commonly nouns and verbs that take inflectional affixes, most often to show who did what, and when. Verbs may take affixes that show **AGREEMENT** with the person, number and gender of the ‘who’ (the participant(s) in the event), and others that pin down the ‘when’. Nouns can also carry inflectional affixes which mark whether the referent depicted by the noun is doing the action, undergoing the action or performing some other role (such as instrument), as well as other affixes that mark the number, gender or class of the noun’s referent.⁸

In the example from Russian (Slavic, Russia) in (22), the nouns are marked with an inflectional suffix that indicates the grammatical gender (F), number (SG) and role (SBJ, OBJ) of the noun. The verb is marked with perfective aspect and past tense, as well as with an additional suffix indicating feminine and singular, in agreement with the **SUBJECT**, the doer of the action.

- (22) Učitel’nic-a pro-čita-l-a knig-u.
 teacher-F.SG.SBJ PFV-read-PST-F.SG book-F.SG.OBJ
 ‘The teacher read the book.’

Inflectional affixes often occur in organized sets or **PARADIGMS**. In Table 2.9 we see an example of an inflectional paradigm from Yatê (Amazonian, Brazil) showing possessive prefixes that vary in person and number attached to the root *tfe* ‘father’ (Rodrigues 1999: 182).

When we have paradigms of affixes with similar meanings or functions, we expect that only one from each set can appear on a particular word in that particular affix slot. For example, if something is marked as possessed by me, it cannot also be separately marked as possessed by you (**my your father*).

Note too that, for various reasons, you might come across incomplete (or defective) inflectional paradigms where some cells in the table are left unfilled. For example, the English verbs *hit* and *put* do not get marked with past tense morphology (**hitted*, **putted*). In Halkomelem (Salishan, Canada), intransitive

Table 2.10 *Halkomelem person particles with intransitive predicates*

	SINGULAR	PLURAL
1ST	cən	ct
2ND	čx ^w	ce:p
3RD		

predicates occur with first and second person particles but third person is not marked, leading to an incomplete paradigm (Suttles 2004: 322).⁹

In addition, inflectional morphemes tend to be more **PRODUCTIVE** than derivational morphemes, meaning that they apply to a large portion of the words in the appropriate word category. For example, virtually every countable noun in English can be marked for plural with a form of the morpheme *-s*. Derivational morphemes tend to have more restrictions on the types of stems and roots they affix to.

Inflectional affixes are obligatory in certain syntactic contexts while derivational affixes are not. We can see this illustrated in the English examples in (23a) and (b) which show noun and verb inflection respectively. In these two sentences, the word has to be in the right form to fit with the other items in the sentence otherwise the sentence is ungrammatical.

- (23) (a) Two of the *dog/dogs ran off.
 (b) Mavis *grow/grows sunflowers in her bathroom.
 (c) *Three of her child have blue eye.
 (d) *Yesterday, Joe kick both of his cat.
 (e) Boris likes/dislikes wine.

Looking at (23e), on the other hand, we can see that the derivational morpheme *dis* is optional in the sense that with or without the derivational morpheme, the sentence is grammatical. Of course, the derived form still has to be the right word type for its function in the sentence for this to work; if you turn a verb into a noun you cannot use it as a verb anymore.

Add the inflectional morphemes missing from (23c) and (d) that are required to make the sentences grammatical.

4.2 Derivation

In the examples in (21) we saw that the addition of certain affixes may change the word type. We would expect each of the words in (21) to have their own entry in a dictionary, while those in (20) are just different forms of the verb *walk*. Therefore, derivational morphology is lexical because it changes one 'lexical entry' into another, changing its meaning, and often (but not always) changing its word category. In (24), we have further examples from English of derivational morphology at work.

- (24) (a) *-er* changes a verb into a noun: *walk + -er = walker*
 VERB NOUN
- (b) *-en* changes an adjective into a verb: *soft + -en = soften*
 ADJECTIVE VERB
- (c) *-ive* changes a verb into an adjective: *impress + -ive = impressive*
 VERB ADJECTIVE
- (d) *un-* adds a negative meaning: *un- + impressive = unimpressive*
 ADJECTIVE ADJECTIVE
- (e) *-ly* changes an adjective into an adverb: *unimpressive + -ly = unimpressively*

In Dagbani (Atlantic-Congo, Ghana), the derivational suffix *-lana* attaches to nouns and some adjectives to form nouns, as illustrated in (25): in (b), for example, it is suffixed to the noun *fara* ‘poverty’ to form *faralana* ‘pauper, poor person’ (Olawsky 2004: 140).¹⁰

- (25) (a) *gbaŋ + -lana = gbaŋlana*
 skin -owner ‘eldest son’
 NOUN NOUN
- (b) *fara + -lana = faralana*
 poverty -owner ‘poor person’
 NOUN NOUN
- (c) *baalim + -lana = baalimlana*
 slow -owner ‘slow person’
 ADJECTIVE NOUN

A final difference between derivational and inflectional morphemes is that while derivational morphemes almost always do only one job, inflectional morphemes may do more than one job; for example, the English inflectional verb suffix *-s* marks both third person and singular.

4.2.1 Roots and stems

Separate the words in (26) into morphemes (remembering to put hyphens on the affixes). See if you can determine which of the affixes are derivational and which are inflectional, and take note of the position of the types of affix in relation to the root.

- (26) (a) walkers _____
 (b) untied _____
 (c) (he) underpays _____

We can see that in English some derivational affixes are prefixes and some are suffixes, while all the inflectional affixes are suffixes. This is a feature of English that we may or may not find in other languages.

We generally expect affixes to have a fixed order in relation to each other and the root. In addition, you may have spotted that the derivational affixes appear closer to the root than inflectional affixes. This is an order we expect to find in all languages, because it is an iconic (visual) reflection of the fact that derivational affixes change the basic meaning of the word while inflectional affixes merely

add grammatical information. We see the same ordering of derivational and inflectional morphemes in the Turkish (Turkic, Turkey) data in (27) (Göksel and Kerslake 2005: 47). The third line shows that the derivational suffixes appear closer to the root than inflectional suffixes, which in turn appear closer to the root than clitics (see section 6).

- (27) (a) suç-lu-luk-la=mi
 crime-DER-DER-INS=INT
 ROOT-DER-DER-INFL=CL
 ‘in a guilty manner?’
- (b) yap-ı-laş-tır-ıl-ma-mış
 build-DER-DER-CAUS-PASS-NEG-EVID/PFV
 ROOT-DER-DER-INFL -INFL -INFL-INFL
 ‘has not been built up’

In the sections above, I described the root of a word as its ‘core’, the morpheme with the central lexical meaning. In (20) and (21), the root is *walk*. The root is always a single morpheme, and remember that it may or may not be a free morpheme (see example (7)). A **STEM**, on the other hand, consists of a root plus any derivational morphemes. In other words, the stem is the form of the word before any inflectional affixes are added.

In a word that contains both inflectional and derivational affixes, the root, the stem and the word will be three different things, as in (28a). In a word with no affixes, all three will be the same, as shown in (28b). In (28c), example (27a) from Turkish is repeated to illustrate the process in another language.

- (28) (a) *governments*
ROOT STEM WORD
 ROOT+DERIVATIONAL ROOT+DERIVATIONAL+INFLECTIONAL
govern govern -ment govern -ment -s
- (b) *chair*
ROOT STEM WORD
chair chair chair
- (c) *suçluluklamı*
ROOT STEM WORD
suç suç-lu-luk suç-lu-luk-la=mi

The distinction between root and stem (and word) distinguishes between derivational and inflectional affixes which we will see is a useful distinction.¹¹

4.2.2 Derivation as a process

When words include several derivational morphemes, there may be a particular order to the way they are affixed. We will take an example of a complex English word – *international* – and break it down into its root and derivational affixes in (29).

Table 2.11 *Derivational affix examples*

Affix	Root or stem category	Resulting word category	Meaning or function	Example
-er	verb	noun	one who does X	<i>walk-er</i>
-en	adjective	verb	to make something have the quality described by the root adjective	<i>soft-en</i>

Table 2.12 *Summary of differences between inflection and derivation*

Property of morpheme	Inflection	Derivation
Changes a word into a new word	no	yes
Changes the word type (e.g. verb to noun)	no	often
Can be organized into paradigms	yes	no
Determined by syntax (obligatory)	yes	no
Meaning of the whole is predictable from the parts	usually yes	often not ¹²
Closeness of the added element to the root morpheme	farther	nearer
Type of meaning	grammatical	lexical
Productive (applies to all roots of that type)	very	not very

- (29) *international*
 nation + -al = national (*internation) + inter- = inter-national
 ROOT STEM WORD
 NOUN ADJECTIVE ADJECTIVE

Looking at the word *international* we can see that the *-al* suffix is added first to create an adjective. We know this because **internation* is not a word. After *-al*, the prefix *inter-* is added to create *international*. We saw another example of this in (24c–e) above with the formation of the word *unimpressively*. Notice that the derivational suffixes *-ive* and *-ly* are positioned according to the order in which they are attached (**unimpresslyive*).

4.2.3 Analysing and listing

Since derivational affixes often change the word type of a word as well as its meaning it is helpful to show the effect of using a derivational affix in a table (Table 2.11). In the empty rows, add entries for the derivational affixes illustrated in (29).

4.3 Summary of derivation and inflection

Table 2.12 presents a summary of the main differences between derivational and inflectional affixes. Some (but not many) distinctions are

borderline; they might be inflection in one language but derivation in another, so it is important to check with this list to make sure.

Section summary

In this section you have learned:

- to recognize how derivation and inflection differ and how they can be analysed,
- to understand terms for describing more complex words.
- **KEY TERMS:** derivation, inflection, agreement, paradigm, iconic, stem, root, productive
- **EXERCISES:** A3, A4, B4

5 Morphological processes

The morphological analysis we did in section (3) was on a pretty simple and straightforward set of morphological data. Each morpheme tagged onto either the beginning or end of a root or stem. However, there are quite a few other morphological processes that are not quite as clear cut. We will take a look at some of these **NON-LINEAR** morphological processes in this section.¹³

5.1 Circumfixes and infixes

So far we have only looked at prefixes and suffixes. These are by far the most common types of affixes but these are not the only morphological fruit. Take a look at the data in (30) from Georgian (Kartvelian, Georgia) and at how nouns on the right are derived from those on the left (Boeder 2005: 43).

- (30) (a) pul ‘money’ sapule ‘purse’
 (b) tval ‘eye’ satvale ‘spectacles’
- (31) (a) col ‘wife’ nacolar ‘former wife’
 (b) sopel ‘village’ nasoplar ‘site of a former village’

In order to form the words on the right **CIRCUMFIXES** are used. A circumfix is an affix with two parts that adds an element to both the beginning and the end of the root. It ‘hugs’ the stem, if you will.

The opposites of circumfixes, in a sense, are **INFIXES**, which are inserted into the middle of a root. We can do this with expletives in English in phrases such as *abso-bloody-lutely*. In Mori Bawah (Malayo-Polynesian, Indonesia) the infix *-in-* indicates the passive voice as illustrated in the contrast between the verb forms in (32a) *pepate* and (b) *pinepate* (Mead 2005: 698).

Describe the effect on the meaning of the words caused by the addition of *sa.e* and *na.ar*.

- (32) (a) ... ka=i pepate='ira ana-no.
 ... and=3SG.NOM kill=3PL.ABS child-3SG.POSS
 '... and she killed her children.'
- (b) Ta p<in>epate.
 3SG.FUT <PASS>kill
 'He will/shall/must be killed.'

In Semelai (Mon-Khmer, Malaysia) the affix *raʔ* produces a comparative adjective of dimension, turning 'be thin' into 'be thinner' in (33a), for example.

- (33) (a) sey 'be thin' raʔ-sey 'be thinner'
 (b) kēt 'be small' raʔ-kēt 'be smaller'
- (34) (a) jləŋ 'be long' jə<raʔ>ləŋ 'be longer'
 (b) dpēs 'be low, short' də<raʔ>pēs 'be lower, shorter'

When the roots have one syllable, as in (33), the affix appears as a prefix. In (34), on the other hand, the roots have two syllables. The affix *raʔ* is realized as an infix, appearing between the two syllables of the root (Kruspe 2004: 69).

Examples (32b) and (34b) show how infixes are indicated in the text and gloss, between angled brackets '< >'. In the examples from Georgian in (30) and (31) the circumfix is derivational and in that case we would not generally gloss the circumfix morpheme. However, when circumfixes (or any two-part affixes) are inflectional, one way we can write the glosses is as illustrated in (35), putting the meaning twice under each part of the morpheme.

- (35) gesehen German (Germanic, Germany)
 ge-seh-en
 PTCF-see-PTCF

5.2 Null morphemes

Some morphemes carry a meaning which is conveyed without an actual form. We will examine that phenomenon in this section.

In English there are several ways to signal plural and /-s/ is the most common, as illustrated in (36b). However, with a few words there is no audible distinction between singular and plural: the pronunciation is identical for both forms, as for *sheep* in (37b).

- (36) (a) goat *There was one goat in the field.*
 (b) goat + -s = PLURAL *There were twenty goats in the field.*
- (37) (a) sheep *There was one sheep in the field.*
 (b) sheep + -∅ = PLURAL *There were twenty sheep in the field.*

On the one hand, we have a regular pattern for most nouns in English where /-s/ (or some other less common form such as *-en*) is added as a suffix to a noun to mark the plural. On the other hand, we have exceptions to this pattern like *sheep*.

Because we usually do have an audible plural morpheme, the form in (37b) is an exception and it is labelled a **NULL** (or zero) **MORPHEME**.

We only use these terms where there is clear evidence that other words have a regular morpheme and that there is a gap in the distribution of that morpheme. The form of the plural morpheme with *sheep* is described as $-\emptyset$ ‘plural’ (where ‘ \emptyset ’ means null); both $-\emptyset$ and $/-s/$ are variants, **ALLOMORPHS**, of the plural morpheme.

If a meaning is consistently conveyed without the addition of a morpheme, we say it is **UNMARKED**, but we only use this term when the lack of morpheme is the rule rather than the exception. For example, in the simple present tense in English, only the third person singular is marked on the verb (regardless of which verb it is), as we can see in (38).

- (38) (a) I walk I lie I wobble
 (b) You walk You lie You wobble
 (c) He walk-s He lie-s He wobble-s
 (d) We walk We lie We wobble
 (e) You walk You lie You wobble
 (f) They walk They lie They wobble

As the data show, the lack of marking is a consistent pattern, so we would say that all the other persons are unmarked.

5.2.1 Conversion or zero derivation

Derivational change can also occur without the adding of morphemes. An example of this from English is the word *fish*, shown in (39a). This word is a noun but it can also be used as a verb meaning ‘to catch fish’ without any derivational morpheme added. Another example is the word *break* which is a verb describing the action of damaging or destroying something (39b). From this we derive the noun *break*, again without adding any extra morphology.

- (39) (a) *fish* → *fish*
 NOUN VERB
 (b) *break* → *break*
 VERB NOUN

This type of derivation is called **ZERO DERIVATION** (or **CONVERSION**).

In (40) we have further examples from Mualang (Malayo-Polynesian, Indonesia) that show zero derivation from a noun to a verb stem without the addition of any morphemes (Tjia 2007: 138–9).

- (40)
- | | NOUN | VERB |
|-----|----------------------|--|
| (a) | catuk ‘spoon’ | → ‘to scoop (food, etc.) with a spoon’ |
| (b) | tusuy ‘story’ | → ‘to tell (a story, etc.)’ |
| (c) | jabaw ‘bamboo shoot’ | → ‘to look for bamboo shoots’ |
| (d) | ludah ‘saliva’ | → ‘to spit’ |
| (e) | laban ‘enemy, rival’ | → ‘to oppose, fight’ |

5.3 Segmental variation – changing part of the root

5.3.1 Change in a sound feature

We sometimes find distinctions between words marked by a change in a feature of one or more of the sounds of the root. In the set of English words in (41), for example, the difference between the word types is marked by a change in voicing.

- (41)
- | | | |
|-----|-------------|------------|
| | VERB | NOUN |
| (a) | use [z] | use [s] |
| (b) | house [z] | house [s] |
| (c) | prove [v] | proof [f] |
| (d) | breathe [ð] | breath [θ] |

5.3.2 Change in the vowel system

In Semitic languages (e.g. Hebrew, Arabic), a lot of both inflectional and derivational information is conveyed through changes in the vowels of the root. In fact, the roots are generally considered to consist of just the consonants and the appropriate vowels are added for the meaning required. In the Hebrew (Semitic, Israel) examples in (42), the connection between the words is the set of consonants g-d-l and meanings to do with the concept ‘grow’ (Shimron 2006: 10, 12).

- (42)
- | | | |
|-----|--------|---|
| (a) | gódel | ‘size’ |
| (b) | gdula | ‘greatness’ |
| (c) | gadlut | ‘grandeur’ |
| (d) | migdal | ‘tower’ |
| (e) | gadal | ‘to grow’ (with one argument, e.g. <i>The tree is growing</i>) |
| (f) | gidel | ‘to grow, raise’ (with two arguments, e.g. <i>We are raising a genius</i>) |
| (g) | gidul | ‘growth, tumour’ |

The variations in meaning are conveyed through changes in the vowel patterns that accompany the consonants g-d-l (as well as a few extra affixes).¹⁴

Sign languages also frequently use what are known as base sequences which can be varied in different ways to convey meaning distinctions. For example, in American Sign Language, we see the patterns given in (43), based on the meaning ‘sick’ (Sandler and Lillo-Martin 2006: 52–4).

- (43)
- | | | |
|-------|----------------|----------------------|
| SICK | SICK Intensive | SICK Durational |
| L M L | LL M LL | L M L (REDUPLICATED) |
| I I I | V I V | I I I |
| x y z | x y z | x [arc] z |

The basic template begins at a L(ocation) near the forehead, then a straight M(ovement) and at another (L)ocation in contact with the forehead. To get the intensive form, the hand is held in each location for a longer time (shown with a double ‘L’), and for the durational form an arc is added to the movement (instead of the straight movement) with the option of reduplication (repetition, see section 5.3.4).

5.3.3 Suppletion – changing the root form

Sometimes meanings are expressed through a complete change in the root form instead of an affix. This is called **SUPPLETION**; a whole new form is ‘supplied’.

In Georgian (Kartvelian, Georgia), suppletion occurs with some verbs depending on whether they have singular or plural arguments. In (44), for example, we see the verb root *k’l* when there is a singular victim, and the root form *xoc* when there is more than one victim (Boeder 2005: 29).

- (44) (a) vk’lav. ‘I kill him/her/it.’
 (b) vxocav. ‘I kill them.’

An example of suppletion from English is the variation in tense forms of the verb *to be*, which changes its whole root form for each past tense form. Compare it in (45) with the regular verb *wash* which obediently adds the suffix *-ed*, as we see in (46).

- (45) (a) He is a mess.
 (b) He was (*is-ed) a mess.
 (c) He has been (*is-ed) a mess.
 (46) (a) I wash regularly.
 (b) I wash-ed my car yesterday.
 (c) I have wash-ed my hands.

The forms in (45) are **PORTMANTEAU** morphemes, morphemes that have more than one function: here they represent the meaning of the root and also carry tense.

The data in (45) are examples of ‘total’ suppletion, but ‘partial’ suppletion also exists, where only the main vowel is changed. English also uses this strategy: *sing / sang / sung; drink / drank / drunk* (a process somewhat similar to the change in vowels described in section 5.3.2).

5.3.4 Reduplication – repeating part of the root

REDUPLICATION is a strategy whereby part of the root gets repeated (reduplicated). The amount of the root that gets reduplicated can vary. In Kúkú (Eastern Sudanic, Sudan and Uganda), the first consonant and vowel of the root is reduplicated as part of the formation of past continuous and future tenses/aspects, as shown in (47b) and (c) (Cohen 2000: 76).¹⁵

- (47) (a) ń dér.
 1SG cook
 ‘I cooked / I cook.’
 (b) ń dé-dér-já.
 1SG RED-COOK-QUAL
 ‘I was cooking.’

- (c) ń dɛ-dɛr.
 1SG RED-cook
 ‘I will cook.’

In many cases, reduplication indicates either ongoing action, or repeated action (either repeated by one person, or one action by lots of people). On nouns and quantifiers it can also convey or emphasize plurality or intensity. These uses appear to be somewhat iconic, since their shape visually reflects their meaning; in this case, depicting an increase in frequency or intensity. The examples in (48) and (49) come from Mualang (Malayo-Polynesian, Indonesia) and illustrate just some of the uses of reduplication in that language.¹⁶ In (48b), the whole root is reduplicated; this sentence depicts one complex movement (Tjia 2007: 187).¹⁷

- (48) (a) Kacung N-lompat.
 frog ATV-jump
 ‘The frog jumped (once).’
 (b) Kacung N-lompat-lompat.
 frog ATV-jump-RED
 ‘The frog jumped around (i.e. up and down aimlessly).’

In (49a), we see reduplication indicating duration of the action and in (b), plurality or the large size of the patient. In (49c), we see a reduplicated root used as a modifier of intensity. Finally, in (d) we see a reciprocal (‘each other’) meaning expressed and in this case the voice marker *ba-* occurs between the reduplicated forms (Tjia 2007: 190–1).

- (49) (a) Miak ia’ ba-sabak-sabak.
 child that ANTIP-cry-RED
 ‘The child keeps crying.’
 (b) Babas da-tebas-tebas sampay luah.
 forest PASS-cut-RED until large
 ‘A wide area of forest is cleared (by cutting grass and bushes/trees).’
 (c) Am’i’ mimit-mimit!
 take little-RED
 ‘Take little by little!’
 (d) Burung sawut-ba-sawut.
 birds reply-ANTIP-RED
 ‘Birds are replying to one another.’

The amount of the stem that is reduplicated may depend on its shape. In Gùrdùng (Chadic, Nigeria), monosyllabic stems are reduplicated in their entirety, as we see in the pairs of verbs in (50).

- (50) (a) g^yù ‘fill’ g^yù-g^yù ‘fill repeatedly’
 (b) dʒì ‘step’ dʒì-dʒì ‘step (on) repeatedly’
 (c) v^waa ‘pour’ v^waa-v^waa ‘pour repeatedly’

Stems with a $C_1V_1C_2V_2$ pattern, on the other hand, involve a sequence of two processes: firstly the stems are partially reduplicated (specifically the $C_1V_1C_2$ portion). Secondly, the second consonant of the reduplicated portion takes the same form as (assimilates to) the following consonant and long vowels are shortened. We see these processes illustrated in the examples in (51) (Haruna 2003: 80–1).

- (51) (a) pàni ‘take’ → (pàn-pàni) → pàppàni ‘take repeatedly’
 (b) nàasi ‘ask’ → (nàas-nàasi) → nànnàasi ‘ask repeatedly’
 (c) limbi ‘sew’ → (lim-limbi) → lillimbi ‘sew repeatedly’

5.4 Suprasegmental variation

The name may be intimidating, but **SUPRASEGMENTAL VARIATION** simply refers to inflectional or derivational meaning changes carried out by changing some ‘higher level’ feature of the root, such as stress placement or in just one feature of the sound. This variation is called suprasegmental because it is above (‘supra-’) the level of the sounds themselves, only changing one feature.¹⁸

5.4.1 Change in stress pattern

In the set of English data in (52), the placement of stress determines whether the word is a noun or verb (and also affects vowel qualities).

- (52)
- | | VERB | NOUN |
|-----|----------|----------|
| (a) | pro'test | 'protest |
| (b) | con'vict | 'convict |
| (c) | im'port | 'import |
| (d) | re'bel | 'rebel |

Decide whether the difference illustrated in (52) is an inflectional or a derivational change.

5.4.2 Change in tone

Tone patterns can do the job of carrying meaning differences. In the examples in (53) from Ngiti (Central Sudanic, DR Congo), only the tone change indicates the difference between singular and plural pronouns (Kutsch Lojenga 1994: 115). In (53a) and (b), for example, the tones on both syllables go from mid to low tone (indicated with accents) to indicate plurality.

- (53) (a) ìma ‘I/me’ ìmà ‘we/us’
 (b) ìnyì ‘you(SG)’ ìnyì ‘you(PL)’
 (c) àbadhi ‘he/him/it’ abádhí ‘they/them’

5.5 Allomorphs: one morpheme with different phonological forms

Morphemes may have a variety of allomorphs: different forms depending on their phonological context. If you have studied phonology, you

will recognize the parallel with allophones of a phoneme, which are also varieties of a sound, determined by phonetic context. Imagine your hand is an affix. If you pick up a large object your hand will adjust in shape to grip it; if you pick up a very small object your hand will be in a different shape entirely. It is still your hand and it is carrying out the same purpose, but the object to be picked up affects the hand shape. The same applies when sounds meet: they often adjust their ‘shape’, their voicing and place of articulation.¹⁹

In English, for example, the grammatical morpheme *in-* ‘not’ has different forms depending on the consonant of the stem it attaches to, as we can see in (54). In (54b), for example, the prefix is pronounced *im*, with a bilabial nasal, because it precedes a bilabial plosive /p/.

- (54) (a) inaccurate in + vowel
 (b) impervious im + p (both bilabial)
 (c) indecisive in + t, d (both alveolar)
 (d) illogical il + l (both lateral)
 (e) incoherent inj + k (both velar)
 (f) irreverent ir + r (both alveolar approximants)

For the purposes of explaining morphology, we will usually choose a basic form as a representative of the morpheme. In this case, we would choose *in-* ‘not’ since it occurs before a vowel which is considered to be a neutral environment; it also occurs in the widest variety of environments. The other forms occur in environments which can be explained phonologically: in this case, they assimilate to the place of articulation of the following consonant.

In the Basque (Isolate, Spain) examples in (55), we see the perfective participle form of the verbs, which end in either *-tu* or *-du* (Hualde and Ortiz de Urbina 2003: 196–7).

- (55) (a) geratu ‘remain’
 (b) hartu ‘take’
 (c) sartu ‘enter’
 (d) kendu ‘take away’
 (e) saldu ‘sell’

What we find is that the *-du* allomorph occurs after nasals and lateral (55d, e), and the *-tu* form occurs elsewhere (55a–c).

5.6 Same sequences with different meanings

The list of English words in (56) all end in the sequence *er*. However, there are two issues to consider when we find similar sequences. The first is whether the sequence forms a morpheme or is part of a larger morpheme. The second is whether a morpheme that looks or sounds the same has the same meaning.

- (56) (a) brother
 (b) painter
 (c) hammer
 (d) fuller
 (e) water
 (f) toaster
 (g) spider
 (h) slaughter

When we think about the meaning as well as the form we can see which have *-er* as a suffix, namely (56b) *paint-er* ‘someone who paints’, (56d) *full-er* ‘more full’ (comparative) and (56f) *toast-er* ‘thing that toasts’. We can also see that the meaning of that *-er* suffix is slightly different in all three cases. All the other words contain only one morpheme.

5.7 Other derivational strategies

In section 4.2 we saw how derivational affixes can be used to form new words. In this section we will look at a number of other strategies languages use to form new words.

5.7.1 Compounds: words with more than one root

Examine the words in (57) and break them into morphemes.

- (57) (a) teapot
 (b) boyfriend
 (c) headphones
 (d) hotdog

These words all contain two lexical roots side by side, and are called **COMPOUNDS**. It can be difficult to tell the difference between a compound and a phrase of two words, but there are a few tell-tale signs, all of which are evidence that the two roots together are being treated as one unit.²⁰

- (i) *A compound word usually contains only one main stress, while in a phrase each word has its own stress.*

As we see in (58), the compound words on the left contain only one stressed syllable, while the phrases on the right contain two, one on each word in the phrase. In these examples the accent mark ´ indicates stress.

- | (58) | COMPOUND WORD | PHRASE |
|------|-----------------|------------------|
| (a) | ápplesauce (US) | ápple sáuce (UK) |
| (b) | lámbohops (US) | lámh chóps (UK) |
| (c) | a bláckboard | bláck bóard |

- (ii) *Inflectional morphemes only occur on the final root in the compound, and in fact nothing can appear between the two roots.*

The examples in (59) illustrate that the plural marker *-s* can only occur at the end of the whole compound noun, and that modifiers cannot occur between the two roots.

- (59) (a) *girl-sfriend *girlbestfriend girlfriend-s
 (b) *bab-iessitter *babyfreesitters babysitter-s

We can also see this second characteristic in data from Mualang (Malayo-Polynesian, Indonesia), where the compound meaning of a compound noun ‘longhouse’ is lost when the second root is modified (as in 60b) or when elements appear between the two roots (as in (60c); Tjia 2007: 92).

- (60) (a) rumah-panyay ‘(traditional) longhouse’
 house-long
 (b) rumah panyay-panyay ‘houses that on average are long’
 (c) rumah besar panyay ‘a long big house’

(iii) *The roots in a compound might lose their original meaning, as in hotdog, or be extended to a more metaphorical sense.*

We can see this third distinction illustrated by the data in (61–63) from Hup (Nadahup, Brazil).²¹

- (61) (a) tój mɔy ‘house’ (nose hole/house)
 (b) mɔm b’ɔk hicũ? ‘pot lid’ (iron pot/cover)
- (62) (a) b’ɔk m’ác ‘pot clay, clay for making pots’ (pot/clay)
 (b) j’ak j’ɔ yág ‘hammock made from buriti palm fibres’ (buriti palm flower/ hammock)
- (63) (a) nɔ-cúg ‘moustache/beard’ (mouth/hummingbird)
 (b) pũh mɔyɔ ‘glass window’ (water foam/house opening)

In (61) and (62), we see a fairly direct relationship between the parts of the compound and its meaning: in (61) there is a relationship of (a) possessor/possessed and (b) part/whole. In (62) there is an object and its inherent or defining property. In (63), on the other hand, we see a more metaphorical connection between the meaning of the parts and the meaning of the whole (Epps 2007: 108).

As all the examples in this section show, different word classes can combine into compounds. In these final compound examples in (64) from Leti (Malayo-Polynesian, Indonesia), the root *aana* ‘child’ is added to another root to form the diminutive while a verb root *lavna* ‘become big’ is added to form the augmentative noun (which may indicate greater physical size, age or power) (van Engelenhoven 2004: 127).

- (64) (a) püata ‘woman’ püat-aana ‘girl’ püat-lavna ‘mature woman’
 (b) isüðna ‘witch’ isüðn-aana ‘tiny witch’ isüðl-lavna ‘supreme witch’
 (c) pòka ‘rifle’ pòk-aana ‘pistol’ pòk-lavna ‘cannon’

- | | | | | | | |
|-----|---------------|----------|------------|----------|------------|----------------|
| (d) | toon <u>u</u> | 'lake' | toonü-aana | 'puddle' | toul-lavna | 'lake' |
| (e) | nusa | 'island' | nus-aana | 'islet' | nus-lavna | 'major island' |

In sign languages, communication takes place using several parameters simultaneously, including the hands, the face and the body position, and each of these elements can be adjusted to derive different aspects of meaning (Sandler and Lillo-Martin 2006: 61). For example, in Netherlands Sign Language, the mouthed word (or MOUTHING) *brood* 'bread', borrowed from spoken Dutch, can act as an independent morpheme in combination with the manual sign ETEN 'to eat' to form *brood eten* 'to eat bread' (Crasborn, van der Kooij, Waters, Woll and Mesch 2008: 48).

5.7.2 Clipping, acronyms, blends and back formation

There are a number of other ways that language speakers form new words (**NEOLOGISMS**), and I will describe some of them briefly here, using examples from French (Romance, France) and English. Examples (65a) and (66a) are from French, and the English translations also illustrate the same processes.

- (65) (a) Les publicités → Les pubs
the advertisements → the ads / the adverts
- (b) weblog → blog
- (c) taxicab → taxi or cab

All the examples in (65) illustrate **CLIPPING** which, as the name suggests, involves chopping off part of the original word. **ACRONYMS** are formed when the initial letters of a series of words are used to form new word which is pronounced as a word (rather than a string of letter names). Examples are given in (66). In the example in (66a), an extra letter is taken from the beginning of the second morpheme in *immunodéficitaire* and *immunodeficiency*.

- (66) (a) Syndrome Immunodéficitaire Acquis → SIDA (pronounced /sida/)
Acquired Immunodeficiency Syndrome → AIDS
- (b) National American Space Agency → NASA
- (c) Light amplification by stimulated emission → laser
of radiation

In (67) we have examples of **BLENDS** in English, 'blending' elements from two words to create a new word. There is a current trend in entertainment journalism to create blends from the names of celebrity couples; perhaps you can think of some examples.

- (67) (a) smoke + fog → smog
- (b) grape + apple → grapple (an apple with grape flavour injected)

BACK FORMATIONS occur when speakers go 'back' and analyse where they think the morpheme breaks in a word are, a process commonly motivated by comparing it with similar words (a process of analogy). Then they form a new word based on that morpheme break that is actually incorrect for the word

in question. We saw an example of this in (65b), where *web+log* has been reanalyzed as *we+blog*, leading to the related words *blogger* and *blogging*.

As another example, consider the English word *alcoholic*, where the root *alcohol* plus the suffix *-ic* indicates someone addicted to alcohol. A process of **REANALYSIS** leads to new words such as *workaholic* or *shopaholic*, where the roots *work* and *shop* have been added to the perceived suffix *-aholic*. These do have a nicer ring to them than *workic* or *shopic* and perhaps retaining part of the root form *alcohol* strengthens the sense of addiction. Notice that there also appears to be a tendency to keep subsequent new words to the same syllable pattern (68d).

- (68) (a) alcohol + *-ic* → alcoholic ‘someone addicted to alcohol’
 (b) REANALYSIS: alcohol-ic → alc-oholic
 (c) BACK FORMATION: work-aholic, shop-aholic
 (d) *chocolaholic, chocaholic

Finally, it is worth adding that these processes above involve manipulating words that exist in the language. Speakers may also borrow words from other languages (like *karaoke*, *fajita*, *café* into English) or use personal or brand names as the general name for a thing or action (like *Braille*, *(to) google*, *Kleenex*).

Section summary

In this section you have learned:

- to identify and label some more unusual types of morpheme,
- to recognize the main types of non-linear morphological processes.
- **KEY TERMS:** infix, circumfix, non-linear morphology, null morpheme, conversion, zero derivation, suppletion, portmanteau, reduplication, allomorph, compound, clipping, blend, acronym, back formation, analogy, reanalysis
- **EXERCISES:** A5, A6, A7, B5, B6, B7, B8

6 Clitics

In section 1, I outlined several properties of phonological words. In this section I will add the concept of syntactic words. We will see that there can be a grey area between an element that is a separate word and one that is an affix, and the distinction between phonological and syntactic words will come in handy to describe these ‘in between’ elements, or **CLITICS**. Clitics that occur before the root are **PROCLITICS** and those that occur after the root are called **ENCLITICS**. In this section, we will look at some features of clitics.

We can see the difference between affixes and clitics by looking at the sound ‘s’ with the examples in (69) and (70).

- (69) (a) the alien's tiny spaceship CLITIC '=s'
 (b) the alien that I trod on's tiny spaceship / *the alien's I trod on tiny spaceship
- (70) (a) the aliens AFFIX '-s'
 (b) *the alien that I trod ons / the aliens that I trod on

In (69) we see the clitic =s. (Clitics are often indicated in data and glosses with an equals sign '='.) We can see that it can attach to the main noun, as in (69a), but it can also attach to other elements in the noun phrase that happen to occur right before the possessed noun; a preposition, in the case of (69b). In this way it is syntactically free: it is not picky about the word class of the word it attaches to. This behaviour contrasts with the plural suffix in (70), which only attaches to nouns, as (70b) shows.

On the other hand, the form of the clitic does still vary according to the features of the word it attaches to, as illustrated for the plural /s/ in (71). In that sense it is phonologically bound. So we can see that the term free can have two senses.

- (71) (a) the alien's spaceship [z]
 (b) the book's cover [s]
 (c) the witch's hat [ɪz]

In addition, because they are more loosely connected, clitics will appear further from the root or word they are attaching to than affixes. For example, if we have possession and plural in the same noun phrase the pattern shown in (72) emerges. This pattern is blurred somewhat by English spelling conventions, so an example with a different plural morpheme form is included too, in (72b).²²

- (72) (a) the aliens' spaceship (*the alien'ss spaceship)
 (b) the children's toys (*the child'sren toys)

Other examples of clitics in English include those in (73) and (74). Note that the (*i*s and (*woul*)d can appear either in 'contracted' clitic form, as phonologically bound to the preceding word, or as separate (free) words. Hence they appear to be in between independent words and affixes, and in these cases variant forms of free words (as the alternative sentences show).

- (73) (a) He's quite the surfer. / He is quite the surfer.
 (b) I'd be careful with that if I were you. / I would be careful with that if I were you.
- (74) (a) I could've warned them.
 (b) *Could've I warned them? / Could I have warned them?

In (74b) we see an illustration of the syntactic freedom of the clitic 've: when the element it attaches to appears at the front of the clause, the clitic does not also appear there; it needs to stay in its own syntactic position in the sentence. In other words, it is not syntactically bound as a unit with its **HOST**. Compare this

Table 2.13 *Summary of differences between affixes and clitics*

Property	Affix	Clitic
Phonologically free	no	no
Syntactically free	no	yes
– can appear with different types of words		
– does not form syntactic unit with word		
Appears closer to root	yes	no
Variant forms of free words	no	sometimes
Written as separate words	no	sometimes

behaviour with the affix *-s* in (75) which appears attached to the root noun *day* wherever that noun appears.

- (75) (a) I like rainy dayss.
 (b) Rainy days I like. / *Rainy day I like s.
 (c) It's rainy dayss I like. / *It's rainy day I like s.

We find that affixes are phonologically and grammatically more restricted and more closely bound to the head noun. Affixes are like spouses and clitics are like boy/girlfriends, if that helps.

As we have seen, in examining 'words', we need to look both at phonology (stress and syllable patterns, for example) and at syntax, namely the extent to which the element functions as a syntactic unit with the stem it attaches to.

Table 2.13 summarizes the differences between affixes and clitics. Note that some of the properties may or may not apply for certain clitics in certain languages: these are tendencies rather than rules.

Section summary

In this section you have learned:

- how to distinguish between words, clitics and affixes.
- **KEY TERMS:** clitic, proclitic, enclitic, host
- **EXERCISE:** B9

Further reading

For more elaboration on all areas of morphology, as well as example morphology descriptions, see Spencer and Zwicky (2001) and Booij (2007). Clitics are discussed in detail in Anderson (2005).

Exercises

A. Exercises from English

1. *Basic terms

Divide the following words into morphemes.

- (1) inserted
- (2) unimaginable
- (3) predestined
- (4) mosquito
- (5) morphologically
- (6) cucumbers
- (7) multicoloured

2. *Basic terms

In example (6) above we labelled the morphemes of the word *played* with the appropriate basic terms, as repeated here. Do the same for the words in (2–4).

- | | | |
|-----|-------------------|--------------------|
| (1) | <i>played</i> | (2) <i>trains</i> |
| | play | -ed |
| | root (verb) | affix (suffix) |
| | lexical | grammatical |
| | free | bound |
| | open set | closed set |
| (3) | <i>unpleasant</i> | (4) <i>bending</i> |

3. *Derivation

From the following data, describe precisely the function(s) of the derivational prefix *un-* and draw a table as shown in section 4.2.3 that indicates the word type(s) it attaches to and the meaning(s) it conveys.

- (1) undo
- (2) unclear
- (3) unattractive
- (4) untie
- (5) unintelligent
- (6) unravel
- (7) untreatable
- (8) unfair
- (9) unwrap

4. *Derivational and inflectional morphology

Divide the following English words into morphemes and show which are roots, which are derivational affixes and which are inflectional affixes.

If there are multiple affixes, describe the sequence in which they attach to the root (i.e. which one is affixed first, second, etc.).

- (1) scissors (as in 'Don't run with scissors, they'll slow you down.')
- (2) gameplans (as in 'I have several gameplans for a situation like this.')
- (3) polysyllabic (as in 'The word *ambiguous* is polysyllabic.')
- (4) undercooks (as in 'Uncle Jim always undercooks the carrots.')
- (5) unlockable (as in 'This door is totally unlockable.')
- (6) globalization (as in 'Globalization leads to a loss of identity.')
- (7) procrastinating (as in 'Have you started to work or are you still procrastinating?')
- (8) forgiveness (as in 'You should ask for forgiveness from her.')

5. *Allomorphs

Examine the plural suffix forms below and note the three different forms in (1), (2) and (3). (It is important to say them aloud to hear the differences.) Which of the processes described in this chapter apply to the way the plural is formed?

If you have studied phonetics, try to account for when the different plural forms are used.

- (1) a. back backs
b. cup cups
c. boot boots
d. sink sinks
e. list lists
- (2) a. bead beads
b. dog dogs
c. store stores
d. pool pools
e. bend bends
- (3) a. witch witches
b. edge edges
c. loss losses
d. nose noses
e. clash clashes

6. *Inflectional morphology and suppletion

Underline the inflectional morphemes in the following sentence, and indicate any suppletion (which you will not be able to underline).

'As the people ran, the monsters chased them, making them go faster and hide behind cars.'

7. *New words

Think of five English words that have been 'invented' in the last five years. What derivational processes led to their creation?

B. Exercises from other languages

1. *Atkan Aleut (Eskimo-Aleut, Alaska, USA)²³

Analyse the following data and provide a table describing the morphemes, following the procedure explained in this chapter (section 3). Group together lexical roots by word type and group inflectional affixes according to their meaning. Include a chart to show affix ordering.

Translate sentences (12) and (13) into Aleut.

(1)	Asxinuŋ hilakuŋ.	‘The girl is reading.’
(2)	Hlaŋ hilakuŋ.	‘The boy is reading.’
(3)	Hilakuŋ.	‘I am reading.’
(4)	Hlaŋ chalikuŋ.	‘The boy is fishing.’
(5)	Hlas hilakus.	‘The boys are reading.’
(6)	Asxinuŋ halukuŋ.	‘The girl is sewing.’
(7)	Halukuŋt.	‘You(SG) are sewing.’
(8)	Hlas chalikus.	‘The boys are fishing.’
(9)	Hilakus.	‘We are reading.’
(10)	Halukus.	‘They are sewing.’
(11)	Halukuŋ.	‘I am sewing.’
(12)	‘The girls are reading.’	_____
(13)	‘I am fishing.’	_____

2. **Ngiti (Central Sudanic, DR Congo)²⁴

Analyse the following data showing possession forms and provide a table describing all the morphemes, following the procedure explained in this chapter (section 3).

Group together lexical roots by word type and group inflectional affixes according to their meaning.

Note and explain any variation in the morpheme forms. (Do not worry about the singular/plural variation in the root noun glosses – follow the translations in presenting your glosses).

(1) a.	ɔtsɛ́du	‘my hand(s)’
b.	ɔtsɛ́nɐ	‘your(SG) hand(s)’
c.	kɔ́tsɛ́	‘his/her hand(s)’
d.	ɔtsɛ́ka	‘our(EXCL) hands’
e.	əlɔ́tsɛ́	‘our(INCL) hands’
f.	ɔtsɛ́kɐ	‘your(PL) hands’
g.	abádhíɔ́tsɛ́	‘their hands’
(2) a.	dàdu	‘my tongue’
b.	dànɐ	‘your(SG) tongue’
c.	kàdà	‘his/her tongue’
d.	dàka	‘our(EXCL) tongues’
e.	əlɛ̀dà	‘our(INCL) tongues’
f.	dàkɐ	‘your(PL) tongues’
g.	abádhídà	‘their tongues’
(3) a.	avhèdu	‘my sister’

- | | | |
|----|--------------|--------------------|
| b. | avhènũ | 'your(SG) sister' |
| c. | kāvhènà | 'his/her sister' |
| d. | avhèkà | 'our(EXCL) sister' |
| e. | àlāvhènà | 'our(INCL) sister' |
| f. | avhèkũ | 'your(PL) sister' |
| g. | abádhiāvhenà | 'their sister' |

3. **Swahili (Narrow Bantu, Tanzania and eastern Africa)²⁵

Analyse the following data and provide a table describing the morphemes, following the procedure explained in this chapter (section 3). Group together lexical roots by word type and group inflectional affixes according to their meaning. Include a chart to show affix ordering.

- | | | |
|------|-------------|--------------------------|
| (1) | walipata. | 'They got.' |
| (2) | nilipiga. | 'I hit (PST).' |
| (3) | nilikipata. | 'I got it.' |
| (4) | ulikipata. | 'You(SG) got it.' |
| (5) | nitakipata. | 'I will get it.' |
| (6) | ulipiga. | 'You(SG) hit (PST).' |
| (7) | watakipiga. | 'They will hit it.' |
| (8) | niliwapiga. | 'I hit them (PST).' |
| (9) | walikipiga. | 'They hit it (PST).' |
| (10) | utatupiga. | 'You(SG) will hit us.' |
| (11) | ulipata. | 'You(SG) got.' |
| (12) | watakupiga. | 'They will hit you(SG).' |
| (13) | nitakupata. | 'I will get you(SG).' |
| (14) | ninakujua. | 'I know you(SG).' |
| (15) | anasoma. | 'S/he reads.' |
| (16) | ulituuliza. | 'You(SG) asked us.' |
| (17) | tulikuona. | 'We saw you(SG).' |
| (18) | anamjua. | 'S/he knows him/her.' |
| (19) | anakujua. | 'S/he knows you(SG).' |
| (20) | walisoma. | 'They read (PST).' |

4. *Lengo (Oceanic, Solomon Islands)²⁶

The data given here shows a derivational process in Lengo. Describe in detail the process that occurs and the changes in word type. Pay attention to differences between (1–4) and (5–6).

- | | | | |
|-----|----|---------|--|
| (1) | a. | digi | 'something is closed' |
| | b. | didigi | 'door' |
| (2) | a. | tughu | 'someone changes' |
| | b. | tutughu | 'change (monetary)' |
| (3) | a. | dea | 'someone goes' |
| | b. | dedea | 'programme, event, proceedings, goings on' |
| (4) | a. | rongo | 'someone hears' |
| | b. | rorongo | 'news' |

- (5) a. vothe 'paddle'
 b. vovothe 'someone paddles a canoe'
- (6) a. vugho 'fishing net'
 b. vuvugho 'someone nets fish'

5. **Mualang (Malayo-Polynesian, Indonesia)²⁷

The following data illustrate a sequence of two morpho-phonemic processes in going from the (a) words to the (b) words. A prefix turns an adjective into a noun, and the other process adds to the degree of the meaning. Determine and describe the processes involved and the order in which they occur.

- (1) a. bəsay 'big'
 b. pəməsayməsay 'very big size'
- (2) a. paŋay 'long'
 b. pəmaŋaymaŋay 'very great length'
- (3) a. tiŋ'i? 'high, tall'
 b. pəniŋ'i?niŋ'i? 'very great height'
- (4) a. jawuh 'far'
 b. pəŋawuhŋawuh 'very great distance'

6. **Chamorro (Malayo-Polynesian, Guam)²⁸

Examine the effect of adding the prefix *man-* in the following data. Describe the morpho-phonemic processes that occur and the order in which they must take place.

- (1) man + bende = mambende 'to sell'
 (2) man + godde = manggodde 'to tie'
 (3) man + ngangas = mangngangas 'to chew'
 (4) man + daggao = mandaggao 'to throw'
 (5) man + po'lo = mamo'lo 'to put'
 (6) man + taña' = manaña' 'to taste'
 (7) man + kati = mangati 'to cry out'
 (8) man + fa'om = mama'om 'to clobber'
 (9) man + hanao = mananao 'to go'
 (10) man + na'i = manna'i 'to give'

7. *Arabic (Semitic, Middle East and North Africa)²⁹

Compare the singular, plural and diminutive forms of the following words. Which of the processes described in section 5 best describes the data? Give as much detail as you can about the changes that occur.

- | | SINGULAR | PLURAL | DIMINUTIVE | |
|--------|----------|----------|------------|-------------|
| (1) a. | ʕinab | ʕanaab | ʕunayb | 'grape' |
| b. | ħukm | ħakaam | ħukaym | 'judgement' |
| c. | jundub | janaadib | junaydib | 'locust' |
| d. | sulṭaan | salaṭiin | sulaytiin | 'sultan' |

10. **Text-based exercise: Mangghuer (Mongolic, China)³²

These are the first few lines of a Mangghuer folktale. Examine the data and answer the following questions. Do not worry if you do not understand what all the glosses mean. At this point we are interested in identifying patterns; we will examine what the different labels mean in later chapters.

Describe the types of morphological processes you find in the data: what types of affix / clitic do you see? What word types do the affixes and clitics attach to? What kinds of meaning do the affixes and clitics have? (Use the abbreviations list at the beginning of the book.) Also, what free grammatical morphemes do you notice in the data?

Make a table that shows just the noun and verb roots, as well as the clitics and the affixes. Be sure to include glosses and the line number where the examples occur.

- (1) Taolai=ni Jianjia.
 rabbit=GEN trick
 ‘Rabbit’s Trick.’
- (2) Tiker shijie=du bai,
 past time=DAT EMPH
 ‘In the past,’
- (3) yi-ge chuna, yi-ge yehu, yi-ge taolai bang bai.
 one-CLF wolf one-CLF fox one-CLF rabbit OBJV.COP EMPH
 ‘(there were) a wolf, a fox, (and) a rabbit.’
- (4) Du gesi yi-ge wula diere sao-ser bang ma,
 now 3PL one-CLF mountain on sit-PROG OBJV.COP PTCP
 ‘Now they were sitting on a mountain,’
- (5) jianjian=ni gedie-si luosi-ji lai ber-lang bai.
 each.one=GEN belly-PL be.hungry-IPFV NEG become-OBJV.IPFV EMPH
 ‘(and) each one’s belly was (so) hungry (that he) couldn’t stand it.’

3 The structure of sentences

KEY TOPICS

- Constituency and hierarchy
- Universal and non-universal aspects of syntactic structure
- Non-verbal predicates
- Operators
- Head-marking constructions

1 Introduction to syntactic structure

In this chapter we will introduce syntax, the study of how words pattern together in sentences.

So far we have concentrated on the structure of words: morphology. Syntax is the study of the function of words and how they are arranged into groups (**CONSTITUENTS**) and sentences. We are interested firstly in the types of words we find and their linear order. From there we can look at the structural relationships between constituents; in other words, which constituents are dependent on others. We will also study the hierarchical relationships between constituents; in other words, how units sit inside other units.

To illustrate constituent structure, take a look at the examples in (1) and (2). They are both ambiguous.

- (1) the tiny elephant hunter
(2) Parking attendant attacks rocket.

Both (1) and (2) illustrate **STRUCTURAL AMBIGUITY**. They have two meanings because we can ‘chop them up’ in different ways, assigning different structures and forming different constituents. (3) and (4) show one way of representing the two meanings and the constituents involved.

Explain the two meanings of (1) and (2).

- (3) the tiny elephant hunter
(a) the [tiny elephant] hunter (The elephant is tiny)
(b) the tiny [elephant hunter] (The hunter is tiny)

(4) Parking attendant attacks rocket.

- (a) [Parking attendant] attacks rocket. (Verb = attacks)
- (b) [Parking attendant attacks] rocket. (Verb = rocket)

In this section we will look at methods of locating constituents and begin to describe their internal structure and relationship to each other. Before we do that, we will look more closely at individual words, discovering strategies for determining which words belong together in classes.

1.1 Word classes

We may have learned that the words *dogs* and *cat* are nouns because they name a person or thing, and that *chase* is a verb because it describes an action (a ‘doing’ word). In this section, we will look more precisely at what we mean by ‘noun’, ‘verb’ and other word classes, and how this ties in to analysing language structure.

As mentioned above, we may have learned that a ‘noun’ is a person or a thing and a ‘verb’ describes an action. We soon find these definitions are inadequate for many nouns such as *honesty* and *love* and verbs such as *feel* or *sense*. However, these basic definitions tend to describe prototypical nouns and verbs, and this, as we will see, is a useful notion.

There are two main places to look for syntactic evidence of a word class: morphological patterning and syntactic distribution; we will look at each in turn. Once we find a class, we may want to give it an appropriate label (noun, verb, etc.) based on the kinds of semantic meaning it expresses (Dixon 2004: 3).

1.1.1 Morphological patterning

Words from the same class will often share patterns of inflectional morphology. If we find morphological patterns among a group of words, we can use those patterns as tests to see if other words belong in the same class. For example, in the set of words in (5) we see two patterns of inflectional morphology, suggesting (5a) and (b) belong to one set, and (c) and (d) to another.

- (5) (a) rich rich-er rich-est *rich-s
- (b) poor poor-er poor-est *poor-s
- (c) tree *tree-er *tree-est tree-s
- (d) hut *hut-er *hut-est hut-s

In (5a) and (b), we see comparative forms marked with *-er* and superlative forms marked by *-est*. In (5c) and (d) we see plural *-s* marking. We can use the meanings of the words and the inflectional morphemes to help label the classes as adjective (*rich, poor*) and noun (*tree, hut*).

Of course, there can be complications to this procedure. For example, although **richs* in (5a) is not an English word, *riches* is; however, *riches* is then classed

as a noun because it takes morphology associated with prototypical nouns like *tree* and *hut*, and also because it is being used to refer to something rather than describing an attribute. It is important to supplement this test with more evidence for word class, and we will look at a second set of criteria in the next section.

1.1.2 Distribution

Along with morphological patterning, we can use the **DISTRIBUTION** of a word to help determine its word class; in other words, looking at where in a sentence it occurs and what other words occur with it in a phrase.

Recall that in chapter 2 you were able to assign inflectional morphology to *bleek* and *pleep* in the examples repeated as (6) and (7). You did this largely on the basis of the distribution of the missing forms, making judgements about the word class of the missing word based on where it appears in the sentence and the words that occur around it.

- (6) (a) Henry only has one bleek.
 (b) Sally, on the other hand, has two bleeks.
- (7) (a) Today, Maria is happily pleeping.
 (b) Yesterday, Maria happily pleeped.

In (6b), the word *bleeks* is preceded by a numeral *two* and the sequence of words *two bleeks* follows a verb *has*. These suggest that *bleeks* is a noun. In (7b), on the other hand, *pleeped* follows a proper noun *Maria* and an adverb *happily*.

We can also look at the word order within phrases as evidence for word classes. We will see in section 1.2.2 that nouns head noun phrases. In the data in (8) from Faroese (Germanic, Faroe Islands), we see examples of the distribution of the noun *bátur* ‘boat’; it is a word that heads a phrase that denotes an entity. In terms of its distribution, the evidence in (8) shows it can occur after a determiner and an optional adjective, and with the possibility of a definite determiner suffix (Barnes 1994: 206).¹

- (8) (a) ein stórir bátur
 INDF.ART big boat
 ‘a big boat’
- (b) ein bátur
 INDF.ART boat
 ‘a boat’
- (c) tann gamli bátur-in
 DEF.ART old boat-DEF
 ‘the old boat’

We could then place other words in these syntactic contexts to see if they are also nouns. The distribution and morphological patterning of *mann* and

kettlingur in (9), for example, suggest that these are also nouns (Lockwood 1977: 106, 109).

- (9) (a) ein gamlan mann
 INDF.ART old man
 ‘an old man’
- (b) tann svarti kettlingur-in
 DEF.ART black kitten-DEF
 ‘the black kitten’

The class of a form may vary in different syntactic contexts. In (10), only the wider context tells us that *break* is a noun in (a) and a verb in (b), and in (11) a wider context would be needed to disambiguate the two meanings of the sequence of words in Maonan (Tai-Kadai, China) (Lu 2008: 170).

- (10) (a) There was a break in the music.
 (b) Eggs break easily.
- (11) nɔk⁸ vin³
 bird fly
 ‘flying bird’ / ‘Birds fly.’

In this section we have seen that determining if a word is a noun or verb (or in some other word class) is a question of looking at its inflectional morphology and syntactic distribution. For many languages, it is important to have an understanding of the patterns and behaviour of different word classes, though a number of complications can arise. As we have seen in (10), for example, a word (or root) can belong to a number of different word classes. In addition, a word can have several functions, as we see in (12): in each case *bean* is a noun but it has a slightly different function in each sentence.

- (12) (a) That thing is a bean.
 (b) My bean plants are growing.
 (c) Beans are my favourite vegetable.

In section 1.2 we will look further at methods for finding constituents, and we will begin to concentrate more on the function of a word, its job in the sentence, rather than its syntactic ‘class’ in section 1.3.

1.2 Constituent structure

1.2.1 Finding constituents

Look at the English sentence in (13). As speakers of English, we can easily tell which words in this sequence of nine words form groups. We know that certain groups of words form semantic units; they may refer to participants in an event or its location, for example.

- (13) The big dogs chased the cat in the street.

Furthermore, the same groups of words pattern together in different syntactic environments. In this section we will look at the different kinds of syntactic tests we can use to find constituents in languages we are not familiar with. Begin by filling in the blanks in the sentences in (14b) and (c).

- (14) (a) The big dogs chased the cat in the street.
 (b) It was _____ that chased the cat in the street.
 (c) _____ was where the big dogs chased the cat.

Once complete, sentences (14b) and (c) express essentially the same thing as (14a), just with a different syntactic structure. We can see that the words which group together to fill in the gaps are *the big dogs* in (14b) and *in the street* in (14c). The test illustrated in (14b) and (c) is often called **MOVEMENT** because the constituents appear to have ‘moved’ to a different place in the sentence.

We can see this illustrated again in the Nupe (Atlantic-Congo, Nigeria) data in (15) (Kandybowicz 2008: 83). Sentence (15a) presents the normal order of words in Nupe, while in sentences (15b) and (c) particular parts of the sentence are being focused or emphasized and appear at the beginning of the sentence. (The focused element is in small capitals in the free translation.)

- (15) (a) Musa à ba nakàn sasi èsun làzi yin.
 Musa FUT cut meat some tomorrow morning PTCL
 ‘Musa will cut some meat tomorrow morning.’
 (b) [nakàn sasi] Musa à ba èsun làzi yin o.
 meat some Musa FUT cut tomorrow morning PTCL FOC
 ‘Musa will cut SOME MEAT tomorrow morning.’
 (c) [èsun làzi] Musa à ba nakàn sasi yin o.
 tomorrow morning Musa FUT cut meat some PTCL FOC
 ‘Musa will cut some meat TOMORROW MORNING.’

In (15b) and (c) the groups of words *nakàn sasi* and *èsun làzi* appear at the beginning of the sentence, and the fact that these two sets of words act as a group suggests they both form constituents.

The second main test for finding constituents involves **SUBSTITUTION**: we can try replacing groups of words with pronouns in the same position in the sentence.

- (16) (a) [The big dogs] chased [the cat] [in the street].
 (b) [They] chased [it] [there].

In (16) we can see which words or phrases are **MUTUALLY SUBSTITUTABLE**; in other words, which words or phrases can replace each other, and we see evidence that *the big dogs*, *the cat* and *in the street* are constituent **PHRASES**. We will examine the internal structure of phrases in the next section.

Another example of substitution is given in the Afrikaans (Germanic, South Africa) data in (17) where we see that in (17b) the pronoun *dit* can replace the noun phrase *die tronk op Robbeneiland* (Donaldson 1993: 127).

- (17) (a) [Die tronk op Robbeneiland] is verskriklik oud.
 'The prison on Robben Island is terribly old.'
 (b) [Dit] is verskriklik oud.
 'It is terribly old.'

Other possible ways to test for constituency are illustrated with English examples in (18).

- (18) (a) [The big dogs] chased the cat in the street.
 (b) [Who] chased the cat in the street? [The big dogs.]
 (c) [The brown chihuahua and the white poodle] chased the cat in the street.
 (d) *[The big wholeheartedly dogs] chased the cat in the street.
 (e) [The big dogs] chased the cat wholeheartedly in the street.

In (18b), we see the constituent *the big dogs* replaced with a question word, and also as providing the answer to the question. In (18c) we have joined together (or **COORDINATED**) two constituents of the same type with *and*. Examples (18d) and (e) show that modifiers like adverbs (*wholeheartedly*) tend to be placed between constituent phrases rather than inside them.

1.2.2 The internal structure of constituents

When we looked at morphology, we examined the internal structure of words to analyse inflection and so on. For syntactic constituents, we need to analyse the order and category of the words that can or must appear within each type of phrase. For example, we saw in (18a) that English noun phrases often begin with a determiner, and this can be followed by an adjective and finally a noun.

Roughly speaking, the most important word in a phrase is its **HEAD** (and this gives the phrase its name). The other words in a phrase are called the **DEPENDENTS**. But how do we decide which word in a phrase is the head? One clue is that the head of a phrase determines many of the grammatical features of the phrase. In the English example in (19), the noun *cats* is plural and consequently the determiner *these* must also be plural (not the other way round).

- (19) [These cats] are making me sneeze.

The plurality of the noun *cats* also determines that the verb in the sentence be marked as plural, taking the form *are*.

Another characteristic of the head of a phrase is that it is more likely to be obligatory, as the examples in (20) show: it is possible to omit any words within the noun phrase *the three blind mice* except the head noun *mice*.

- (20) (a) [The three blind mice] lost their tails.
 (b) [The blind mice] lost their tails.
 (c) [The mice] lost their tails.
 (d) [Mice] lost their tails.
 (e) *[The three blind] lost their tails.

It is not always the case in languages that the parts of constituent phrases appear next to each other in the sentence. Look at the examples in (21) from Ukrainian (Slavic, Ukraine). The **CASE** marking on both the adjective *cikavu* ‘interesting’ and *knyžku* ‘book’ indicate that these are part of the same constituent in (21a), (b) and (c), even though they are not positioned alongside each other in (21b) and (c); in (22b) the constituent ‘many nice books’ is even split into three parts (Féry, Paslawska and Fanselow 2007: 2, 4).

- (21) (a) Marija pročytala [cikavu knyžku].
 Mary has.read interesting-ACC.F book.ACC.F
 ‘Mary has read an interesting book.’
- (b) [Cikavu] Marija pročytala [knyžku].
 interesting-ACC.F Mary has.read book-ACC.F
 ‘Mary has read an interesting book.’
- (c) [Knyžku] Marija pročytala [cikavu].
 book-ACC.F Mary has.read interesting-ACC.F
 ‘Mary has read an interesting book.’
- (22) (a) Vin pročytav [bahato harnyx knyžok].
 he has.read many-ACC nice-GEN books-GEN
 ‘He has read many nice books.’
- (b) [Knyžok] vin [bahato] pročytav [harnyx].
 books-GEN he many-ACC has.read nice-GEN
 ‘He has read many nice books.’

‘Split’ or ‘discontinuous’ constituents such as these have traditionally been problematic for syntactic analysis. In chapter 6 we will see a straightforward way of analysing these split constituents, and we will look at reasons for the variations in word order in chapter 8.

Another type of phrase is the **PREPOSITIONAL PHRASE** such as *in the street*. In these phrases, the preposition (*in*) is the head and it is followed by a noun phrase (*the street*). These are simple examples of hierarchy in syntactic structure: one unit contains another, as illustrated in (23).

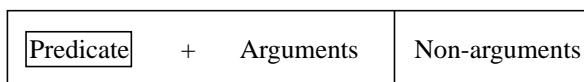
- (23) [in_p [the street]_{NP}]_{PP}

We will examine the internal structure of phrases further in chapter 6.

Once we have established where our constituents begin and end, we need to look further at their function in the sentence. This is the topic of section 1.3.

1.3 The semantic basis for syntactic structure

Approaches to analysing syntax differ in terms of how they explain the behaviour of language and the patterns we find. Some approaches to grammar look primarily at how the elements of a sentence are ordered alongside each other. The task of the analysis is then to establish the rules and principles that

Figure 3.1 *Universal semantic elements*

can account for all the grammatical sentences of the language and exclude the ungrammatical ones.

Here I take a different, more holistic approach, which views language primarily as communication. We will incorporate the meaning and function of language in our grammatical analysis to give a more rounded picture and to allow us to account more intuitively for structures in non-Indo-European languages.

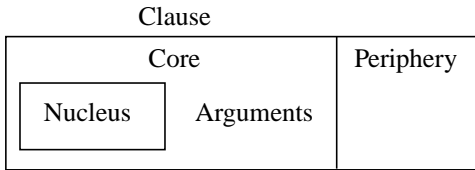
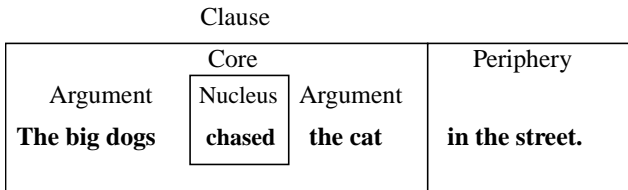
Using an appropriate amount of theory gives us a ‘meta-language’ – a language to talk about language, in the same way that the International Phonetic Alphabet is a symbolic system for representing sounds in all languages. A holistic theory of language structure can help us not only to describe language, but also to explain and understand it more fully. We will follow Van Valin and LaPolla (1997: 22) in requiring of our theory the standards described in (24).

- (24) (a) A theory of syntax should capture all of the universal features of clauses without imposing features on languages that show no evidence for them.
 (b) A theory should represent comparable structures in different languages in comparable ways.

The meaning and function of words will form the basis for the way we represent syntactic structure, following Role and Reference Grammar (Van Valin 2005). We will see that we find certain semantic categories in all languages but that languages express these categories differently in their syntax. If we base our syntactic representation on the semantics of a sentence, we can provide a level syntactic ‘playing field’ for all languages, without adding complications to languages that are different from Indo-European languages like English.

The fundamental semantic distinction found in all languages is between predicates, their arguments, and non-argument elements. Note that this is not saying that all languages have a distinction between nouns and verbs, but is instead focusing on semantic (meaning-based) categories. The **PREDICATE** describes the event or situation and is often (but not always) expressed by a verb. The **ARGUMENTS** represent the participants in that action or event; these are therefore **REFERRING EXPRESSIONS** that are often (but not always) expressed by noun phrases. Other non-argument elements may tell us something about when or where the event or situation occurs. We can represent these elements as in Figure 3.1.

In Figure 3.1 we see semantic elements. The main *syntactic* constituents that correspond to them are the **NUCLEUS**, which contains the predicate, the **CORE**, which contains the nucleus and its arguments, and a **PERIPHERY**, which contains non-arguments, phrases and words that modify the whole core (for example, by placing them in space or time). Compare Figure 3.1 with Figure 3.2 to see the mirroring between the semantic and syntactic units.

Figure 3.2 *Universal syntactic elements*Figure 3.3 *Syntactic elements of sentence 25*

As an example of how this parallel works, let us look again at the example in (16a), repeated here as (25).

(25) The big dogs chased the cat in the street.

The first thing to do is to locate the predicate. The semantic predicate in (25) is the verb *chased* and this will form the syntactic nucleus of the sentence. The arguments of *chased* are *The big dogs* and *the cat*. Altogether, these three constituents form the core of the sentence. The optional locative prepositional phrase *in the street*, which places the event in space, is in the syntactic periphery. This process is represented in [Figure 3.3](#).

Notice that this analysis concentrates on function rather than word class (noun, verb, etc.). We will more often speak of arguments and predicates than nouns and verbs because we base our syntactic structures on the meaning and function associated with each word and constituent. In each sentence in (26) from Amele (Trans-New Guinea, Papua New Guinea), the element functioning as the argument is in square brackets (John Roberts p.c.).

- (26) (a) [Dana] hona.
man coming
'A man is coming.'
- (b) [Dana ben] hona.
man big coming
'A big man is coming.'
- (c) [Ben] hona.
big coming
'A big (thing/person) is coming.'

In (26a) and (b) a noun phrase functions as the single argument of the verb *hona* ‘coming’. We see that a word used to modify a noun (as in 26b) can also function as an argument, as in (26c).

Nambiquara (Amazonian, Brazil) provides another example of a non-nominal argument in (27b). The two sentences in (27) follow each other in a story.

- (27) (a) $hi^1na^2su^2$ [$wa^3lin^3-su^3-nti^2$] $\tilde{i}^3-a^1-ra^2$.
 today manioc-CLF(BONE.LIKE)-OBS.REC.GIV plant-1SG-PFV
 ‘Today I planted the manioc roots that we both saw earlier in the day.’
- (b) ʔyān^1ta^1 [$su^3-ha^1li^1$ $ot^3s\text{ʔ}\tilde{a}^3$] $\tilde{a}^3-si^1na^1-ra^2$.
 but CLF(BONE.LIKE)-few extra leave-1SG.EXCL-PFV
 ‘But we left behind a few extra (roots).’

In the second sentence in (27b) we see a classifier morpheme su^3 standing for a referent that has been established with a noun phrase ($wa^3lin^3su^3nti^2$) in the first sentence in the sequence. An element that normally modifies a noun is instead representing a referent, like a pronoun would (Lowe 1999: 290). (Notice too in (27a) how many English words it takes to convey what Nambiquara takes three words to achieve.)

Another reason to focus on function is that it may be difficult to determine the ‘basic’ word type of a root. In Papuan Sulka (East Papuan, Papua New Guinea), the root *kha* ‘branch’ can function as a noun (28a) or a verb (28b) (Reesink 2005: 163).

- (28) (a) a ho ka kha
 SG tree 3SG.POSS branch
 ‘a/the branch of a tree’ (*kha* as noun)
- (b) a ho t=a kha
 SG tree 3SG=IPFV branch
 ‘The tree branches.’ (*kha* as verb)

In section 1.5 we will look at non-verbal predicates as another example of the distinction between form and function.

1.4 Representing syntactic structure

A common way to represent the syntactic structure of sentences is to draw **TREE DIAGRAMS**. This enables us to show the internal structure of constituents and the relationship between them in a visual way.

In such a tree diagram, the branches of the tree end in **NODES**. Each node is labelled (e.g. NP, PP, ADV). Nodes that are on the same level and linked to a higher node are called sisters. The higher node they link up to is the mother and they are daughters.

We can transfer Figure 3.3 to the tree diagram in Figure 3.4. This is the **CONSTITUENT REPRESENTATION** of the sentence because it shows the placement and hierarchical relationship of the constituent units.² The periphery is connected

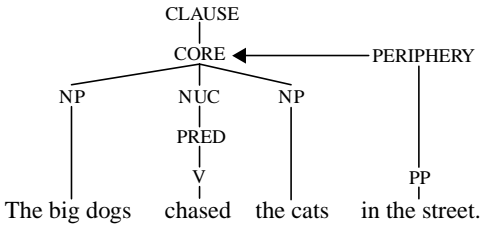


Figure 3.4 *Constituent representation of sentence 25*

to the core with an arrow to show it is an optional element outside the core and to show that it modifies the core (in this case, by describing a location).

We do not need to label the noun phrases as arguments since that is given by the fact they are daughters of the core node. They are labelled ‘NP’ because in this case (and in most cases) arguments are represented by noun phrases. However, if we have other elements functioning as arguments we can use the label **RP** which stands for **REFERENCE PHRASE** (Van Valin 2008). We saw examples of other argument types in Amele in (26) and in Nambiquara in (27).³

Since syntactic constituents are semantically motivated, languages with very different word orders have constituent representations that look quite similar to the English tree (when the semantic constituents are the same). To illustrate this, take a look at the examples from Jiwarli (Pama-Nyungan, Australia) in (29) (Austin 2001: 6–7). Jiwarli allows a wide range of word orders, some of which are illustrated in the examples. It helps to underline the predicate and draw square brackets around the arguments, as in (29a). (Ignore the other elements for now.)

Try drawing the tree for the Amele sentence in (26c), using the ‘RP’ notation.

- (29) (a) [Pulhapayaralu] kanyanyja [pirru ngunha].
 Pulhapayara carried meat that
 ‘Pulhapayara carried that meat.’
- (b) Warri nhanyara ngathanha ngunhipa kajalpulu.
 not will.see me there emu
 ‘The emu will not see me there.’
- (c) Pijinha manthartanha wankarlarninyja ngulupa martarulu.
 many man cured that gum
 ‘That gum has cured many people.’
- (d) Jimpingkarninyja ngathathu wirtanyjarrija.
 carried I boys
 ‘I carried the boys (on my back).’

The constituent representation for (29b) is given in Figure 3.5. As you can see, lines in the ‘tree’ may cross if necessary.

Each time, the various constituents are represented according to their function and meaning, and no constituent order is necessarily more ‘basic’ or primary than another.

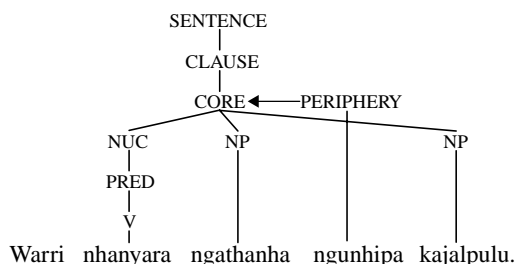


Figure 3.5 *Constituent representation of sentence 29 (b)*

1.5 Non-verbal predicates

The nucleus in a core contains the predicate. The predicate describes the action or situation and is often a verb, but not always. In the English examples in (30), we see an adjective as the predicate in (30a) (an **ATTRIBUTIVE** clause), a noun phrase as predicate in (30b) (a **NOMINAL PREDICATE**) and a prepositional phrase as predicate in (30c). It is important to see that in (30b) we have a noun phrase *a pilot* (a determiner followed by a noun) that is not functioning as a referring expression: in other words, the noun phrase is not referring to a person (as an argument) but instead it describes an attribute (a predicative function).

- (30) (a) Jake is happy.
 (b) Monica is a pilot.
 (c) The money is under the bed.

Notice that while there is a verb in these sentences, this **COPULA VERB** *to be* is just a linking verb that carries tense; it does not carry the main meaning of the sentence in describing the event or situation. In (31) we see another example of a nominal predicate, *gaki* ‘monkey’, facilitated by a copula verb, this time from Desano (Eastern Tucanoan, Colombia and Brazil); in this case the copula verb appears clause finally (Miller 1999: 125).

- (31) bĩ?ĩ pągo gaki ă?rĩ-bō.
 2SG mother monkey be-3SG.F
 ‘Your mother is a monkey.’

Further evidence that the copula verb is not the predicate in sentences like these comes from languages which have **NON-VERBAL PREDICATES** without copula verbs. We see a nominal predicate in Russian (Slavic, Russia) in (32) and adjectival predicates in Luo (Eastern Sudanic, Kenya) in (33) (Tucker 1994: 245).

- (32) Mikhail vrač.
 Mikhail doctor-SBJ
 ‘Mikhail is a doctor.’

- (33) (a) kwac ra·c.
leopard bad
'The leopard is bad.'
- (b) pala bí^th.
knife sharp
'The knife is sharp.'

Languages may use a copula verb for some non-verbal predicates but not others, while other languages have different copula verbs for different non-verbal predicate types. Mangghuer (Mongolic, China), for example, has one copula verb for nominal predicates (34a), and one for all other non-verbal predicates (34c), as well as negative forms of each one, as in (34b) and (34d) (Slater 2003: 126–7).

- (34) (a) bi laoshi bi.
1SG teacher SUBV.COP
'I am a teacher.'
- (b) dangda niangjia gui!
1SG.DAT parental.home SUBV.NEG.COP
'I have no parents' home!' (*lit.* 'to me there is no parents' home')
- (c) gan saihang bang.
3SG beautiful OBJV.COP
'She's beautiful.'
- (d) gan wunduer (u)guang.
3SG tall OBJV.NEG.COP
'S/he's not tall.'

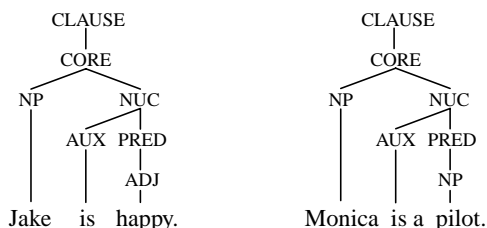
Dagbani (Atlantic-Congo, Ghana) also uses two copula verbs, one for descriptions of identity and one for locations (see 35a and b respectively).

- (35) (a) o nyɛ pay-a.
she be woman-SG.II
'She is a woman.'
- (b) o be du-u.
she be.at room-SG.III
'She is in the hut.'
- (c) o nyɛ zay' viɛl-li.
she be NOUN beautiful-SG.I
'She is (a) beautiful (one).'

In addition, adjectives cannot form non-verbal predicates by themselves; a 'dummy' noun *zay'* that means something like 'one' can be used with the adjective to form a noun phrase, which can then stand as a non-verbal predicate. This structure is illustrated in (35c) (Olowsky 2004: 139–40). Notice that the same copula verb is used for the nominal predicates in both (35a) and (35c).

The constituent representations for (30a) and (b) are given in Figure 3.6. The copula verb is marked as 'AUX' for auxiliary verb and is a daughter of the nucleus node.

Draw the constituent representations for the examples in (32–35).

Figure 3.6 *Constituent representations of non-verbal predicates*

1.5.1 Other non-verbal predicates

There are a number of other non-verbal predicate constructions, each of which serves a slightly different function. Examples from English are given in (36).

- (36) (a) Clark Kent is Superman. EQUATIONAL
 (b) The winner is Rosie. SPECIFICATIONAL
 (c) There was once a tiny blue butterfly. EXISTENTIAL

The **EQUATIONAL** sentence in (36a) communicates that the referents of the two noun phrases *Clark Kent* and *Superman* are one and the same person. In (36b), the noun phrase *Rosie* specifies a more complete description of the identity of the person described as *the winner*: this is a **SPECIFICATIONAL** function. In (36c), the **EXISTENTIAL** sentence sets up the existence of a tiny blue butterfly (probably so that it can be talked about in the ensuing conversation).⁴

We have seen that in English (and in many other languages) these functions are carried out by constructions involving a copula verb and non-verbal predicates. However, many languages use a verbal predicate for existential functions. In Sinhala (Indo-Iranian, Sri Lanka) there are different existential predicates for animate and inanimate arguments, as illustrated by the different underlined forms in (37a) and (b) (Gair 2007: 874).

- (37) (a) laṅkaawe rilaw huṅgak innəwa.
 Sri Lanka monkey-PL many be(AN)-PRS
 ‘There are many (macaque) monkeys in Sri Lanka.’
 (b) mee iskoole sinhələ panti tunak tīyenəwa.
 this school-LOC Sinhala class-PL three-INDF be(INAN)-PRS
 ‘There are three Sinhala classes in this school.’

Tukang Besi (Malayo-Polynesian, Indonesia) also has an existential predicate *ane* as illustrated in (38a). We can tell that *ane* is a predicate in this data because it can carry verbal agreement markers like the *-’e* in (38a).

- (38) (a) Ane-’e na po’o korou i Tindoi.
 exist-3OBJ NOM mango many OBL Tindoi
 ‘There are many mangoes in Tindoi.’

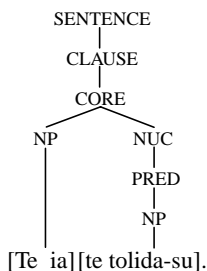


Figure 3.7 *Constituent representation of specificational sentence 38 (b)*

- (b) [Te ia] [te tolida-su].
 CORE 3SG CORE cousin-1SG.POSS
 ‘She is my cousin.’

Example (38b) shows that *Tukang Besi* also has a non-verbal predicate construction with two noun phrases: depending on the context, (38b) could have either a specificational or an equational interpretation (Donohue 1999: 57–8).

In the English and *Tukang Besi* data, we see that specificational and equational functions are carried out by sentences without semantic predicates. However, for specificational sentences in particular, one referring expression presents new identifying information. This ‘new’ referring expression acts a bit like a predicate in carrying out the main communicative function of the sentence. In a specificational sentence, then, we have an unusual structure where the referring expression that presents the new information sits in the nucleus slot. Thus, a possible analysis of (38b), in answer to *Who is she?*, is shown in Figure 3.7.⁵

The constructions we have looked at in this section perform a function that is somewhat different from those in (30)–(35). The ones illustrated in this section provide more information regarding the identity of a referent, rather than describing a semantic property. We will return to these constructions in chapter 8.

1.6 Templates

As we have seen, the semantic principles behind the constituent representation of sentences are universal, but languages vary in how they express meanings in their syntax. We have seen basic sentence patterns emerging in languages that typify the way they structure their syntax. These basic sentence patterns are known as **SYNTACTIC TEMPLATES** and together form the syntactic template inventory of a language. Each template can be filled with lexical and grammatical material for a particular utterance. These templates can also be combined to form more complex sentences.

No one template need be more basic than the others (although some may be more common). Speakers simply choose the syntactic template that fits best with the meaning they are trying to convey.

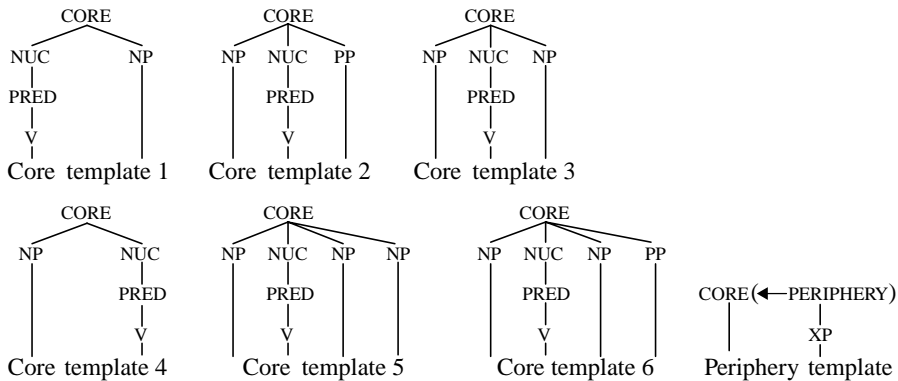


Figure 3.8 *Syntactic core and periphery templates for English*

Let us look at some examples. In Figure 3.8, we have a selection of the core templates of English, along with the periphery template (with brackets to show that it is an optional addition to each core template).⁶

Think of example sentences that use each of the core templates in Figure 3.8.

Section summary

In this section you have learned:

- to identify and categorize syntactic constituents,
- to understand the semantic basis for syntactic structure,
- to draw syntactic tree diagrams.
- **KEY TERMS:** constituent, phrase, head, dependent, word class, morphological patterns, distribution, predicate, argument, referring expression, tree diagrams, core, nucleus, periphery, copula, syntactic template.
- **EXERCISES:** A1, A2, B1, B2, B3, B4, B5

2 Operators

So far in our constituent representations we have only provided the structure for predicates, arguments and non-argument constituents. We ignored certain other words and morphemes in the sentences, such as the morphemes and meanings underlined in the sentences in (39).

- (39) (a) What did Robin hit yesterday?
 (b) ŋa²¹² wo³¹ me⁵⁵ mau³³ ʔa⁵⁵? Dong (Tai-Kadai, China)⁷
 2SG know 3SG Q
 ‘Do you know him?’

- (c) arroz 20 pesos waha-ki-yo-ro. Desano (Eastern Tucanoan, Colombia)⁸
 rice 20 pesos pay-VB-HSY-N3
 ‘Rice costs 20 pesos (I was told).’
- (d) kété ?ád-i-n. Dime (Omotoc, Ethiopia)⁹
 3PL.SBJ come-PFV-3
 ‘They came.’

The underlined elements in the examples in (39) represent different kinds of grammatical morphemes. In (39a) we have the auxiliary verb *did*. In (39b) there is a clause-final marker ?á⁵⁵, which indicates in Dong that the sentence is a question. In the example from Desano in (39c) we see a suffix *-yo* glossed ‘hearsay’. Finally in (39d), we have the morpheme *-i* that indicates perfective aspect in Dime.

Despite their different forms as affixes, particles and auxiliary verbs, all these morphemes have similar functions in providing grammatical information, affecting our interpretation of the predicate and the sentence as a whole. In the case of the sentences in (39), we get information about the time of the event, about the type of sentence (statement, question, etc.), and about how speakers know the information they are conveying. These are examples from a closed set of morphemes that modify the basic meaning of the predicate, the core or the whole clause, and they are called **OPERATORS**. We will look at operators in more detail in this section, grouping them according to the level of the clause they modify (nucleus, core or clause). We are interested in when these meanings are expressed by morpho-syntactic forms (rather than by context, for example).

The only operators which are universal, that is, that occur in every language, are negation and illocutionary force (see section 2.2.4). Every language must be able to negate, and to make statements, ask questions, give commands, etc. None of the other operators are universal.

We will cover quite a bit of new terminology in this section, but many of the concepts themselves will be already known to you. To illustrate the different operator levels, we will begin with a familiar concept: negation.

2.1 Negation

Negation is the only operator that can modify all three levels of the clause: nucleus, core and clause, as the examples in (40) illustrate.

- (40) (a) Maria is happy. / Maria is unhappy. NUCLEAR NEGATION
 (b) Jake didn’t give Maria roses. (He gave her daisies.) CORE NEGATION
 (c) Jake didn’t cook dinner. (It didn’t happen.) CLAUSE NEGATION

In (40a), the derivational morpheme *un-* makes the meaning of *happy* into its opposite, giving the predicate a negative meaning.¹⁰ The morpheme only affects

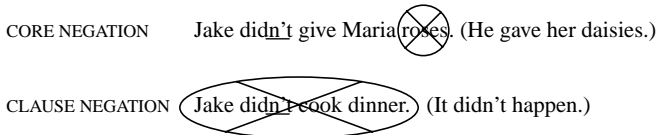


Figure 3.9 *The scope of core and clausal negation*

the basic meaning of the predicate through derivation, not the participants or the clause as a whole, and so is an example of nuclear negation.

The difference between core-level and clause-level negation is difficult to illustrate with English because they are expressed with the same form: *not*. Core-level negation (also known as **INTERNAL** or narrow-scope negation) negates one constituent. In (41a), for example, *roses* is negated as a participant in the event. This type of negation can often be paraphrased with a **FOCUS CONSTRUCTION**, such as the **CLEFT CONSTRUCTION** in (41b). (We examine focus constructions further in chapter 8.)

- (41) (a) Jake didn't give Maria roses. (He gave her daisies.)
 (b) It wasn't roses that Jake gave Maria. (It was daisies.)

With clause-level (**EXTERNAL**, or wide-scope) negation, on the other hand, the whole **PROPOSITION** is negated, and in English it can be paraphrased (somewhat artificially) with *It is not the case that...*, as we see in (42b). The sentence does not merely negate the involvement of one of the participants, but declares that the whole event did not take place.

- (42) (a) Jake didn't cook dinner.
 (b) It is not the case that Jake cooked dinner.

We can see the difference represented visually in Figure 3.9.

Unlike English, some languages express internal and external negation differently. Tondi Songway Kiini (Songhai, Mali) is one such language. In (43b), the negative form of the imperfective marker indicates core-level negation. In (43c), on the other hand, the negative element η^{\square} *kí* literally means 'it is not (the case that)' and negates the whole proposition (Heath 2005: 169, 213).

- (43) (a) à w kóy.
 3SG.S IPFV go
 'He will go.'
- (b) ày sí[□] hám-5: wⁿǎ.
 1SG.S IPFV.NEG meat-DEF.SG eat
 'I will not eat meat.'
- (c) η^{\square} kí ní: w kóy.
 NEG be 2SG.S IPFV go
 'It's not the case that you will go.'

Negation is often expressed in English with the particle morpheme *not*. The variant form *n't* is an allomorph. Negative sentences can also be formed with negative quantifiers such as *nobody*, *nowhere* or with adverbs with an inherently negative meaning such as *never*.

Negation is commonly marked with a free word or particle, but there are other ways that languages mark negation. One strategy involves an affix on the verb: in the Armenian (Indo-European, Armenia) example in (44b), the verb carries the prefix *č-* which marks negation (Kozintseva 1995).¹¹

- (44) (a) de, es gnac-i.
well, I leave-AOR.1SG
'Well, I am gone.'
- (b) č-gnac-i.
NEG-leave-AOR.1SG
'I am not gone.'

Hill Madia (South-Central Dravidian, India) is an example of a language with a negative copula verb. It appears following various non-verbal predicate types, as shown in (45b–d) (Vaz 2005: 3).¹²

- (45) (a) Salmoni bera bød̥t̥øG mət̥øG.
Salmoni bera bød̥-t-øG mən̥-t-øG
Solomon big wisdom-BEL-3SG.M be-PST-3SG.M
'Solomon was someone of great wisdom.'
- (b) Nəna pəŋəyənən ilen.
Nəna pəŋəyøG-ən il-en
1SG champion-1SG not.be-1SG
'I am not a champion.'
- (c) Naɣpʊr vɛla jek ile.
Naɣpʊr vɛla jek il-ta
Nagpur much far not.be-3SG.NM
'Nagpur is not very far.'
- (d) Bəbəl lon iləG.
Bəbəl lon il-øG
dad house not.be-3SG.M
'Dad is not at home.'

We also saw examples of negative copula verbs in Mangghuer in (34).

As an operator, negation is unusual because it can operate at the nuclear, core or clause level. All other operators only operate at one level. We will look at the other operators in more detail in the next sections, beginning with clause-level operators.

2.2 Clause-level operators

The clause-level operators, as we might expect, modify the whole clause or whole sentence. They are the following:

STATUS, which includes external negation, epistemic modality, realis:irrealis

TENSE

EVIDENTIALS

ILLOCUTIONARY FORCE

Clause-level operators may situate the event or situation in time (tense), tell us how real or hypothetical the proposition is (**EPISTEMIC MODALITY**), indicate how the speaker came to have the information they are talking about (evidentials), or mark the type of **SPEECH ACT** as a statement, question etc. (illocutionary force). We will look at each of these clause-level operator types in turn.

2.2.1 Status

Status operators are all to do with how ‘real’ the proposition expressed by the clause is; in other words, its ‘status’ in reality. In fancy terms, they refer to the **EPISTEMOLOGICAL BASIS** of the proposition. Status is a cover term for external negation, epistemic modality and the realis:irrealis distinction. External negation has already been discussed in section 2.1.

2.2.1.1 Epistemic modality

There are two types of modality: epistemic modality, which operates at the clause level, and deontic modality, which is a core-level operator. English often uses the same words to express both types of modality but other languages may not, so it is important to distinguish them.

Epistemic modality has to do with the speaker’s assessment of the probability that the situation expressed by the clause will actually come to pass. In other words, it has to do with how committed the speaker is to the truth of the whole proposition, and it ranges from certainty to mere possibility, to outright negation. It has the whole clause as its **SCOPE** and hence is a clause-level operator. **DEONTIC MODALITY** is a core-level operator (see section 2.3.3) and has to do with permission, ability and obligation.

In (46) and (47) we see some examples from English that illustrate the two types of modality, and we can see that the modal form used is the same in each case. In this section we are primarily interested in epistemic modality but we will contrast epistemic and deontic modality here and again in section 2.3.3 in order to understand the distinction.

(46) Jake may come tomorrow.

- | | | |
|-----|---|--------------------|
| (a) | It is allowed/permissible for Jake to come. | DEONTIC MODALITY |
| (b) | It is possible that Jake might come. | EPISTEMIC MODALITY |

(47) Jake must win the race now.

- | | | |
|-----|--|--------------------|
| (a) | Jake is obliged to win, otherwise something bad will happen! | DEONTIC MODALITY |
| (b) | Everyone else is so far behind, it is certain he will win. | EPISTEMIC MODALITY |

The sentence in (46) is ambiguous: *may* can either mean the speaker is giving permission, or expressing the possibility that Jake will come. The epistemic

reading of *may* is the latter: the speaker expresses her assessment of the probability of the situation. The probability refers to the likelihood of the proposition as a whole so this operator is clause-level. In (47), we have another modal *must*, again with two possible readings. In the second epistemic modality reading, the speaker expresses relative certainty that Jake will win.

Epistemic and deontic modals also have different syntactic behaviour; we see this demonstrated by the grammaticality of the examples with deontic *can* in (48) and epistemic *might* in (49).

- (48) (a) Jake can juggle five flaming batons.
 (b) Jake is able to juggle five flaming batons.
 (c) *It is able for Jake to juggle five flaming batons.
- (49) (a) Jake might juggle six flaming batons.
 (b) *Jake is possible to juggle six flaming batons.
 (c) It is possible for Jake to juggle six flaming batons.

In the Kham language (Tibeto-Burman, Nepal), we find epistemic modality markers: there is a two-part suffix *-khe-ho*, illustrated in (50a), that indicates probability, expressing that a situation is extremely likely to occur. There is another suffix *-kya*, illustrated in (50b), that indicates that the situation is possible, among other scenarios (Watters 2002: 286–7).

- (50) (a) ao bəhl-e te ge-gətə:lai bəgəi-d-ya-si-khe-ho.
 this flood-ERG FOC 1PL-mill-OBJ sweep-NF-BEN-1PL-PFV.PROB-PROB
 ‘The flood has probably swept our mill away.’
- (b) u-hu-rih-zya-o achim ta-kya, pəhra:ti ta-kya.
 3S-come-PROS-CONT-NMLZ today be-PBL, tomorrow be-PBL
 ‘His coming might be today, [. . .] it might be tomorrow’

2.2.1.2 *Realis: irrealis*

The term **REALIS** is concerned with real (and necessary) events and its opposite **IRREALIS** with hypothetical, conditional, possible or imaginary events. In fact, these terms describe a continuum rather than a black and white situation and do not have as concrete a definition as tense and aspect. The realis/irrealis divide may be associated with certain verb aspects and tenses: subjunctive, future tense, hypothetical clauses and conditionals are all close to the irrealis end of the scale, for example. However, irrealis covers a very broad range of meaning and interpretation, and its use varies across languages. Even future events, which one might assume to be prototypical ‘irrealis’ events, are not always marked so across languages (de Haan 2006: 42).

There is a connection between realis and certainty, and between irrealis and possibility, so we can see it is closely connected with epistemic modality – hence realis/irrealis and epistemic modality are often collapsed under the more general category status, as clause-level operators, and that is what we will do from now on.

past, remembered past, intermediate past, recent past, near future, intermediate future and distant future (Jacobsen 1964).¹⁵

Tense can be expressed lexically (through suppletion), morphologically or with auxiliary verbs. English exhibits all three types: (51) illustrates morphological marking, (52b) illustrates the auxiliary verb *will* and the distinction between *is* and *was* is an example of lexically marked (suppleted) tense.

Certain languages do not mark tense morpho-syntactically at all; the interpretation of the utterance is left to be understood by the context, which may include time adverbs. Mualang (Malayo-Polynesian, Indonesia) is such a language, as example (54) illustrates (Tjia 2007: 193).

- (54) M'ih N-pakay apa?
 2SG.M ATV-eat what
 'What did you eat?' / 'What are you eating?' / 'What will you/are you going to eat?'

The verb does not carry any tense marking and as such, out of context, the sentence is ambiguous.

2.2.3 Evidentials

Evidentials have to do with the **SOURCE** of information on which the speaker bases what he is saying. In other words, they indicate *how* a speaker has learned the knowledge he is sharing. He might have witnessed something first-hand, for example, or be expressing something that is just hearsay (gossip). His information might have been deduced from evidence or be a matter of general knowledge. This is connected to, but different from, epistemic modality. Epistemic modality tells you *how much* certainty or evidence a speaker has for the proposition expressed by his utterance. Evidentiality markers express the *source* of the evidence.

We have a pair of examples with evidential morphemes in (55) from the M'ky language (Arawakan, Brazil).

- (55) (a) jamã-pju-si ka.
 give-3PL.U-2SG.A+PRS+VIS arrow
 'You(SG) just gave them (an) arrow (and I saw it).'
- (b) matosi manã-Ø-méhmĩ.
 monkey kill-3SG.U-2DU.A+PRS+NVIS
 'You two just killed (a) monkey (and I didn't see it).'

Notice that the second person subject markers *-si* and *-méhmĩ* also express whether the speaker did or did not see the described event (Montserrat and Dixon 2003: 239).¹⁶

The data in (56) is from Desano (Eastern Tucanoan, Colombia) and illustrates more evidential marker types.

- (56) (a) arroz 20 pesos waha-ki-yo-ro.
 rice 20 pesos pay-VB-HSY-N3
 ‘Rice costs 20 pesos (I was told).’
- (b) bĩ?ĩ youaro-ge a?hra-y-a.
 2s far-LOC come-ASSUM-N3
 ‘You have come a long way (it appears).’

We see a ‘hearsay’ morpheme *-yo* in (56a), used when the speaker obtained their information from another person. In (56b), an ‘assumed’ evidential suffix *-y* indicates that while the speaker did not see the event, they are assuming it occurred based on their general knowledge of the person or situation (Miller 1999: 65–8).

In languages that use them, which count for around a quarter of the world’s languages, evidentials are often obligatory elements of the sentence (Aikhenvald 2004: 1). The obligatory nature of evidentials is illustrated by the data in (57) from Shipibo-Konibo (Panoan, Peru).

- (57) (a) Jawen jema-ra ani iki.
 POSS3 village:ABS-DIR.EV large COP
 ‘Her village is large. (I have been there.)’
- (b) Jawen jema-ronki ani iki.
 POSS3 village:ABS-REP large COP
 ‘Her village is large. (I have not been there, but I have been told.)’
- (c) ??Jawen jema ani iki.

The questionable grammaticality of example (57c) occurs because the evidential markers are necessary in Shipibo-Konibo in order to avoid a sentence perceived as incomplete (Valenzuela 2003: 33–4).

Culture and worldview interact with every aspect of language, but perhaps particularly clearly in the area of evidentials, realis:irrealis and tense, indicating the difference between the ‘known’ physically present world and the ‘unknown’ world or between known events and unknown (possibly future) events. We will look at this area in more detail in chapter 9. This interaction explains why evidentials have scope over the whole proposition; they are clause-level operators.

2.2.4 Illocutionary force

Illocutionary force concerns whether an utterance is, for example, a statement (**DECLARATIVE**), a question (**INTERROGATIVE**), a command (**IMPERATIVE**), a wish (optative) or a performative utterance where a change occurs as a result of the utterance (e.g. *I now pronounce you husband and wife*). Illocutionary force is a universal operator because in every language social interaction requires different speech acts.

Declarative illocutionary force is often unmarked in languages, and languages vary in how they express the other types. Some, including English, may use a variation in word order, auxiliary verbs and/or intonation, as illustrated in (58).

- (58) (a) John studied the book. DECLARATIVE
 (b) Did John read the book? INTERROGATIVE
 (c) Study the book, John! IMPERATIVE

We can form a question solely through intonational means in English, or we can use a different word order and, in the case of (58b), the auxiliary verb *do*. In (58c), we also see a different word order and the omission of the addressee argument (*you*) to express a command.

PARTICLES or clitics are also common ways to mark illocutionary force. Languages may mark different question types in distinct ways, as is the case in the Niuean examples in (59) (Oceanic, Niue; Otsuka 2006a: 434).

- (59) (a) Kohai kia e tagata i ko?
 who Q ABS.CN man at there
 ‘Who is that man there?’
 (b) Fia hau nakai a koe mo au?
 want come Q ABS.PN you with me
 ‘Would you like to come with me?’

Determine the difference between the question type in (59a) and that in (59b).

We will look at question types in more detail in chapter 8.

2.3 Core-level operators

So far we have looked at operators that modify the whole clause. In this section, we will look at core-level operators which modify parts of the core. We already saw an example of a core-level operator when we looked at core-level (internal) negation. The core operators are as follows.

CORE DIRECTIONALS

EVENT QUANTIFICATION

DEONTIC MODALITY

INTERNAL NEGATION

We will see that all these core-level operators relate to the predicate and a core argument.

2.3.1 Core directionals

Core directionals relate to the direction of movement of a core argument. In Meithei (Tibeto-Burman, India), the directional *-lu* indicates that the performer of the action moves away from the speaker, as illustrated in (60) (Chelliah 1997: 225–6).

- (60) əydi Kəlkəta čətlure.
 əy-ti Kəlkəta čət-lu-lə-e
 I-DLMT Calcutta go-DIR-PRF-ASRT
 ‘(After our last conversation), I went to Calcutta.’

In Desano (Eastern Tucanoan, Colombia), we find directional affixes that relate the action to the position of the speaker.

- (61) (a) i wiʔi-ge bāhā-a-dīgā-yō-rā daha.
 this house-LOC go.up-away-begin-HSY-3PL again
 ‘They went up to the house again (away from the speaker).’
 (b) Viviano bāhā-ra-bī wiʔi-ge.
 Viviano go.up-toward.PST-3SG.M house-LOC
 ‘Viviano went up to the house (towards the speaker).’

In (61a), the suffix *-a* indicates movement away from the speaker, while the suffix *-ra* in (61b) marks movement toward the speaker (Miller 1999: 80).

Note also that in English direction may be expressed lexically as *push* versus *pull*. In this case, the directionality is an integral part of the lexical meaning of the verb and is not marked with an operator.

2.3.2 Event quantification

An event quantification operator indicates that there are multiple actions of the verb.¹⁷ In Evenki (Tungus, China), the operator suffix *-t(y)* indicates that the action was repeated (‘distributive’), as we see in (62b) (Nedjalkov 1997: 252).¹⁸

- (62) (a) Asi hulla-va loko-ro-n.
 woman blanket-ACC.DEF hang-NFUT-3SG
 ‘The woman hung a blanket.’
 (b) Asi hulla-l-va loko-t-to-n.
 woman blanket-PL-ACC.DEF hang-DSTR-NFUT-3SG
 ‘The woman hung blankets in different places / here and there.’

The Mayali (Gunwinguan, Australia) distributive morpheme *bebbe-* in (63) is also an event quantification operator (Evans 1995a: 220–1).

- (63) (a) Bonj, garri-bebbe-yarlarm-e.
 OK 1PL.INCL-DSTR-separate-NPST
 ‘All right, let’s each go our own way.’
 (b) Gunj barri-bebbe-yame-ng.
 kangaroo 3PL-DSTR-spear-PST.PFV
 ‘They each killed a (different) kangaroo.’

In this case, the event is interpreted as happening several times with several different actors.

2.3.3 Deontic modality

Deontic modality has to do with the obligation, ability or permission of a participant to perform an action. Since it affects one of the arguments, it is a core-level

operator. Examples (46) and (47) are repeated as (64) and (65): we see a deontic interpretation involving permission in (64a) and a deontic interpretation of obligation in (65a).

(64) Jake may come tomorrow.

- | | | |
|-----|--------------------------------------|--------------------|
| (a) | It is allowed for Jake to come. | DEONTIC MODALITY |
| (b) | It is possible that Jake might come. | EPISTEMIC MODALITY |

(65) Jake must win the race now.

- | | | |
|-----|--|--------------------|
| (a) | Jake is obliged to win, otherwise something bad will happen! | DEONTIC MODALITY |
| (b) | Everyone else is so far behind, it is certain he will win. | EPISTEMIC MODALITY |

It is perfectly possible for a sentence to contain both types of modality, as in example (66) from Thai (Tai-Kadai, Thailand; Van Valin and LaPolla 1997: 78).

- (66) Khăw khong cà? tông kin khâaw.
 3SG PBL FUT OBLIG eat rice
 'It is very possible that he will have to eat rice.'

Determine which operator in (66) expresses epistemic modality and which expresses deontic modality.

2.4 Nuclear-level operators

The final category of operators consists of those which operate on the nucleus.

ASPECT

DERIVATIONAL NEGATION

NUCLEAR DIRECTIONALS

We have already examined derivational negation so we will turn to aspect, and then head towards nuclear directionals.

2.4.1 Aspect

As we saw above, aspect and tense (and modality) are semantically related and sometimes difficult to distinguish. The basic distinction between tense and aspect is that while tense tells us about the time of the event as a whole in relation to a reference time, **ASPECT** tells us about the internal temporal structure of the event itself. There are many types of aspect but they all focus on various portions of the internal structure of an event.

In this section we will look at some of the main questions that aspect markers can answer.

2.4.1.1 *Does the event happen at one moment, or is it extended in time?* PUNCTUAL (INSTANTANEOUS), DURATIVE, INCHOATIVE

A punctual event is one that happens instantaneously; it has no (or very little) internal temporal duration. In (67) and (68) we see examples from

German (Germanic, Germany) and Russian (Slavic, Russia) respectively. In each case, a verb takes an inchoative prefix (*los-* in German, and *za-* in Russian) which signifies the instantaneous onset, the starting point of that activity (Zeisler 2004: 64).

- (67) (a) lachen 'laugh' GERMAN
 (b) los-lachen 'burst into laughter'
- (68) (a) zapet' 'sing' RUSSIAN
 (b) za-zapet' 'start singing'

On the other hand, languages may mark that an event took place over a longer period of time. The African American English auxiliary *bin* is used in examples (69a–d) to indicate that an event happened for a long time (Green 2002: 56).

- (69) (a) He bin running.
 'He's been running for a long time.'
- (b) They just sent me this one, but I bin having that one.
 'They just sent me this one, but I've had that one for a long time.'
- (c) I bin knowing he died.
 'I've known for a long time that he died.'
- (d) A: The police going bad.
 B: They ain't going bad. They bin bad.
 'They aren't going bad. They've been bad for a long time.'

2.4.1.2 *Is the event ongoing or recurring?* PROGRESSIVE, ITERATIVE (REPEATED), HABITUAL

Progressive and habitual aspect are subtypes of imperfective aspect: progressive refers to events currently happening while habitual refers to 'habits', events that take place at regular intervals. In English, progressive aspect is marked morphologically, as in (70a). Iterative and habitual aspectual meaning, on the other hand, come from syntactic context (given by *a lot* in (70b) and *on Wednesdays* in (70c)) as well as inherent properties of the predicate (see chapter 4).¹⁹

- (70) (a) Alisha is talking to her tomato plant. PROGRESSIVE
 (b) Alisha is coughing a lot. ITERATIVE
 (c) Alisha talks to her plants on Wednesdays. HABITUAL

Ewe (Atlantic-Congo, Ghana) includes verbal suffixes, prefixes and clause-final particles among its aspect-marking strategies (Payne 1997: 242–3).

- (71) (a) é-ga-du mɔ́li.
 3-ITER-eat rice
 'S/he repeatedly ate rice.'
- (b) é-du mɔ́li vɔ.
 3-eat rice COMPL
 'S/he finished eating rice.'

Match Ewe's three aspect-marking strategies with the three examples in (71).

- (c) é-du-a mǎli.
 3-eat-HAB rice
 ‘S/he eats rice.’

2.4.1.3 *Is the event completed or not completed?* PERFECTIVE, IMPERFECTIVE, COMPLETIVE

In **PERFECTIVE** aspect, the situation is viewed in its entirety, while in **IMPERFECTIVE** aspect the situation is, in a sense, viewed ‘from the inside’, as an ongoing process without inherent boundaries. Slavic languages have a morphologically marked perfective/imperfective aspect system. In Russian (Slavic, Russia), as we see in (72), the perfective is often formed from the imperfective stem onto which a variety of perfective aspect prefixes can be attached.

(72)		IMPERFECTIVE	PERFECTIVE
(a)	‘write’	pisat	na-pisat
(b)	‘build’	stroit	po-stroit
(c)	‘divide’	delit	raz-delit
(d)	‘go blind’	slepnut	o-slepnut
(e)	‘do’	delat	s-delat

The Lepcha language (Tibeto-Burman, India) has several auxiliary verbs that, when attached to other verbs, express shades of aspectual meaning, focusing on different aspects of the event. Three of these auxiliary operators are shown in (73).

- (73) (a) go ʔóng-re-m kám kóm bi-hát.
 1SG boy-DEF-DAT little.bit money give-PFV
 ‘I have already given the boy some money.’
- (b) tungvyeng thok-nón.
 door close-RES
 ‘The door is closed.’
- (c) ʔázóm zo-lel-nu, rok.
 rice eat-COMPL-ABL read
 ‘After you have eaten your food, go and study.’

All the operators in (73) refer to the end of the event, but with slightly different meanings. The perfective auxiliary *-hát*, shown in (73a), indicates a situation that occurred in the past and is still relevant. The resultative auxiliary *-nón*, illustrated in (73b), signals that a situation or event exists because of a change of state, or transition, in the past. The **COMPLETIVE** auxiliary *-lel* shows that an activity is carried out to its endpoint, as we see in (73c) (Plaisier 2007:122–5).

Perfective and imperfective aspect may interact in interesting ways with the expression of evidentials, discussed above in section 2.3.3. Consider the two

examples in (74) from Wanano (Eastern Tucanoan, Brazil) and in particular the difference in aspect marking.

- (74) (a) a'ri tattia bi'sa dī-ra.
 DEM:PROX room be.narrow be.PROG-VIS.IPFV.2/3
 'This room is narrow.'
- (b) si wu'ɛ-pu-kā tattia bi'sa dī-re.
 DEM:DIST house-LOC-DIM room be.narrow be.PROG-VIS.PFV.2/3
 'The room (in that little house) is narrow.'

In these sentences, the aspectual markers refer not to the internal structure of the event as such, but instead to the access the speaker has to the 'visual' evidence they are claiming to have. Hence in (74a), the speaker has ongoing access to the evidence at the time of the utterance; they are in the room or can see the room. In (74b), on the other hand, the speaker had direct visual evidence before the moment of speech (Stenzel 2008: 415).

Completive aspect marks the termination of an event, as we see illustrated by Desano (Eastern Tucanoan, Colombia) in (75) (Miller 1999: 79).

- (75) ba-tuʔa-ha-bi yiʔi.
 eat-COMPL-TEL-N3.PST 1SG
 'I have finished eating.'

The operator morpheme *-tuʔa* conveys a sense of completion, reflected in the word *finished* in the translation.

2.4.2 Nuclear directionals

Directionals, as the name suggests, are markers which indicate the direction of the action itself. The Tibeto-Burman language Qiang (China) provides some examples (LaPolla 2003: 156) which are given in (76): the various prefixes give a direction to the action.

- (76) (a) təl 'look upwards'
 (b) fiəl 'look downwards'
 (c) səl 'look downstream'
 (d) nəl 'look upstream'
 (e) zəl 'look towards the centre'
 (f) dəl 'look outward from the centre'
 (g) əl 'look in'
 (h) həl 'look out'

2.5 Formal representation of operators

Operators are represented visually in an **OPERATOR REPRESENTATION**, which is put underneath the constituent representation. The operator representation is, in a sense, a mirror of the constituent representation, as Figure 3.10 shows.²⁰

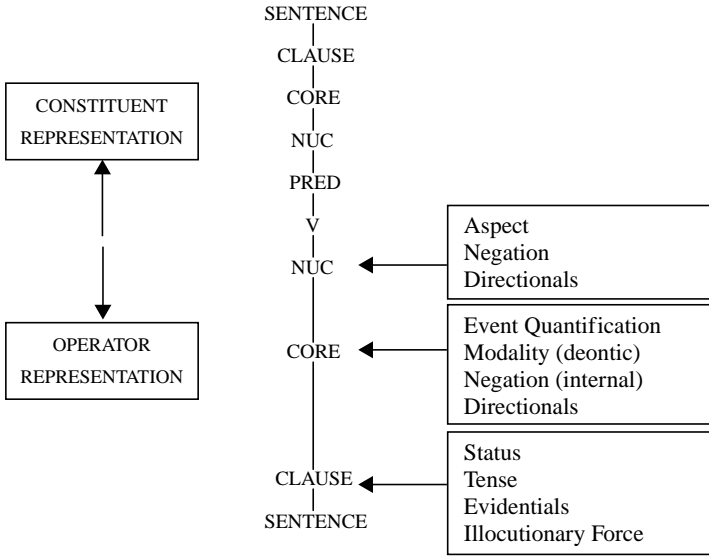


Figure 3.10 *Syntactic representation*

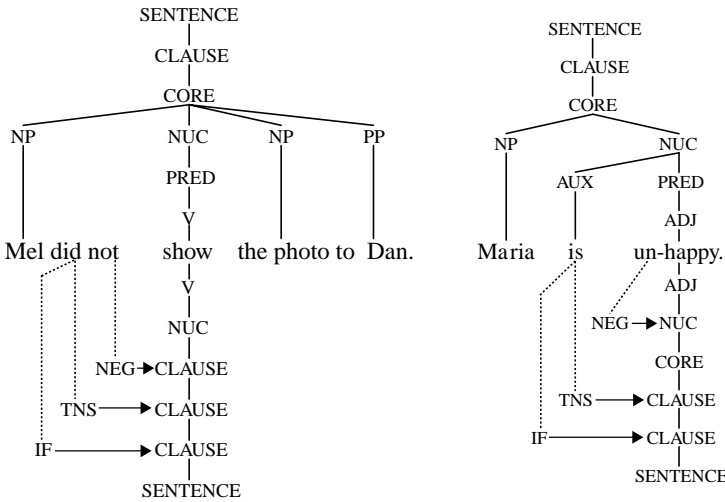


Figure 3.11 *Example syntactic representations for English sentences*

The operator representation mirrors the constituent representation in terms of layering. However, in the operator representation a layer can be represented more than once if there is more than one operator at that level, as we see in Figure 3.11, where both the constituent and operator representation of two English sentences are given. Notice that only operators that are morpho-syntactically marked in the language are indicated.²¹

For each of the morpho-syntactic forms which encodes an operator, we draw a line downwards from that morpheme or word until we get to the appropriate

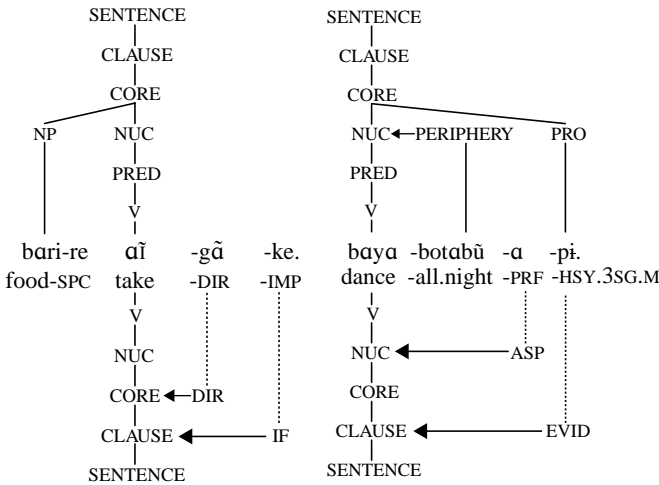


Figure 3.12 *Syntactic representation of 77 (a) and (b)*

layer where that operator functions (nucleus, core or clause). We write the label of the operator (e.g. ASP(ect), MOD(ality), NEG(ation), etc.) and use an arrow to point to the scope node.

Notice that there are two labels attached to *did* and *is*. They are performing two functions: their form indicates tense while their position in the sentence is what tells us these are statements rather than questions (compare *Is Maria unhappy?*). In the vast majority of cases, elements will appear labelled in either the constituent representation or the operator representation but not both. However, as we see for *is* in Figure 3.11, occasionally elements appear in both; this most often occurs when a lexical item carries some operator meaning.²²

We use an arrow for the same reason that we used an arrow for marking the periphery. The operators modify the appropriate layer of the clause. Here are two more examples of the operator representation using more data from Desano. We have the sentences in (77) and the constituent and operator representations in Figure 3.12 (Miller 1999: 78).

- (77) (a) bari-re aĩ-gã -ke.
 food-SPC take-DIR(move)-IMP
 ‘Take the food (to another spot)!’
- (b) baya-botabũ-a-pi.
 dance-all.night-PRF-HSY.3SG.M
 ‘He has danced all night (I was told).’

2.5.1 The linear order of operator morphemes

The general order in which the morphemes expressing operators appear in relation to the predicate root tends to be very similar across languages. What we find is that the linear order of the morphemes expressing operators tends to correspond

to their level of scope. Clausal operator morphemes will be farthest from the nucleus, those expressing core operators are next closest, and nuclear operator morphemes are closest to the nucleus. We can represent this as follows in (78), where ‘ \supset ’ means ‘has scope over’.

(78) clausal \supset core \supset nucleus

In terms of the operator representation, this means that we would not usually expect to find lines crossing, but rather expect that each layer will ‘sit’ inside the others. You can see this clearly in the Desano examples in Figure 3.12, where the operators are linearly ordered according to the level over which they have scope.

In addition, within each group of operators (clausal, core and nuclear), there is a tendency for a certain ordering of the operator morphemes, although this ordering within levels is not universal and may vary from language to language.

For clausal: illocutionary force \supset evidentials \supset tense/status
 For core: deontic modality/core directionals \supset negation
 For nucleus: directionals/derivational negation \supset aspect

What this means is that we would, for example, expect to see a morpheme marking tense closer to the nucleus than illocutionary force marking.

Recognizing these patterns in languages gives a head start in language analysis. It suggests features of language we can expect to find. However, keep in mind that operators are not always expressed morpho-syntactically so it is not always possible to compare their order. In addition, within one language different operators may occur on different sides of the nucleus, in which case their order relative to the nucleus, and therefore their relative scope, cannot be so easily determined. In addition, the meaning associated with certain operators may be expressed using lexical or syntactic strategies rather than operators. Nonetheless, we expect that morphemes marking illocutionary force and evidentiality will always have scope over those marking tense and status because the former are modifiers of the entire utterance.

Section summary

In this section you have learned:

- the terms and representation for the operator elements in language,
- to distinguish declarative, imperative and interrogative sentences,
- to distinguish tense, aspect and modality, and describe their functions.
- **KEY TERMS:** operator, internal/external negation, epistemic/deontic modality, realis/irrealis, illocutionary force, speech act, tense, evidentials, directionals, event quantification, aspect (im/perfective, progressive, iterative, habitual, punctual, durative), scope.
- **EXERCISES:** A3, A4, B6, B7, B8

3 Head-marking constructions

Each construction in a language has a ‘head’ and a ‘dependent’, as we saw in section 1.2.2. In a noun phrase, the head is the noun. In the case of clauses, the terms ‘head’ and ‘dependent’ refer to the predicate and its arguments, and how we are told about the relationship between them; in other words, how languages mark the semantic role of the arguments (agent, patient, etc.) in the event or situation described by the predicate. We are interested in how languages tell us who did what to whom through morpho-syntactic patterns.

Constructions within languages mark the relationship between a head and its dependents in different ways. So far we have mostly looked at what are termed **DEPENDENT-MARKING CONSTRUCTIONS**.²³ In dependent-marking constructions, the relationship between the arguments and the predicate is marked morpho-syntactically on the dependents (the arguments) as either case or adpositional marking. In (79a), for example, the *to* tells us that Bryn is the recipient argument.

(79) (a) Maya gave a piece of chocolate cake to Bryn.

In other languages, morphological marking on noun phrases indicates the role of the referents: this is termed **CASE MARKING** and is used to show the same kinds of relationships. Some examples of case marking are given from Finnish (Uralic, Finland) in (80) (Nelson 1998: 7) and German (Germanic, Germany) in (81) (Butt 2006: 208).

(80) Tanja näk-i piene-n ruskea-n linnu-n.
 Tanja.NOM see-PST small-ACC brown-ACC bird-ACC
 ‘Tanja saw a/the small brown bird.’

(81) Der Affe gab dem Hund
 the.M.SG.NOM monkey.M.SG gave the.M.SG.DAT dog.M.SG
 einen Kuchen.
 a.M.SG.ACC cake.M.SG.ACC
 ‘The monkey gave the dog a cake.’

In (80) ‘Tanja’ is marked (actually zero-marked) as the subject with **NOMINATIVE CASE** and ‘the small brown bird’ is marked as the object with the suffix *-n*, **ACCUSATIVE CASE**. In (81), we again see the subject (zero-)marked with nominative case and the direct object marked with accusative case. There is also a recipient argument *dem Hund* marked with dative case. The case marking tells us who did what in the ‘seeing’ and ‘giving’ event and these relationships are marked on the noun phrases, the dependents: hence in (79)–(81) we have dependent-marking constructions.²⁴

In a **HEAD-MARKING CONSTRUCTION**, on the other hand, the relationships are marked on the head, the predicate, and there is no marking on the dependents to show the roles of the participants. In fact, the argument noun phrases may be

optional, leaving only the predicate and its affixes to form a complete sentence. Languages with primarily (or solely) head-marking constructions are found in many languages of the world. In (82) we see an example from Abkhaz (West Caucasian, Georgia) where in (82b), the verbal word (the head) can form a complete sentence by itself since it has all the pertinent information attached to it (Helmbrecht 2001: 1427).

- (82) (a) α -xàc'á α -pñ'əs α -š'q'ə Ø-l_c-y-te-yt'.
 the-man the-woman the-book it-to.her-he-gave-FIN
 'The man gave the woman the book.'
 (b) Ø-l_c-y-te-yt'.
 it-to.her-he-gave-FIN
 'He gave it to her.'

In (82a), the three noun phrases are not morphologically marked to tell us which is the agent, which is the theme and which is the recipient. This relationship is shown by affixes attached to the verb. The noun phrases tell us more about the identity of the two arguments but not which one is giving and which is receiving.

In St'át'imcets (Salishan, Canada), full noun phrases are optional and the order of subject and object is also somewhat variable, not uncommon in head-marking constructions; the order of the affixes, on the other hand, is fixed (Roberts 1999: 278–9).

- (83) (a) tsún-tsi-lhkan. (*tsún-lhkan-tsi.)
 tell-2SG.OBJ-1SG.SBJ
 'I told you.' *not* 'You told me.'
 (b) áts'x-en-Ø-as ta sqáycw-a ta smúlhats-a.
 see-TR-3OBJ-3SBJ DET man-DET DET woman-DET
 'The woman saw the man.' (preferred), or 'The man saw the woman.'

In (83a), we see the fixed order of the suffixes on the verb. In (83b), in contrast, we see from the translation that the order could be interpreted as verb-subject-object or verb-object-subject.

It is worth noting that in some languages (notably in the Oceanic branch of the Austronesian family), the pronominal 'head-marking' pronoun might not be an affix on the main predicate but instead a separate word. It is nonetheless the case that these pronouns are obligatory, and can occur in addition to an optional noun phrase with the same referent, suggesting that these can be analysed as head-marking constructions. The example in (84) from Fijian (Oceanic, Fiji) illustrates this type of construction (Dixon 1988: 33).

- (84) (a) era la'o.
 they are.going
 'They are going.'
 (b) era la'o a gone.
 they are.going ART children
 'The children are going.'

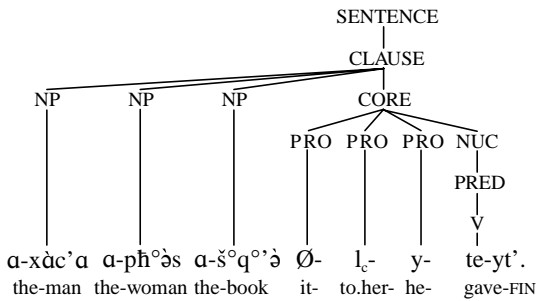


Figure 3.13 *Constituent representation for head-marking sentence 82 (a)*

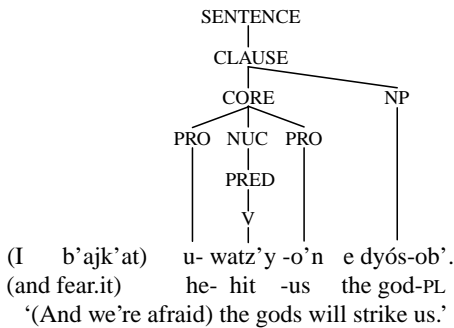


Figure 3.14 *Constituent representation of head-marking in Ch'orti'*

The example in (84b) is a simple clause with both a pronominal element and an independent noun phrase, which gives more descriptive information.

3.1 Constituent representation of head-marking clause structure

In head-marking constructions, then, it is really the affix on the verb that represents the argument of the predicate; the (co-referential) noun phrase is merely optional. For this reason, the affixes, not the lexical noun phrases, are shown as the core arguments in the constituent representation of a head-marking construction (labelled as PRO). Since the core can only contain one instance of each argument, the optional noun phrases appear outside the core as daughters of the clause node. In Figure 3.13 we have the constituent representation for sentence (82a).

Both dependent-marking and head-marking constructions can have different basic word orders. In Figure 3.14 we see another example of a head-marking construction with one pronominal argument and one expressed on the verb and with an optional noun phrase. The sentence in Figure 3.14 is from Ch'orti' (Mayan, Guatemala; Quizar 1994: 127).

It is important to note that the distinction between 'head-marking languages' and 'dependent-marking languages' is not clear cut. There are languages that

feature both types of marking. Croatian (Slavic, Croatia) is an example: it is basically dependent-marking but, since it also marks person and number of the subject on the verb, an independent pronoun is not necessary and so it has head-marking features too (Van Valin 2005: 18).

- (85) (a) Marij-a je kupi-l-a knjig-u.
Maria-F.SG.SBJ be.3SG buy-PST-F.SG book-F.SG.OBJ
 ‘Maria bought the book.’
- (b) Ona je kupi-l-a knjig-u.
3F.SG.SBJ be.3SG buy-PST-F.SG book-F.SG.OBJ
 ‘She bought the book.’
- (c) Kupi-l-a je knjig-u.
buy-PST-F.SG be.3SG book-F.SG.OBJ
 ‘She bought the book.’ (*‘Bought the book.’)

The clause structure of sentence (85a) would be syntactically represented as dependent-marking: the core would contain a nucleus and two noun phrase core arguments.

Sentences (85b) and (c) mean the same thing but in (85c) there is no overt subject noun phrase – the argument is expressed solely through the morphological marking on the verb. Sentence (85c), then, would be represented as a ‘partially’ head-marking construction: the agreement affix on the verb would be one core argument and the noun phrase *knjigu* would be the other. This reflects the fact that every semantic argument has to be represented somewhere in the clause.

There are also languages that use double marking; that is, that have both case marking on nouns and affixes on the predicate. In the Belhare sentence (Tibeto-Burman, Nepal) in (86), both noun phrases are marked for case to indicate their role. In addition, the verb carries affixes that agree with both arguments and give the same information (Nichols and Bickel 2005: 98).

Draw the constituent representations for the sentences in (85).

- (86) kubaŋ-chi-ŋa pitcha-chi n-ten-he-chi.
monkey-NSG-ERG child-NSG.ABS 3NSG.A-hit-PST-3NSG.PAT
 ‘The monkeys hit the children.’

Section summary

In this section you have learned:

- to distinguish head-marking and dependent-marking clause structures.
- **KEY TERMS:** head-marking, dependent-marking.
- **EXERCISES:** B9, B10

Further reading

Van Valin and LaPolla (1997:17–52), Van Valin (2005:1–18). On head-marking and dependent-marking: Nichols (1986). For further examples of the expression of operators, see Payne (1997).

Exercises

A. Exercises from English

1. *Constituents and hierarchy

Determine the constituents in these sentences using movement and substitution tests, as demonstrated in section 1.

- (1) Ian ran over an old stone bridge.
- (2) Ian ran over the slow cat.
- (3) I gave Percy six carrots the day before yesterday.
- (4) Percy was given plenty of carrots.
- (5) Bob walked through his house.
- (6) Bob sorted through his grandmother's belongings.

2. *Non-verbal predicates

Provide your own two examples of each of these non-verbal predicate types and draw the constituent representation for each.

- (1) Adjectival predicate
- (2) Locative predicate
- (3) Nominal predicate

3. *Operators

Label the operators in the following sentences. Draw the constituent and operator representations.

- (1) We will not be making a comment.
- (2) Why did you have to say that?
- (3) Kathleen can bake a mean chocolate cake.
- (4) Eric must save the universe.
- (5) Get a life.

4. *Negation

Examine the negation operators in the following sentences. Explain when the **TAG QUESTIONS** are positive and when they are negative.

How does the polarity of the tag question (as positive or negative) help you to determine the level at which the negation operates?

- (1) a. Bill doesn't like garlic, does he?
 b. Bill dislikes garlic, doesn't he?
- (2) a. Bill isn't happy, is he?
 b. Bill is unhappy, isn't he?
- (3) a. Bill hasn't decided, has he?
 b. Bill is undecided, isn't he?

B. Exercises from other languages

1. *Samoan (Oceanic, Samoa), Lengo (Oceanic, Solomon Islands), Iraqi Arabic (Semitic, Iraq), Mazandarani (Indo-Iranian, Iran) and Filipino (Malayo-Polynesian, Philippines)²⁵

Determine the predicate and arguments in these sentences. (The constituents have been enclosed in square brackets where necessary.) Draw the constituent representation for the (a) examples from each set.

- (1) Samoan
- | | | |
|----|--|---------------------------------|
| a. | [Olo'ō totō] [e le fafine] [esi]. | 'The woman is planting papaya.' |
| b. | [Olo'ō kuka] [e le teine] [aniani]. | 'The girl is cooking onions.' |
| c. | [Olo'ō totō] [e le tagata] [aniani]. | 'The man is planting onions.' |
| d. | [Olo'ō totō] [e le tagata] [fatu lā'au]. | 'The man is planting grain.' |
- (2) Lengo
- | | | |
|----|--------------------------------------|---------------------------------|
| a. | [e guraa] [na ghole] [na ghaoka]. | 'The woman is cooking cabbage.' |
| b. | [e subaa] [na ghole] [na mane]. | 'The man is planting cabbage.' |
| c. | [te abua] [na kau] [na mane]. | 'The man hit the dog.' |
| d. | [e ghania] [na vanga vuru] [na kau]. | 'The dog is eating meat.' |
- (3) Iraqi Arabic
- | | | |
|----|---------------------------|-------------------------------|
| a. | ilbinit tiktib iddars. | 'The girl writes the lesson.' |
| b. | ilwalad yihibb ilbinit. | 'The boy loves the girl.' |
| c. | ilwalad yiktib ilmaktuub. | 'The boy writes the letter.' |
| d. | ilbinit tišūuf ilwalad. | 'The girl sees the boy.' |
- (4) Mazandarani (Ignore the word *dare* for the purposes of the exercise.)
- | | | |
|----|------------------------------------|---|
| a. | [Mardi] dare [se] [xarne]. | 'The man is eating the apple.' |
| b. | [Zanike] dare [sabzi] [kaarne]. | 'The woman is planting the vegetables.' |
| c. | [Kijaa] dare [sibzamini] [pajene]. | 'The girl is cooking the potato.' |
| d. | [Mardi] dare [gandem] [kaarne]. | 'The man is planting grain.' |
- (5) Filipino
- | | | |
|----|---------------------------------------|--------------------------------------|
| a. | [Kumakain] [ang lalaki] [ng gulay]. | 'The man is eating vegetables.' |
| b. | [Nagtatanim] [ang babae] [ng saging]. | 'The girl is planting banana.' |
| c. | [Nagluluto] [ang babae] [ng sitaw]. | 'The girl is planting string beans.' |
| d. | [Kumakain] [ang aso] [ng karne]. | 'The dog is eating meat.' |

2. *Koyra Chiini (Songhai, Mali)²⁶

Examine these data from Koyra Chiini. What do you think is the purpose or function of the *i-* prefix glossed ABSOL(UTE) in (1c) and (2c)?

Draw the constituent representation for (1a).

- (1) a. ni beer.
 2SG big
 ‘You(SG) were big.’
- b. har beer di
 man big DEF
 ‘the big man’
- c. i-beer di
 ABSOL-big DEF
 ‘the big one’
- (2) a. ni čirey.
 2SG red
 ‘You(SG) were red.’
- b. har čirey di
 man red DEF
 ‘the red man’
- c. i-čirey di
 ABSOL-red DEF
 ‘the red one’

3. *Irish Gaelic (Celtic, Ireland)²⁷

Draw the syntactic templates required to account for the following Irish data.

- (1) tógann Máire an cat.
 lift-PRS Mary ART cat
 ‘Mary lifts the cat.’
- (2) d’fhoscail sé an doras.
 open-PST he ART door
 ‘He opened the door.’
- (3) d’éirigh sé.
 rise-PST he
 ‘He got up.’
- (4) thuit sé inné.
 fall-PST he yesterday
 ‘He fell yesterday.’
- (5) ní baile deas Béal Feirste.
 NEG-COP town nice Belfast
 ‘Belfast is not a nice town.’

4. **Lezgian (East Caucasian, Russian Federation)²⁸

Determine the constituents (predicates and arguments) for the sentences below.

Remember to study the patterns in the Lezgian data, which may not be the same as in the English translation.

Draw the constituent representations for each sentence.

- (1) Zi buba Joxanes kešiš ja.
my father Johannes priest is
'My father Johannes is a priest.'
- (2) Ruš šaddi ja.
girl glad is
'The girl is glad.'
- (3) Q`ud pad sekin tir.
four side quiet was
'Everywhere around it was quiet.'
- (4) Wi ktab im ja.
your book this is
'Your book is this one.'
- (5) Gatfarin güzel waxt tir.
spring beautiful time was
'It was the beautiful time of spring.'
- (6) Rušar q`eleč jak`arinbur ja.
girls thin flesh are
'The girls are lean.'

5. **Bella Coola (Salishan, Western Canada)²⁹

Look at the following sets of data. Draw the constituent representations for the sentences that contain non-verbal predicates. Do they follow the same syntactic template as the sentences with verbal predicates?

What do you notice about the relationship between word class and function? In other words, what kinds of words can function as predicates and as arguments, and how do you know the function of a particular word in a sentence?

- (1) nuyamł-Ø ti-ʔimmlkī-tx.
sing-3SG.SBJ PROX-boy-PROX
'The boy is singing.'
- (2) ʔat`ma-Ø ti-nusʔūlx-tx.
die-3SG.SBJ PROX-thief-PROX
'The thief is dying.'
- (3) ʔimmlkī-Ø ti-nusʔūlx-tx.
boy-3SG.SBJ PROX-thief-PROX
'The thief is a boy.'

- (4) sx-Ø ti-nusʔulχ-tx.
bad-3SG.SBJ PROX-thief-PROX
'The thief is bad.'
- (5) ʔs-Ø ti-ʔimlk-tx.
ill-3SG.SBJ PROX-man-PROX
'The man is ill.'
- (6) ʔimlk-Ø ti-nuyamɫ-tx.
man-3SG.SBJ PROX-sing-PROX
'The one who is singing is a man.'
- (7) nusʔulχ-Ø ti-ʔs-tx.
thief-3SG.SBJ PROX-ill-PROX
'The one who is ill is a thief.'
- (8) k'x-is ti-λ'ikm-tx ti-ya-tx.
see-3SG.SBJ/OBJ PROX-run-PROX PROX-good-PROX
'The one who is running saw the one who is good.'

6. **Ladakhi (Sino-Tibetan, India)³⁰

Look at the following sets of data which illustrate just some of the evidential operators in Ladakhi. Describe how the various evidential meanings are expressed morpho-syntactically in Ladakhi.

- (1) a. pəlldən-ni spe-čha sill-ət.
Paldan-ERG book-DIRC read-REP
'Paldan reads a book.'
- b. kho-e lcəŋ-me cəd-duk.
he-ERG tree-die cut-OBS
'He cuts the tree.'
- c. kho-ə zur-mo sənte duk ši-ok.
he-DAT pain-DIRC very be die-INFR
'He will die, because he is very sick.'
- d. kho-e thore ŋə əčo thuk-cen.
he-ERG tomorrow my brother-DIRC meet-SPEC
'He is likely to meet my brother tomorrow.'
- (2) a. dolmə yon-thig-rek.
Dolma come-INFR-SOUND
'Dolma is coming' (hearing footsteps, voice, etc.)
- b. khoe kəne pene ŋe khyer-thig-yot.
he me from money take-INFR-OBSERVED
'He might have taken money from me' (having trouble remembering)
- c. kho i-khəŋpe nəŋŋə duk-thig-son.
he this-house in live-INFR-UNOBSERVED
'He might have lived in this house.'

- d. əpumo rdemo yot-thig-duk.
that-girl beautiful be-INFR-GUESSED
'That girl might be beautiful.'
- (3) a. ɲə məg-mi yin.
I soldier-DIRC be
'I am a soldier.'
- b. khon-ɲə pɛ-ne yot.
he-DAT money-DIRC be
'He has money.' (definite knowledge)
- c. ɲə go-ə zur-mo rək.
I head-DAT pain-DIRC be
'I have a headache.' (experience)
- d. pu-mo rdemo duk.
girl-DIRC beautiful be
'That girl is beautiful.' (seen)

7. **Ngiti (Central Sudanic, DR Congo)³¹

Discuss the effect of the plural marker(s) on arguments and as an operator on predicates. How would you label the operator? Include discussion of the difference between its use with a non-human object and a human object.

Sets 1 and 2 are there for your reference and to help you answer the question which concerns the remaining sets (3–6).

- (1) a. ìndrî 'goat/goats'
b. ibhú 'canoe/canoes'
c. ayívhè 'jackal/jackals'
d. tdotdo 'sweet potato/sweet potatoes'
- (2) a. m̀̀novhì 'soldier' pb̀̀novhì 'soldiers'
b. tsìbhále 'woman' vèbhále 'women'
c. ngbángba 'child' nzónzo 'children'
d. mù̀̀dzakurà 'grandchild' pb̀̀̀dzakurà 'grandchildren'
- (3) a. ma mf ìndrî nádha.
ma m-í ìndrî nf-ádha
1SG SC-AUX goat RSM-pull:NOM1
'I am pulling one goat, or a group of goats simultaneously.'
- b. ma mf ìndrî núdhà.
ma m-í ìndrî nf-údhà
1SG SC-AUX goat RSM-pull:PL:NOM1
'I am pulling several goats one by one, or one goat several times.'
- (4) a. ma mf ngbángba nánzi.
ma m-í ngbángba nf-ànzi
1SG SC-AUX child RSM-call:NOM1
'I am calling the child.'

- b. ma mǎf nzónzo nánzi.
 ma mǎf nzónzo nǎ-ànzi
 1SG SC-AUX children RSM-call:NOM1
 ‘I am calling the children (collectively, as a group).’
- c. ma mǎf nzónzo núnzi.
 ma mǎf nzónzo nǎ-ùnzi
 1SG SC-AUX children RSM-call:PL:NOM1
 ‘I am calling the children (individually).’
- d. ma mǎf ngbángba núnzi.
 ma mǎf ngbángba nǎ-ùnzi
 1SG SC-AUX child RSM-call:PL:NOM1
 ‘I am calling the child (several times).’
- (5) a. ma mákpè.
 ma m-ǎ-àkpè
 1SG SC-AUX-whistle:NOM1
 ‘I am whistling.’
- b. ma múkpè (abhɔ).
 ma m-ǎ-ùkpè (abhɔ)
 1SG SC-AUX-whistle:PL:NOM1 (much)
 ‘I am whistling (a lot).’
- c. mà múkpè.
 mà m-ǎ-ùkpè
 1PL SC-AUX-whistle:PL:NOM1
 ‘We (each one) are whistling (separately).’
- d. mà mákpè.
 mà m-ǎ-àkpe
 1PL SC-AUX-whistle:NOM1
 ‘We (as a group) are whistling (collectively).’
- (6) a. ma mǎf mafà.
 ma m-ǎ mǎ-àfà
 1SG SC-AUX 1SG:OBJ-cry.out:NOM1
 ‘I am crying out (once).’
- b. ma mǎf mǎfǎ.
 ma m-ǎ mǎ-àfǎ
 1SG SC-AUX 1SG:OBJ-cry.out:NOM1
 ‘I am crying out (several times).’
- c. mà mǎf mǎfǎ.
 mà m-ǎ m-àfǎ
 1PL SC-AUX 1PL:OBJ-cry.out:PL:NOM1
 ‘We (each one) are crying out (separately).’
- d. mà mǎf màfǎ.
 mà m-ǎ m-àfǎ
 1PL SC-AUX 1PL:OBJ-cry.out:NOM1
 ‘We (together) are crying out (collectively).’

8. **Mongsen Ao (Tibeto-Burman, India)³²

Using the underlined verbs in the sentences, decide what operator types there are (tense, modality, etc.), and the level at which they operate (clause, core or nuclear).

Describe the order in which these operators must appear, relative to the predicate. Present your findings in a chart, as described in chapter 2, and illustrate ordering with operator representations of the verb forms.

- (1) (atʃa mətʃuŋla) hjim-əɪ ati.
be.hungry-PRS PTCL
'(Without having eaten), [I'm] really hungry.'
- (2) nì nə tukrəɪ tʃa-ì-ùʔ.
1SG AGT doctor call-IRR-DECL
'(If you were sick), I'd call the doctor.'
- (3) a-u nə nəŋkhəla thijàʔ khiʔ-ì-ùʔ ɹə.
VOC-grandfather AGT 2PL wages give-IRR-DECL PTCL
'Grandfather will give your wages.'
- (4) thalata tsəŋi ɹə-pàʔ i nə sənaj ɹàksaʔ-əɪ-ùʔ.
now.month rain come-NMLZ PROX AGT/INS crop break-PRS-DECL
'These rains that come this month damage the crops.'
- (5) pa nə nàŋ tʃa-ja-əɪ-ùʔ.
3SG AGT 2SG call-CONT-PRS-DECL
'He's calling you.'
- (6) li-aŋ ní nì alak-tʃuk-ja-əɪ-ùʔ ùku pi.
stay-IMP PTCP 1SG forget-PFV-CONT-PRS-DECL PTCP PROX
'Just wait a moment, OK? I'm completely forgetting this.'
- (7) sə-tʃuk-iʔ-ì-ùʔ.
die-PFV-CAUS-IRR-DECL
'[I] will kill him.'
- (8) nì mə-ɹə-tʃhət-la-ùʔ.
1SG NEG-come-ABIL-NEG.PST-DECL
'I wasn't able to come.'
- (9) pa a-ki tʃu nə mə-wa-tʃhət-əɪ.
3SG NRL-house DIST ALL NEG-go-ABIL-PRS
'He is unable to go to his house.'
- (10) ...inti taham ku pa nə phìləm-tʃhət.
path MIDDLE LOC 3SG AGT think-ABIL.PST
'... on the way he realized.'
- (11) tə-sa-əɪ nuksənsaŋpàʔ a-hlú nə wa.
thus-say-SEQ Nòksənsaŋba NRL-field ALL go.PST
'And having said that, Nòksənsaŋba went to the field.'

- (12) tə hjuʂə tʃu i-tə sana-jaʔ-ùʔ wà.
 thus story DIST PROX-thus speak-HAB.PST-DECL PTCL
 ‘Thus the story used to be told like this, as I remember.’
- (13) tʃhùwa-tʃhuwa-əkə a-tʃu tʃàʔ-maʔ.
 emerge-RED-SIM NRL-DIST consume-COMPL.PST
 ‘While coming out [from the jungle, she] finished eating it up.’
- (14) a-hən-za-la intaŋ tʃu kàʔ a-hiʔ-za-la nə məsà-əkə
 NRL-chicken-DIM-F thing DIST even NRL-rat-DIM-F AGT request-SIM
tʃàʔ-maʔ-tʃuk.
 consume-COMPL-PFV.PST
 ‘Rat Pup asked for and completely ate up even Little Chick’s share
 [of the fish].’

9. **Chichewa (Narrow Bantu, Malawi)³³

Examine the verb markers in the Chichewa data. Would you characterize Chichewa as a head-marking or dependent marking language? Why?

What is the effect of using the object marker (OBJ) – how does it change the grammaticality of sentences? Note: in this data, the numbers represent noun classes.

- (1) a. Njûchi zi-na-lúm-á alenje.
 10-bees 10SBJ-PST-bite-FV 2-hunters
 ‘The bees bit the hunters.’
 b. Zi-na-lúm-á alenje njûchi.
 10SBJ-PST-bite-FV 2-hunters 10-bees
 ‘The bees bit the hunters.’
- (2) a. *Njûchi zi-na-lúm-á dzulo alenje.
 10-bees 10SBJ-PST-bite-FV yesterday 2-hunters
 b. Njûchi zi-na-lúm-á alenje dzulo.
 10-bees 10SBJ-PST-bite-FV 2-hunters yesterday
 ‘The bees bit the hunters yesterday.’
- (3) a. Njûchi zi-ná-wá-lum-a alenje.
 10-bees 10SBJ-PST-2OBJ-bite-FV 2-hunters
 ‘The bees bit the hunters.’
 b. Zi-ná-wá-lum-a.
 10SBJ-PST-2OBJ-bite-FV
 ‘They bit them.’
 c. *Zi-na-lúm-á.
 10SBJ-PST-bite-FV
 (‘They bit them.’)
- (4) a. Njûchi izi zi-ná-lúm-á álenje awa ópúsa.
 10-bees 10PROX.DEM 10SBJ-PST-bite-FV 2-hunters 2PROX.DEM foolish
 ‘These bees bit these foolish hunters.’

- b. *Awa njûchi izi zi-ná-lúm-á alenje ópúsa.
 2PROX.DEM 10-bees 10PROX.DEM 10SBJ-PST-bite-FV 2-hunters foolish
 ('These bees bit these foolish hunters.')
- c. *Awa ópúsa njûchi izi zi-ná-lúm-á alenje.
 2PROX.DEM foolish 10-bees 10PROX.DEM 10SBJ-PST-bite-FV 2-hunters
 ('These bees bit these foolish hunters.')
- d. Awa njûchi izi zi-ná-wá-lum-a
 2PROX.DEM 10-bees 10PROX.DEM 10SBJ-PST-2OBJ-bite-FV
 alenje ópúsa.
 2-hunters foolish
 'These bees bit these foolish hunters.'
- e. Alenje zi-ná-wá-lum-a njûchi izi
 2-hunters 10SBJ-PST-2OBJ-bite-FV 10-bees 10PROX.DEM
 awa ópúsa.
 2PROX.DEM foolish
 'These bees bit these foolish hunters.'

10. **Kwak'wala (Wakashan, Western Canada)³⁴

Examine the following data and discuss whether you would characterize Kwak'wala as a head-marking language or dependent-marking language.

Draw the constituent representation for (1a) and (2a).

- (1) a. yəlk^wəmas=ida bəg^wanəma=χ=a 'watsi=s=a g^waχχ uχ^w.
 cause.hurt=DEM man=OBJ=DEM dog=INS=DEM stick
 'The man hurt the dog with the stick.'
- b. χ^wəsʔid=ida bəg^wanəma=χ=a gənanəma=s.
 struck=DEM man=OBJ=DEM child=INS
 'The man struck the child with it.'
- c. χ^wəsʔid=ida bəg^wanəma=q.
 struck=DEM man=OBJ
 'The man struck him.'
- (2) a. nikə=Ø=q.
 say-he-OBJ
 'He says to him.'
- b. *nikə=Ø=q laχ-is χ^wənuk^w.
 say-he-OBJ to-his child
 ('He says to his child.')

4 The structure of meaning

KEY TOPICS

- Predicate classes
- Representing semantic structure
- Semantic roles
- Macroroles
- Valency

1 Predicate classes

So far we have looked at morphology and syntax and the different structures found in various languages. Right from the start we saw that semantics (meaning) and syntax (structural form) are closely related: in a sense they are two sides of the same coin. We based our syntactic tree diagrams on the meaning of the sentence, using semantic terms like predicate, argument and modifier. [Table 4.1](#) provides a reminder of the basic relationships.

In this chapter we turn our attention to the semantics side of the coin. In order to look at the relationship between syntax and semantics in more detail I divide predicates into classes, and introduce a way of representing their meaning that shows these different classes. This semantic framework helps us to talk about semantics in a more precise and useful way. We will see that the various predicate classes may be expressed differently in the syntax, and we can also learn a lot about the semantic role(s) of the participant(s) by taking predicate classes into account.¹

When we looked at aspectual operators in [chapter 3](#), we were interested in three areas of meaning. The first had to do with the completion of the event; that is, whether or not it has an endpoint. The second was whether the event was ongoing through time or had an iterative (repeated) meaning, and the third was concerned with whether the event was instantaneous or occurred over a period of time. We saw how morphemes attached to predicates could impact the interpretation of the predicate in these areas.

Languages do not only express these meanings with ‘additional’ operators. In this chapter we focus on looking at these same areas of meaning when they are

Table 4.1 *Relationship between syntactic and semantic units*

SYNTACTIC UNIT	SEMANTIC UNIT
NUCLEUS	= PREDICATE
CORE	= PREDICATE + ARGUMENTS
CLAUSE	= PREDICATE, ARGUMENTS AND NON-ARGUMENTS

part of the lexical meaning of the predicate itself. This will give us a framework for dividing predicates into classes, based on their meaning. Here are some examples from English as an introductory illustration.

- (1) (a) Superman saw through walls.
 (b) The scientist watched the rocket take off.
 (c) The fan glimpsed his hero.
- (2) (a) The secret agent is dead.
 (b) The secret agent died.
 (c) Sydney killed the secret agent.
 (d) Sydney murdered the secret agent.

Think about how you would describe the differences in meaning between the predicates in (1) and (2).

By the end of this chapter you will be able to describe the differences between the predicates in (1) and (2) clearly.

Note that although we describe them as predicate classes, we will see that the context of the whole sentence where the predicate finds itself can affect the way each predicate is understood.

1.1 Basic predicate classes

There are five basic predicate classes as listed below.² We will look at the basic properties of each one in turn, with examples from English and Tuwuli (Atlantic-Congo, Ghana; Harley 2005, 2008).

STATES

ACTIVITIES

ACHIEVEMENTS

ACCOMPLISHMENTS

SEMELFACTIVES

1.1.1 States

Look at the picture in [Figure 4.1](#) depicting the predicate ‘love’, and consider its meaning. If we put the verb into a sentence such as *Cora loves her dog* we are describing Cora’s internal feelings, and there is no necessary indication in the sentence that she will stop loving her dog.

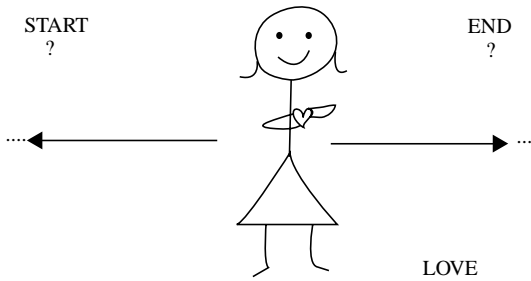


Figure 4.1 *Illustration of state predicate 'love'*

Further examples of state predicates are given in (3).

- (3) (a) Ethel is beautiful.
 (b) Bertha loves George Clooney.
 (c) Alfred had three ears.
 (d) The alien is tiny.
 (e) My neighbour is a spy.
 (f) The shark is under the boat.

Label the examples in (3) that are expressed by non-verbal predicates.

As we see in these examples, **STATES** are usually internal feelings (3b), conditions (3c) or properties (3a, d, e). They may also express location (3f). They may be temporary or permanent, but they have no inherent endpoint.³ They also cannot usually answer the question ‘What happened?’ because they are **STATIC**; they do not describe a ‘happening’ or action. (All other predicate classes are non-static.) For this reason it is often tricky to mime states. Try it with the examples in (3).

As the examples in (3) show, states are often syntactically expressed with non-verbal predicates, particularly for properties and internal feelings. We associate verbs with action, and states do not involve action. We can already see, then, that particular predicate classes may be expressed in a particular way in the syntax. However, some states are expressed with verbal predicates; in English, senses (*see, hear, etc.*) are expressed with verbs.

I have said that states do not have an inherent endpoint. However, note that (3c) does seem to imply that Alfred no longer has three ears. It is important to be aware from the start that the sentence context we put predicates into, particularly using certain tenses and aspects, can affect their interpretation. If we are interested in determining whether a predicate has an inherent endpoint to it, it is best to put it in the present tense. Using the past tense automatically gives the sense that the situation is over or has changed. Note, then, that the sentence *Alfred has three ears* does not inherently mean that this situation will have an endpoint; that is, that he will have a different number of ears in future.

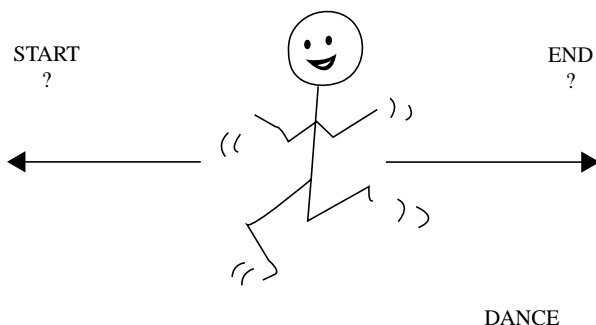


Figure 4.2 Illustration of activity predicate *‘dance’*

In (4) we see examples of state predicates in Tuwuli.

- (4) (a) Bi-deĩ.
3PL-be.EXIST
‘They exist.’
- (b) Kofi deĩ sika.
Kofi be.EXIST money
‘Kofi has money.’
- (c) Ade lebeŋŋe a.
DCOP pawpaw ID
‘This/that is a pawpaw.’
- (d) Foe baũ.
it big
‘It is big.’
- (e) Fu-deĩ ne ɔtsetse a kame.
3SG.REF-be.EXIST LOC basket ID inside
‘It is in the basket.’

Describe the meanings you see expressed in the sentences in (4).

1.1.2 Activities

In contrast to states, **ACTIVITIES** (as their name suggests) involve action; they are non-static and so can answer the question *What happened* or *What is happening?* Like states, activities have no inherent endpoint. This is illustrated with the depiction of *dance* in Figure 4.2.

In (5) we see further examples of activity predicates in English.

- (5) (a) Rod is dancing.
(b) Jane swam.
(c) Freddy will march energetically.
(d) Brian is watching television.

In each case, there is some action involved but without a particular endpoint. We do not get the sense, for example, that Jane swam *to* anywhere in particular in

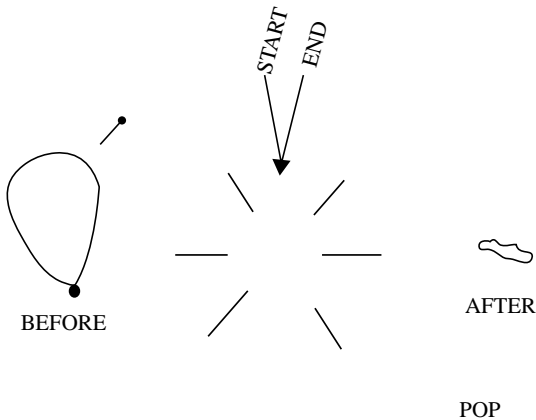


Figure 4.3 *Illustration of achievement predicate **pop***

(5b), nor that Freddy will march energetically to a particular location in (5c) (but see section 1.2.1).

Activities are **DYNAMIC**: they involve action, and so they can occur with adverbs like *energetically* or *vigorously* (see 5c). In this feature, they contrast with states, which cannot appear with such adverbs.

The sentence in (5d) is an example of **DIRECTED PERCEPTION**. What did you consider to be the difference between *see* and *watch* in (1a) and (b)? We can see now that *watch* is an activity predicate, while *see* is a state because the first involves a deliberate, controlled action while the second is an involuntary sense.

In (6) we see an example with an activity predicate from Tuwuli. Again, there is no inherent sense that the reading will end.

- (6) ε-la-mla ka-kā.
 3SG-be-with NMLZ-read
 ‘He is reading.’

States and activities are the two most fundamental predicate classes. In the [following section](#) we will look at three more basic classes that build on these two.

1.1.3 Achievements

ACHIEVEMENTS describe an instantaneous change of state.⁴ During a very short window of time, a change takes place that creates a new situation, as depicted in Figure 4.3 where the balloon goes from an inflated state to a deflated state in a very short period of time.⁵ Achievements therefore have an inherent endpoint. Most often, achievement predicates describe instantaneous changes from one state to another, as we see clearly in [Figure 4.3](#).

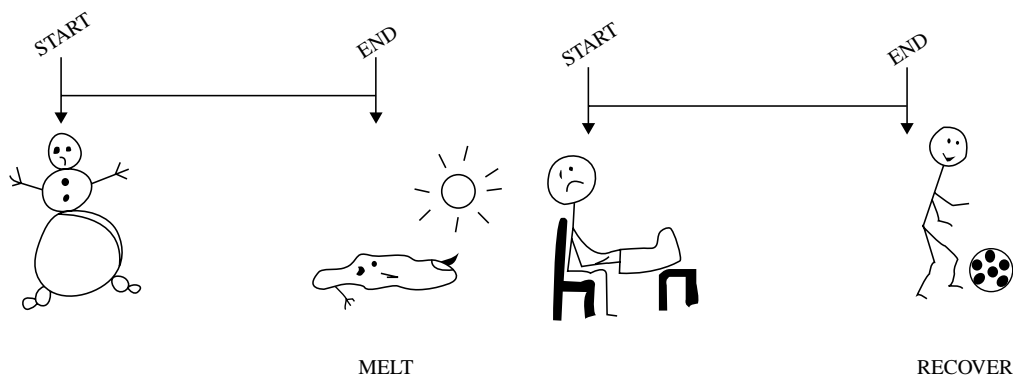


Figure 4.4 Illustration of accomplishment predicates *melt'* and *recover'*

Furthermore, achievement predicates are non-dynamic as they do not involve an action as such; they cannot be used with adverbs like *energetically* as (7b) shows.

- (7) (a) The balloon popped.
 (b) The house of cards collapsed (*energetically).
- (8) fu-tui.
 3SG.REF-explode
 'It exploded.'

The sentence in (8), again from Tuvuli, contains an achievement predicate; it describes an instantaneous event and involves a change of state.

1.1.4 Accomplishments

ACCOMPLISHMENT predicates are like achievements in describing changes of state. However, accomplishments are changes that take place over a longer period of time, as we see illustrated in (9) and (10).

- (9) (a) The snowman melted.
 (b) Bob recovered from his broken leg.
 (c) Emily mastered karate.
- (10) fo-wole.
 3SG.REF-become.dry
 'It dried.'

Since they describe changes, accomplishments also have an inherent endpoint. The change of state in examples (9a) and (b) is visually depicted in Figure 4.4. In (9c) the understanding is that Emily has no more to learn about karate. In the Tuvuli example in (10) the item has, over time, come to a point where it is completely dry. Like achievements, accomplishments are non-dynamic.

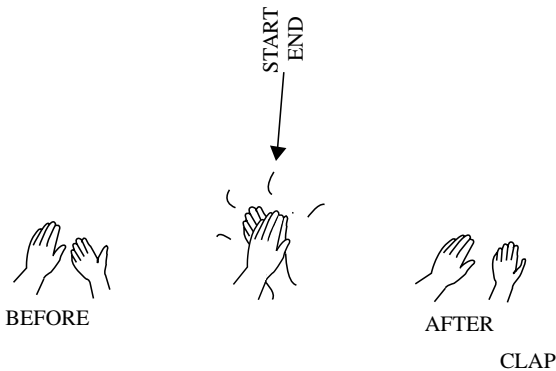


Figure 4.5 Illustration of semelfactive predicate *clap*'

1.1.5 Semelfactives

SEMELFACTIVES are similar to achievements: these predicates also represent instantaneous events that take a short period of time but, unlike achievements, they do not involve a change of state. In (11) from Tuwuli, for example, the light is off before it flashes, and it is off after it flashes.

- (11) osidza a la-mla ka-mɔ̃anɛ.
 light ID be.MANNER-with NMLZ-flash
 'The light is flashing.'

Because there is no change of state with semelfactives, they are *not* considered to have an endpoint. English examples of semelfactives are given in (12) and the predicate *clap* is illustrated in Figure 4.5. The hands are in the same position before and after the event.

- (12) (a) The examiner clapped.
 (b) The Canadians glimpsed the sun.

Semelfactives often imply repetition. Hence we would ordinarily assume *clapped* in (12a), for example, to mean a repeated action (rather than a single clap); sentence (11) also receives an iterative (repeated) interpretation (Harley 2008: 296). *Glimpse*, on the other hand, does not have the same sense of repetition.

In addition, some semelfactive predicates involve dynamic action while others do not; thus we can say *The examiner clapped energetically* but not *?The Canadians glimpsed the sun energetically*.

In section 1.1.2 I contrasted *see* and *watch*. We can also contrast *see* with *glimpse*, as in (12b). The meaning of *glimpse* is based on the meaning of *see* but it also has an extra layer of meaning: to glimpse something or someone is to see them for a very short period of time, and so *glimpse* is a semelfactive predicate.

1.1.6 Basic predicate class summary

At this point, we can summarize the properties of the five basic predicate classes we have looked at so far using four basic semantic contrasts: static/non static;

Table 4.2 *Properties of the five main predicate classes*

	Static	Dynamic	Inherent endpoint	Instantaneous
State	✓	✗	✗	✗
Activity	✗	✓	✗	✗
Accomplishment	✗	✗	✓	✗
Achievement	✗	✗	✓	✓
Semelfactive	✗	some	✗ ⁶	✓

dynamic/non-dynamic; inherent endpoint/no inherent endpoint; and instantaneous/durative. We will only consider predicates to be instantaneous if they *always* have to be interpreted as quick.

1.2 Two more predicate classes

There are two more classes of predicates that we find in languages: active achievements and causative predicates. These build on the basic predicates described in section 1.1 and show how the syntactic context of the predicate can affect the meaning. We will look at active achievements first.

1.2.1 Active achievements

ACTIVE ACHIEVEMENTS build on an activity predicate by adding an endpoint. Look at the two examples in (13).⁷

- (13) (a) Henry walked (in the park). **ACTIVITY** (no inherent endpoint)
 (b) Henry walked to the park. **ACTIVE ACHIEVEMENT** (activity with inherent endpoint)

In both sentences the basic predicate is *walk*. In (13a) we could add the peripheral prepositional phrase *in the park* which would place the whole event in ‘the park’. Either way, in (13a) the predicate *walk* has no sense of an inherent endpoint, nothing to tell us if or when Henry finished walking. In (13b), on the other hand, we have included the prepositional phrase *to the park* which provides a **GOAL** for Henry’s walking. We know where he ended up and so the addition of this prepositional phrase creates an inherent endpoint to the walking. In (13b), we have an active achievement.

Providing a goal for verbs to do with motion turns activities into active achievements. But motion verbs are not the only kind of verbs that can lead to active achievements. Verbs of consumption (*eating, drinking, etc.*) and verbs of creation (*build, write, knit, etc.*) have the same alternation, but in a slightly different way. We get the active achievement meaning when there is a specific object or amount of something that has been consumed or created. The examples in Table 4.3 help to illustrate this. All the sentences in the active achievement column have an inherent endpoint: for example, *He knitted a sweater* means that the activity finished when the sweater was complete.

Table 4.3 *Activities and active achievements*

	ACTIVITY	ACTIVE ACHIEVEMENT
Verbs of consumption	She swallows swords. He ate pizza. She drank beer.	She swallowed a sword. He ate five pizzas. She drank a pint of beer.
Verbs of creation	He wrote poetry. She composed music. They painted. He knitted. She cooked.	He wrote 'About My Frog'. She composed 2 musicals. They painted the ceiling. He knitted a sweater. She cooked a roast dinner.

Table 4.4 *Properties of active achievements*

	Static	Action	Inherent endpoint	Instantaneous
Active achievements	✗	✓	✓	✗

In Bulgarian (Slavic, Bulgaria), the connection between telicity and definite objects is connected to aspect. This means that a verb such as *jam* 'eat' has to occur with a definite noun phrase when it is in the perfective (telic) form (14a). In the imperfective form, the definite noun phrase object is optional (14b) (Dimitrova-Vulchanova 1999: 97).

- (14) (a) Ivan izjade jabŭlkata. / *Ivan izjade.
Ivan ate.PFV the.apple / Ivan ate.PFV
'Ivan ate up the apple.'
(*'Ivan ate up.')
- (b) Ivan jadeše (jabŭlkata).
Ivan ate.IPFV (the.apple)
'Ivan was eating (the apple).'

Some predicates are active achievements with or without 'extra' constituents. The verb *go*, for example, is inherently (lexically) an active achievement. We can add active achievements to Table 4.4, to show that they involve action but also have an inherent endpoint.

1.2.2 Causative predicates

So far, all of the predicate classes we have looked at describe spontaneous events or states. However, for each of these classes there is a corresponding caused event or state. Compare the examples in (15).

- (15) (a) The boys are afraid. STATE
(b) The dog is frightening the boys. CAUSATIVE STATE

The meaning of (15b) is that the dog is doing something that is causing the boys to feel afraid. In (15a), on the other hand, there is no inherent causation expressed

Table 4.5 *Causative predicate classes*

STATE	The boy is afraid.
CAUSATIVE STATE	The dog frightens the boy.
ACTIVITY	The ball bounced round the room.
CAUSATIVE ACTIVITY	The girl bounced the ball round the room.
ACHIEVEMENT	The balloon popped.
CAUSATIVE ACHIEVEMENT	The cat popped the balloon.
SEMELFACTIVE	The branch tapped on the window.
CAUSATIVE SEMELFACTIVE	The teacher tapped his pencil on the desk.
ACCOMPLISHMENT	The ice melted.
CAUSATIVE ACCOMPLISHMENT	The hot water melted the ice.
ACTIVE ACHIEVEMENT	The soldiers marched to the camp.
CAUSATIVE ACTIVE ACHIEVEMENT	The sergeant marched the soldiers to the camp.

in the sentence. There may be something causing the boys to feel afraid but this is not inherent in the way the sentence is syntactically expressed in (15a); the boys might just be nervous generally.

Notice that sentences with a causative predicate contain an additional argument, the causer. Example (15a) has one argument while (15b) has two.⁸ The causer argument takes over the pre-verbal position in the sentence in (15b), and determines **VERB AGREEMENT** (*the dog is/*are*). In Table 4.5 we see examples where a predicate with two arguments takes on a third argument when it is changed into a causative (see *march*, for example).

Table 4.5 provides examples of the basic predicate classes and their corresponding causative classes. Notice that the thing or person doing the causing need not necessarily be doing it consciously or wilfully. In the causative examples, the causation is part of the inherent meaning of the verb in its context: in many of the examples, we use the same verb in English, and its interpretation as causative or not depends on the context of the sentence we find it in.

This table shows that we now have twelve predicate classes, the five basic classes, active achievements and the causative versions of each of those classes, and this completes the typology.

In our own language, or one we know well, we can often intuitively tell which predicates have inherent endpoints, which are static, and so on. In a language we are not familiar with we need a way of finding out this information. In 1.3 you will find predicate class tests that are used for this purpose.

1.3 Predicate class tests

In this section, I will introduce some predicate class tests that we can use to determine which class a predicate belongs to (following Van Valin and

LaPolla 1997). As we go through these tests, it is important to remember that even though the principles behind each of these tests are valid across languages, we need to find language-specific ways of ‘translating’ them.

In addition, some of the tests work more effectively with some predicate classes than with others (you may see ‘irrelevant’ marked in some places), but taken together to test a particular predicate, they can help to decide which class it is in. We have to be particularly cautious when testing causative predicate classes, which are formed of one state of affairs (commonly an activity) causing another.

For each of these tests, the purpose of the test is described and the expected results are shown in a table.

1.3.1 Test 1: can the predicate occur with the progressive aspect (if a language has it)?

Purpose: The progressive aspect cannot usually occur with state predicates, nor with instantaneous predicates. Therefore, activities and accomplishments, which can take time, answer ‘yes’ to this test (e.g. *I am dancing*), while states (static) and achievements (instantaneous) answer ‘no’ (e.g. **I am being tall*).

Expected results by predicate class:

State	No	Causative state	Yes
Activity	Yes	Causative activity	Yes
Semelfactive	No	Causative semelfactive	No
Achievement	No	Causative achievement	No
Accomplishment	Yes	Causative accomplishment	Yes
Active achievement	Yes	Causative active achievement	Yes

A ‘progressive’ aspectual marking with achievements and semelfactives may be grammatical but only if it creates an iterative or habitual meaning, where the action happens more than once (e.g. *The teacher is tapping the pencil*).

As noted in this chapter, causative predicate classes are formed through one state of affairs causing another, and this can affect the results of the predicate class tests. In the case of this first test, we see that a causative state can occur in the progressive aspect, while a basic state cannot. This difference occurs because when a causative state comprises an activity and a state, the progressive is permissible with the activity part of the representation: *His singing is frightening the birds*.

1.3.2 Test 2: does the predicate occur with dynamic adverbs like *vigorously* or *violently*?

Purpose: This test is the only one that can distinguish between accomplishments and active achievements. Accomplishments cannot occur with dynamic adverbs: **The snow melted vigorously* while active achievements can (because they are based on activity predicates): *He walked vigorously to the park*.

Expected results by predicate class:

State	No	Causative state	Yes
Activity	Yes	Causative activity	Yes
Semelfactive	Some	Causative semelfactive	Yes
Achievement	No	Causative achievement	Yes
Accomplishment	No	Causative accomplishment	Yes
Active achievement	Yes	Causative active achievement	Yes

When selecting adverbs for this test it is best not to use adverbs which imply a wilful agent like *carefully*, *deliberately* because they do not work with involuntary activities like *shiver* and *shake*. In addition, directed perception verbs like *look* or *listen* work best with adverbs like *actively* and *attentively*.

Some semelfactive verbs (e.g. *cough*) can appear with adverbs such as *violently* while others (e.g. *glimpsed*) cannot: *He coughed violently* is ok but *He glimpsed the horse violently* is not. With causative states, achievements and accomplishments a dynamic action adverb can be acceptable if the causing state of affairs is active enough.

1.3.3 Test 3: does the predicate occur comfortably with slow pace adverbs like *slowly*, *gradually*?

Purpose: Slow pace adverbs can only occur with predicates that take time and are non-static, in other words, that are not instantaneous. This test therefore distinguishes activities and accomplishments from states, semelfactives and achievements. There is a lot of overlap in results between this test and the progressive aspect test in section 1.3.1. Consequently, this slow pace adverb test can serve as a substitute if a language does not mark progressive aspect.

Expected results by predicate class:

State	No	Causative state	No
Activity	Yes	Causative activity	Yes
Semelfactive	No	Causative semelfactive	No
Achievement	No	Causative achievement	No
Accomplishment	Yes	Causative accomplishment	Yes
Active achievement	Yes	Causative active achievement	Yes

Semelfactives that occur with a slow pace adverb take on an iterative meaning and so fail the test: *The tree branch tapped on the window slowly (?once)*.

1.3.4 Test 4: can the predicate occur with phrases of time duration, e.g. *for an hour*?

Purpose: Only predicates with internal duration can occur for an hour so this distinguishes predicates that can have internal duration from those that cannot, such as achievements (**The balloon popped for an hour*).

Expected results by predicate class:

State	Some	Causative state	Yes
Activity	Yes	Causative activity	Yes
Semelfactive	Yes	Causative semelfactive	No
Achievement	No	Causative achievement	No
Accomplishment	Irrelev.	Causative accomplishment	Irrelev.
Active achievement	Irrelev.	Causative active achievement	Irrelev.

The effect of this test on some achievement predicates (and semelfactives) is to create an iterative interpretation: *He popped balloons for an hour* (causative achievement). The test is largely irrelevant for durative predicates with an inherent endpoint as the phrase *for an hour* emphasizes the period of time an event took place, rather than its endpoint.

State predicates only pass this test when they refer to temporary states, e.g. *He was angry for five minutes* but not **?He was tall for five minutes*.

1.3.5 Test 5: can the verb occur with phrases indicating an endpoint, e.g. *in an hour*?

Purpose: Providing an endpoint distinguishes predicates with inherent endpoints from those without. It effectively distinguishes accomplishments (and active achievements) from the other classes, as the expected results show.⁹

Expected results by predicate class:

State	No	Causative state	No
Activity	No	Causative activity	No
Semelfactive	No	Causative semelfactive	No
Achievement	No	Causative achievement	No
Accomplishment	Yes	Causative accomplishment	Yes
Active achievement	Yes	Causative active achievement	Yes

Providing an extended period of time (such as an hour) also narrows the field to predicates with internal duration.

1.3.6 Test 6: does the verb have a derived adjective representing a terminal state?

Purpose: Achievements (e.g. *pop*) involve a change of state, while semelfactives (e.g. *cough*) do not. This test is the only one that distinguishes between these two classes.

Expected results by predicate class:

State	Yes	Causative state	Yes
Activity	No	Causative activity	No
Semelfactive	No	Causative semelfactive	No
Achievement	Yes	Causative achievement	Yes
Accomplishment	Yes	Causative accomplishment	Yes
Active achievement	Yes	Causative active achievement	Yes

Achievements involve a change of state and therefore can be turned into derived adjectives; for example, *the window shattered* can be turned into *the shattered window*. Semelfactives do not involve a change of state, so they cannot be turned into derived adjectives: **the tapped window*, **the flashed light*.

Notice that semelfactives can have an iterative interpretation with a singular subject, because the subject does not undergo a change of state so it can repeat the action, e.g. *the branch tapped the window* (repeatedly, the same branch each time). With achievements, on the other hand, an iterative meaning is only possible with a plural subject, because there is a change of state, e.g. *The balloons popped* (repeatedly, a different balloon each time).

1.3.7 Test 7: does the predicate have a causative meaning?

Purpose: As discussed in this chapter, each of the basic predicate classes has a causative version. This test serves to distinguish causatives from non-causatives. In English, causative predicates can be paraphrased with the verb *cause*: *Bob frightened the squirrel/Bob caused the squirrel to be frightened*.

Expected results by predicate class:

State	No	Causative state	Yes
Activity	No	Causative activity	Yes
Semelfactive	No	Causative semelfactive	Yes
Achievement	No	Causative achievement	Yes
Accomplishment	No	Causative accomplishment	Yes
Active achievement	No	Causative active achievement	Yes

1.4 Morphological marking of predicate classes

In many languages, the distinction between related predicate classes is marked morphologically, and this is one area where this typology of predicate classes can help us understand the morpho-syntactic patterns we find. We will look at some of these relationships in this section.

Many languages possess morphological processes that reflect the connection and distinction between states, accomplishments and causatives. In other words, instead of using different verbs for these classes, speakers simply attach morphemes to (or remove them from) one basic verb.

We can see this relationship illustrated in four languages in [Table 4.6](#). In Saami (Uralic, Norway; Julien 2007: 142, 167) and Qiang (Tibeto-Burman, China) the forms become progressively more marked as we move from a state to an accomplishment to a causative accomplishment. In Qiang, a directional prefix *tə-* is added to form an accomplishment (turning the root form *ba* into *wa*) and a suffix *-z* introduces the causative meaning (LaPolla and Huang 2003: 158). In Yakan (Malayo-Polynesian, Philippines) the prefix *nga-* is added to a state to form an accomplishment, while an alternative prefix *pa-* is added to form a causative accomplishment (Brainard and Behrens 2002: 66).¹⁰ In O'dham (Uto-Aztec, USA), we see a similar alternation. The suffix *-i/a* has an inchoative meaning,

Table 4.6 *Morphological marking of states, accomplishments/achievements and causatives*

LANGUAGE	STATE	ACCOMPLISHMENT	CAUSATIVE ACCOMPLISHMENT
Saami	dimis ‘soft’	dipm-a-t ‘become soft’	dipm-a-d-it ‘make softer’
	guhkki ‘long’	guhkk-u-t ‘become long(er)’	guhkk-u-d-it ‘cause to get longer’
Qiang	ba ‘big’	tə-wa ‘become big’	tə-wa-z _i ‘cause to become big’
	χtʂa ‘small’	fiα-χtʂa ‘become small’	fiα-χtʂa-z _i ‘cause to become small’
Yakan	tampul ‘be dull’	nga-tampul ‘become dull’	pa-tampul ‘make dull’
	STATE	ACHIEVEMENT	CAUSATIVE ACHIEVEMENT
O’odham	(s-)wegī ‘x is red’	weg-i ‘x becomes red’	weg-i-(ji)d ‘y makes x red.’
	(s-)moik ‘x is soft’	moik-a ‘x becomes soft’	moik-a-(ji)d ‘y makes x soft.’

which turns the root into an achievement (rather than an accomplishment). The addition of another suffix *-(ji)d* then creates a causative achievement (Hirose 2003: 68).

Section summary

In this section you have learned:

- how to define and distinguish predicate classes.
- **KEY TERMS:** state, activity, achievement, accomplishment, semelfactive, active achievement, causative, endpoint.
- **EXERCISES:** A1, A2, B1, B4, B5, B4, B5, B6, B7

2 Semantic representations and roles

In the last section, we looked at how to group predicates into different categories based on their meaning. In this section we will look at each of those predicate classes in turn and do two things. Firstly, I will introduce a way of representing the basic meaning of a predicate. Secondly, we will look more closely at the arguments of some predicate classes. We will see patterns emerging: the arguments of predicates in each class share certain characteristics and semantic roles (also called **THEMATIC RELATIONS**). As a quick example, look at the English sentences in (16) where we see activity verbs with two arguments.

- (16) (a) He is hitting the punching bag.
 (b) She is kicking the ball.

In both these examples, the first argument (before the verb) is actively doing something to something else. The second argument in each case is having

something done to it. In this section we will look more closely at the similarity in the semantic roles of arguments.

Once we have learned which semantic roles are associated with which predicate class, we can begin to use this information in a predictive way that helps us understand and analyse languages. We will be able firstly to find out which predicate class a particular predicate belongs to, and determine its semantic representation following the framework we will look at here. Then we will be able to predict what kinds of semantic roles the arguments are likely to have and better understand the syntactic patterns we find.

2.1 Semantic representation of predicates

Just as we learned a way of representing the syntactic form of clauses in the last chapter, we will here learn a system of representing the semantics. In this section we will look both at how to represent the different predicate classes, and also at patterns of semantic roles that are associated with the arguments of those predicate classes. Patterns will start to emerge.

We will follow a generally accepted way of representing semantic meaning that uses the following formalisms. Predicates are represented in **bold** and are followed by the symbol \prime , like a straight apostrophe (called a prime symbol).¹¹ This way of writing semantic predicates (e.g. **see** \prime) helps us to distinguish the semantic concepts from verbs in particular languages (e.g. *see*).

The elements in bold represent basic categories of meaning, basic semantic ‘building blocks’, not English verbs. It is perhaps unfortunate that we have to choose terms in one language with which to describe all languages. Because of this drawback, some theories of syntax use pictures and symbols to describe meaning, a whole new ‘language’ in itself. Provided we understand the difference between predicates in bold and verbs in a particular language, we can make use of the ‘formula’ notation described here.

Arguments are written in the language of study and placed in brackets (), appearing after the predicate. If we are not referring to specific referents, we use the variables ‘x’ and ‘y’ to represent the arguments; ‘x’ always comes first within the brackets. The ‘x’ argument is generally the more agentive argument (the ‘doer’), and the ‘y’ argument is less agentive. If there is only one argument, we label it ‘x’. The framework is shown in (17).¹²

(17) **predicate** \prime (x, y) or **predicate** \prime (x)

Not all predicates in a language are ‘basic’ – some are built up from combinations of more basic predicates; we will need to ‘decompose’ the meaning into its component parts in order to represent what they really mean. We will see examples below, particularly in the section on causatives and active achievements. But we will start with the basic classes.

2.2 State and activity predicates

The distinction between state and activity predicate classes is the most fundamental, as we saw in section 1.1. The representations for the other classes are built around the semantic representations of states and activities, and so I will describe these two classes first.

2.2.1 State predicates

2.2.1.1 *Semantic representation of state predicates*

As mentioned above, state predicates are basic classes and so we represent them simply as a predicate followed by its arguments, as follows:

predicate' (x)	for state predicates with one argument
or predicate' (x, y)	for state predicates with two arguments
or be'/feel' (x, [predicate'])	for state predicates with nominal or adjectival predicates

Notice from the third example that we can have a predicate as the argument of another predicate. In that third example, the nominal or adjectival predicate is the 'y' argument of **be'** or **feel'**.¹³ If we put predicate structures inside other predicate structures, we enclose them in square brackets [] to show where they begin and end. Some examples will make this clearer and are given in (18).

(18)	Example	Semantic representation
(a)	The television is broken.	broken' (television)
(b)	Mildred is tall.	be' (Mildred, [tall'])
(c)	There was once a king.	exist' (king)
(d)	Bertha loves George Clooney.	love' (Bertha, George Clooney)
(e)	Alfred had three ears.	have' (Alfred, three ears)
(f)	The money is on the table.	be-on' (table, money)

In (18a) we see a result state predicate with a single argument. In (18b), we see an example of an adjectival predicate, which we differentiate from the result state predicate in (18a) by using the predicate **be'**. Result states differ from properties in that the former are the outcome of a process. Notice that in English we use the past participle of a verb for result state predicates both in the syntax and in the semantic representation. Other languages also reflect this meaning difference between result state and attributes in their syntactic patterns and so it is useful to have the distinction made in the semantic representation.¹⁴

In addition, note that, other than result states which use the past participle form of the verb, we do not indicate anything about tense or other operators in the semantic representation.

(18c) illustrates an existential sentence, which sets up the existence of a referent. Examples (18d) and (e) illustrate state predicates with two arguments. Notice that for location predicates like (18f), the predicative preposition is joined to **be'** and the location (*table*) is always the first argument in the semantic representation (unlike the word order in English syntax).

Table 4.7 *Semantic roles of state predicate arguments*

Type of argument:	‘x’ argument of predicate ´ (x, y)	‘y’ argument of predicate ´ (x, y)	single argument of state predicate ´ (x)
Semantic role(s):	EXPERIENCER POSSESSOR LOCATION ETC.	SENSATION/TARGET POSSESSED THEME ETC.	PATIENT

2.2.1.2 *Semantic roles with state predicates*

If we look again at the examples in (18), we can make generalizations about the arguments of state predicates. Firstly, when state predicates have only one argument – such as *the television* in (18a) – that argument often has the semantic role of **PATIENT**. A patient is an argument that is in a certain condition or state.¹⁵

When state predicates have two arguments, there are a number of different semantic roles that the ‘x’ and ‘y’ arguments can have. Some of the key roles for the first (‘x’) argument are **EXPERIENCER** (*Bertha* in (18d)), **POSSESSOR** (*Alfred* in (18e)) and **LOCATION** (*the table* in (18f)). The experiencer role includes the senses (*hear, see, etc.*), the brain (*think, know, etc.*) and emotions (*love, hate, like, etc.*). In these kinds of state predicates, the corresponding second (‘y’) argument has the semantic role of the thing being seen, known, hated, possessed etc., a role labelled either **SENSATION** or **TARGET**. **THEME** is the term for an argument in a particular location (*the money* in (18f)).

These patterns are represented in Table 4.7. The semantic roles are listed in columns according to their position in the semantic representation. Furthest to the right is the column for state predicates with one argument, which all have the semantic role of patient. Further to the left we see the ‘y’ arguments of two-argument predicates and further still we see listed the ‘x’ arguments of two-place predicates.

2.2.2 **Activity predicates**

2.2.2.1 *Semantic representation of activity predicates*

Activities comprise the second fundamental class of predicate. We represent activity predicates as follows:

do´ (x, [**predicate**´ (x)]) for activity predicates with one argument
or **do**´ (x, [**predicate**´ (x, y)]) for activity predicates with two arguments

At first glance, this may seem complex, but on closer inspection you can see that these representations are based on the same basic elements as state predicates: predicates in bold and arguments in brackets.

The difference between states and activities is that the semantic representation of activity predicates always begins with the predicate **do**´. This indicates an activity predicate and thus distinguishes them from state predicates. The first

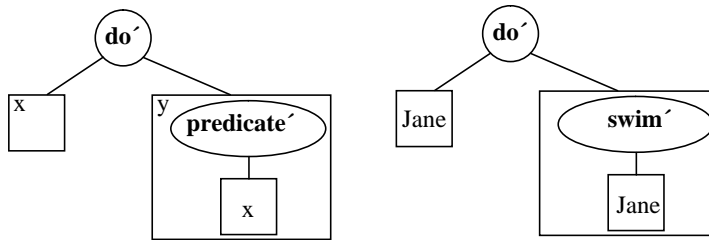


Figure 4.6 *Picture of activity predicate semantic representations*

argument of **do'** is repeated as the first argument of the other predicate (shown by the two 'x's above). The second ('y') argument of **do'** consists of the other predicate with its arguments, enclosed in square brackets []. Examples are given in (19).

(19)	Example	Semantic representation
(a)	Scott is dancing.	do' (Scott, [dance' (Scott)])
(b)	Jane swam.	do' (Jane, [swim' (Jane)])
(c)	Anna writes poetry.	do' (Anna, [write' (Anna, poetry)])
(d)	Harry watches football.	do' (Harry, [watch' (Harry, football)])

The **do'** reminds us that there is more action involved in activity predicates than there is in state predicates. We could loosely, and oddly, paraphrase (19a) as *Scott is doing dancing*. Notice that we use the verb *do* in English when the activity is unspecified: *I'll do it* or *What have you done?*

Figure 4.6 provides a pictorial representation of how the predicates fit inside each other in the semantic representation of activity predicates. The predicates are in round shapes and the arguments are in squares.

2.2.2.2 *Semantic roles with activity predicates*

The first arguments of **do'** in activity predicates, *Scott*, *Jane*, *Anna* and *Harry* in (19), have similar semantic roles. The main roles are covered by the general term **EFFECTOR**. This is the semantic role of a referent that is doing something, a 'doer'. An effector may or may not be consciously making something happen; compare (20a) with (20b) where *Brian* is a conscious effector while *the wind* in (20b) is not, yet they are both doing something. The more specific term for an inanimate effector like the wind that acts without deliberate will is **FORCE**.

(20) (a)	Brian plays golf.	do' (Brian, [play' (Brian, golf)])
(b)	The wind is blowing.	do' (wind, [blow' (wind)])

Other sub-types of effectors include consumers, creators (19c) and observers (19d). In (20a), the second argument of *play* is the **LOCUS**, while the second argument of *watch* is the **STIMULUS**.

We can add these patterns to the table from section 2.2.1.2 to give us Table 4.8. In the semantic representation of activity predicates, the arguments

Table 4.8 *Semantic roles of activity predicate arguments*

Type of argument:	1st argument of do' (x, . . .)	1st argument of predicate' (x, y)	2nd argument of predicate' (x, y)	single argument of state predicate' (x)
Semantic role(s):	EFFECTOR CONSUMER CREATOR OBSERVER ETC.	EXPERIENCER POSSESSOR LOCATION ETC.	SENSATION/TARGET POSSESSED THEME LOCUS CONSUMED CREATION STIMULUS ETC.	PATIENT

of **do'** are repeated as the first arguments of a predicate (*Scott, Jane* and *Anna* appear twice in the semantic representations in (19)). So, in order to distinguish them from the first arguments of state predicates, I list them in the table as the first arguments of **do'**. The 'y' arguments, however, share similarities with the 'y' arguments of state predicates and so I list them together.

We will return to this table when we look at causatives. For the moment, we need to look at how we can represent the semantic structure of the other predicate classes.

2.3 Other predicate classes

The semantic representations of the other predicate classes (achievements, semelfactives, accomplishments, active achievements and causatives) are based on state or activity predicates. Extra elements are added to represent the differences in meaning.

As far as the semantic role of their arguments is concerned, the other predicate classes follow the state or activity classes they are based on. In (21a), for example, we have an accomplishment predicate.

- (21) (a) The toaster broke. BECOME **broken'** (toaster) ACCOMPLISHMENT
 (b) The toaster is broken. **broken'** (toaster) (RESULT) STATE

As we can see, accomplishments are represented by adding BECOME to a state or activity predicate. In the case of (21a), BECOME is added to a result state predicate **broken'**. The argument *the toaster* has the same semantic role (patient) as it would have if it appeared with a simple state predicate, as in (21b).

Since the semantic roles follow from the state or activity predicates they are based on, this section will focus only on describing the semantic representations of the rest of the predicate classes.

2.3.1 The semantic representation of achievements

You will remember from section 1.1.3 that achievements are instantaneous changes of state or activity. For the semantic representation of achievements we simply add the notation INGR before state or activity predicates.¹⁶

- (22) The balloon popped. INGR **popped'** (balloon)
- (23) ó kú lánàá. INGR **dead'** (ó)
3SG die yesterday
'She died yesterday.'

We interpret (22) to mean that the balloon was suddenly in the state of being popped. The example in (23) comes from Yoruba (Atlantic-Congo, Nigeria). In Yoruba, the verb *kú* 'die' describes the point of death and is an achievement (Botne 2003: 270). Note that this is unlike English and Hausa (see (25)), where *die* also encodes the process of dying and is therefore an accomplishment.

2.3.2 The semantic representation of accomplishments

Accomplishments take time and have an inherent endpoint. We already saw how their semantic representation is formed in the introduction to this section, and further examples are given from English in (24) and from Hausa (Chadic, Nigeria) in (25). We add BECOME before state or activity predicates (though most are formed from states).¹⁷

- (24) (a) The snowman melted. BECOME **melted'** (snowman)
(b) Ben learned Karate. BECOME **know'** (Ben, Karate)
- (25) Yā mutù (jiya). BECOME **dead'** (yā)
3M.COMPL die (yesterday)
'He/it (has) died (yesterday).'

In contrast to Yoruba, the Hausa verb *mutù* is an accomplishment, since it codes the process of dying as well as the point of death (Botne 2003: 245).

2.3.3 The semantic representation of semelfactives

Semelfactives are similar to achievements in that they represent instantaneous events, but differ in that they do not involve a change of state. For their semantic representation we add SEML before a state predicate, as in (26), or an activity predicate, as in example (27) from Russian (Slavic, Russia) (Mehlig 1996: 97).

- (26) Jessica glimpsed the picture. SEML **see'** (Jessica, picture)
- (27) Mal'čik kival SEML **do'** (mal'čik, [**nod'** (mal'čik)])
boy nod.PST.IPFV
'The boy was nodding.'

2.3.6 Agents

We noted in section 2.2.2 that the first argument of **do'** in activity predicates generally has the semantic role of an effector, the person or thing that does something. We noted (and illustrated in (20)) that an effector could be a wilful, conscious agent or an inanimate entity (like the wind, for example).

There are some predicates that always *require* a conscious, wilful **AGENT**. Agents are effectors that always act deliberately. One predicate that requires such an argument is the English verb *murder*. By definition, the first argument of *murder* (the killer) acts deliberately. You cannot murder someone accidentally, though it is possible to kill someone accidentally.

We can represent this inherent property of *murder* through using **DO** at the front of the semantic representation, which indicates that the first argument is an agent type of effector. We put **DO** at the beginning of the semantic representation and then put the whole of the rest of the representation in an extra set of brackets. *Murder* is a causative accomplishment predicate: someone does something to cause someone else to die. We can therefore represent the contrast between *murder*, *kill*, *die* and *(be) dead* as in (31). Whichever way you look at it, things do not look good for the postman.

- (31) (a) The postman is dead. [**dead'** (postman)]
 (b) The postman died. [BECOME **dead'** (postman)]
 (c) Bob killed the postman (accidentally).
 [**do'** (Bob, Ø)] CAUSE [BECOME **dead'** (postman)]
 (d) Bob murdered the postman (*accidentally).
 [DO (Bob, [**do'** (Bob, Ø)] CAUSE [BECOME **dead'**
 (postman)])]

You can see from the data in (31) how the representations build on each other and show the relationship between the predicate classes.

The question of inherent intentionality associated with the verb *kill* is language-specific; in other words, languages vary in whether verbs like this require an agentive argument. In Tsafiki (Barbacoan, Ecuador), the use of different suffixes on the verb (termed 'conjunct' and 'disjunct') can indicate an agent (32a) or an effector (32b) (Dickinson 2000).¹⁸

- (32) (a) la kuchi=ka tote-yo-e.
 1M pig=ACC kill-CONJ-DECL
 'I killed the pig (intentionally).'
 (b) la kuchi=ka tote-i-e.
 1M pig=ACC kill-DISJ-DECL
 'I killed the pig (unintentionally).'

2.3.7 Summary of semantic roles

Now that we have one final semantic role – agent – we will add this to Table 4.9, which is now complete. If we examine the results in this table, we can see how particular semantic roles are associated with particular predicate classes or, more specifically, with particular positions in semantic representations. In other words, once we establish which class of predicate we have, that gives us a head

Table 4.9 *Semantic roles and predicate classes*

argument of DO	1st argument of do' (x, . . .)	1st argument of predicate' (x, y)	2nd argument of predicate' (x, y)	single argument of state predicate' (x)
AGENT	EFFECTOR	EXPERIENCER	SENSATION/TARGET	PATIENT
	CONSUMER	POSSESSOR	POSSESSED	
	CREATOR	LOCATION	THEME	
	OBSERVER	ETC.	LOCUS	
	ETC.		CONSUMED	
			CREATION	
			STIMULUS	
			ETC.	

start in determining the possible semantic roles of its arguments. For example, if we have a state predicate with one argument, we know that argument will have a patient role.

Secondly, we can see that looking towards the left of the table, we have more agentive semantic roles, with more control over the action, while towards the right of the table we have more patient-like semantic roles with less control. The semantic roles correlate with their position in the semantic representation. Note too that predicates cannot take more than one argument from each column. We will explore this pattern and its significance further in the next chapter.

2.4 Example from Norwegian (Germanic, Norway)¹⁹

In this section, we will examine some data from Norwegian, specifically the verb meaning 'walk'. The data is given in (33) and corresponds to the predicate class tests given in section 1.3.

- (33) (a) Jenta gjekk i parken i 10 minutt / *om 10 minutt.
 the.girl walked in the.park for ten minutes/ in ten minutes
- (b) Jenta gjekk sakte / energisk.
 the.girl walked slowly / energetically

We see from the ungrammaticality of adding *om 10 minutt* in (33a) that this verb has no inherent endpoint. The acceptability of the event occurring over ten minutes in the same example, and the grammaticality of the verb occurring with the adverb *sakte* 'slowly' in (33b) shows us that it is not inherently instantaneous. Norwegian does not have progressive aspect so we will rely on the data in (33b) to determine the predicate class. The fact that the verb can occur with a dynamic adverb like *energisk* 'vigorously' leads us to the conclusion that we have an activity predicate with a single argument.

We can now give *gjekk* a semantic representation suitable for an activity, as shown in (34).

- (34) **do'** (x, [walk' (x)])

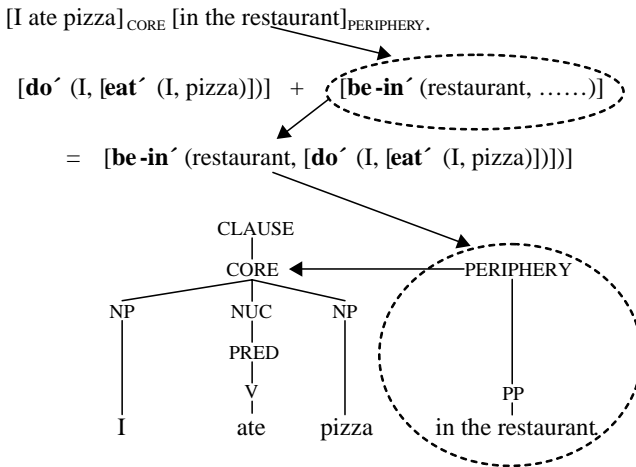


Figure 4.7 Representation of adjunct

If we then look at the table of semantic roles in section 2.3.7 we can predict that the ‘x’ argument will have an effector type semantic role. We might intuitively guess this to be the case but it is vital to have a process in place that enables us to check this independently so that we are in less danger of imposing the properties of our own language on the one we are analysing.

2.5 Semantic representation of other elements

In this section we look at the semantic representation of elements which appear in the syntactic periphery: these constituents, such as adverbs and adpositional phrases, modify the core (placing the whole event in time or space, for example) and are termed **ADJUNCTS**. An example is provided in (35) where *in the restaurant* describes the location of the ‘eating’ event.

(35) [I ate pizza]_{CORE} [in the restaurant]_{PERIPHERY}.

Adjuncts take the whole semantic representation of the core as an argument.²⁰ The connection between the semantic and syntactic representation of peripheral constituents is illustrated in Figure 4.7. The semantic representation of *I ate pizza* becomes the ‘y’ argument of the locative state predicate **be-in’**, showing it has scope over the whole core, and this is why it is placed in the syntactic periphery.²¹

Section summary

In this section you have learned:

- to understand the framework for the semantic representation of predicate classes,

Table 4.10 *Hierarchy of semantic roles*

More AGENT-like				More PATIENT-like
Argument of DO	1st argument of do' (x, . . .)	1st argument of predicate' (x, y)	2nd argument of predicate' (x, y)	single argument of state predicate' (x)
AGENT	EFFECTOR	EXPERIENCER	SENSATION/TARGET	PATIENT
	CONSUMER	POSSESSOR	POSSESSED	
	CREATOR	LOCATION	THEME	
	OBSERVER	ETC.	LOCUS	
	ETC.		CONSUMED	
			CREATION	
			STIMULUS	
			ETC.	

- to associate semantic roles (thematic relations) with the arguments of different predicate classes,
- to include the semantic representation of adjunct adpositional phrases.
- **KEY TERMS:** patient, experiencer, possessor, location, theme, effector, force, locus, agent.
- **EXERCISES:** A3, A4, B8, B9

3 Macroroles

In the last chapter we looked at the semantic roles of arguments and how these correspond to places in the semantic representation of predicates. We ended up with the table repeated here as [Table 4.10](#), which contains columns of semantic roles. We also noted that the arguments to the left of the table are more agentive while those to the right are more patient-like.

In this section, we will examine this pattern and condense the number of semantic roles down to two general groups of semantic roles, two **MACRO-ROLES** termed **ACTOR** and **UNDERGOER**. We will see that once we start studying the behaviour of these two generalized macroroles, we can begin making connections between where these arguments appear in semantic representations and how they are represented in the syntax. This will help us to understand better concepts like 'subject' and 'object', which we examine further in the next chapter. We will see that the actor and undergoer macrorole arguments in a clause are more significant than other arguments in terms of their function and how they affect the morphology and syntax of the clause.

3.1 Syntactic evidence of macroroles

To begin with, let us look at some evidence for grouping semantic roles into two macroroles. In (36a–e) we have sentences where underlined semantic arguments with various roles appear before the verb (as the ‘subject’).

- (36) (a) Larry broke the window. [do' (Larry, ∅)] CAUSE [BECOME **broken**' (window)]
 Larry = EFFECTOR
- (b) The wind is blowing. do' (wind, [**blow**' (wind)])
 The wind = EFFECTOR (FORCE)
- (c) Mary got a parking ticket. BECOME **have**' (Mary, parking ticket)
 Mary = POSSESSOR
- (d) The giraffes heard the roar. **hear**' (giraffes, roar)
 giraffes = EXPERIENCER
- (e) Bob murdered Len. DO (Bob, [[do' (Bob, ∅)] CAUSE [BECOME **dead**' (Len)])
 Bob = AGENT

Compare the examples in (36) with those in (37) where we have examples of the different semantic roles that a post-verbal ‘object’ noun phrase can have in English.

- (37) (a) Mary gave the man the book. [do' (Mary, ∅)] CAUSE [BECOME **have**' (man, book)]
 man = POSSESSOR
- (b) The giraffes heard the roar. **hear**' (giraffes, roar)
 the roar = STIMULUS
- (c) The cat popped the balloon. [do' (cat, ∅)] CAUSE [INGR **popped**' (balloon)]
 balloon = PATIENT

What we see is that certain groups of semantic arguments behave the same way in the syntax. The group of arguments that function as ‘subjects’ are generally more agentive semantic roles; that is, the ‘doers’. The group of arguments that typically function as ‘objects’ are generally more patient-like roles, having something done to them; they are the ‘affected’ arguments. We will label the agent-type group actor and the patient-type semantic group undergoer. These are names for the two macroroles, which are generalized ‘umbrella’ terms for groups of semantic roles, as we have seen in (36) and (37). Notice that actors do not have to be wilful agents, as (36b) shows, although they can be, of course.

In **ACTIVE** sentences with two arguments, such as (36a), (36c–e) and the sentences in (37), the actor macrorole argument is generally expressed as the syntactic subject and the undergoer is generally expressed as the object (at least in a language like English). We will re-evaluate the notions of ‘subject’ and ‘object’ in chapter 5. However, it is important to note here that actor and undergoer are semantic terms that do not necessarily correspond directly to subject and object, which are grammatical terms.

If we turn the sentences in (37) into **PASSIVE** sentences, for example, the undergoer semantic arguments are now the syntactic subject. An example pair is given in (38), where (38a) is an active sentence and (38b) its passive counterpart

Table 4.11 Actor-undergoer hierarchy

More likely to be ACTOR		More likely to be UNDERGOER		
		→		
Argument of DO	1st argument of do' (x, . . .)	1st argument of predicate' (x, y)	2nd argument of predicate' (x, y)	single argument of state predicate' (x)

and the subject is underlined in both. Notice that the semantic representations are exactly the same for the active and the passive sentences. (We will look at passive sentences in more depth in chapter 5.)

- (38) (a) Mary gave the man the book. [**do'** (Mary, Ø)] CAUSE [BECOME **have'** (man, book)]
 ACTOR
- (b) The man was given the book by Mary.
 UNDERGOER [**do'** (Mary, Ø)] CAUSE [BECOME **have'** (man, book)]

We can also look at the groupings of semantic roles in terms of their place in the semantic representation and see how significant the position of the argument is in determining the actor and undergoer macroroles. In (39) the 'x' and 'y' arguments have been lined up underneath each other to show this pattern.

(39) (a)	<i>break</i>	[do' (Fred, Ø)] CAUSE [BECOME broken' (window)]	x	y
(b)	<i>get(receive)</i>	BECOME have' (Mary,		parking ticket)
(c)	<i>hear</i>	hear' (giraffes,		roar)
(d)	<i>murder</i>	DO (Bob, [do' (Bob, Ø)] CAUSE [BECOME dead'		(Len)])
(e)	<i>give</i>	[do' (Mary, Ø)] CAUSE [BECOME have'		(man, book)]
(f)	<i>pop</i>	do' (cat, Ø) CAUSE [INGR popped'		(balloon)]
			↓	↓
			ACTOR	UNDERGOER

3.2 Actor and undergoer selection

The patterns we discovered in the [previous section](#) mean we can make some predictions about which argument in the semantic representation of a predicate is most likely to be the actor macrorole, and which is most likely to be the undergoer (and this will have consequences for the syntactic patterns we find). Each clause has only one actor macrorole argument and one undergoer macrorole argument. We can represent the correlation between the semantic position of the argument and how likely it is to be the actor or undergoer macrorole in [Table 4.11](#). This is termed the **ACTOR-UNDERGOER HIERARCHY** (Van Valin 2005: 61).

The arguments towards the left side of table (which you will remember are more agentive) are more likely to be the actor macrorole, while those to the right

(which are less agentive) are a more **MARKED** choice as actor. On the other hand, arguments towards the right are more likely to be the argument with an undergoer macrorole, with the single argument of a state predicate the least-marked choice.

Again, it seems like an intuitive point to say that the most agentive argument is most likely to be the actor. To an extent, this is true, but that is precisely why we need a system like the one described in this section, to operate independently of intuition.

3.3 Macrorole assignment

In the [previous section](#) we saw how certain arguments form groups in terms of how they behave in the syntax, and we subsume them together as macroroles. We also saw that we can predict which argument is likely to be the actor and which the undergoer. In this section, we look further at how we know how many macroroles a particular predicate will have and what those macroroles will be. We will be formulating fairly straightforward principles based on what we have discovered so far in terms of semantic roles and macroroles.

3.3.1 Macrorole assignment principles

The principles that we use to determine how many macroroles a predicate has and what they are follow from the semantic representation and can be stated as in (40) (Van Valin and LaPolla 1997: 152).

(40) Macrorole assignment principles:

- (a) **NUMBER:** the number of macroroles a predicate takes is less than or equal to the number of arguments in its semantic representation. In other words,
 - i. If a predicate has two or more arguments in its semantic representation, it will have two macrorole arguments.²²
 - ii. If a predicate has one argument in its semantic representation, it will have only one macrorole argument. See (40b).
- (b) **NATURE:** for predicates which have only one argument,
 - i. If the predicate has an activity predicate in its semantic representation, that single argument is an actor macrorole.
 - ii. If the predicate has no activity predicate in its semantic representation, that single argument is an undergoer macrorole.

It makes sense that a predicate cannot have more macroroles than it does semantic arguments. And in terms of its ‘nature’, since activities involve dynamic action, it is logical that their single argument should be an actor and that of a state should be an undergoer. I will illustrate these principles in the following sections.

3.3.2 Predicates with one argument

We have already seen in (36) and (38) that ‘subjects’ can have either an actor or undergoer macrorole, depending on whether the sentence is active or passive. This is also the case for predicates with one argument. That single argument can be either an actor or undergoer, depending on the predicate class of the basic

predicate, as stated in (40b). This correspondence is illustrated by the examples in (41) and (42).

- (41) (a) David danced. $\text{do}'(\text{David}, [\text{dance}'(\text{David})])$
David = 1st argument of $\text{do}'(x, \dots)$ → ACTOR MACROROLE
 (b) Lucy is coughing. $\text{SEML } \text{do}'(\text{Lucy}, [\text{cough}'(\text{Lucy})])$
Lucy = 1st argument of $\text{do}'(x, \dots)$ → ACTOR MACROROLE
- (42) (a) Mary is tall. $\text{be}'(\text{Mary}, [\text{tall}'])$
Mary = single argument of state $\text{predicate}'(x)$: → UNDERGOER MACROROLE
 (b) The ice melted. $\text{BECOME } \text{melted}'(\text{ice})$
ice = single argument of state $\text{predicate}'(x)$: → UNDERGOER MACROROLE

We can see in (41) that the single argument of an activity-based predicate like *dance* or *cough* is an actor, while in (42) the single argument of a state-based predicate like (*be*) *tall* or *melt* is an undergoer.

3.3.3 Predicates with more than one argument

For two-argument predicates, the assignment of actor and undergoer follows the hierarchy given in Table 4.11, and this was illustrated in the examples in (39). Two of those examples are repeated here in (43).

- (43) (a) *break* [$\text{do}'(\text{Fred}, \emptyset)$] CAUSE [BECOME **broken'**(window)]
 (b) *pop* [$\text{do}'(\text{cat}, \emptyset)$] CAUSE [INGR **popped'**(balloon)]

The argument furthest to the left of the representation (and the hierarchy) is the most agentive argument (*Fred* and *cat*): it gets selected as the actor macrorole. The argument furthest to the right (*window*, *balloon*), the least agentive argument, is the undergoer.

When a predicate has three arguments, some languages offer a choice as to which of the non-actor arguments is the undergoer macrorole. Look at the example from English in (44). Note that both of these sentences have the same semantic representation because they are two different ways of describing the same event.

- (44) (a) Wilma gave Fred a rock. } [$\text{do}'(\text{Wilma}, \emptyset)$] CAUSE [BECOME **have'**
 (b) Wilma gave a rock to Fred. } (Fred, rock)]

In English the actor generally appears pre-verbally, as the 'subject' in active sentences. Meanwhile, undergoers describe the primarily affected participant and generally appear immediately after the verb, as we see in (44).

The difference between (44a) and (b) is in the argument expressed as undergoer. In (44a) the first argument of **have'**, the POSSESSOR/RECIPIENT *Fred* is the undergoer (the primarily affected participant), appearing immediately after the verb. In (44b), on the other hand, the second argument of **have'**, the theme *rock* is the undergoer. If we look at the actor-undergoer hierarchy, we can see that the 'z' argument *rock* is more likely to be undergoer because this argument appears furthest to the right in the semantic representation. Therefore, sentence (44a) has

a marked choice of undergoer; in other words, not the one we might expect if we follow the hierarchy strictly and take the least agentive argument.²³

Some other languages also have this alternation. In (45) we have an example of marked and unmarked undergoer choice in Central Arctic (Eskimo, Canada). In Central Arctic, the undergoer carries **ABSOLUTIVE CASE**, which is unmarked.

- (45) (a) Anguti-up titiraut-Ø nutarar-mut tuni-vaa.
 man-ERG pencil-ABS child-DAT give-IND.3SG.3SG
 ‘The man gave a pencil to the child.’
- (b) Anguti-up titirauti-mik nutaraq-Ø tuni-vaa.
 man-ERG pencil-MOD child-ABS give-IND.3SG.3SG
 ‘The man gave the child a pencil.’
- (c) [do’ (anguti, Ø)] CAUSE [BECOME have’ (nutaraq, titiraut)]

The sentence in (45a) has the expected, or less marked, choice of undergoer in *titiraut* ‘pencil’, as the semantic representation in (45c) shows, and the other argument *nutarar* ‘child’ appears marked with non-macrorole dative case. Sentence (45b), on the other hand, has a marked choice for undergoer: while the word order remains the same, *nutaraq* ‘child’ is no longer marked with dative case but with absolutive case, and *titirauti* ‘pencil’ receives what is termed modalis case (another non-macrorole case; Bok-Bennema 1991: 152).

Notice too that the semantic representation given in (45c) is the same for both sentences, and is also the same as for the English verb *give*, although in (45c) the arguments are written in the Central Arctic language.

3.4 Valence and macrorole assignment

The principles and hierarchy described in (40) are valuable descriptive and predictive tools for language analysis. Nonetheless, it is important to note that there are a few exceptions to the macrorole assignment principles. **VALENCE** (or **TRANSITIVITY**) refers to the number of arguments a predicate has: predicates with one core argument are termed **INTRANSITIVE**, those with two are **TRANSITIVE** and those with three are **DITRANSITIVE**. However, as we will see in this section, we need to differentiate between numbers of syntactic arguments, semantic arguments and macroroles.

In this section we examine predicates where there is a mismatch between the number of syntactic arguments that a predicate appears with (its **SYNTACTIC VALENCE**), the number of semantic arguments it has in its representation (its **SEMANTIC VALENCE**) and the number of macroroles it has (its **MACROROLE VALENCE**).

3.4.1 Predicates with no semantic arguments

Some predicates have no semantic, referring arguments at all. English weather verbs like *rain* have no semantic arguments, but because English requires all

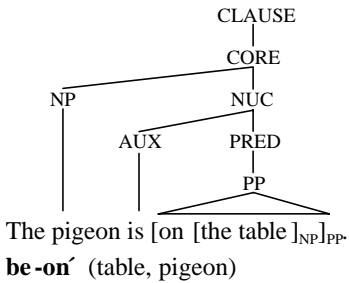


Figure 4.8 *Representation of locative predicate*

declarative sentences to have at least one syntactic argument, they appear with a **DUMMY** syntactic argument *it*, as illustrated with *snow* in (46). Dummy arguments are syntactic arguments that do not refer to a participant. Clearly then, since they have no semantic arguments, they also have no macroroles.

(46) It's snowing. **snow'**

3.4.2 Locative state predicates

Intransitive location predicates have two semantic arguments but only one is a macrorole argument. The macrorole argument is the one which appears as a core argument in the syntax. In the sentence shown in Figure 4.8, for example, *the pigeon* is the macrorole argument because it is a direct syntactic argument in the core. The noun phrase *the table*, on the other hand, appears within the prepositional phrase *on the table*, not as a direct argument: it is not an argument of the core so cannot be any kind of macrorole. Since **be-on'** is a state predicate, the single macrorole is undergoer, so in Figure 4.8 *the pigeon* is the undergoer macrorole.

3.4.3 Activities and active achievements

There is a class of activity verbs that at first do not seem to follow the macrorole assignment principles. Compare the pair of examples in (47).

- (47) (a) Bill drank beer. ACTIVITY
 (b) Bill drank a beer. ACTIVE ACHIEVEMENT

We are particularly interested here in the (a) example. The situation described in (47a) does not have an inherent endpoint; it is an activity. The object *beer* does not refer to a specific participant; in a sense it tells us what 'kind' of drinking Bill did: this lack of specific reference means that these objects can sometimes become syntactically incorporated into the verb, as in the sentence *Bill went beer-drinking*. (We will look further at noun incorporation in chapter 5.)

Because *beer* is non-referential, it cannot refer to a specific ‘affected’ participant, which is what the undergoer has to be. Therefore, this second argument of the activity predicate is a syntactic argument of the core, and it is a semantic argument in the semantic representation but it is not a macrorole. As such, there is only one (actor) macrorole in this type of activity predicate.

In (47b), in contrast, we have an active achievement. The specific, referring argument *a beer* is the undergoer and gives the event an endpoint. There are two macrorole arguments in (47b), following the principles in (40).

In Leti (Malayo-Polynesian, Indonesia), syntactic incorporation is the only way to represent activities with second arguments as the pair of examples in (48) illustrate.

- (48) (a) Ntikikilbaale.
 n-tik-tikli-baala=e
 3SG-RED-kick-ball=DEX
 ‘He kicks balls around.’
- (b) Ntikli baale.
 n-tikli baala=e
 3SG-kick:DEX ball=DEX
 ‘He kicks the ball.’

Example (48a) shows an activity structure where the incorporated *baale* does not refer to a participant in the event but merely characterizes the kicking. In (48b), in contrast, the independent noun phrase *baale* indicates an undergoer, creating an active achievement with a telic interpretation (van Engelenhoven 2004: 195–6).

Section summary

In this section you have learned

- to recognize two generalized semantic roles called macroroles,
- to understand the actor-undergoer hierarchy,
- to apply the principles for determining how many macroroles a predicate has, and what they are, as well as the exceptions to those principles.
- **KEY TERMS:** macrorole, actor, undergoer, markedness, valence.
- **EXERCISES:** A5, B10

Further reading

On semantic representation: Van Valin and LaPolla (1997: 82–195), Van Valin (2005: 31–67).

Exercises

A. Exercises from English

1. *Predicate classes – basic

Match each sentence with a predicate class chosen from those given in the box.

- (1) Dwight nodded his head uncertainly.
- (2) Bob follows Dwight.
- (3) Bob recovered from a broken leg.
- (4) Dwight secretly knitted six scarves.
- (5) The convention began at 2pm.
- (6) Dwight went to a knitting convention.
- (7) Dwight hears voices.

ACTIVE ACHIEVEMENT STATE	ACTIVE ACHIEVEMENT	SEMELFACTIVE ACCOMPLISHMENT	ACHIEVEMENT ACTIVITY
-----------------------------	--------------------	--------------------------------	-------------------------

2. *Predicate classes – causative

Match each sentence with a predicate class chosen from those given in the box.

- (1) Dwight's grandmother has taught Dwight how to knit a scarf.
- (2) Dwight's knitting pleased his grandmother.
- (3) Dwight's grandmother tapped her baseball bat in her hand.
- (4) Bob bounced the ball of pink wool around the room.
- (5) Dwight marched his grandmother to the police station.
- (6) Bob snapped Dwight's knitting needles in half.

CAUSATIVE ACCOMPLISHMENT	CAUSATIVE ACHIEVEMENT	CAUSATIVE SEMELFACTIVE
CAUSATIVE ACTIVITY	CAUSATIVE ACTIVE ACHIEVEMENT	CAUSATIVE STATE

3. *Semantic representations

Match the sentences with their semantic representations. (**pred'** = predicate)

- | | | |
|----------------------------------|--|--|
| (1) The dog is brown. | a. BECOME pred' (x) | |
| (2) The dog is dead. | b. [do' (x, [pred' (x, y)))] & [INGR pred' (y)] | |
| (3) The dog died. | c. pred' (x) | |
| (4) The lion killed the dog. | d. [do' (x, ∅)] CAUSE [INGR pred' (y)] | |
| (5) The wind snapped the branch. | e. be' (x, [pred']) | |
| (6) The snowman ate six muffins. | f. do' (x, [pred' (x)]) | |
| (7) The astronaut is walking. | g. [do' (x, ∅)] CAUSE [BECOME pred' (y)] | |

4. **Semantic representations

Write out the semantic representations for the following sentences, based on your answers from exercises (1) and (2). Note that some of the sentences here are slightly different from those in exercises (1) and (2).

Indicate which arguments are the actor and undergoer macrorole arguments.

- (1) Dwight nodded his head.
- (2) Bob follows Dwight.
- (3) Dwight knitted six scarves.
- (4) Dwight went to a knitting convention.
- (5) Dwight hears voices.
- (6) Dwight's knitting pleased his grandmother.
- (7) Dwight marched his grandmother to the police station.
- (8) Bob snapped Dwight's knitting needles.

5. **Semantic representations and macroroles

Write an example sentence in English (or your own language if it is not English) that would be expressed by these semantic representations. In English at least, it is possible to express these meanings with simple clauses; that is, containing just one main predicate.

Indicate which arguments are actor and undergoer macroroles.

- (1) [DO (x, [do' (x, Ø)] CAUSE [INGR **dead'** (y)])]
- (2) **do'** (x, [**blow'** (x)])
- (3) **do'** (x, [**eat'** (x, y)])
- (4) [**do'** (x, Ø)] CAUSE [BECOME **be'** (y, [**fat'**])]
- (5) **do'** (x, [**see'** (x, y)])
- (6) **see'** (x, y)
- (7) [**do'** (x, Ø)] CAUSE [BECOME **have'** (y, z)]
- (8) **be-on'** (x, y)
- (9) **be'** (x, [**bald'**])
- (10) BECOME NOT **be'** (x, [**sick'**])

B. Exercises from other languages

1. *Burmese (Tibeto-Burman, Myanmar)²⁴

Based on the following data, determine the predicate class of the verbs *ne* 'stay, live' and *θi* 'know'.

- (1) a. $\tilde{e}i=ma \quad ne!$
house=at stay
'Stay at home!'
- b. $*\text{əp}^h\text{je}=ko \quad \theta i!$
answer=OBJ know
(*Know the answer!')
- (2) a. $mj\acute{a}k^h\tilde{i} \quad \tilde{e}i=ma \quad ne=pa=l\acute{o} \quad \theta u \quad \text{ə}m\tilde{e}i \quad p\grave{e}=\text{t}\epsilon.$
Mya Khin house=at stay=POL=COMPL she order give=RL
'She ordered Mya Khin to stay at home.'
- b. $*mj\acute{a}k^h\tilde{i} \quad \text{əp}^h\text{je}=ko \quad \theta i=pa=l\acute{o} \quad \theta u \quad \text{ə}m\tilde{e}i \quad p\grave{e}=\text{t}\epsilon.$
Mya Khin answer=OBJ know=POL=COMPL she order give=RL
(*She ordered Mya Khin to know the answer.')

- (3) a. $\theta u \text{ } \acute{e}i=\eta a \text{ } t\acute{a}m\acute{i}\theta\epsilon? \theta\epsilon? \text{ } ne=t\epsilon.$
 she house=at intentionally stay=RL
 ‘She stayed at home intentionally.’
- b. $*\theta u \text{ } \acute{a}p^hje \text{ } t\acute{a}m\acute{i}\theta\epsilon? \theta\epsilon? \text{ } \theta\acute{i}=t\epsilon.$
 she answer intentionally know=RL
 (*She knew the answer intentionally.)
- (4) a. $\theta\acute{u}=m\acute{f}b\acute{a}=t\acute{o}=\eta\acute{i} \text{ } ne=ne=t\epsilon.$
 her=parent=PL=with stay=CONT=RL
 ‘She’s staying with her parents (now).’
- b. $*\theta u \text{ } \acute{a}p^hje \text{ } \theta\acute{i}=ne=t\epsilon.$
 she answer know=CONT=RL
 (*She is knowing the answer (now).’)

2. *Koyraboro Senni (Songhai, Mali)²⁵

What is the effect of adding the *-(a)ndi* suffix to the following predicate stems in all the following data?

In Set 2, what is the predicate class before and after the suffix is added?

- (1) a. ben ‘finish’ ben-andi ‘cause to end’
 b. haŋ ‘drink’ haŋ-andi ‘irrigate’
 c. too ‘arrive’ too-ndi ‘deliver’
 d. ŋaa ‘eat’ ŋaa-ndi ‘feed’
- (2) a. kan ‘(be) sweet’ kaan-andi ‘sweeten’
 b. koron ‘(be) hot’ konn-andi ‘(to) heat’
 c. šerre ‘(be) straight’ šerr-andi ‘straighten’
 d. too ‘(be) full’ toon-andi ‘fill’

3. **Dhangar-Kurux (Dravidian, Nepal)²⁶

Examine the data and answer the following question: what effect does it have to add *-(a)n* to the object noun phrase in terms of

- the semantic interpretation of the noun phrase? (Hint: (1a) could also be translated ‘I did paddy-reaping’.)
- the predicate class of the verb?

- (1) a. een xess xosskan.
 I paddy reaped
 ‘I reaped paddy (yesterday).’
- b. een xess-an xosskan.
 I paddy reaped
 ‘I reaped the paddy.’
- (2) a. een g^hoŋo xindkan.
 I horse bought
 ‘I bought a horse.’

- b. een manrupas-hi g^hoɽo-n xindkan.
I Manrup's horse bought
'I bought Manrup's horse.'
- (3) a. een dahri k^handɽkan.
I beard cut
'I shaved.'
- b. een manrupas-hi dahri-n k^handɽkan.
I Manrup's beard cut
'I shaved Manrup.'

4. *Plains Cree (Algonquian, Canada)²⁷

The predicates in the following data appear with either the suffix *-(i)si* or *-(i)n* immediately after the verb stem. Describe which predicate classes appear with *-(i)si* and which appear with *-(i)n*.

Since you do not have access to predicate class test results for this language, you will have to assume that the class is the same as the English translation. The morphemes *-(i)si* and *-(i)n* are unglossed in order not to give away the answer.

- (1) a. ni-kino-si-n.
I-tall-??-1/2
'I am tall.'
- b. ni-t-âhko-si-n.
I-t-sick-??-1/2
'I am sick.'
- c. sêk-isi-w.
scare-??-INAN
'S/he is scared.'
- d. kanû t-isi-w.
clean-??-INAN
'S/he is clean.'
- (2) a. ni-pîko-n-ê-n.
I-break-??-INAN.TH-1/2
'I broke it (by hand).'
- b. ni-tihk-in-ê-n.
I-melt-??-INAN.TH-1/2
'I melted it (by hand).'
- c. tahk-in-am(-w).
cold-??-INAN.TH(-3)
'S/he cools it (by hand).'
- d. ni-kisîpêk-in-ê-n ôma wiyâkan.
I-wash-??-INAN.TH-1/2 this dish
'I washed this dish.'

5. *Plains Cree (Algonquian, Canada)²⁸

In this second exercise based on Plains Cree, the predicates have undergone 'light' reduplication. Describe the morphological process of reduplication as evidenced in this data.

In the two sets of data (A) and (B) the effect of reduplication is different. Describe the effect of reduplication in the two sets and account for why the difference is there, basing your answer on the predicate classes in the two sets. (The morpheme breakdown has been omitted.)

Set A:

- (1) a. âhkosiw. 'S/he is sick.'
 b. ayâhkosiw. 'S/he is very sick.'
- (2) a. mihkwâw. 'It is red.'
 b. mamihkwâw. 'It is very red.'
- (3) a. miywêyih tamw. 'S/he likes it.'
 b. mamiywêyih tamw. 'S/he really likes it.'

Set B:

- (1) a. pâhpiw. 'S/he laughs.'
 b. papâhpiw. 'S/he is laughing.'
- (2) a. tihkipayiw. 'It melts (suddenly).'
 b. tatihkipayiw. 'It is starting to melt.'
- (3) a. ocêmêw. 'S/he kisses him/her.'
 b. ayocêmêw. 'S/he is kissing him/her.'

6. ***Bella Coola (Salishan, Canada)²⁹

Examine the effect of *?aʔ-* prefix on different predicate classes. Describe the effect and assess both the similarities and the differences in the effect of adding *?aʔ-* to the different predicate classes. Do not get too distracted by tense differences; focus on aspectual differences (in terms of operators and predicate classes).

- (1) a. *?aʔ-qup'*-is vans sa: x^wan.
 ??-punch-he.her Vance Saxwan
 'Vance keeps punching Saaxwan.'
- b. *qup'*-is vans sa: x^wan.
 punch-he.her Vance Saxwan
 'Vance punched Saaxwan.'
- (2) a. *?aʔ-?ap x^w-ic.*
 ??-lift-I.it
 'I'm holding it up.'
- b. *?ap x^w-ic.*
 lift-I.it
 'I'll lift it up.'

- (3) a. $\text{ʔaʔ-mulm-}\emptyset$ snac.
 ??-dive-he Snac
 ‘Snac is swimming underwater.’
 b. mulm- \emptyset snac.
 dive-he Snac
 ‘Snac dived into the water.’
- (4) a. $\text{ʔaʔ-kic-}\emptyset$.
 ??-crooked-it
 ‘It’s been made crooked.’
 b. kic’- \emptyset .
 crooked-it
 ‘It’s crooked.’
- (5) a. $\text{ʔaʔ-ʔq-}\emptyset$.
 ??-split-it
 ‘It’s been split.’
 b. ʔq’- \emptyset .
 split-it
 ‘It split (by itself).’
- (6) a. cp-ic ti-q’^w x^wmtimut-tx.
 wipe-I.it PROX-car-PROX
 ‘I wiped the car.’
 b. ʔaʔ-cp-ic ti-q’^w x^wmtimut-tx.
 ??-wipe-I.it PROX-car-PROX
 ‘I keep wiping the car.’
 c. $\text{ʔaʔ-cp-}\emptyset$ ti-q’^w x^wmtimut-tx.
 ??-wipe-it PROX-car-PROX
 ‘The car’s been wiped.’
 d. *cp- \emptyset .
 (‘It is wiped.’)
- (7) a. tap-is snac ti-numucta-tx.
 open-he.it Snac PROX-door-PROX
 ‘Snac opened the door.’
 b. ʔaʔ-tap-is snac ti-numucta-tx.
 ??-open-he.it Snac PROX-door-PROX
 ‘Snac keeps opening the door.’
 c. $\text{ʔaʔ-tap-}\emptyset$ ti-numucta-tx.
 ??-open-it PROX-door-PROX
 ‘The door’s open.’
 d. *tap- \emptyset .
 (‘It is open.’)
- (8) a. lis-cs snac.
 push-he.me Snac
 ‘Snac pushed me.’

- b. ʔaʔ-lis-tinic .
 ??-push-PASS.I
 ‘I’ve been pushed.’
- (9) a. $\text{caq}^w\text{-}\emptyset$.
 straight-it
 ‘It’s straight.’
- b. $\text{ʔaʔ-caq}^w\text{-}\emptyset$.
 ??-straight-it
 ‘It’s been straightened.’
- c. $\text{caq}^w\text{-tuc}$.
 straight-CAUS.I.it
 ‘I’ll straighten it.’
- (10) a. ʔiʔm-\emptyset ti-stn-tx .
 be.upright-it PROX-stick-PROX
 ‘The stick is upright.’
- b. $\text{ʔaʔ-ʔiʔm-\emptyset}$ ti-stn-tx .
 ??-be.upright-it PROX-stick-PROX
 ‘The stick has been stood upright.’
- c. ʔiʔm-tus ʔaleks ti-stn-tx .
 be.upright-CAUS.he.it Alex PROX-stick-PROX
 ‘Alex stood the stick upright.’
- d. ʔaʔ-ʔiʔm-tus ʔaleks ti-stn-tx .
 ??-be.upright-CAUS.he.it Alex PROX-stick-PROX
 ‘Alex is holding the stick upright.’

7. *Bonggi (Malayo-Polynesian, Malaysia)³⁰

Determine the predicate class of the verbs in the data. The results of the predicate class tests for each predicate class are shown with each example.

Describe how the differences between related predicates seem to be marked morphologically, according to the data you have. Note that certain affixes have been glossed with the generic ‘AFX’ since their more accurate glosses would indicate the predicate class of the predicate.

Test	States	Achievements	Accomplishments	Activities	Active achievements
Test 2: occurs with adverb <i>kosog</i> ‘vigorously’	No	No	No	Yes	Yes
Test 3: occurs with adverb <i>peladn-peladn</i> ‘slowly’	No	No	Yes	Yes	Yes
Test 4: occurs with X for an hour	Yes	No	irrelevant	Yes	irrelevant
Test 5: occurs with X in an hour	No	No	Yes	No	Yes

- (1) Sia di bali nya. Tests: 2: No 3. No 4. Yes 5. No
 3s.NOM at house 3s.GEN
 'He is at his house.'
- (2) Sia kim-ingad. Tests: 2: No 3. Yes 4. Irrel. 5. Yes
 3s.NOM AFX-near
 'It became near.'
- (3) Sia n-dabu?. Tests: 2: No 3. No 4. No 5. No
 3s.NOM RL-fall
 'He fell.'
- (4) Sia m-ingad. Tests: 2: No 3. No 4. Yes 5. No
 3s.NOM AFX-near
 'It is near.'
- (5) Sia longi. Tests: 2: Yes 3. Yes 4. Yes 5. No
 3s.NOM <AFX>swim
 'He swims.'
- (6) Sia l<i><m>ongi kin-di seborokng sungi na.
 3s.NOM <RL><AFX>swim to-at other.side river the
 'He swam to the other side of the river.'
 Tests: 2: Yes 3. Yes 4. irrel. 5. Yes

8. *Burmese (Tibeto-Burman, Myanmar)³¹

Describe the predicate class of the predicates in the following sentences, based on their semantic representations.

- (1) a. mják^{hĩ} ěi=ṃa jí=tɛ.
 Mya Khin house=at be=RL
 'Mya Khin is at the house.'
 b. [**be-at**' (ěi, mják^{hĩ})]
- (2) a. kəlè=de ŋo=tʃá=tɛ.
 child=PL cry=PL=RL
 'The children cried.'
 b. [**do**' (kəlède, [**cry**' (kəlède)))]
- (3) a. bəḏĩbauṃṃā kwè=θwà=tɛ.
 window.pane break=go=RL
 'The window broke.'
 b. [INGR **broken**' (bəḏĩbauṃṃā)]
- (4) a. jegè pjɔ=θwà=tɛ.
 ice melt=go=RL
 'The ice melted.'
 b. [BECOME **melted**' (jegè)]

- (5) a. mják^hĩ s^hāi=ko pjè=θwà=tɛ.
Mya Khin store=to run=go=RL
'Mya Khin ran to the store.'
- b. [do' (mják^hĩ, [run' (mják^hĩ))] & [INGR **be-at'** (s^hāi, mják^hĩ)]
- (6) a. mják^hĩ bədĩbau?mā=ko k^hwè=lai?=tɛ.
Mya Khin window.pane=OBJ break=follow=RL
'Mya Khin broke the window.'
- b. [do' (mják^hĩ, Ø)] CAUSE [INGR **broken'** (bədĩbau?mā)]

9. **Fijian (Oceanic, Fiji)³²

Examine the following two sets of data from Fijian.

Based on the two sets of data, what is the difference between the predicate classes of the two sets of verbs both before and after a transitivizing suffix is added?

Write out the semantic representation for Set A (1a) and (1b), and Set B (1a) and (1b). What are the semantic roles of the arguments before and after the suffix is added?

Set A

- (1) a. E dree a cauravou.
3SG pull ART youth
'The youth is pulling.'
- b. E dre-ta a waqa a cauravou.
3SG pull-TR ART boat ART youth
'The youth is pulling a boat.'
- (2) a. E la'o a marama.
3SG go ART woman
'The woman is going.'
- b. E la'o-va a suka a marama.
3SG go-TR ART sugar ART woman
'The woman is going for sugar.'
- (3) a. E tadra a gone.
3SG dream ART child
'The child is dreaming.'
- b. E tadra-a a 'aa'ana a gone.
3SG dream-TR ART food ART child
'The child is dreaming of food.'

Set B

- (1) a. E lo'i a kaukamea yai.
3SG bend ART metal this
'This (piece of) metal is bent.'
- b. E lo'i-a a kaukamea yai a cauravou.
3SG bend-TR ART metal this ART youth
'The youth is bending this (piece of) metal.'

- (2) a. E tawa a 'oro yai.
3SG inhabit ART village this
'This village is inhabited.'
- b. E tawa-na a 'oro yai a vuulagi.
3SG inhabit-TR ART village this ART stranger
'Strangers inhabit this village.'
- (3) a. E qaqi a dovu.
3SG crush ART sugar.cane
'The sugar cane is crushed.'
- b. E qaqi-a a dovu a cauravou.
3SG crush-TR ART sugar.cane ART youth
'The youth is crushing the sugar cane.'

10. **Dong (Tai-Kadai, China)³³

Determine the predicate classes of the predicates in the following data. You will have to use the English translations to guide you, and the semantic representations in the next part of this question. Describe what further tests you would want to use (that is, what data you would want to elicit) to check the predicate class in each case.

Choose from the semantic representations given here (each template fits only one sentence) and write out the semantic representation for each of the following examples, remembering to write the arguments in Dong. (Only include predicates and their arguments, ignore the other elements.)

- do'** (x, [predicate' (x)])
 INGR **predicate'** (x)
predicate' (x, y)
predicate' (x, y)
 [do' (x, Ø)] CAUSE [INGR **have'** (y, z)]
 SEML **do'** (x, [predicate' (x)])
 [do' (x, Ø)] & [INGR **predicate'** (y, x)]

Determine the actor and undergoer macrorole arguments in each example, based on your semantic representations and the principles given in (40), section 3.3.1.

Note: the numbers refer to tone patterns.

- (1) to²² mət³⁵ jim¹¹ to²² nəi²².
CLF flea dislike CLF louse
'The flea dislikes the louse.'
- (2) ʔai¹¹ jən⁵⁵ la³¹.
cock crow STM
'The cock crowed.'
- (3) mau⁴⁴ sai¹¹ ta⁴⁴ jau²².
3SG give before 1SG
'He gave (it) to me.'

- (4) mau³³ ɕa³²³ li²² lai⁵⁵.
 3SG write PTCL good
 'He writes well.'
- (5) noŋ³¹ jau²¹² ljo³⁵ jaŋ³¹.
 younger.brother 1SG wake.up STM
 'My younger brother woke up.'
- (6) mau⁴⁴ tou⁵⁵ ɕaŋ²².
 3SG go.to market
 'He went to the market.'
- (7) jau²² me²² ji³⁵ wa³³ kwan³⁵.
 1SG have one CLF axe
 'I have an axe.'

5 Integrating language structure

KEY TOPICS

- Grammatical relations
- Case
- The nominative-accusative pattern
- The ergative-absolutive pattern
- Valence-changing constructions, including voice

1 How semantic roles are syntactically marked

In the last chapter we learned about different semantic roles and how these are connected to the predicate class with which they occur. In this chapter we look at how those semantic roles are made clear in the syntax. In other words, we look at how languages show who did what to whom, and with what.

In addition, we find that macrorole arguments – that is, the actor and the undergoer – group together in different ways. In this section I begin by describing the morpho-syntactic ways that languages mark semantic roles.

1.1 Linear order

1.1.1 Word order

In many languages, the actor and undergoer arguments appear in a certain position in the sentence and this tells us which is the actor and which the undergoer.¹ In English, for example, the actor argument appears before the verb and the undergoer appears after the verb in a declarative sentence. This is why English is said to have a ‘Subject-Verb-Object’ word order or, in our terminology, Actor-Predicate-Undergoer constituent order. We know from the order of the constituents in (1a), for example, that the alien is the actor, the one doing the zapping.

- (1) (a) The small green alien zapped the reckless astronaut.
ACTOR PREDICATE UNDERGOER
- (b) The reckless astronaut zapped the small green alien.

If we reverse the order of the noun phrases, as in (1b), the astronaut appears in actor position in the sentence and is interpreted as such.

1.1.2 Affix order

In head-marking languages, it may be the order and position of the affixes on the head that gives us information about who did what to whom, rather than the order of the noun phrases (which are often optional). We see this illustrated by the examples from Baure (Arawakan, Bolivia) in (2) and (3).

- (2) (a) heni, ver nikomorikier.
 heni ver ni=ikomorik=ro
 yes PRF 1SG=kill=3SG.M
 ‘Yes, I already killed it.’
- (b) ver nikowoyočor.
 ver ni=kowoyo-čo=ro
 PRF 1SG=bathe-APPL=3SG.M
 ‘I already bathed him.’
- (3) (a) pipanir.
pi=pa=ni=ro
2SG=give=1SG=3SG.M
 ‘You give it to me.’
- (b) nipapir.
ni=pa=pi=ro
1SG=give=2SG=3SG.M
 ‘I give it to you.’

As these examples show, the actor argument is expressed as a proclitic, attached to the front of the verb, while the undergoer and third argument are expressed as enclitics, appearing after the root (Danielson 2007: 176–7).

1.2 Case and adpositions

1.2.1 Case

As we saw in chapter 3, some languages mark semantic roles on arguments with inflectional morphology (case). Affixes or clitics attached to the noun phrases show the semantic role of that referent (a dependent-marking system). When a language has case marking, it does not need to rely so heavily on word order to tell us who did what. As a consequence, languages that use case marking may have freer word order. In Matses (Panoan, Peru), for example, the noun phrases can appear in either order since the case marking tells us who is the actor (marked with **ERGATIVE CASE**) and who is the undergoer ((zero-)marked with absolutive case), as we see in (4a) and (b) where the noun phrases are reversed but the meaning stays the same (Fleck 2006: 543).

- (4) (a) wennando-n debi-Ø kues-o-şh.
 Fernando-ERG Davy-ABS hit-PST-3
 ‘Fernando hit Davy.’
- (b) debi-Ø wennando-n kues-o-şh.
 Davy-ABS Fernando-ERG hit-PST-3
 ‘Fernando hit Davy.’

Lezgian (East Caucasian, Russian Federation) is a language with an extensive case-marking system. It has a total of eighteen different cases marking different semantic roles, and these are illustrated in (5).

- (5) (a) sew ‘the bear’ (absolutive)
 (b) sew-re ‘the bear’ (ergative)
 (c) sew-re-n ‘of the bear’ (genitive)
 (d) sew-re-z ‘to the bear’ (dative)
 (e) sew-re-w ‘at the bear’
 (f) sew-re-w-aj ‘from the bear’
 (g) sew-re-w-di ‘toward the bear’
 (h) sew-re-q^h ‘behind the bear’
 (i) sew-re-q^h-aj ‘from behind the bear’
 (j) sew-re-q^h-di ‘to behind the bear’
 (k) sew-re-k ‘under the bear’
 (l) sew-re-k-aj ‘from under the bear’
 (m) sew-re-k-di ‘to under the bear’
 (n) sew-re-l ‘on the bear’
 (o) sew-re-l-aj ‘off the bear’
 (p) sew-re-ldi ‘onto the bear’
 (q) sew-re ‘in the bear’
 (r) sew-räj ‘out of the bear’

The first four are grammatical cases (see section 2.2.2) and the other fourteen are related to motion and location. Notice that the more complex meanings are expressed through combinations of case markers (Haspelmath 1993: 74).

1.2.2 Adpositions

The translations of the examples in (5) illustrate that English makes more use of adpositions than of case marking to mark the different semantic roles of arguments that are not macroroles. Further examples are provided in (6).

- (6) (a) The elf gave the treasure map to the giant. RECIPIENT
 (b) The giant held the treasure map for the elf. BENEFACTOR
 (c) The elf hit the giant with his tiny fists. INSTRUMENT
 (d) The giant bent down to the ground. GOAL
 (e) The elf deciphered the map with the giant. ACCOMPANIMENT

Section summary

In this section you have learned:

- to recognize the morpho-syntactic strategies languages use to code the semantic roles of participants.
- **KEY TERMS:** constituent order, case.
- **EXERCISES:** A1, B1

2 Grammatical relations

In chapter 4, we discovered that there are two macroroles that arguments can have, actor and undergoer, and that the actor and undergoer arguments have special functions in clauses. In this section we will look at the syntactic roles ('grammatical relations') that arguments can have and see what the connection is between semantic macroroles and syntactic function. In section 3 we will go on to look at ways that we can vary the number of arguments in a construction.

2.1 The 'subject' – syntactic patterns

When we talk about the 'subject' of a sentence, what do we mean? We are usually referring to the argument that the sentence is 'about'. It has special syntactic functions and semantic properties. Let us look first at some of the *syntactic* features we might associate with 'subjects'.

Firstly, in some languages the subject may occur in a particular position in the sentence. In English, for example, it is the first noun phrase argument in a declarative sentence. In (10), *Angela* is the subject, not *the game*.

(10) Angela watched the game.

Secondly, some properties of the subject (e.g. person, number, gender) may be reflected in agreement marking on the verb. In (11), for example, the verb agrees in person and number with the singular noun phrase *the vet* (not the plural noun phrase *cats*).

(11) The vet prefers cats.

Thirdly, the subject noun phrase may take a particular case marking. To use another English example, subject pronouns like the third person singular masculine actor in (12) appear in nominative case.

(12) He likes her. / *Him likes her.

Fourthly, a subject argument may be omitted from the sentence when clauses are connected together. In (13), we interpret Carmyn as being the actor for

all the verbs even though all the clauses except *weigh* are ‘missing’ their actor argument in the syntax.

- (13) Carmyn_i weighed the ingredients, ____i chopped them, ____i boiled them in the pot, ____i stirred the soup and ____i poured it into a bowl.

Finally, the subject is usually the topic of a sentence, in the sense that it is the referent that the sentence is about.

All of the descriptions above might be true of subjects in any particular language but none of them is required. Although ‘subject’ is a helpful term for many languages, there is no definition that all linguists agree on for what is meant by ‘subject’.

2.2 The ‘subject’ – semantic properties

In the section above we looked at some syntactic properties of ‘subjects’. In this section we turn to the semantic role(s) of the ‘subject’. We may have learned that the ‘subject’ is the most agent-like argument in a clause, the ‘doer’ of the action. However, even in English this is not always accurate. In all the sentences in (14), for example, the single argument, traditionally considered to be the ‘subject’, has an undergoer (patient) role.

- (14) (a) Kim is wise.
 (b) Larry is in his car.
 (c) Anna is a poet.
 (d) Matthew is tall.

In this section we will look at the different *semantic* roles that subjects can have, focusing particularly on the actor and undergoer macroroles. We will look again at morphological coding like verb agreement and case marking and also at the behaviour of the ‘subject’ argument in more complex sentences. I will introduce some terminology that will help us to be more precise in our description of the grammatical relations we find.

2.2.1 Verb agreement

Let us look again at the argument with which the verb agrees. In (15) we have examples of different sentence types, along with their semantic representations and macroroles. On the right are descriptions of the arguments that the verb (the auxiliary verb *be*) does or does not agree with.³

- (15) (a) The child is reading magazines. ✓ Actor of a transitive verb
 do' (child, [read' (child, magazines)])
 ACTOR UNDERGOER
- (b) The child is singing. ✓ Actor of an intransitive verb
 do' (child, [sing' (child)])
 ACTOR

we can see case marking on pronouns (*she/he* and *her/him*) so we will look at the distribution of the form *she* in the examples in (17).

- | | | |
|----------|--|--|
| (17) (a) | <u>She</u> caught the mouse. | ✓ Actor of a transitive verb |
| (b) | <u>She</u> came. | ✓ Actor of an intransitive verb |
| (c) | <u>She</u> grew. | ✓ Undergoer of an intransitive verb |
| (d) | *The policeman caught <u>she</u> . | ✗ Undergoer of a transitive verb |
| (e) | <u>She</u> was caught by the policeman. | ✓ Undergoer of a transitive verb (passive) |
| (f) | *The astronaut gave the rose to <u>she</u> . | ✗ Non-macrorole argument |

Comparing the sentences in (15) to those in (17), we find the same pattern that I described in (16). The *she* form of the feminine singular pronoun (a nominative form) occurs when the argument is the single argument of an intransitive verb (17b and c), the actor of a transitive verb (17a) and the undergoer in a passive voice construction (17e). We find a restricted neutralization of the semantic macroroles of actor and undergoer, along with the possibility of passive voice and so here again we have a syntactic PSA.

2.2.3 The *want* construction

Finally, we will turn to a more complex construction where we shall see the importance of precisely defining the privileged syntactic argument. In (18) we have examples of the *want* construction in English. On the right I have listed the semantic roles that the ‘missing’ argument can have in relation to the second predicate in each sentence (*eat*, *run*, (*be*) *tall*, and *arrest*).

- | | | |
|----------|--|--|
| (18) (a) | Susan _i wants ___ _i to eat a hamburger. | ✓ Actor of a transitive verb |
| (b) | Susan _i wants ___ _i to run. | ✓ Actor of an intransitive verb |
| (c) | Susan _i wants ___ _i to be taller. | ✓ Undergoer of an intransitive verb |
| (d) | *Susan _i doesn't want the police to arrest ___ _i . | ✗ Undergoer of a transitive verb |
| (e) | Susan _i doesn't want ___ _i to be arrested by the police. | ✓ Undergoer of a transitive verb (passive) |

In sentences like these, there are two predicates: *want* and another predicate (*eat*, *run*, (*be*) *tall*, and *arrest*), each with its own PSA. The second predicate structure serves as the second semantic argument of *want*; in other words, it is the ‘thing’ that Susan wants. The semantic representation for (18b) is given in (19).

- (19)
- | | | |
|--|-------|--------|
| Susan | wants | to run |
| want' (Susan, [do' (Susan, [run' (Susan)])]) | | |

We also interpret the sentence to mean that *Susan* is an argument of both predicates in the semantic representation even though the noun phrase *Susan* only appears once in the syntax. So (18b), for example, could be oddly paraphrased as *Susan wants Susan to run*. As in (13), the underlined spaces in (18) are a visual reminder of this fact, and the subscript ‘i’ indicates that the two arguments are

identical, understood to have the same reference. These concepts can be tricky to grasp because as fluent speakers we are so used to making the assumption automatically. Nonetheless we will try to break down the processes and patterns involved.

2.2.3.1 The PSA determining co-reference

First, let us look at how we know who it is that is eating hamburgers, running and so on. In every sentence in (18) it is the first syntactic argument in the sentence (*Susan*), the actor argument of *want*, that has the privileged role of telling us (controlling) the referent of the ‘missing’ argument, as shown in (20).⁴

(20) $\boxed{\text{Susan}}$ wants to run. **want'** ($\boxed{\text{Susan}}$, [**do'** (Susan , [**run'** (Susan)])])

In other words, that first argument *Susan* leads us to interpret *Susan* as the one eating hamburgers, running, being taller, etc. Note too that in every sentence in (18), *Susan* is the actor argument of **want'**, never the undergoer. As far as the verb *want* is concerned, *Susan* is the PSA because it has this privileged function. (Notice too that the verb form *wants* is marked to agree with the same noun phrase.)

Since the PSA (*Susan*) is always the actor of *want* there is no neutralization here and so we have a semantic PSA, rather than a syntactic PSA, because the pattern is based purely on semantic roles: the actor is the PSA. This is different from the pattern we saw in (16) and is evidence that the PSA (or ‘subject’) can vary in its properties, even within one language.

2.2.3.2 The PSA ‘missing’ argument of the linked clause⁵

Now, there is more to the *want* construction. We have two verbs and we are also interested in the kinds of argument that can be omitted in the second part of the sentence: in other words, what semantic roles can the syntactically ‘missing’ arguments have? Those roles are given alongside the examples in (18), and we can see that we have the same pattern as for verb agreement and case described in (16). So, for the second verb in each sentence we have a syntactic PSA because we see restricted neutralization of semantic roles.

Within one sentence construction we have found two different PSA patterns: a semantic (actor) PSA and a syntactic PSA. It turns out that ‘subject’ is not such a straightforward concept after all.

2.3 Summary so far

In the English examples we have looked at in this section, the privileged syntactic argument is most often (though not always) one of the arguments described in (16), which is repeated here as (21).

- (21) (a) the actor of a transitive predicate
 (b) the actor or undergoer single argument of an intransitive predicate
 (c) the undergoer in a passive construction

This pattern gives us evidence for a syntactic, grammatical PSA since we cannot define the patterns we find on the basis of semantic roles alone.

We have seen in this section that one exception to this pattern is in *want* constructions, where the controller of the identity of the ‘missing’ argument is semantic (namely the actor). We have seen that even within one construction the idea of a privileged syntactic argument needs careful examination. Looking in detail at the arguments that carry out these various privileged functions sheds a lot more light on why languages pattern the way they do and gives us a more accurate description.

In order to demonstrate this further, we will look, in section 2.5, at a language that works a little differently. Before we do, section 2.4 provides a summary of the procedure for figuring out the definition and description of the PSA in a construction.

2.4 Analysing the privileged syntactic argument

In (22), we see the process we have just followed to help us analyse the PSA in a particular construction; in other words, to decide which argument has a ‘privileged’ role. Also given are the abbreviations commonly used to refer to each of the roles.

(22) *Try as many of the following situations as possible to determine the PSA pattern.*

	ABBREVIATIONS
(a) Intransitive predicate ⁶	S
(i) State-based predicate (with an undergoer argument)	S _U
(ii) Activity-based predicate (with an actor argument)	S _A
(b) Transitive predicate	A, U
(i) in unmarked voice	
(ii) in marked voice (passive/antipassive), <i>if</i> the language has it.	d-S
(c) Try using a non-macrorole argument as the PSA. If only macroroles pattern the same way, you have restricted neutralization.	

With regard to (22b), d-S stands for ‘derived single argument’, and we will discuss marked voices like passive and antipassive in more detail in section 3.2. For now, note that marked voice constructions are a way of ‘getting around’ the default PSA choice. In English, for example, passive voice enables the undergoer of a transitive predicate to be the PSA.

Remember that if the privileged function you are examining can be determined by semantic roles (for example if you can say ‘the verb always agrees with the

actor') you have a semantic PSA. A few languages only have semantic PSAs. These languages can be said to have no grammatical relations, only semantic relations.

We have seen this procedure tested on English. In the [next section](#) we will try it on another language that patterns a little differently from English.

2.5 Enga

Enga (Trans-New Guinea, Papua New Guinea) is a double marking language (both head-marking and dependent-marking): it marks case on its noun phrases and also marks arguments on the predicate. However, it does not have the possibility of marked (passive) voice (Van Valin and LaPolla 1997: 254).⁷ We will look at marking on the verb first.

2.5.1 Verb cross-reference

In (23) we have a set of examples that are analogous to the English sentences in (15). The cross-reference marker on the verb and the independent argument are underlined in both the syntactic and semantic representations. The independent pronouns are in brackets because they are optional.⁸

- (23) (a) (Baa-mé) mená lóngó-Ø p-í-á. ✓ A of a transitive predicate
 (3SG-CASE) pig many-CASE hit-PST-3SG
 'He killed many pigs.'
do' (baa, Ø) CAUSE BECOME **dead'** (mená))
 ACTOR UNDERGOER
- (b) (Baá) pe-ly-á-mo. ✓ S_A of an intransitive predicate
 (3SG) go-PRS-3SG-DECL
 'He is going.'
do' (baá, [**move.away'** (baá)]) & INGR **be-LOC'** (Ø, baá)
 ACTOR
- (c) (Baá) ándá dokó-nyá ka-ly-á-mo. ✓ S_U of an intransitive predicate
 (3SG) house DET-LOC be-PRS-3SG-DECL
 'He is in the house.'
be-in' (ándá, baá)
 UNDERGOER
- (d) *(Baa-mé) mená lóngó-Ø p-í-ámí. ✗ U of a transitive predicate
 (3SG-CASE) pig many-CASE hit-PST-3PL
- (e) No passive ✗ (d-S)

We are examining the argument that controls the cross-reference marking on the verb. We can see from these examples that the verb is marked to agree with the arguments listed in (24).

- (24) (a) the actor of a transitive predicate (23a) A
 (b) the actor or undergoer argument of an intransitive predicate (23b, c) S

Enga has no passive voice, no way of making the undergoer of a transitive verb the privileged argument. This means that the privileged syntactic argument in Enga patterns differently from the typical PSA pattern in English, shown in (16). We still see restricted neutralization (because either actor or undergoer can be the PSA with intransitive verbs) but the PSA has different characteristics because of the lack of a marked voice option.

2.5.2 The *want* construction equivalent

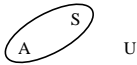
Let us turn to the equivalent of the *want* actor-control construction that we discussed for English. In Enga this is formed by the verb *mási* ‘think’ and a desiderative (‘wanting’) suffix *-nya* on the other verb (*pyá* ‘kill’, *pá* ‘go’, and *ká* ‘be’), which is non-FINITE and so has no agreement marker. Examples are given in (25).

- (25) (a) (Baa-mé) mená dóko-Ø pyá-la-nya mási-ly-a-mo.
 3SG-CASE pig DET-CASE kill-INF-DES think-PRS-3SG-DECL
 ‘He wants to kill the pig.’ ✓ A of a transitive predicate
- (b) (Baá-Ø) Wápaka pá-a-nya mási-ly-a-mo.
 3SG-CASE Wabag go-INF-DES think-PRS-3SG-DECL
 ‘He wants to go to Wabag.’ ✓ S_A of an intransitive predicate
- (c) (Baa-Ø) akáli ká-ly-a-nya mási-ly-a-mo.
 3SG-CASE man be-INF-DES think-PRES-3SG-DECL
 ‘He wants to be a man.’ ✓ S_U of an intransitive predicate
- (d) *(Baa-mé) pyá-la-nya mási-ly-a-mo.
 3SG-CASE kill-INF-DES think-PRS-3SG-DECL
 (‘He wants to be killed.’) ✗ U of a transitive predicate
- (e) No passive

Like in English, the argument that tells us the identity of the syntactically missing argument is the actor of *mási* ‘think’, and so we have a semantic PSA there. Each sentence in (25) works the same as (25a) which is repeated as (26).

- (26) (Baa-mé) mená dóko-Ø pyá-la-nya mási-ly-a-mo.
 3SG-CASE pig DET-CASE kill-INF-DES think-PRS-3SG-DECL
 ‘He wants to kill the pig.’
- want’** [3SG, [**do’** (3SG, Ø)]] CAUSE [BECOME **dead’** (mená)]

Let us focus now on the possible semantic roles of the missing argument within the linked clause; in other words, its relationship to the second predicates (*kill*, *go*, *be a man*). The argument possibilities are again listed to the right of the sentences in (25). Looking at these examples, we can see the same pattern that we found for verb agreement in section 2.5.1. The missing argument can be the actor argument of a transitive verb or the single argument (actor or undergoer) of an intransitive verb. Again, there is no possibility of marked voice so those are the only options.

Figure 5.1 *Nominative-accusative system*

2.6 Choice of privileged syntactic argument – nominative system

In both English (15a) and (d) and Enga (23a) and (d) we saw that when predicates have two macrorole arguments, it is the actor, not the undergoer, that is selected as the privileged syntactic argument. Given the choice, these languages choose the more agentive macrorole argument – the actor – to be the PSA. The English verb agreement examples are repeated in (27).

- | | | |
|----------|---|-------------------------------------|
| (27) (a) | <u>The child</u> is singing. | ✓ Actor of an intransitive verb |
| (b) | <u>The child</u> is growing. | ✓ Undergoer of an intransitive verb |
| (c) | <u>The child</u> is reading magazines. | ✓ Actor of a transitive verb |
| (d) | *The child are reading <u>magazines</u> . | ✗ Undergoer of a transitive verb |

Since semantic roles are neutralized with intransitive verbs, we group the arguments of the intransitive verbs (S_A and S_U) together as ‘S’ and we end up with the **NOMINATIVE-ACCUSATIVE** pattern shown in Figure 5.1 (ignoring voice possibilities for now).

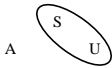
Figure 5.1 shows that in a nominative-accusative system, the single argument of an intransitive verb patterns with the actor of a transitive verb (and is marked with nominative case in languages that use case marking). The arguments within the circle in Figure 5.1 represent the PSAs. The other argument will be marked with accusative case, where case marking is used.

The selection of argument as the actor or undergoer macrorole makes reference to the actor-undergoer hierarchy first introduced in chapter 4, and we can use the same hierarchy to describe PSA selection, as shown in (28) (Van Valin 2005: 100).

- (28) PSA selection hierarchy (arguments to the left are ‘higher ranking’):
 arg of **DO** > 1st arg of **do’** > 1st arg of **pred’** (x, y) > 2nd arg of **pred’**
 (x, y) > arg of **pred’** (x)

In a nominative-accusative system, then, the PSA is the highest ranking argument available; in other words, the one furthest to the left of the hierarchy in (28).

Languages like English and Enga will usually choose the highest ranking, or most agentive argument as the PSA; in other words, the actor if there is one. So, for example, we can say that verb agreement is with the highest-ranking macrorole, and nominative case is marked on the highest-ranking macrorole. English also has the option of using passive voice to make the second highest argument (the undergoer) the PSA by excluding the actor. In the next section we will look at languages that pattern in a quite different way.

Figure 5.2 *Ergative-absolutive system*

2.7 Ergative pattern

In the previous section, I introduced the concept of the privileged syntactic argument. We saw that the PSA can be expressed as different patterns within different languages, and in different constructions within languages. In some cases, the PSA can be defined by its semantic role (e.g. ‘the verb agrees with the actor’). In most cases, however, we cannot explain which argument is privileged purely in terms of its semantic role: the difference between actor and undergoer is neutralized and we have evidence of grammatical relations. We examined the nominative-accusative pattern, where the single argument of an intransitive predicate patterns like the actor of a transitive predicate.

In this section, we will look at a second common pattern of grammatical relations that is essentially the reverse of the nominative-accusative pattern we examined above. In an **ERGATIVE-ABSOLUTIVE** system, the single arguments of intransitive verbs pattern and behave like the undergoers of transitive verbs. This might mean they get the same case (absolutive case), or both determine verb agreement patterns, and so on. Macrorole arguments that are ranked lower on the hierarchy in (28) are the default choice to be the PSA; these are the arguments within the circle in Figure 5.2.

The ergative-absolutive system is the basic system in many languages of Australia, Central Asia and the Americas. It is also used in South Asian and Austronesian languages. It is rare in African languages.⁹

2.7.1 Verb cross-reference

Look at the data from Ch’orti’ (Mayan, Guatemala) in (29).

- | | | |
|----------|---|---|
| (29) (a) | wayan-et.
sleep-2SG
‘You slept.’ | |
| (b) | in-ira-et.
1SG-see-2SG
‘I saw you.’ | |
| (c) | a-ira-en.
2SG-see-1SG
‘You saw me.’ | A |

If we look at the markers on the verb we can see that the actor of the intransitive verb in (29a) and the undergoer of the transitive verb in (29b) have the same second person singular form *-et* and both appear as suffixes on the verb. On the other hand, the actor of the transitive verb in (29c) has a different form and appears

as a prefix on the verb (Quizar 1994: 121–2). This is an ergative-absolutive verb marking pattern.¹⁰

In (30) we see another set of data illustrating an ergative pattern of verb marking, this time from Kurdish (Indo-Iranian, Turkey, Iraq and Iran).

- (30) (a) Ez çû-m.
1SG.DIRC go.PST-1SG
'I went.'
- (b) Tu çu-yî.
2SG.DIRC go.PST-2SG
'You went.'
- (c) Te ez dît-im.
2SG.OBL 1SG.DIRC see.PST-1SG
'You saw me.'
- (d) Min tu dît-î.
1SG.OBL 2SG.DIRC see.PST-2SG
'I saw you.'

In this data, the verb only carries agreement with the PSA which, since this is an ergative pattern, means the S (30a–b) and U (30c–d) arguments (Haig 1998: 157).¹¹

2.7.2 Case

Turning to case marking, I illustrate an ergative pattern with the data from Dolakha Newar (Tibeto-Burman, Nepal) given in (31).

- (31) (a) ãku biruwā(-Ø) bur-a. S_A (activity predicate)
there plant sprout
'A plant sprouted there.'
- (b) ãme mā(-Ø) ekdam ma-pha-ene sit-a. S_U (state predicate)
3SG.GEN mother very NEG-able-PTCP die-3SG.PST
'Her mother became very ill and died.'
- (c) kwākarbeŋ=na sã(-Ø) na-e. A U
frog=ERG cow eat-NMLZ2
'A frog ate a cow.'

The actor of a transitive predicate has an ergative case enclitic =*na* (31c). The single argument of an intransitive predicate (regardless of whether it is an actor as in (31a) or an undergoer as in (31b)) and the undergoer of a transitive predicate pattern together in not having this case marker (Genetti 2007: 106).

2.7.3 The *want* construction¹²

In order to see an ergative pattern at work in a *want* construction we will look at some data from Balinese (Malayo-Polynesian, Indonesia). Before we turn to the *want* construction, we will briefly examine a few key features of the language, using the data in (32) (Wechsler and Arka 1998).

- (32) (a) La pules.
3 sleep
'S/he is sleeping.'
- (b) Bawi-ne punika tumbas tiang. UNMARKED VOICE: U AS PSA
pig-DEF that ov.buy I
'I bought the pig.'
- (c) Tiang numbas bawi-ne punika. MARKED VOICE: A AS PSA
I AV.buy pig-DEF that
'I bought the pig.'

The PSA (underlined) precedes the predicate in Balinese. The unmarked voice is called 'objective voice' by Wechsler and Arka and is shown in (32b) with the undergoer appearing in PSA position. There is also a marked voice called 'agentive voice' which makes the actor the PSA: in agentive voice the initial consonant of the predicate is replaced with a nasal at the same place of articulation, as in (32c).

Now, let us turn to the *want* construction in Balinese. Examples are given in (33).

- (33) (a) Tiang_i edot ____i teka. ✓ S_A
I want come
'I want to come.'
- (b) Tiang_i edot ____i periksa dokter. ✓ U
I want ov.examine doctor
'I want to be examined by a doctor.'
- (c) *Tiang_i edot dokter periksa ____i. ✗ A
I want doctor ov.examine
'(I want to examine a doctor.)'
- (d) Tiang_i edot ____i meriksa dokter. ✓ d-S_A (marked voice)
I want AV.examine doctor
'I want to examine a doctor.'

This data tells us that in unmarked voice the 'missing' argument can only be the single argument (33a) or undergoer (33b) within that second clause. (The English translation of (33b) is in the passive voice but the Balinese sentence is in the unmarked objective voice.) In order for the 'missing' argument to be interpreted as actor, the marked agentive voice has to be used, as we see in (33d), otherwise it is ungrammatical (33c). To summarize, in Balinese we see an ergative pattern with a voice alternation available.

2.8 Choice of privileged syntactic argument – ergative system ■

In section 2.7, we saw that in an ergative pattern, when predicates have two macrorole arguments, it is the undergoer, not the actor, that is selected as the PSA. Given the choice, these languages choose the less agentive macrorole argument – the undergoer – to be the PSA. With reference to the actor-undergoer

hierarchy in (28), we can say that languages like Ch'orti', Dolakha Newar and Balinese choose the lowest-ranking, or least agentive macrorole argument as the PSA; in other words, the undergoer if there is one. So, for example, we can say that the verb in Ch'orti' is cross-referenced with the lowest-ranking macrorole, and that absolutive case is (zero-)marked on the lowest-ranking macrorole in Dolakha Newar.

Once again, some languages also have the option of using a marked voice to make the second lowest argument (the actor) the PSA by excluding or demoting the undergoer, as we see in Balinese in (33) and also later in Dyirbal in (47) (section 3.2.2).

2.9 Split systems

Languages with ergative-accusative patterns often have **SPLIT SYSTEMS**.¹³ In other words, in some constructions they may have an ergative-accusative pattern while in others they may have a nominative-accusative pattern.

Languages may have different patterns within their case and/or verb agreement systems depending on a variety of factors: whether the clause is marked for tense or not, depending on the aspect marked in the clause, the tense of the clause or the animacy of the arguments, to name a few.¹⁴

Warlpiri (Pama-Nyungan, Australia) has a split system that is illustrated in (34) and (35).

- (34) (a) Parnka-ja-rna.
run-PST-1SG
'I ran.'
- (b) Nya-ngu-rna-ngku.
see-PST-1SG-2SG.OBJ
'I saw you.'
- (35) (a) Ngarrka-Ø ka wangka-mi.
man PRS.IPFV speak-NPST
'The man is speaking.'
- (b) Ngarrka-ngku ka karli-Ø jarnti-rmi.
man-ERG PRS.IPFV boomerang trim-NPST
'The man is trimming a boomerang.'
-

In (34) we see examples of cross-reference on a verb: the first person singular single argument cross-referenced on the verb in (34a) has the same form *-rna* as the first person singular actor of the transitive verb in (34b). This is a nominative-accusative system.

In contrast, the case marking on the independent nouns shown in (35) demonstrates an ergative pattern: both the single argument in (35a) and the undergoer of the transitive verb in (35b) are unmarked for case (Legate 2006: 147, 149). From the data here, one might be led to believe that the tense of the examples is a factor:

in fact, this is a coincidence, and the split is between pronominal arguments (34) and independent noun phrase arguments in (35).

In the St'át'imcets language (Salishan, Canada) we find a different split system within its system of cross-reference marking on the predicate, shown in (36) and (37).

- (36) (a) tsún-Ø-as.
tell-3SG.CASE(U)-3SG.CASE(A)
'She told him.' (transitive verb)
- (b) tsut-Ø.
say-3SG.CASE
'She said.' (intransitive verb)
- (37) (a) tsun-ts-kál'ap.¹⁵
tell-1SG.CASE-2PL.CASE
'You guys told me.'
- (b) tsút-kal'ap.
say-2PL.CASE
'You guys said.'
- (c) tsút-kan.
say-1SG.CASE
'I said.'

Comparing the suffix forms in (36) and (37), determine which pattern is nominative-accusative and which is ergative-absolutive.

The split is based on the person of the arguments: first and second person marking pattern one way, while third person marking patterns a different way (Roberts 1999: 280–1).

We have seen abundant evidence that we need to dig deep into the privileged syntactic argument patterns in a language in a wide selection of constructions to understand the coding and behaviour that we find.

Section summary

In this section you have learned:

- to define in more detail the patterns and functions of the privileged syntactic argument,
- to describe non-macrorole argument case/adpositions,
- to recognize nominative-accusative and ergative-absolutive patterns of coding and behaviour and the possibility of split systems.
- **KEY TERMS:** agreement, privileged syntactic argument, controller, (restricted) neutralization, nominative, accusative, ergative, absolutive, voice, split system
- **EXERCISES:** A2, A3, B2, B3, B4, B5, B6, B7

3 Valence-changing constructions

Whenever we describe an event or situation we choose which participants to include, and which one we feel is most important or relevant. This affects the way we structure that information in a sentence.

Essentially, valence (or ‘valency’) refers to the participants we choose to represent as arguments in our sentence, and the way we choose to represent them. For example, all the sentences in (38) describe one scene, which you can probably picture after reading them. However, while each one includes the same predicate (*cut*), each describes the participants differently.

- (38) (a) A girl is cutting up the broccoli.
 (b) A girl is cutting broccoli with a pair of scissors.
 (c) A girl is using a pair of scissors to cut broccoli.
 (d) Broccoli is being cut up with scissors.
 (e) A girl is broccoli-cutting.
 (f) A girl is cutting up broccoli for her gerbil with scissors.

In describing this scenario in English, we are likely to want to represent the actor somewhere in our sentence, particularly since she is the only human being involved, so we are perhaps most likely to include *the girl* in our sentence. *Broccoli* may feature as a second argument (38a, b, f) or merely be incorporated as part of the verb, as in (38e). However, if we are fascinated by broccoli (and who isn’t), we can omit the actor and make *broccoli* the PSA by using the passive voice as shown in (38d). Finally, we also have the option of including the instrument (38b, c, d, f) and/or the beneficiary, the referent for whom the broccoli is being cut up (38f).

Notice too that in terms of the number of syntactic arguments in each sentence we have one in (38e), two in (38a) and (d), three in (b) and (c) and four in (f). We can see, then, that even English offers a number of different syntactic strategies for altering the number of arguments and for adjusting the way they are represented in the sentence. The one we choose will depend on the context of the sentence. We will examine a number (though not all) of these strategies in this section, and at the end of the section you will find a table summarizing the various properties of these constructions.

3.1 Macrorole valency

In chapter 4 we noted several ways that there can be a mismatch between the number of syntactic arguments, semantic arguments and macrorole arguments a predicate has. In this section we look at pairs of constructions with the same number of syntactic and semantic arguments, but different numbers of macrorole arguments. One of these mismatches occurs with activity and active achievement predicates. The examples from chapter 4 are repeated here in (39).

- (39) (a) Bill drank beer. ACTIVITY
 (b) Bill drank a beer. ACTIVE ACHIEVEMENT

The second argument of an activity characterizes the action rather than denoting a specific referent, as we examined in chapter 4 (section 3.4.3). In English we do not use a determiner with the non-macrorole second argument of an activity predicate (39a). When second arguments are generic, non-specific or non-referential, they may not function as the undergoer macrorole since undergoers are always referents, affected participants in the event.

We find this status reflected in their inability to take the case marking associated with undergoers (in languages that use case marking). In the data in (40) from Mangghuer (Mongolic, China), for example, the alternation shows the definite second argument of the active achievement in (40b) carrying the accusative case enclitic =*ni* reflecting its undergoer status; that clitic is missing from the second argument of the activity in (40a) (Slater 2003: 165).

- (40) (a) gan mori wuni-jiang.
 3SG horse ride-OBJV.PFV
 ‘S/he rode a horse, went horse-riding.’
 (b) gan mori=ni wuni-jiang.
 3SG horse=ACC ride-OBJV.PFV
 ‘S/he rode the horse (and not something else).’

As is the case in English, the second argument of the activity predicate in the Mangghuer example in (40a) is retained as a syntactic and semantic argument, though the case marking suggests it is not a macrorole. In other languages, these non-referential arguments may be subject to noun incorporation (see section 3.5) or be considered a type of antipassive construction (see section 3.2.2).

3.2 Marked voice constructions

Marked voice constructions allow a speaker to select an argument for PSA that is not normally selected, in order to give it prominence – a ‘voice’, if you like – in the sentence. In order for this to happen, the ‘usual’ or default PSA argument is either demoted, or not syntactically expressed in the sentence at all. As such, marked voice constructions affect the syntactic and semantic valence of a construction.

Passive voice is primarily associated with nominative-accusative constructions (since it promotes the otherwise neglected undergoer argument), while antipassive voice is usually found in ergative-absolutive constructions (serving to promote the actor). However, we will see that there can be some blurring in this correlation.

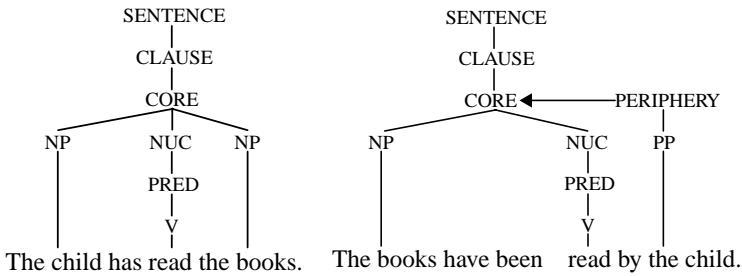


Figure 5.3 *Constituent representation of English active and passive sentences*

3.2.1 Passive voice

Earlier in this chapter we noted an important difference between English and Enga. English has a **MARKED VOICE CONSTRUCTION**, the passive. The **PASSIVE VOICE** downplays the actor of a transitive verb. Passive voice also makes the undergoer of a transitive verb the PSA.¹⁶ Enga, on the other hand, has no marked voice constructions.

In a passive voice construction, as the name suggests, the more active argument, the actor, is no longer the PSA, perhaps because its identity is unknown, or possibly because it is simply less relevant to the conversation. Instead the undergoer, the more ‘passive’ argument, is chosen to appear as the PSA, and the actor appears in a less important position (in a prepositional phrase in English), receives a non-macrorole case and/or is omitted altogether.

Passive voice makes the undergoer the PSA because once the actor is demoted from macrorole status, the undergoer automatically becomes the highest-ranking (the only) macrorole argument left in the core and it therefore qualifies to be the PSA. In (41b), the verb *have* agrees with the undergoer noun phrase *the books*, which is the PSA in that passive sentence.¹⁷

- (41) (a) [The child has read the books]_{CORE}. ACTIVE VOICE
 ACTOR PSA UNDERGOER
- (b) [The books have/*has been read]_{CORE} [by the child]_{PERIPHERY}. PASSIVE VOICE
 UNDERGOER PSA (ACTOR)
- (c) [**do**´ (child, [**read**´ (child, books))]] & [INGR **consumed**´ (books)]

Notice that both (41a) and (b) have the same semantic representation, given in (41c), and represent the same basic state of affairs. The difference lies in whether the speaker is more interested in the child or the books; in other words, which referent is more relevant.

In terms of valence-changing, notice in [Figure 5.3](#) that the active construction (on the left) has two macrorole core arguments, while the passive construction (on the right) only has one. In the English passive construction, the actor appears outside the core and is marked with the preposition *by*.

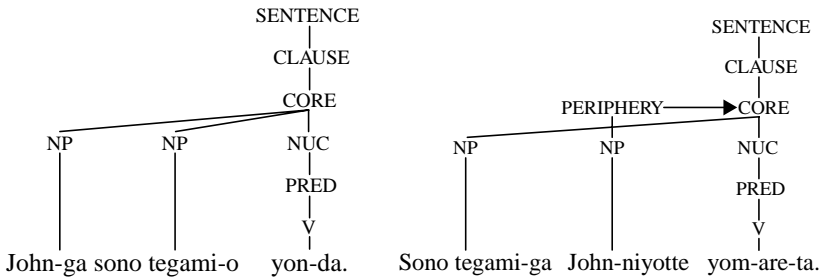


Figure 5.4 *Constituent representation of Japanese active and passive sentences*

In Vitu (Malayo-Polynesian, Papua New Guinea), the actor is not permitted to occur at all in a passive construction (van den Berg 2007: 56).

- (42) (a) Hau ta kati-a vaga kua na vazalea.
 1SG RL make-3SG canoe this LOC beach
 ‘I made this canoe on the beach.’
 (b) Vaga kua e katua na vazalea.
 canoe this RL:3 make:PASS LOC beach
 ‘This canoe was made on the beach.’

Determine what strategies mark the passive construction in (42b).

The English passive voice construction involves a different word order and the use of the auxiliary verb *be*. Japanese (Isolate, Japan) has a different marking strategy. A morphological suffix *-(r)are* appears on the predicate to create a passive construction, as illustrated in (43b).

- (43) (a) John-ga sono tegami-o yon-da. ACTIVE
 John-NOM that letter-ACC read-PST
 ‘John read that letter.’
 (b) Sono tegami-ga John-niyotte yom-are-ta. PASSIVE
 that letter-NOM John-OBL read-PASS-PST
 ‘That letter was read by John.’

Notice too that in the passive sentence the actor is marked as ‘OBL’ (oblique), indicating it is no longer a macrorole argument. It appears in the periphery, which can occur between core constituents in Japanese, as we see in Figure 5.4.

Finally, notice that the undergoer argument becomes the PSA, taking nominative case marking and appearing in clause-initial position (Watanabe 1996: 115–16).

3.2.1.1 *Adversatives*

‘Adversary’ means ‘enemy’ and **ADVERSATIVES** indicate that an action had a bad effect on someone or something. They are often considered a type of passive construction since they downplay the actor referent. However, their effect on valence can vary; we will look at some examples in this section.

In the Japanese sentence in (44), which is related to those in (43), the adversely affected argument (Mary) is added, and it takes on the nominative-marked clause-initial PSA role (Watanabe 1996: 116).¹⁸

- (44) Mary-ga John-ni sono tegami-o yom-are-ta.
 Mary-NOM John-DAT that letter-ACC read-PASS-PST
 ‘Mary was adversely affected by John’s reading of that letter.’

Fijian (Oceanic, Fiji) has an adversative prefix *lau-* used with verbs that involve action carried out aggressively (Dixon 1988: 224). This construction demotes the actor but also indicates that the undergoer was adversely affected by the action. Compare the passive and adversative in (45a) and (b) respectively and notice that the undergoer is the same referent in both.

- (45) (a) Sa sivi-ti a matakau yai. PASSIVE
 ASP carve-PASS ART statue this
 ‘this statue has been (properly) carved.’
 (b) Sa lau-sivi a matakau yai ADVERSATIVE
 ASP ADVR-carve ART statue this
 ‘this statue has been badly carved (as if someone tried to spoil it).’

Examine the Malay (Malayo-Polynesian, Malaysia) adversative construction illustrated in (46) (Kroeger 2005: 279).

- (46) (a) Kelapa itu jatuh.
 coconut that fall
 ‘The coconut fell.’
 (b) Tomo ke-jatuh-an kelapa.
 Tomo ADVR-fall-ADVR coconut.
 ‘Tomo was fallen on by a coconut.’

Describe the effect of adding the adversative circumfix in (46b).

3.2.2 Antipassive voice

ANTIPASSIVE voice, as the name suggests, is essentially the mirror image of the passive voice.¹⁹ The undergoer in a transitive sentence is demoted in order to allow the actor to be prominent. In ergative-absolutive patterns, the undergoer of a transitive clause is the default selection to be the PSA in active clauses. Some languages with ergative-absolutive patterns have this antipassive voice construction that allows the actor to become the PSA instead, by demoting the undergoer, either through marking it with a non-macrorole case or by removing it altogether.

We can illustrate the antipassive by looking at the Dyirbal (Pama-Nyungan, Australia) data in (47). The basic ergative-absolutive pattern in the unmarked voice is shown in (47a) and (b). The PSA is (zero-)marked with absolutive case in each sentence (Dixon 1994: 10).

- (47) (a) η uma banaga- η u. PSA = S_A
 father.ABS return-NFUT
 ‘Father returned.’
- (b) yabu η uma- η gu bura-n. PSA = U
 mother.ABS father-ERG see-NFUT
 ‘Father saw mother.’
- (c) η uma bural- η a- η u yabu-gu. PSA = d-S_A
 father.ABS see-ANTIP-NFUT mother-DAT
 ‘Father saw (mother).’

In (47b) the undergoer argument *yabu* ‘mother’ is the PSA. In order to prioritize the actor and make it the PSA, Dyirbal uses the verbal antipassive suffix *- η a*; in addition, the undergoer is marked in the dative case (which demotes it to non-macrorole status) and appears post-verbally, as we see in (47c). The actor of the transitive clause is now marked with absolutive case since it is the PSA in the antipassive construction.

It is difficult to translate the Dyirbal sentence in (47c) into a language with a nominative-accusative pattern. Despite this difficulty, or rather because of it, it is important to understand the effect of this voice construction in an ergative-absolutive language.

The data in (47) concern the case-marking properties of PSAs. Let us look at another example that involves a ‘missing’ argument. First, consider the pattern we find in a nominative-accusative construction.

- (48) (a) Father_i saw mother and ____i returned. ACTIVE VOICE
 (b) Mother_i was seen by father and ____i returned. PASSIVE VOICE

In (48a) the single (undergoer) argument of the second predicate *return* is not represented in the syntax. We interpret it as having the same referent as the actor of the first clause. In other words, this sentence can only mean that father returned (shown with the subscript ‘i’). In the marked voice construction (the passive) in (48b), on the other hand, *mother* has been made the PSA, and now we interpret her as the one who returned. In both sentences, the PSA of the first clause controls the identity of the ‘missing’ argument in the second clause.

The PSA of the first clause also determines the identity of the ‘missing’ argument in Dyirbal, but the ergative pattern makes for a different interpretation, as we see in (49) (Dixon 1994: 13, 166).

- (49) (a) yabu η uma- η gu bura-n banaga- η u.
 mother.ABS father-ERG see-NFUT return-NFUT
 ‘Father saw mother_i and ____i returned.’
- (b) η uma bural- η a- η u yabu-gu banaga- η u.
 father.ABS see-ANTIP-NFUT mother-DAT return-NFUT
 ‘Father_i saw (mother) and ____i returned.’

In the active sentence in (49a) the interpretation is that ‘mother’ returned. In other words, the undergoer of ‘see’ is the PSA, determining the referent of the missing argument in the second clause. In (49b), on the other hand, we have an antipassive construction. In this case, ‘mother’ is no longer a macrorole, and ‘father’ is now marked as the PSA, appearing in initial position and carrying absolutive case: it is ‘father’ that now controls the referent of the missing argument. Sentence (49b) is interpreted to mean that father returned.

As we have seen, the antipassive voice demotes or downplays the undergoer, and this serves to change the macrorole valency of the predicate. Some languages make use of a type of antipassive construction as a ‘detransitivizer’ to mark the difference between a referential undergoer and a non-specific argument that merely characterizes the action. Note that in the examples from Bari (Eastern Sudanic, Sudan) in (50), the presence or absence of the ‘detransitivizer’ suffix *-ja* effectively marks the difference between an active achievement (in 50a) and an activity (50b) (Spagnolo 1933).²⁰

- (50) (a) nan a dər sukuri.
 ISG PFV cook chicken
 ‘I cooked the chicken.’
- (b) nan a dər-ja sukuri.
 ISG PFV cook-DETR chicken
 ‘I cooked (a) chicken.’

This ‘detransitivizing’ function of antipassives means that we can find languages that have both passive and antipassive voice. In (51), we have a set of such examples from Yakan (Malayo-Polynesian, Philippines), showing subtleties of meaning through various voice constructions.

- (51) (a) Kinehet kennahin we’ dendehin. ACTIVE
 k<in>ehet kenna=in we’ dende=in
 <TR>cut fish=DEF ERG woman=DEF
 ‘The woman cut up the fish.’
- (b) Kinehet kennahin. PASSIVE
 k<in>ehet kenna=in
 <TR>cut fish=s
 ‘The fish was cut up.’
- (c) Ngehet kenna dendehin. ANTIPASSIVE
 n-kehet kenna dende=in
 INTR-cut fish woman=s
 ‘The woman cut up fish.’
- (d) Ngehet dendehin. ANTIPASSIVE
 n-kehet dende=in
 INTR-cut woman=s
 ‘The woman cut up (something).’

Sentence (51a) is an active, unmarked voice construction that has two macrorole arguments and is an active achievement. In (51b), the actor is omitted but the verb is still in its transitive form, and this gives a passive interpretation.²¹ In (51c) and (d), we have antipassive or ‘detransitivizing’ voice constructions. The noun *kenna* appears without its enclitic =*in* and in (d) is omitted altogether (Brainard and Behrens 2002: 158, 161).²²

In terms of valence-changing properties, all marked voice constructions reduce the number of macrorole arguments by demoting the default PSA choice so that the other macrorole argument gets the chance to be the PSA. For a passive construction, the actor argument is demoted, allowing the undergoer to function as PSA. In an antipassive construction, the undergoer argument is demoted, so that the actor argument can be the PSA. As we saw by comparing Japanese and English, the demoted argument may be marked with a different case, and/or it may be removed from the core (either altogether or in a peripheral phrase).

3.3 Causatives

Unlike marked voice constructions, which reduce the number of arguments, causative constructions add a semantic and syntactic argument to their non-causative equivalents by expressing the causer argument, which takes on the actor macrorole status. The meaning as well as the morpho-syntactic form of the sentence is changed.

We can see this process at work in the data from Mangghuer (Mongolic, China) in (52) where the verb *ber* ‘become’ is interpreted to mean ‘become well’.

- (52) (a) [gan=ni aguer=ni bieqin] ber-jiang.
 3SG=GEN daughter=GEN illness.NOM become-OBJV.PFV
 ‘(and then) his daughter’s illness got better.’
 BECOME **feel**’ (daughter, [**well**])²³
- (b) [qi] [gan=ni aguer=ni] ber-gha-lang.
 2SG.NOM 3SG=GEN daughter=ACC become-CAUS-OBJV.IPFV
 ‘you (can) make his daughter become well.’
 do’ (2SG, Ø) CAUSE BECOME **feel**’ (daughter, [**well**])

Notice that in (52a) there is only one syntactic and semantic argument *ganni aguerni bieqin* ‘his daughter’s illness’, marked with nominative case (and enclosed in square brackets). In the causative construction in (52b), on the other hand, there are two arguments, and *ganni aguerni* ‘his daughter’ takes an accusative case enclitic =*ni*. The causative construction is marked through the addition of the suffix *-gha* on the verb, underlined in (52b) (Slater 2003: 130).

It is worth noting that there are three ways that languages express causatives. The one we are discussing here is morpho-syntactic: languages such as Mangghuer attach a causative affix to the verb, as we see in (52b). The second method

is lexical: some verbs have an inherently causative meaning (such as *kill* and *smash*). The third type of causative is syntactic (or ‘analytic’): an extra verb is used to create the causative interpretation. In English, for example, we can express similar (though not identical) meanings with *Herbert killed the linguist* and *Herbert caused the linguist to die*, both of which express causation through lexical and analytic means respectively.

There appears to be a connection between the tightness of the syntactic construction (lexical-morphological-analytical) and how directly the causer is involved in the event; in other words, the closeness of the cause and effect (see Payne 1997: 181–6). Gawri (Indo-Aryan, Pakistan) has three ways of forming causatives that support this connection and these are illustrated in (53).

- (53) (a) *hābīb ṣ̣ōlānt.*
 hābīb ṣ̣ōlā-an-t
 Habib talk-IPFV.M.SG-PRS
 ‘Habib is talking.’
- (b) *yā hābīb ṣ̣ōlānt.*
 yā hābīb ṣ̣ōlā-ā-an-t
 I Habib talk-CAUS-IPFV.M.SG-PRS
 ‘I am making Habib talk.’
- (c) *yā hābīb ṣ̣ā ṣ̣ōlānt.*
 yā hābīb ṣ̣ā ṣ̣ōlā-ā-an-t
 I Habib CM talk-CAUS-IPFV.M.SG-PRS
 ‘I am causing Habib to talk.’
- (d) *yā hābīb ṣ̣ā ṣ̣ōlāg kārānt.*
 yā hābīb ṣ̣ā ṣ̣ōlā-ūg kār-ā-an-t
 I Habib CM talk-INF do-CAUS-IPFV.M.SG-PRS
 ‘I am causing Habib to talk.’

Example (53b) illustrates direct causation which is expressed with the verbal suffix *-ā*. Indirect causation is expressed with this suffix and the use of a particle that Baart terms a causee marker (CM), as shown in (53c).²⁴ There is also an analytic causative construction (53d) which implies an even lower level of involvement by the causer: the main verb is *kār* ‘do’ and ‘talk’ is expressed as an infinitive (Baart 1999: 91–2).

We may also encounter ‘double causatives’, as illustrated in (54) and (55). In Uruarina (Isolate, Peru), for example, two valence-changing causative suffixes can appear on the same verb, as we see in (54) (Olawsky 2006: 461).

- (54) *Fwedoro eno-a-erate* *karesero kuane herodesi.*
 Peter enter-CAUSI-CAUSII.3 prison inside Herod
 ‘Herod had Peter thrown into prison.’

This sentence means that Herod caused someone to cause Peter to enter prison. Likewise in (55), we see two instances of a causative morpheme in a

double causative in Kabardian (West Caucasian, Russian Federation) (Matasović 2009: 1).

- (55) šāla-m āna-m l'əz-əm pyəsmaw-r yə-r-yə-ga-gā-tx-ā-ś
 boy-ERG mother-ABS old.man-ERG letter-ABS 3SG-3SG-3SG-CAUS-CAUS-write-PRET-AFF
 'The boy made his mother make the old man write the letter.'

3.4 Applicatives

APPLICATIVE markers increase the valency of a predicate by adding a semantic and syntactic argument that can have a number of semantic roles. In Taba (Malayo-Polynesian, Indonesia), an applicative suffix is used to convey the meaning of 'give', as shown in (56b); the added argument has a recipient role.

- (56) (a) Banda n=ot yan bakan.
 Banda 3SG=get fish be.big
 'Banda caught a big fish.'
- (b) Banda n=ot-ik yak yan.
 Banda 3SG=get-APPL 1SG fish
 'Banda gave me some fish.'
- (c) Yak kgorcak kapaya (ada) kobit
 yak k=goras-ak kapaya (ada) kobit.
 1SG 1SG=shave-APPL pawpaw (with) knife
 'I took the seeds out of the pawpaw with a knife.'

An applicative suffix can also add an instrumental argument which, in Taba, appears with an optional preposition, as (56c) shows (Bowden 2001: 208–9).

The Hakha Lai language (Tibeto-Burman, Myanmar) possesses seven applicative suffixes with a variety of roles, and these are illustrated in (57) (Peterson 2003: 418).

- (57) (a) law ?a-ka-thlo?-piak.
 field 3SG.SBJ-1SG.OBJ-hoe-BEN.APPL
 'He hoed the field for me/in my place.'
- (b) law ?a-ka-thlo?-tse?m.
 field 3SG.SBJ-1SG.OBJ-hoe-ADDITIONAL.BEN.APPL
 'He hoed the field for my benefit (in addition to his own benefit).'
- (c) law ?a-ka-thlo?-pii.
 field 3SG.SBJ-1SG.OBJ-hoe-COMITATIVE.APPL
 'He hoed the field along with me.'
- (d) law ?a-ka-thlo?-hno?.
 field 3SG.SBJ-1SG.OBJ-hoe-MALEFACTIVE.APPL
 'He hoed the field to my detriment.'
- (e) law ?a-ka-thlo?-ka?n.
 field 3SG.SBJ-1SG.OBJ-hoe-PRIORITIVE.APPL
 'He hoed the field ahead of/before me.'

- (f) law ʔa-ka-thloʔ-taak.
 field 3SG.SBJ-1SG.OBJ-hoe-RELINQUITIVE.APPL
 ‘He left me and hoed the field.’
- (g) tuuhmuy law ʔa-thloʔ-naak.
 hoe field 3SG.SBJ-hoe-INS.APPL
 ‘He hoed the field with a hoe.’

In each case, the addition of the suffix increases the valency of the verb, in these examples adding the first person singular argument (prefix) in (57a–f) and the instrument *tuuhmuy* ‘hoe’ in (g). In (57c), we have a ‘comitative’ applicative (‘com’ meaning ‘with’), in (e) the event takes place ahead of or before the additional argument, and in (f) the additional argument is left (‘relinquished’) in order for the event to take place. Examples (57a), (b) and (d) are discussed in the next section.

3.4.1 Benefactives

The first two Hakha Lai examples in (57) are examples of benefactives, subtypes of applicatives. **BENEFACTIVE** markers increase the valency of a predicate by adding the beneficiary argument, indicating that the action was done for the benefit of someone or in their place. The further examples in (58a) and (b) are from Kisi (Atlantic-Congo, Liberia) and clearly show the increase in valency, the addition of *yá* ‘me’, when the verb carries the benefactive suffix *-l* (Childs 1995: 259).

- (58) (a) Hálí cùká sàá.
 Hali prick Saa
 ‘Hali pricked Saa.’
- (b) Hálí cùká-l yá sàá.
 Hali prick-BEN me Saa
 ‘Hali pricked Saa for me.’

The opposite, in a sense, of a benefactive is a malefactive, where the applicative marker indicates that something was done to the detriment of another’s well-being. Example (57d) is an example of this type of applicative.

3.5 Noun incorporation

In **NOUN INCORPORATION** constructions, the clue is in the name. It involves an argument (usually the second argument) appearing as an affix on the predicate; in other words, the argument becomes incorporated into the predicate. This reduces by one the number of independent syntactic arguments in the core.

In chapter 4, I contrasted activities with active achievements and found that the second argument of an activity predicate characterizes the action rather than describing a participant. As such, that second argument does not function as an undergoer macrorole. As I suggested there, these argument types are susceptible

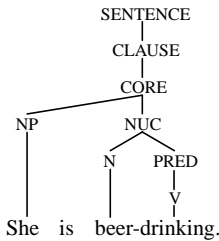


Figure 5.5 *English noun incorporation construction*

to incorporation into the predicate. The examples from chapter 4 are repeated here as (59a) and (b).

- (59) (a) She drank six beers. ACTIVE ACHIEVEMENT
 (b) She drank beer. ACTIVITY
 (c) She is beer-drinking.

Figure 5.5 shows the syntactic representation for the noun-incorporated structure in (59c). The incorporated noun is a daughter of the nucleus node.

In (60) we see another example of noun incorporation, this time from Somali (Cushitic, Somalia).²⁵

- (60) (dawo webi kama ag dhowaato,) yaxaasna weli
 jackal:SBJ river to:NEG near approach:NEG:3M crocodile:SBJ:and still
 wuu carrabla'yahay.
 DECL:he tongue.miss:PRS:3M
 '(Jackal still does not go near the river,) while Crocodile is still tongueless.'

Carrab means 'tongue' and this noun appears without any determiner and occurs between the subject pronominal and the verb. Tosco points out that the use of noun incorporation strategy in Somali is closely linked to the referent being either generic or old information in the sentence: the sentence in (60) occurs at the end of a Somali folktale about the crocodile's tongue (Tosco 2004: 90–1).

Over time, noun-incorporated verbs may become lexical items – compound words – with their own idiosyncratic meaning not necessarily directly related to the composition of their parts. If this occurs, they may take new second arguments. Looking again at Somali, we can see this progression in (61a–c).

- (61) (a) waan raacay.
 DECL:I follow:PST:1SG
 'I followed him/her/it/them.'
 (b) waan raadraacay.
 DECL:I trace.follow:PST:1SG
 1. 'I followed, went trace-following.' or 2. 'I investigated X.'
 (c) way i raadraaceen.
 DECL:they me trace.follow:PST:3PL
 'They investigated me.'

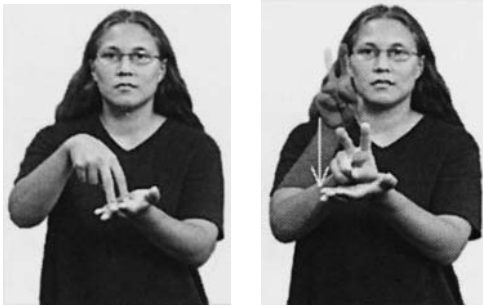


Figure 5.6 ASL sign for 'fall' (Sandler and Lillo-Martin 2006: 87)

The verb *raac* 'follow' incorporated its object noun *raad* 'trace' and then became ambiguous, as shown in (61b). The verb *raadraac* developed the meaning 'investigate' and with this meaning it can take a new (non-incorporated) noun phrase object, as shown in (61c) (Tosco 2004: 94–5).²⁶ Only (61b) is an example of noun incorporation, (61c) is a compound verb.

In American Sign Language, we find another example of an incorporated structure that has developed a meaning beyond the sum of its parts. The sign FALL originated in the combination of a 'flat object' size and shape specifier together with the morpheme classifier 'legs of an animate being' as we can see in Figure 5.6. However, now this sign FALL is now 'frozen' and functions as a unit and remains the same regardless of whether the thing falling is animate or inanimate, and whatever its shape (Sandler and Lillo-Martin 2006: 87).

It is most commonly the second arguments of predicates that are incorporated, but this is not the only possibility, as we see exemplified by the Chukchee (Paleo-Siberian, Russian Federation) data in (62) and (63).

- (62) (a) *gəm-nan walə-Ø tə-mne-Ø-gʔen.*
 I-ERG knife-ABS:SG 1SG.SBJ-sharpen-AOR-3SG.OBJ
 'I sharpened the knife.'
- (b) *gəm-Ø tə-wala-mna-Ø-gʔak.*
 I-ABS 1SG.SBJ-knife-sharpen-AOR-1SG.SBJ
 'I sharpened the knife.' (Lit. 'I knife-sharpened.')
- (63) (a) *tirkə-tir Ø-amecat-Ø-gʔe.*
 sun-ABS.SG 3SG.SBJ-appear-AOR-3SG.SBJ
 'The sun appeared.'
- (b) *Ø-terk-amecat-Ø-gʔe.*
 3SG.SBJ-sun-appear-AOR-3SG.SBJ
 'The sun appeared.' (Lit. '(It) sun-appeared.')

In (62b), we see incorporation of the second argument of the transitive predicate *mna* 'sharpen'. In (63b), on the other hand, the single argument of the non-agentive verb *amecat* 'appear', has been incorporated, resulting in a one-word sentence (Muravyova 2001: 524–5).

As seen in examples (61)–(63), noun incorporation normally refers to a bare noun becoming part of the nucleus. However, it is possible in some languages for incorporated nouns to be modified by noun phrase operators. We can see this possibility in the Southern Tiwa examples in (64) (Kiowa Tanoan, USA).²⁷

- (64) (a) Wisi seuan-in bi-mû-ban.
 two man-PL 1SG.AGR:II-see-PST
 ‘I saw two men.’
- (b) Wisi bi-seuan-mû-ban.
 two 1SG.AGR:II-man-see-PST
 ‘I saw two men.’

Sentence (64a) has an independent object noun phrase *wisi seuanin* ‘two men’. In (64b), the noun *seuan* has been incorporated into the verbal word (in its singular form) but it can still be modified from outside the verbal word by the quantifier *wisi* ‘two’.

In (65) we can see another pair of Southern Tiwa sentences; this time we see a **DEMONSTRATIVE** *yede* ‘that’ modifying the (shortened) incorporated noun in (65b).

- (65) (a) Ti-mu-ban ‘uide.
 1SG.AGR:I-see-PST child
 ‘I saw the child.’
- (b) Ti-‘u-mu-ban yede.
 1SG.AGR:I-child-see-PST that
 ‘I saw that child.’

We will look further at the syntactic structure of these constructions in the next chapter.

3.6 Lexical reflexives

Just as a mirror provides a reflection or copy of an image, a **REFLEXIVE** is a second argument that has the same referent as another argument in the same clause.

In this section on valence-changing constructions, we are most interested in lexical reflexives marked through grammatical morphemes, where we end up with two semantic arguments but only one syntactic argument.²⁸ The pair of examples in (66) is from Dyirbal (Pama-Nyungan, Australia).

- (66) (a) Bala-Ø yugu-Ø ba-ŋgu-l yaɾa-ŋgu buyba-n.
 DEIC-ABS stick-ABS DEIC-ERG-I man-ERG hide-TNS
 ‘The man is hiding the stick.’
- (b) Bayi-Ø yaɾa-Ø buyba-yiri-nu.
 DEIC-ABS man-ABS hide-REFL-TNS
 ‘The man is hiding himself.’

Table 5.1 *Properties of valence-changing constructions*

+ = Adds an argument – = Subtracts an argument	Effect on the number of macrorole core arguments	Effect on the number of semantic arguments	Effect on the number of independent syntactic core arguments
Marked voice	–	– (sometimes)	– (sometimes)
Adversative		+ / –	+ / –
Causative	+	+	+
Applicative		+	+
Benefactive		+	+
Noun incorporation			–
Lexical reflexives	–		–

Absolutive case marks the PSA in this ergative construction: notice that the noun phrase meaning *the man* is marked with absolutive case in (66b), indicating that it is the PSA of this sentence, in contrast to (66a) where the lowest-ranking macrorole, the undergoer (*yugu* ‘stick’), is the PSA (Dixon 1972: 90).

3.7 Summary of valence-changing constructions

The valence-changing constructions discussed above are all marked syntactic constructions, meaning that they involve special morpho-syntactic marking and they are not the ‘normal’ default sentence type. They vary in terms of whether they reduce or add to the number of arguments, and in terms of what they do to the number of syntactic, semantic and macrorole arguments. These observations are captured in Table 5.1.

Note that while applicatives do not change the number of macrorole arguments, the added argument may sometimes become the undergoer, demoting another core argument. In fact, with all of these constructions we have seen that it is important to look at the change in identity of the macrorole arguments, as well as the change in the number of them.

Section summary

In this section you have learned:

- to analyse various valence-changing constructions,
- to recognize the difference between macrorole, semantic and syntactic valence.
- **KEY TERMS:** valence, adversative, marked voice construction, passive, antipassive, applicative, noun incorporation, lexical reflexive.
- **EXERCISES:** B8, B9

Further reading

Van Valin and LaPolla (1997: 242–303), Van Valin (2005: 89–127).
On ergativity: Dixon (1994). On noun incorporation: Mithun (1984).

Exercises

A. Exercises from English

1. *Marking semantic roles

Provide examples that illustrate how English uses word order, case and adpositions to mark different semantic roles.

2. **Define the PSA in English relative clauses

Study the following relative clauses. The relative clause follows the head noun.

What roles can the ‘missing’ argument in the relative clause have? Do we see (a) a semantic PSA, (b) restricted neutralization (syntactic PSA), or (c) unrestricted neutralization?

- (1) the guy who sold me this computer
- (2) someone I’ve never met
- (3) the woman he gave the flowers to
- (4) the hammer I hit the nail with
- (5) the people I’m baking this cake for
- (6) the park she walked to
- (7) the country he came from
- (8) the gardeners I worked with

3. **Define the PSA in jussive clauses

The following sentences contain a main clause followed by a dependent, non-finite clause, as indicated in (1). The main clauses contain jussive verbs: verbs to do with commands or requests.

Firstly, which argument in the main clause controls the identity of the ‘missing’ argument in the second clause in each example? Based on your findings, do we see a syntactic controller or a semantic controller? (See section 2.2.3 for reference.)

Secondly, what roles can the ‘missing’ argument have within the dependent clause? Discuss whether you find a syntactic or semantic pattern.

What semantic reason makes (3) and (5) sound a little odd?

- (1) [Emma asked Ben]_{MAIN} [to rent a movie]_{DEPENDENT}.
- (2) Rachel ordered Jonathan to sit down.
- (3) Grace persuaded Oscar to be happy.
- (4) *Ben told Noah to Jonathan carry.
- (5) Ben persuaded Noah to be carried by Jonathan.

B. Exercises from other languages

1. *Mangghuer (Mongolic, China)²⁹

Mangghuer has a case enclitic =*du* (with a variant form =*di*) that marks a number of semantic roles. Examine the following data and describe the semantic roles that =*du*/*di* (underlined) marks.

- (1) a. Huguer jiaoduer gan=du manten ba-ji hu-lang.
cow every.day 3SG=CASE bread defecate-IPFV give-OBJV.IPFV
'Cow defecated bread for her every day.'
- b. Ni ger=du laoshi ningger ge bang.
this house=CASE honest old.woman SG.INDF OBJV.COP
'In this house there was an honest old lady.'
- c. qi=ni huayan=du bao-ba.
2SG=GEN garden=CASE go.down-SUBV.PFV
'(It) fell into your garden.'
- d. gan ana=du=nang keli-jiang.
3SG mother=CASE=REFLPOSS say-OBJV.PFV
'He said to his mother.'
- e. banber kai=du yi-tian 'bang!' 'bang!' di daogher
board wind=CASE one-day ONOM ONOM QUOTE sound
sao-jiang.
sit-OBJV.PFV
'All day the board sounded "bang! bang!" like that in the wind.'
- f. Ana=du ergha guang bai.
mother=CASE power OBJV.NEG.COP EMPH
'Mother had no power (any more).'
- g. gan zou luchu=di sao danang.
3SG thus rolling.stone=CASE sit after
'He had sat on a roller stone (used to thresh grain).'

2. *Russian (Slavic, Russia)³⁰

Study the following sentences and their semantic representations. What is the predicate class in each sentence?

Using the actor-undergoer hierarchy and the notions of higher- and lower-ranked arguments, give the case assignment rules for Russian, based on the data.

- (1) Molod-aja učitel'nic-a da-l-a nov-uju
young-F.SG.NOM teacher-F.SG.NOM give-PST-F.SG new-F.SG.ACC
knig-u star-oj ženščin-e.
book-F.SG.ACC old-F.SG.DAT woman-F.SG.DAT
'The young teacher gave a/the new book to an/the old woman.'
[do' (učitel'nic-, Ø)] CAUSE [BECOME have' (ženščin-, knig-)]
- (2) Učitel'nic-a pro-čita-l-a knig-u.
teacher-F.SG.NOM PFV-read-PST-F.SG book-F.SG.ACC
'The teacher read the book.'
[do' (učitel'nic-, [read' (učitel'nic-, knig-)])] & [INGR consumed' (knig-)]

- (3) Učitel'nic-a govori-l-a.
 teacher-F.SG.NOM speak-PST-F.SG
 'The teacher was speaking.'
do' (učitel'nic-, [**speak'** (učitel'nic-)])
- (4) Ženščin-a umer-l-a.
 woman-F.SG.NOM die-PST-F.SG
 'The woman died.'
 BECOME **dead'** (ženščin-)

3. *Guató (Amazonian, Brazil)³¹

Look carefully at the patterning of personal affixes in Guató presented in the table and describe the patterns (nominative, ergative or other) you find along the different rows of data.

Translate the partially glossed sentences in (1) and (2). (You can use the present progressive form for the verb.)

Personal affixes	A	S	U
1st SG	-jo	-jo	-jo
2nd SG/PL	gwa-	-he	-he
3rd SG	ε- / i-	-∅	-∅
1st dual inclusive	ga-	ga-	ge-
1st non-SG	dʒa-	dʒa-	dʒε-
3rd PL	bε-	bε-	∅-

- (1) na-gwa-bagáki-(j)o. _____
 IND-??-hit-??
- (2) n(a)-ε-bagáki-he. _____
 IND-??-hit-??

4. **Gawri (Indo-Aryan, Pakistan)³²

What differentiates the data in set 1 from the data in set 2? In other words, what do *all* the examples in set 1 have in common, and what do *all* the examples in set 2 have in common?

Examine the case form of the pronouns when they are the S, A and U argument in the two sets of data and describe the patterns you find – nominative? Ergative? Something else? (The pronoun case glosses have been omitted for the purposes of the exercise. The acute and grave accents indicate tone.)

Next, look at the person, number and gender agreement on the verb. Discuss the following points separately.

- Discuss which argument the verb agrees with, again using S, A and U for reference. (At this point, ignore whether it is person, number or gender agreement, just look at which argument the verb agrees with.)
- Describe what type of agreement (person, number, gender) you find, in terms of S, A and U.

- (1) a. yä häsant.
I laugh.IPFV.M.SG.PRS
'I(M) am laughing.'
- b. yä häsent.
I laugh.IPFV.F.PRS
'I(F) am laughing.'
- c. tu häsant.
you laugh.IPFV.M.SG.PRS
'You(M.SG) are laughing.'
- d. sä häsant.
he laugh.IPFV.M.SG.PRS
'He is laughing.'
- e. ï pō häsant.
this boy laugh.IPFV.M.SG.PRS
'This boy is laughing.'
- f. ami lukuṭor häsänt.
these boys laugh.IPFV.M.PL.PRS
'These boys are laughing.'
- g. ami likiṭer häsent.
these girls laugh.IPFV.F.PRS
'These girls are laughing.'
- h. tu mäy päšant.
you me see.IPFV.M.SG.PRS
'You(M.SG) see me(F).'
- i. yä thäy päšant.
I you see.IPFV.M.SG.PRS
'I(M) see you(M.SG).'
- j. ï pō gēl khānt.
this boy bread eat.IPFV.M.SG.PRS
'This boy is eating bread.' (*gēl* is feminine)
- k. ï bire gān mās khēnt.
this girl big meat eat.IPFV.F.PRS
'This girl is eating beef.' (*mās* is masculine)
- l. sä gēl khānt.
he bread eat.IPFV.M.SG.PRS
'He is eating bread.'
- (2) a. tu häsu.
you laugh.PFV.M
'You(M.SG) laughed.'
- b. sä häsu.
he laugh.PFV.M
'He laughed.'
- c. yä häsu.
I laugh.PFV.M
'I(M) laughed.'

- d. yä häsi.
I laugh.PFV.F
'I(F) laughed.'
- e. ã bire häsi.
this girl laugh.PFV.F
'This girl laughed.'
- f. täy täs pōyānu.
you him recognize.PFV.M
'You(M.SG) recognized him.'
- g. tän thāy pōyānu.
he you recognize.PFV.M
'He recognized you(M.SG).'
- h. täy mǎy pōyānu.
you me recognize.PFV.M
'You(M.SG) recognized me(M).'
- i. täy mǎy pōyāni.
you me recognize.PFV.F
'You(M.SG) recognized me(F).'
- j. mǎy thāy pōyānu.
I you recognize.PFV.M
'I(M) recognized you(M.SG).'
- k. mǎy thāy pōyāni.
I you recognize.PFV.F
'I(M) recognized you(F.SG).'
- l. ã bire-ä gǎn mās khāy.
this girl-CASE big meat eat.PFV.M
'This girl ate beef.'

5. **Tongan (Oceanic, Tonga)³³

In the English exercise (A2) we saw how relative clauses contain a syntactically 'missing' argument that is cross-referenced with the head noun. Examine the following Tongan data and determine the roles that the 'missing' argument in the relative clause can have. (The relative clause has been put in square brackets in each case.)

What strategy does Tongan use to allow other arguments to be the cross-referenced argument? Compare (3) and (4) in particular.

- (1) e fefine [na'e tangi]
DEF woman PST cry
'the woman (who) cried'
- (2) e fefine [na'e fili 'e Sione]
DEF woman PST choose ERG Sione
'the woman (who) Sione chose'
- (3) *e fefine [na'e fili 'a Sione]
DEF woman PST choose ABS Sione
('the woman (who) chose Sione')

- (4) e fefine [na'e ne fili 'a Sione]
 DEF woman PST 3SG choose ABS Sione
 'the woman (who) chose Sione'
- (5) *e fefine [na'e ne tangi]
 DEF woman PST 3SG cry
 ('the woman (who) cried')
- (6) *e fefine [na'e fili ia 'e Sione]
 DEF woman PST choose 3SG ERG Sione
 ('the woman (who) Sione chose')

6. **Kamaiurá (Tupi-Guarani, Brazil)³⁴

In Kamaiurá, the choice of which argument to cross-reference on the verb is affected by a person hierarchy: 1st > 2nd > 3rd. The argument furthest to the left of this hierarchy will be chosen. This is illustrated in the data set (1) where in both (a) and (b) it is the first person argument that is cross-referenced on the verb regardless of its role.

Now look at both data sets. How would you describe the pattern of verb agreement? In other words, what determines which form of the 1st singular prefix (*je=* or *a-*) is used?

- (1) a. kunu'uma je=retsak.
 child 1SG=see
 'The child saw me.'
- b. kunu'uma a-retsak.
 child 1SG-see
 'I saw the child.'
- (2) a. a-ja'eo.
 1SG-cry
 'I cried.'
- b. je='amot.
 1SG=be.homesick
 'I'm homesick.'
- c. ne=atua a-perek.
 2SG=nape 1SG-hit
 'I hit your nape (back of the neck).'

7. **Taba (Malayo-Polynesian, eastern Indonesia)³⁵

Taba has an unusual type of split among the single arguments of intransitive predicates. From the following sets of data, describe what determines whether the argument is set (1) or is not set (2) cross-referenced on the verb. Consider semantic properties of the argument as well as the predicate class but note that the tense/aspect of the examples will not be relevant to your answer.

- (1) a. n=tuli.
 3SG=sleep
 '(S)he is sleeping.'

- b. k=búlaj.
1SG=twist
'I'm spinning.'
- c. Oci n=alhod.
Oci 3SG=run
'Oci is running.'
- d. wója n=sagu.
water 3SG=spear
'Water is spouting out.'
- e. n=tub.
3SG=grow
'It is growing (e.g. a plant).'
- f. I n=amseh.
3SG 3SG=be.drunk
'He's drunk.'
- g. L=kiu kwat.
3PL=be.frightened be.strong
'They were really frightened.'
- h. I n=mot.
3SG 3SG=died
'He (a baby) died.'
- (2) a. Ubang da mlongan.
fence DIST be.long
'That fence is long.'
- b. Mapot i.
be.heavy 3SG
'It's heavy.'
- c. Loka posa.
banana be.boiled
'The banana is boiled.'
- d. Wwe mhonas kwat.
leg be.sore be.strong
'My leg is really sore.'
- e. Tabako dumik.
cigarettes be.finished
'The cigarettes are finished.'
- f. masin lekat.
engine be.bad
'The engine is broken down.'
- g. gawája lékat-o.
guava be.bad-APPL
'The guava has gone rotten.'

- b. *Furkü-mate-y.
cool-mate-IND.3SG.SBJ
(‘The mate got cold.’)
- c. *Lüf-ruka-y.
burn-house-IND.3SG.SBJ
(‘The house burned down.’)
- d. *Küme-pulku-la-y.
be.good-wine-NEG-IND.3SG.SBJ
(‘Wine is not good.’)
- (5) a. Ngilla-waka-n. Fey langüm-fi-ñ.
buy-cow-IND.1SG.SBJ then kill-3.OBJ-IND.1.SBJ
‘I bought a cow. Then I killed it.’³⁸
- b. *Ngilla-waka-fi-n.
buy-cow-3.OBJ-IND.1SG.SBJ
(‘I bought a cow.’)
- c. Ngilla-fi-ñ ti waka.
buy-3.OBJ-IND.1.SBJ the cow
‘I bought a cow.’
- (6) a. Pedro ngilla-fi-y motri-le-chi pu waka.
Pedro buy-3.OBJ-IND.3SG.SBJ be.fat-ADJ COLL cows
‘Pedro bought cows that were fat.’
- b. *Pedro ngilla-waka-y motri-le-chi.
Pedro buy-cow-IND.3SG.SBJ be.fat-STAT-ADJ
(‘Pedro bought cows that were fat.’)

10. **TEXT-BASED EXERCISE: Udihe (Tungusic, Russian Federation)³⁹

The Udihe language is spoken by around 10% of an ethnic population of about 1,600 people in the far east of Siberia (Gordon 2005).

The text is a complete short story which has already been divided into sentences, broken down into morphemes, glossed and translated by the people who collected the text.⁴⁰

Begin by locating the predicate(s) of each sentence (which may not be the verb) and constituent boundaries. Then move on to the areas covered in this and previous chapters. You will also be able to develop a preliminary lexicon of words and morphemes.

As well as noting what you find, note the parts of the text that were difficult to analyse, and why. Remember to base your analysis on the Udihe data and not on the English translation (although the English may give you some guidance).

Tigers

- (1) Minti ba:-di-fi kuti wac’a bie, ñamahi
we place-DAT-1PL.INCL tiger few be.PRS.HAB warm
ba:-du tene egdi.
place-DAT CONTR many
‘There are few tigers in our forests, but in warm countries there are many of them.’

- (2) Kuti na:ŋgi di:ŋki-ni bihi-ni.
 tiger manchu.bear size-3SG be-3SG
 ‘The tiger is similar in size to the Manchu bear.’
- (3) Inakta-ni soligi-zi p’aligi-zi kede-ñeñe o:i.
 fur-3SG orange-INS black-INS stripy-ADJ make-PRP
 ‘Its coat has orange and black stripes.’
- (4) Utemi mo:kt’oi o:kt’oi do-ni-ni uta-wa e-u-ji ise.
 therefore bushes grasses inside-DAT-3SG that-ACC NEG-PASS-PRP see
 ‘Hence it cannot be seen in the grass and bushes.’
- (5) Keige zugdi-du siŋe-we wakca-ini, kahi ba: xuon-di-ni
 cat house-DAT mouse-ACC hunt-3SG marten place top-DAT-3SG
 oloxi-we wakca-ini, kuti tene nakta-wa wakca-ini, ni:
 squirrel-ACC hunt-3SG tiger CONTR boar-ACC hunt-3SG man
 ’o-wo-ni mui-we jah-wa-da xoŋto-wo-do
 domestic.animal-ACC-3SG horse-ACC cow-ACC-FOC other-ACC-FOC
 wa-ini.
 kill-3SG
 ‘The cat hunts for mice in the house, the marten hunts for squirrels in the forest, and the tiger hunts for boars and kills men’s domestic animals, horses, cows and others.’
- (6) Ni:-we-de wa-ini.
 man-ACC-FOC kill-3SG
 ‘It also kills men.’
- (7) Slono-zi tene kuti ŋele-ini.
 elephant-INS CONTR tiger be.afraid-3SG
 ‘But it is afraid of the elephant.’
- (8) Ñamai ba:-du wakca-i ni: slono-lo u:ŋ-ka-si kuti-we
 warm place-DAT hunt-PRP man elephant-LOC sit-PRF-PC.SS tiger-ACC
 wakca-iti, xaisi na:-wa-da xokto-di-ni ule-iti tiŋme-lege-ni.
 hunt-3PL also ground-ACC-FOC road-DAT-3SG dig-3PL fall-PURP-3SG
 ‘In warm countries hunters sitting on elephants hunt for tigers, and they also dig (holes) in the ground on the roads so that the tiger falls inside.’

6 The structure of phrases

KEY TOPICS

- Noun phrases
- Adpositional phrases
- Adjuncts

1 Noun phrase syntactic structure

Up to this point, we have treated noun phrases like those in (1) as constituent units.

- (1) (a) a dog with three legs
(b) the three little pigs
(c) Lucy's handkerchief
(d) us

They do function as constituent units in clauses, as we have seen. However, they can be composed of several individual words or morphemes, as we see in (1a–c), and we need a way of describing their internal structure.

In this section we look at some key features of the syntactic structure of noun phrases and in the [following section](#) we examine the operators that can occur inside noun phrases.

1.1 The internal structure of noun phrases

To describe the internal constituent structure of noun phrases, we use the same principles and terminology that we use to describe the syntactic structure of the clause and, as we see in section 3, the same as we use to describe the internal structure of adpositional phrases. We can see the parallel in [Figure 6.1](#).

Clauses have a predicate as their head, so the nucleus node of a clause contains a PRED node, reflecting its predicative function. Noun phrases also have a nucleus but, since they are headed by a noun, the nucleus of a noun phrase

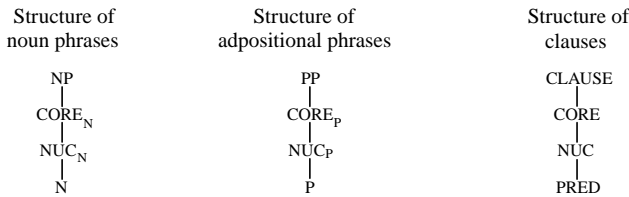


Figure 6.1 *The structure of noun phrases, adpositional phrases and clauses*

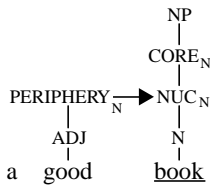


Figure 6.2 *Constituent representation of a good book*

is a N(oun). Notice in Figure 6.1 that we mark the core and nucleus of a noun phrase with a subscript ‘N’ to show they are within a noun phrase, not within a clause, and we likewise mark the core and nucleus of an adpositional phrase with subscript ‘P’.

1.1.1 Structure inside the core_N

1.1.1.1 Nuclear_N periphery_N

Lexical items that modify the nominal nucleus include adjectives; they describe a property of the noun. As modifiers of the noun, then, they are placed in the periphery_N.¹ The example *a good book* is shown in Figure 6.2, where *good* describes a property of the head noun *book* (underlined) and as such is placed in the periphery_N.

We noted in chapter 3 that we are more interested in the function of a constituent than its word class. In the case of elements that occur in the periphery_N of a noun phrase we find again that a variety of constituent types can have the function of modifying a head noun. In (2) we see some examples from English where nouns (*chocolate*, *brick*, *stone*) are modifying the head nouns *cake*, *house* and *monument*.²

- (2) (a) a chocolate cake
 (b) a brick house
 (c) a stone monument

In Gaagudju (Gunwingguan, Australia), the peripheral_N element may sometimes be split from the noun it modifies, as it is in (3) where *marrawaarra* ‘big’ is separated from the head noun *boonjman* ‘rat’ by the main predicate of the clause (Harvey 2002: 316).

- (3) boonjman Ø-arro-oree-garra Ø-marrawaarra.
 rat 3I<I-see-AUX:PST.PFV I-big
 'I saw a big rat.'

Draw the constituent representation for the sentence in (3).

In this section we are interested in when adjectives modify nouns, rather than when they are predicative. This is an important distinction to make as these are two different functions which are commonly expressed differently in the syntax. The distinction in form and meaning is illustrated by the two pairs of examples from Luo (Eastern Sudanic, Kenya) in (4) and Baure (Arawakan, Brazil) in (5) (Tucker 1994: 245 and Danielson 2007: 196).

- (4) (a) kwac má-rá'c LUO
 leopard PTCP-bad
 'a bad leopard'
 (b) kwac ra'c.
 leopard bad
 'The leopard is bad.'
- (5) (a) tin eton monik BAURE
 DEM.F woman pretty
 'the pretty woman'
 (b) monik tin eton.
 pretty DEM.F woman
 'The woman is pretty.'

The (a) examples are noun phrases that include a modifying adjective (which would appear in the periphery_N of the noun phrase). In the (b) examples, on the other hand, the adjective functions as the main predicate of the clause.

1.1.1.2 Arguments of noun phrases

Noun phrases may contain more than one noun. In English, for example, we find noun phrases containing two nouns (6a–e) where the second noun is marked with the preposition *of*.

- (6) (a) the lid of the box
 (b) the houses of parliament
 (c) daughters of Eve
 (d) this chapter of the book
 (e) the belongings of the prisoner

These noun phrase types often express association (6b), relation (6c), or a part-whole relationship (6a) and (d) between the two nouns.³ The head and dependent noun may also be in a relationship of possession as in (6e).⁴

Just as predicates can have arguments in clause structure, in (6) we in fact have nouns as arguments of other nouns. In each case one noun (the underlined noun in (6)) is the head noun and the argument noun is the dependent noun.

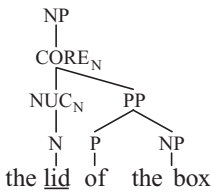


Figure 6.3 *Constituent representation of the lid of the box*

We can also demonstrate which noun is the head noun by placing the noun phrase in a sentence. In (7) the verb *have* agrees in number with the plural head noun *parents*, not with the singular dependent noun *my best student*.

- (7) [The parents of my best student] have(*has) moved to Mongolia.

In English, the dependent noun within a noun phrase appears marked with *of* as part of a prepositional phrase. We represent the whole argument prepositional phrase as a daughter of the core_N in the constituent representation, just as we did for arguments within the clause. The constituent representation for (6a) is therefore as shown in Figure 6.3.

Other languages may mark the dependent noun in a noun phrase with a particular case to indicate its role, rather than place it in an adpositional phrase. This is the strategy in Kayardild (Pama-Nyungan, Australia): in (8) the dependent nouns *maku* ‘woman’ (8a) and *bijarrba* ‘dugong’ (8b) are marked with genitive case while the underlined head nouns *kularrin* ‘brother’ (8a) and *marl* ‘flipper’ (8b) are marked with nominative case (Evans 1995b: 152).⁵

- (8) (a) dathin-karra maku-karra kularrin-da
 that-GEN woman-GEN brother-NOM
 ‘that woman’s brother’ (or ‘the brother of that woman’)
- (b) bijarrba-karra marl-da
 dugong-GEN hand-NOM
 ‘a dugong’s flipper’

1.1.2 Structure outside the core_N

1.1.2.1 Core_N periphery $_N$

As well as a nuclear_N level periphery $_N$, noun phrases have peripheral elements at the core_N level. Core_N -level peripheral elements have functions similar to those that modify the periphery in a clause: they situate the noun phrase in space or time. Consider the first two examples in (9): in both the clause in (9a) and the noun phrase in (9b) the locative prepositional phrase occurs in the periphery.

- (9) (a) [Ron was arrested by the police] CORE [at the protest] PERIPHERY · CLAUSE
 (b) [the arrest of Ron by the police] CORE_N [at the protest] PERIPHERY_N NOUN PHRASE
 (c) [the party] CORE_N [in New York/after the meeting] PERIPHERY_N NOUN PHRASE

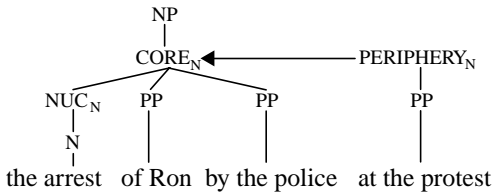


Figure 6.4 *Constituent representation of deverbal noun phrase*

Noun phrases such as those in (9b) are deverbal noun phrases, reflecting their relationship to clauses such as (9a), but core_N periphery elements can also occur within simpler noun phrases, as (9c) shows.

The constituent representation of the noun phrase in (9b) is as shown in Figure 6.4.⁶

Thai (Tai-Kadai, Thailand) has similar core_N peripheral elements, illustrated in (10) (Iwasaki and Ingkaphirom 2005: 67). The prepositional phrases *nay t̄u* ‘in the closet’ and *bon t̄o* ‘on the table’ describe the spatial location of the underlined head nouns.

- (10) (a) kaaŋkeɛŋ nay t̄u
 pants in closet
 ‘a pair of pants in the closet’
- (b) n̄aŋs̄ū l̄ɛm bon t̄o
 book CLF on table
 ‘the book on the table’

Draw the constituent representation for (9c).

Draw the constituent representation for (10a) and (b).

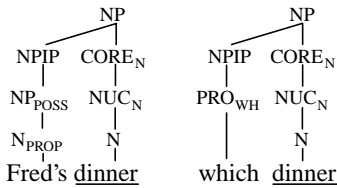
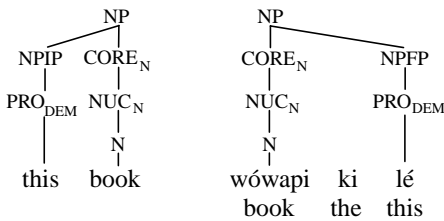
1.1.2.2 *The noun phrase initial position (NPIP)*

In the English noun phrases in (11) the head noun *dinner* is preceded by a variety of other elements. In (11a), (b) and (e), we see possessive constructions, and there is a demonstrative and a question word in (11c) and (d) respectively. Note too that in each case, the element before the head noun also indicates definiteness.

- (11) (a) Fred’s dinner
 (b) his dinner
 (c) that dinner
 (d) which dinner
 (e) yesterday’s dinner

In addition, each of the items in the initial position could head a noun phrase on its own (e.g. *That is mine*).

So, we can see that although *Fred’s dinner* might be said to ‘mean’ the same thing as *the dinner of Fred*, there are clearly syntactic differences between the two noun phrase structures and so we give them different syntactic representations. Groups of elements that have the characteristics described above are placed in **NOUN PHRASE INITIAL POSITION (NPIP)** within the noun phrase. This position is analogous to clause-initial positions with special functions, which we will

Figure 6.5 *Constituent representation of NP with NPIP*Figure 6.6 *Constituent representation of NPIP and NPFP*

examine in chapter 8. As indicated in Figure 6.5, it is useful to indicate what type of constituent is occurring in this position since there are often a number of possibilities NP_{POSS} (possession), PRO_{DEM} , PRO_{WH} , etc.⁷

The constituent representation for (11a) and (b) is given in Figure 6.5.

Looking back now at the Kayardild data in (8) we might want to consider a NPIP position for the initial genitive-marked noun. You might like to consider what other data would be useful to collect in order to determine if this is an appropriate analysis or if it should be treated as an argument, a daughter of the $core_N$ node.

Some languages have a Noun Phrase Final Position (NPFP) where elements like those in (11) occur after the head noun, rather than before, as in the Lakhota (Siouan, USA) example in Figure 6.6 where a demonstrative occurs in the NPFP position (Van Valin 2005: 27).⁸

1.1.3 Possession in head-marking constructions

We saw in chapter 3 that in a head-marking construction, relationships between the head and its dependents are marked on the head. In a clause, this means that arguments are marked morphologically on the predicate. In a noun phrase, it means that elements such as possessive markers are attached to the head noun rather than the dependent noun.

In the examples in (12) from Luiseño (Uto-Aztecan, USA) we see head-marking in the noun phrase. Notice that the indicator of possession is a prefix (boxed) on the head noun *na* ‘father’ (underlined) which agrees in person and number with the possessor noun (Kathol 2002: 191). Compare this with the English (dependent-marking) translation where possession is indicated on the dependent noun *boy* and not the head noun *father*.

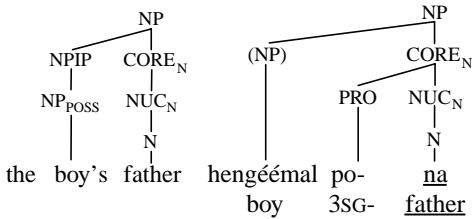


Figure 6.7 *Constituent representation of possessive constructions*

- (12) (a) hengéémal [po-] na
 boy [3SG-] father
 'the boy [s] father'
- (b) hengéémal-um [pom-] na
 boy-PL [3PL-] father
 'the boy [s] father'

This difference is reflected in the constituent representation of the noun phrase: the constituent representations of the Luiseño and the English translation in (12a) are given in Figure 6.7.

In the head-marking structure on the right, the possession marker is represented as a daughter of the core_N while the NP *boy* is shown in brackets, outside the core_N .⁹ This parallels the way head-marking structures in the clause are represented.

1.2 Constituents without internal structure

As has been already mentioned in passing, there are constituents which do not have an internal constituent structure. These include referring expressions consisting of proper nouns (names) or pronouns.¹⁰ Both proper nouns and pronouns can stand in the place of full noun phrases to represent a referent; they do not take any arguments (see 13b), and they cannot generally be modified, as (13c) and (d) illustrate.

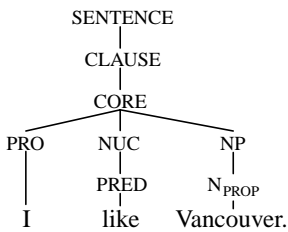
- (13) (a) Oliver
 (b) *Oliver of Katie
 (c) *?the Oliver
 (d) *a strange Oliver

Pronouns can be classified into the subtypes listed in Table 6.1, and it is helpful to label them as such in the constituent representation.

In their constituent representation, pronouns are daughters of the core node; they have no core_N or nuc_N node because they do not need them. The structure

Table 6.1 *Pronoun types*

Name	Label	English examples
Personal pronouns	PRO	I, you, he, she, him, her, we, us . . .
Possessive pronouns	PRO _{POSS}	my, your, his, her, our . . .
Demonstrative pronouns	PRO _{DEM}	this, that, these, those
Relative pronouns	PRO _{REL}	who, which . . .
Question (or ‘WH’) pronouns	PRO _{WH}	who, whom, what . . .
Expletive (‘dummy’) pronouns	PRO _{EXP}	it, . . .

Figure 6.8 *Constituent representation of pronoun and proper noun*

of constituents without internal structure is illustrated with the pronoun *I* and the proper name *Vancouver* in Figure 6.8.

Section summary

In this section you have learned:

- to describe and represent the internal structure of noun phrases.
- **KEY TERMS:** referring expression, core_N/nuc_N/periphery_N, deverbal noun, NPIP/NPFP, pronouns (possessive, demonstrative, personal), proper nouns.
- **EXERCISES:** B1

2 Noun phrase operators

Just as clauses have operators shown in a separate representation, so noun phrases also have operators, grammatical elements modifying different levels of the noun phrase. In the noun phrases in (14), for example, only the head nouns (underlined) would be represented in the constituent representation. The other words are operators.

- (14) (a) some grey ships
 (b) these four Dutch doctors
 (c) no buses

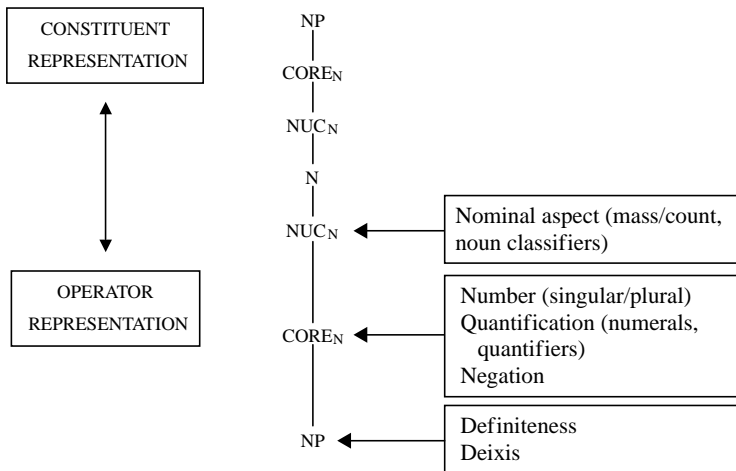


Figure 6.9 Overview of NP constituent and operator representation

The diagram in Figure 6.9 contains all the noun phrase operators that we will examine in further detail in this section. We will begin with NP-level operators and work our way up.

2.1 Noun phrase-level operators: locality

Operators that modify the whole noun phrase have the job of grounding the referent in the ‘real’ world; they are to do with **LOCALITY**. They are similar to clause-level operators in the sentence, in that those also place the clause in the context of the ‘real’ world. NP level operators mark noun phrases for the following.

DEFINITENESS

DEIXIS

2.1.1 Definiteness

Definiteness markers locate the referent according to the speaker’s assumptions about how well the addressee can identify the NP referent. In other words, the use of articles like *a* (indefinite) and *the* (definite) in English essentially depend on whether the speaker thinks the addressee already knows about the referent.

In (15a), the addressee (and possibly the speaker) may not know exactly which library has burned down, but in (15b) the speaker is talking about a specific library and expects the addressee to identify the same library. This is a distinction marked as definiteness, indicating the **IDENTIFIABILITY** of the referent.

- (15) (a) A library has burned down.
 (b) The library has burned down.

Further examples of indefinite and definite markers are provided in (16) from Eastern Bontoc (Malayo-Polynesian: Philippines) (Fukuda 1997: 46).¹¹

- (16) (a) *hen kawad chi chanom.*
 NOM place GEN.INDF water
 ‘the place of some water’
- (b) *hen kawad hen chanom.*
 NOM place GEN.DEF water
 ‘the place of the water’

The marker *chi* is indefinite, marking a non-specific, unknown body of water. The definite marker *hen*, on the other hand, marks specific, known water. Both markers simultaneously serve as ‘genitive’ markers, indicating that *chanom* is the dependent noun in each noun phrase.

2.1.2 Deixis: demonstratives

Deixis (pronounced either ‘day-iksis’ or ‘die-iksis’) is to do with pointing with words. Deictic markers locate the referent with reference to the speaker.¹² The two most basic distinctions mark whether the referent is close to (**PROXIMAL**) or away from (**DISTAL**) the speaker.

- (17) (a) PROXIMAL these carrots/this cabbage ME → CARROTS/CABBAGE
 (b) DISTAL those carrots/that cabbage ME —————→ CARROTS/CABBAGE

It is important to distinguish demonstrative operators from demonstrative pronouns because they may have the same form but they have different functions. Demonstrative operators modify a head noun within a noun phrase, as illustrated in (18a). Demonstrative pronouns, on the other hand, stand alone as referring expressions, as shown in (18b) (see section 2.4).

- (18) (a) [This book]_{NP} is fantastic.
 (b) [This]_{NP} is fantastic.

Similarly, in Luo (Eastern Sudanic, Kenya), the demonstrative occurs as an operator in the noun phrase in (19a) and as a pronoun in sentence (19b).

- (19) (a) *bél-gî*
 sorghum-this
 ‘this sorghum’
- (b) *magi bèl.*
 this sorghum
 ‘This is my sorghum.’

In (19a) the demonstrative operator appears as a suffix on the noun *bél* ‘sorghum’ while in (19b) it attaches to the particle *má* to form a demonstrative pronoun (Tucker 1994: 181–2).

In English we only have two deictic points of reference, proximal and distal. Other languages, such as Spanish (Romance, Spain) mark more than one degree of distance from the speaker, as shown in (20).

- (20) (a) este 'this' —————→
 (b) ese 'that' —————→
 (c) aquel 'that over there' —————→

Luo (Eastern Sudanic, Kenya) goes further in marking five degrees of distance (Tucker 1994: 177). The Leti language (Malayo-Polynesian, Indonesia) marks degree of distance from the speaker in both space and time, as the examples in (21) and (22) illustrate (van Engelenhoven 2004: 155).

- (21) (a) püat=dī=ra
 woman=here=PL
 'the women here (next to me)'
 (b) püat=dó=ra
 woman=there=PL
 'the woman there (a little further away)'
 (c) püat=dé=ra
 woman=over.there=PL
 'the woman over there (in the distance)'

In (21) we see three degrees of spatial distance indicated with the enclitics =*dī* in (21a), =*dó* in (21b) and =*dé* in (21c), underlined.

In (22), on the other hand, we see four degrees of time indicated with the clitics =*dī* (22a), =*do* (22b), =*de* (22c) and =*da* (22d), relating to the point where the referent was introduced into the speech event.¹³

- (22) (a) müan=dī=ra
 man=now=PL
 'the men we discuss now'
 (b) müan≈d≈i≈o=ra
 man≈then=PL
 'the men we discussed then'
 (c) müan≈d≈i≈e=ra
 man≈once=PL
 'the men we discussed once'
 (d) müan=da
 man=once.before
 'the man/men we discussed once / that were mentioned before'

Finally, in (23) we see that these clitics can be stacked, combining on nouns in the order noun=spatial=temporal to create complex deictic meanings.

- (23) (a) müan=dī=dī 'this man here that we discuss now'
 (b) püat=dé=de 'that woman over there we discussed once'

Jahai (Mon-Khmer, Malaysia), shown in (24), has a system of eight demonstratives (Burenhult 2005: 86).

- (24) (a) tōh ‘this’
 (b) ton ‘that (you know)’
 (c) tūn ‘that (you don’t know)’
 (d) tani? ‘that (away)’
 (e) tadeh ‘that (beyond me)’
 (f) tɲi? ‘that (beyond you)’
 (g) titih ‘that (up)’
 (h) tujih ‘that (down)’

Determine the meaning distinctions you see expressed in the data from Jahai in (24).

2.2 Core_N-level operators: quantity

Core_N level operators in the noun phrase have to do with quantification (how much, how many) and negation (whether any or none). They mark noun phrases for the following.

NUMBER

QUANTIFICATION

NEGATION

2.2.1 Number

The term number here refers to the grammatical distinction between singular, plural and, in some cases, dual.¹⁴ (Numerals such as *one*, *two*, *three* are classed as quantification, not number, and are discussed in the next section.) Kham (Tibeto-Burman, Nepal) is one language that has a three-way distinction in its number marking. In (25) we see examples of all three; singular in (a), dual in (b) with a *-ni* suffix, and plural in (c), where the suffix *-rə* indicates ‘three or more’ (Watters 2002: 54).

- (25) (a) luhza
 child.SG
 ‘a child’
 (b) ka:h-ni
 dog-DU
 ‘(two) dogs’
 (c) lū:-rə
 stone-PL
 ‘(three or more) stones’

The singular, in (25a), is unmarked, as is most often the case cross-linguistically. The Nen language (South-Central Papuan, Papua New Guinea) provides an

exception: in this language dual number is unmarked while singular and plural (more than two) are both marked, as illustrated in (26) (Evans 2009: 5).

- (26) (a) t-ane-ng!
3SG.ABS-eat-2NSG.A.IMP
'You (two) eat it!'
- (b) t-ane-ta-Ø!
3SG.ABS-eat-NDU-2SG.A.IMP
'You (sg) eat it!'
- (c) t-ane-ta-ng!
3SG.ABS-eat-NDU-2NSG.A.IMP
'You (three or more) eat it!'

Examples (26b) and (c) include the non-dual suffix *-ta* which indicates a singular actor if paired with the singular form of the actor agreement suffix (26b), and plural if paired with the non-singular form of the actor agreement suffix (26c).

Even within one language, there may be a number of different number marking forms or morphological strategies, as is the case in Kol (Narrow Bantu, Cameroon). A few of its plural-marking strategies are shown in (27) (Henson 2007: 62).

- (27) (a) kól 'sister of man' bòkól 'sisters'
(b) dū 'nose' mû 'noses'
(c) kù 'foot' mòkù 'feet'

Other languages may only mark number on certain nouns. In Mandarin Chinese (Sino-Tibetan, China), for example, number marking is obligatory on pronouns but optional on human nouns. In Mangghuer (Mongolic, China), number (singular or plural) is not normally marked when numerals occur; in other words, number is not marked where there is explicit quantification expressed. Compare the examples in (28), with a plural suffix *-si*, with those in (29) with explicit numerals and no plural suffix marked (Slater 2003: 102–5).

- (28) (a) bulai-si
child-PL
'(some) boys'
- (b) mori-si=nang
horse-PL=REFL.POSS
'his horses'
- (29) (a) bersi liang-ge
tiger two-CLF
'two tigers'
- (b) aguer san-ge
daughter three-CLF
'three daughters'

Describe the morphological processes involved in the Kol data in (27).

We can see that the head noun is not marked for number when there is explicit quantification (*liang* ‘two’ and *san* ‘three’) in the noun phrase.

2.2.2 Quantification

The category of quantification includes both **NUMERALS** (e.g. *one, two, sixteen thousand*) and **QUANTIFIERS** (e.g. *any, few, some, many, every, all*). In languages such as Mordva (Mordvin, Russian Federation) quantification marking (*kavto* ‘two’, *s’ado* ‘hundred’) appears alongside number marking (*-t^j* ‘PL’) (Zaicz 1998: 196). As the translations in (30) show, this is also true of English.

- (30) (a) kavto čī-t^j
 two day-PL
 ‘two days’
 (b) s’ado ijē-t^j
 hundred year-PL
 ‘a hundred years’

As we saw in the previous section, quantification and number do not co-occur in all languages.

In addition, languages differ in terms of the position of their quantification operators and in the way that numerals are formed. The Welsh (Celtic, United Kingdom) for ‘nineteen’ is literally ‘four on fifteen’ and this can be expressed in two different ways, shown in (31) (Watkins 1993: 332). In (31b) we see a syntactic construction used to express number that involves the plural noun *ddynion* marked with the preposition *o*.

- (31) (a) pedwar dyn ar bymtheg
 four man on fifteen
 ‘nineteen men’
 (b) pedwar ar bymtheg o ddynion
 four on fifteen of/from man.PL
 ‘nineteen men’

Like demonstratives, quantifiers may serve as the referring expression in a clause. In the examples from Tinrin (Oceanic, New Caledonia) in (32), for instance, the quantifier *mwârrü* ‘few’ is an operator on the head noun *bosî* in (32a) but stands as a referring expression in (32b) (Osumi 1995: 44).

- (32) (a) saa mwârrü bosî
 a few months
 ‘a few months’
 (b) mwârrü rra
 few DEM.DIST
 ‘those (people/things)’

2.2.3 Negation

Nominal negation marks the absence or lack of a referent. In a sense it is a type of quantifier, describing a quantity of zero. It may be marked through negative operator forms like *no* in English and *kein* in German.¹⁵

- (33) (a) no time
 (b) kein Buch

The examples in (34) show the use of *no* as a nominal negation marker in African American English where it serves with the verbal operator *not* as part of a doubly marked negation system (Green 2002: 77–8).

- (34) (a) Don't no game last all night long.
 'No game lasts all night.'
 (b) Sometimes it didn't have no chalk, no books, no teacher.
 'Sometimes there weren't any chalk, any books or any teacher.'
 (c) I sure hope it don't be no leak after they finish.
 'I hope there won't be a leak after they finish.'

2.3 Nuclear_N-level operators: quality

While NP-level and core_N level operators have to do with locality and quantity, operators modifying a noun at the nuclear_N level modify the 'quality' of the referent.¹⁶ The function of the operators in this category is sometimes termed **NOMINAL ASPECT**, because, in a sense, these markers are to do with the internal structure or form of the referent, just as clausal aspect is to do with the internal structure of the event.¹⁷

One important nuclear operator type is **NOUN CLASSIFICATION**. Noun classifier markers often have to do with the nature and shape of the referent, e.g. 'ball-like', 'stick-like', 'powder-like', 'sheet-like', etc. In Nambiquara (Amazonian, Brazil), there are seventeen classifiers, most of which relate to the physical shape of the noun with which they occur, as the data in (35) illustrates (Lowe 1999: 281). (Notice that in (35d), the classifier affixes to the adjectival modifier suggesting it could be considered a clitic.)

- (35) (a) wa³lin³-su³ -su²
 manioc-CLF(BONE.LIKE) -INDF
 'manioc root'
 (b) huk³ -ẽn¹ -su²
 shooter -CLF(HOLE.LIKE) -INDF
 'shotgun'
 (c) huk³ -ki³ -su²
 shooter -CLF(ROUND) -INDF
 'bow'
 (d) wã²la² wi³win³ -ka³lo³ -a²
 cloth blue -CLF(FLAT.SHEET.LIKE) -DEF
 'the blue cloth'

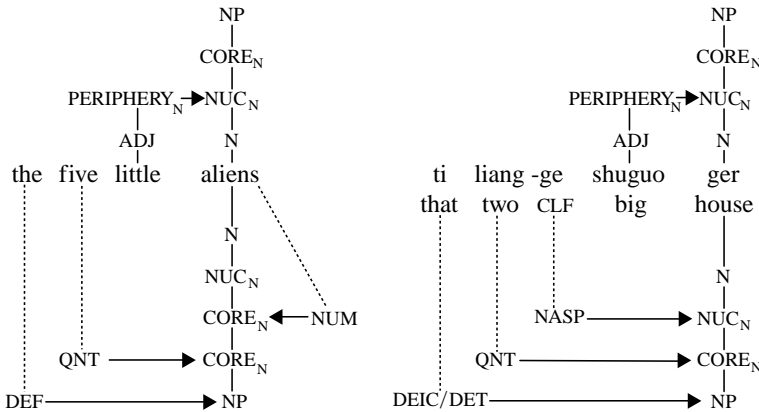


Figure 6.10 *Syntactic representation for noun phrases*

Draw the syntactic representation for (35d).

The use of classifiers varies depending on how a language interprets single unmarked nouns. In English, for example, a noun like ‘book’ is interpreted as having a shape, being ‘bounded’. In Mandarin Chinese (Sino-Tibetan, China), on the other hand, such nouns are interpreted as more shapeless; in a sense, they are like mass nouns. The word *shū*, for example, could be glossed ‘bookness’ rather than ‘book’: for this reason it can only appear with a numeral if a nominal classifier is added (Rijkhoff 2004: 147).

- (36) (a) shū
book(s)
‘book, books’ (‘bookness’)
- (b) wǔ bēn shū
five CLF book(s)
‘five books’

The classifier contributes by pinpointing single occurrences of what is denoted by the noun (Alexiadou, Haegeman and Stavrou 2007: 198).

2.4 Noun phrase operator representation

Now that we have discussed all the main operators that occur within the noun phrase we will focus on how to represent them. Figure 6.10 illustrates how noun phrase operators are represented using noun phrases from English and Mangghuer (‘those two big houses’; Slater 2003: 91).¹⁸

As we saw for clause operators, these syntactic representations clearly show scope relations between the different operator levels. In other words, we expect NP-level operators to be further from the head noun than core_N-level operators, and for core_N-level operators to be further than nuc_N operators.¹⁹ Notice too that operators can appear on either side of the head noun.

In English, nominal aspect may be conveyed with a lexical item rather than a grammatical affix, as illustrated in (37).

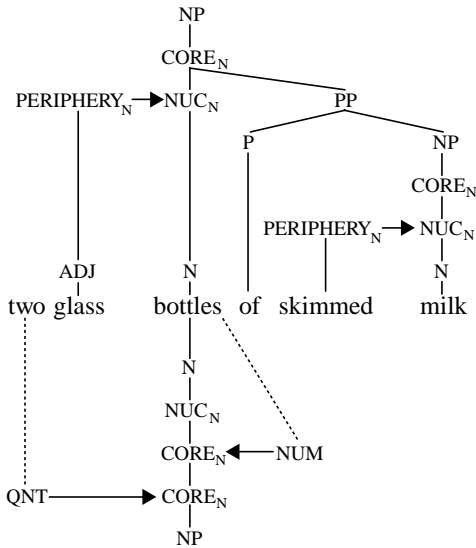


Figure 6.11 *Syntactic representation for English NP with nominal aspect*

- (37) (a) a sheet of paper
 (b) a bottle of milk
 (c) Two glass bottles of skimmed milk have/*has been left on the doorstep.

In these cases, as the verb agreement in (37c) shows, the aspectual element is the syntactic head of the noun phrase, and the modified noun is the argument (reflected also in the presence of the preposition *of*). Even though the meaning of *sheet* and *bottle* has to do with the shape and boundaries of the other noun, in syntactic terms they are the head of each noun phrase. The constituent representation of the noun phrase in (37c) is given in Figure 6.11.

With this type of representation, we can account for languages with ‘split’ or discontinuous noun phrases, where elements of the noun phrase may not appear alongside each other in a sentence. Warlpiri (Pama-Nyungan, Australia) exhibits such a pattern, as we see in (38).

- (38) (a) Kurdu yalumpu-rlu ka-jana maliki-patu jiti-rni.
 child that-ERG PRS-3PL.OBJ dog-PL tease-NPST
 ‘That child is teasing the dogs.’
 (b) Kurdu-ngku ka-jana maliki-patu jiti-rni yalumpu-rlu.
 child-ERG PRS-3PL.OBJ dog-PL tease-NPST that-ERG
 ‘That child is teasing the dogs.’
 (c) Kurdu-ngku ka-jana yalumpu-rlu maliki-patu jiti-rni.
 ‘That child is teasing the dogs.’
 (d) Yalumpu-rlu ka-jana maliki-patu jiti-rni kurdu-ngku.
 ‘That child is teasing the dogs.’

Draw the operator representation for (38b).

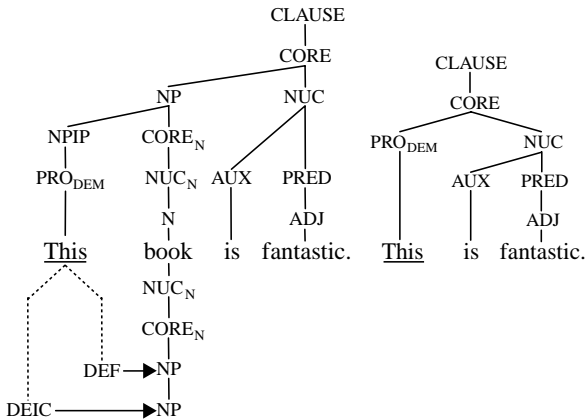


Figure 6.12 *Syntactic representation of demonstratives in NPs*

In (a) we see the constituent *kurdu yalumpurlu* ‘that child’ as a continuous constituent, but in (b–d) we see *yalumpu* split from the noun *kurdu*. When this occurs, both elements are marked with ergative case (Hale 1994: 188).

This system of representation is also useful in distinguishing operators that modify a noun from operator elements that function as referring expressions. Operator elements that act alone as referring expressions need to be shown in the constituent representation as arguments. As we have seen, in English demonstratives can function either as operators or as demonstrative pronouns. These two possibilities, along with their representations, are illustrated in Figure 6.12.

In the noun phrase *this book*, the determiner *this* is represented in both the constituent representation (in the NPPIP) and the operator representation because this form can be used elsewhere in English as an independent pronoun, as illustrated in the right-hand structure.

In (39) we see a similar pair of examples from Ngiti (Central Sudanic, DR Congo).

- (39) (a) [w̩] ngbángba r̩'ì akekpá.
 DEM child be small
 ‘That child is small.’
 (b) [w̩] r̩'ì akekpá.
 DEM be small
 ‘That (one) is small.’

Draw the constituent and operator representations for (39a) and (b).

A demonstrative is functioning as an operator in (39a), modifying the head noun *ngbángba* ‘child’. In (39b), on the other hand, the demonstrative is functioning as a referring expression (Kutsch Lojenga 1994: 374).

If we have no evidence that an operator can occur alone as a referring expression in a language, we will only represent it in the operator representation, and not in the NPIP.

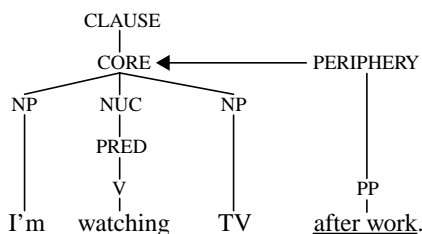


Figure 6.13 *Position of adjunct adpositional phrase*

3.1 Types of adpositional phrases

Adpositional phrases fall into two categories depending on whether they contain predicative or non-predicative adpositions, and there is also a distinction between adpositional phrases that are arguments of the main predicate and those that are not. We will start by looking at predicative adpositional phrases.

3.1.1 Adjunct adpositional phrases

As the name suggests, predicative adpositions function like predicates: they provide semantic information for the clause in which they occur, both in terms of their own meaning and in terms of the meaning of the noun phrase that occurs with them (their argument). They are therefore adjuncts (or adverbials), elements that modify in some way the event or situation described by the main predicate (see section 4). They may place the whole core in time or space, for example. This function is reflected in their semantic and syntactic representation. As we saw in chapter 4 (section 2.5) and as illustrated in (43) and Figure 6.13, the predicative adposition takes the whole of the core as its second argument and the adjunct adpositional phrase appears in the syntactic periphery (see section 3.2 for more on the syntactic representation).

- (43) (a) Mel dances in the kitchen. **be-in'** (kitchen, [**do'** (Mel, [**dance'** (Mel))])]
 (b) I'm watching TV after work. **be-after'** (work, [**do'** (I, [**see'** (I, TV))])]

In these sentences, the preposition contributes to the meaning of the sentence. In the case of (43a), it tells us something about location. In (43b), it carries information about the time of the event. We can see how the preposition contributes to the meaning by changing it and seeing how the meaning of the sentence changes, as illustrated in (44).

- (44) (a) I sat on/under/beside the table.
 (b) I'm watching TV during/before/after work.

The preposition also licenses the noun phrase; in other words, the noun phrase would not be able to occur without the preposition beside it.

Since these adpositional phrase types have a predicative function, we give them an internal constituent structure with a core_P and nucleus_P node, which we

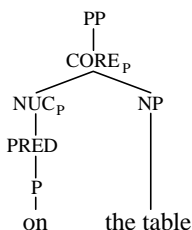


Figure 6.14 *Internal structure of predicative adpositional phrase*

mark with a subscript ‘p’ to show they are within a pre/postpositional phrase. Figure 6.14 shows the internal structure for the prepositional phrase *on the table*.

3.1.2 Argument-marking adpositional phrases

In contrast to adjunct adpositional phrases, argument-marking adpositions are non-predicative. They mark **OBLIQUE CORE ARGUMENTS** of the predicate with an adposition (in languages that do not use case marking for this purpose).²⁰ We have already seen two examples of argument-marking adpositional phrases in (40c) and (d) which are repeated here as (45a) and (b).

- (45) (a) I gave my bonsai tree to Bob.
 (b) I took the phone from my sister.

Core arguments that are not marked with adpositions (e.g. *I* and *my bonsai tree* in (45a)) are **DIRECT CORE ARGUMENTS**. In (45), the predicates *give* and *take* have three arguments, and the preposition marks the third argument; in other words, it marks the non-macrorole argument that is neither the actor nor the undergoer. The preposition itself does not contribute substantial semantic information; it cannot be changed for another preposition because the choice of preposition is determined by the semantic role of the noun phrase that goes with it, as we see in (46).

- (46) (a) I gave my bonsai tree to/*from/*under Bob.
 [do´ (I, Ø)] CAUSE [BECOME **have´** (Bob, bonsai tree)]
 (b) I took the phone from/*to/*beside my sister.
 [do´ (I, Ø)] CAUSE [BECOME NOT **have´** (sister, phone)]

In the case of (46a), the noun *Bob* has the role of **RECIPIENT** which is marked in English by the preposition *to*. In (46b), the opposite role (a type of source) is marked with *from*. Notice that the prepositions do not appear in the semantic representations. They are assigned by rules to particular arguments, as we noted in chapter 5 (section 1.2). Another argument-marking adposition in English is *with*, which is used for the instrument and accompaniment roles and is also assigned by a rule.

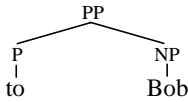


Figure 6.15 *Internal structure of non-predicative prepositional phrase*

As we saw in chapter 4, it is possible in English, as in many other languages, to switch the order of the two post-verbal noun phrases as shown in (47).

- (47) (a) I gave my bonsai tree to Bob.
 (b) I gave Bob my bonsai tree.
- (48) (a) I saw the film star in March.
 (b) *I saw (in) March the film star.

This possibility shows us that the preposition does not license the noun phrase since it is possible for the noun phrase to appear without the preposition under certain circumstances.²¹ Notice in (48) that predicative adpositional phrases are never reversible in the same way.

Since argument-marking adpositional phrases are not predicative, they do not have an internal structure. They simply contain a ‘P’ node and an ‘NP’ node, as Figure 6.15 shows.²²

3.1.3 Argument-adjunct adpositional phrases

We saw in section 3.1.1 that adjunct adpositional phrases contribute semantic information to the meaning of the sentence as predicative modifiers. In section 3.1.2, we saw that non-predicative adpositional phrases contain noun phrases that are arguments of the main predicate. There is a third category of adpositional phrase where both of these features are found. These are **ARGUMENT-ADJUNCT ADPOSITIONAL PHRASES (AAJS)**. Argument-adjunct adpositional phrases contain predicative adpositions that add to the meaning of the sentence. In addition, argument-adjunct adpositional phrases introduce one of the participants in the event.

There are several ways of recognizing argument-adjunct adpositional phrases. Firstly, we can look at certain predicates which require three arguments such as *put*, shown in (49).

- (49) (a) Rosemary put the flowers in the vase.
 (b) *Rosemary put the flowers.
 (c) *Rosemary put the flowers the vase.

The predicate *put* requires three arguments (in this case *Rosemary*, *the flowers* and *the vase*) and so all three are core arguments, even though one is prepositionally marked. But on the other hand, notice that the choice of preposition is not fixed. Unlike non-predicative adpositional phrases with verbs like *give*, we can put a number of different prepositional phrases with verbs like *put*. The choice of preposition affects the meaning, showing that the preposition is predicative: this

Table 6.2 *Semantic roles of argument-adjunct adpositional phrases*

English examples	Semantic role
I did it <i>for</i> you.	BENEFACTIVE
She came <i>from</i> Zambia.	SOURCE
They went <i>via</i> London.	PATH
Put the letter <i>on</i> my desk.	GOAL

is reflected in the semantic representation where the preposition appears as a predicate.²³

- (50) Rosemary put the flowers on/under/beside/behind the vase.
 [do' (Rosemary, Ø)] CAUSE [BECOME be-on/under/beside/behind'
 (vase, flowers)]

So, on the one hand we can see that *on the table* is a core argument of *put* (an oblique core argument), but at the same time the fact that we can choose from a range of prepositions means that the preposition is also predicative, adding to the meaning of the sentence.

A second way to recognize argument-adjunct adpositional phrases is to look at the semantic role of the adpositional phrase. There are several semantic roles that are often represented by AAJ structures. These are listed in Table 6.2 along with English examples.

SOURCE, **PATH** and **GOAL** are similar to **LOCATION** but they indicate some kind of movement, while location is static; it does not imply movement.

The difference between predicative adpositional phrases and argument-adjunct adpositional phrases is essentially this: predicative adpositional phrases modify the whole core. Argument-adjunct adpositional phrases, on the other hand, do not modify the whole core but add information and share an argument with the core. We can see this difference illustrated in the examples in (51).

- (51) (a) Harold saw Madge = The whole event happened in the cinema.
 in the cinema.
 (b) Harold walked to the zoo. = Harold walked + Harold arrived at the zoo.

In (51a) we have an adjunct (predicative) prepositional phrase, providing information about the location of the event. In (51b) we have a goal role introduced by an argument-adjunct (predicative) prepositional phrase; it is not the case that the whole event occurs at the zoo.

Compare the two Italian sentences in (52) (Romance, Italy). Both involve the same predicate and the same argument (*Silvia*) and yet they differ both in syntactic patterning and in meaning, differences that correlate with the differing roles of the prepositional phrases that end the sentences (Bentley 2006: 42).

- (52) (a) Silvia ha corso alle Olimpiadi.
 Sylvia have.3SG run.PST.PTCP at.the Olympics
 ‘Sylvia has run at the Olympics.’
- (b) Silvia è corsa a casa.
 Sylvia be.3SG run.PST.PTCP.F.SG to home
 ‘Sylvia has run home.’

Describe the syntactic and semantic differences between (52a) and (b); decide which PP is an adjunct and which is an argument-adjunct.

We can now see that when we have active achievement predicates with adpositional phrases as in (53b), these adpositional phrases are argument-adjuncts. Sentence (53a) depicts an activity, while (53b) is an active achievement and incorporates an argument-adjunct adpositional phrase.

- (53) (a) Luke ran. **do'** (Luke, [**run'** (Luke)])
- (b) Luke ran to the house. **do'** (Luke, [**run'** (Luke)]) & INGR **be-at'** (house, Luke)

A syntactic difference between adjunct and argument-adjunct adpositional phrases is evident in *Tukang Besi* (Malayo-Polynesian, Indonesia). This language has a directional applicative verbal suffix *-mi/pi* which increases the valency of a predicate, and when it is used an argument otherwise marked as an ‘oblique’ can appear marked as a core argument (marked with *te*). However, this only occurs if the ‘oblique’ argument is an argument-adjunct, introducing the locative goal as an argument, as in (54b), and not if it is an adjunct modifying the place of the event, as in (55b) (Donohue 1999: 77).

- (54) (a) No-tau te sede i panse.
 3.RL-put CORE taro OBL pot
 ‘She put the taro in the pot.’
- (b) No-tau-pi te panse te sede.
 3.RL-put-DIR CORE pot CORE taro
 ‘She put the taro in the pot.’
- (55) (a) No-hengolo te sede i panse.
 3.RL-boil CORE taro OBL pot
 ‘She boiled the taro in the pot.’
- (b) *No-hengolo-mi te panse te sede.
 3.RL-boil-DIR CORE pot CORE taro
 (‘She boiled the taro in the pot.’)

It is important to note that any one adposition may be able to function in different types of adpositional phrases. The sentences in (56) with *to* illustrate this.

- (56) (a) The policeman gave the knife to the boy.
 (b) Eric walked to Hastings.

Determine which sentence in (56) has argument-marking *to* and which has argument-adjunct *to*.

As we see, one adposition can mark more than one semantic role. In addition, when we translate between languages, the adpositions used for the different roles

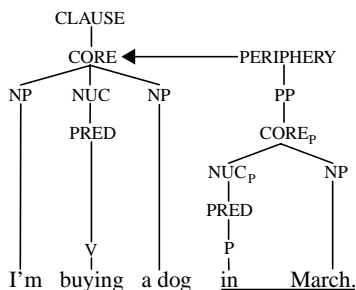


Figure 6.16 *Constituent representation of adjunct adpositional phrase*

may overlap in different ways. Look at the Swedish (Germanic, Sweden) data in (57).

- (57) (a) på vägen 'on the road'
 (b) på jobbet 'at work'
 (c) på semester 'on holiday'
 (d) på svenska 'in Swedish'
 (e) på gatan 'in the street'
 (f) på måfå 'at random'
 (g) på tåget 'on the train'
 (h) på bio 'at the cinema'
 (i) på väg 'on his way'

One prepositional form in Swedish, *på* requires three different prepositional forms to be translated into English.²⁴

Since argument-adjuncts contain predicative adpositions we give them an internal structure with a core_P and a nucleus_P, as for adjunct adpositional phrases, shown in Figure 6.14. In the next section we will look at where these three adpositional phrase types occur in the wider syntactic representation.²⁵

3.2 Syntactic representation of adpositional phrases

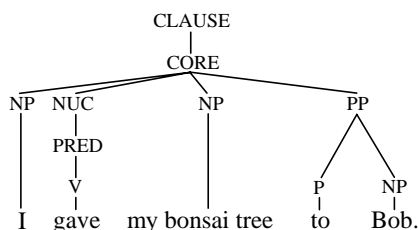
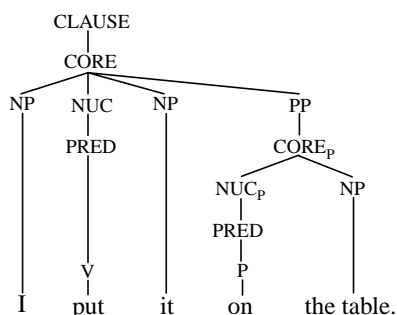
The three types of adpositional phrases are distinguished both by their internal structure, described in section (3.1), and by their position in the wider syntactic structure of the clause. We will look at each in turn.

3.2.1 Adjunct adpositional phrases

Predicative adpositional phrases function as adjuncts and so we put them in the periphery as modifiers of the core (as we did for adverbs like *yesterday*). They have an internal structure with a core_P and nucleus_P because they are predicative. This is illustrated in Figure 6.16.

Table 6.3 *Properties of adpositional phrases*

	ADJUNCTS	ARGUMENT-MARKING	ARGUMENT-ADJUNCT
Predicative	✓	✗	✓
Choice of preposition	✓	✗	sometimes
Modifies the meaning of the whole core	✓	✗	✗
Argument of main clause predicate	✗	✓	✓

Figure 6.17 *Constituent representation of argument-marking adpositional phrase*Figure 6.18 *Constituent representation of argument-adjunct adpositional phrase*

3.2.2 Argument-marking adpositional phrases

Non-predicative adpositional phrases that function as core arguments do not have internal structure, because they do not contain predicates. They appear in the constituent representation as arguments – daughters of the core node – with the label ‘PP’. An example is given in Figure 6.17.

3.2.3 Argument-adjunct adpositional phrases

Argument-adjunct adpositional phrases are predicative and so they have internal structure. However, they appear inside the core because they introduce arguments of the predicate. We see these features in Figure 6.18.

The different properties of the three adpositional phrase types are summarized in Table 6.3.

Section summary

In this section you learned:

- to recognize the difference between prepositions and postpositions,
- to identify types of adpositional phrases,
- to represent the three adpositional phrase types in the constituent representation.
- **KEY TERMS:** adposition, pre/postposition, predicative, adjunct, license, oblique (core argument), direct core argument, argument-adjunct, accompaniment, benefactive, instrument, implement, location, source, path, goal.
- **EXERCISES:** A2, A3, B10

4 Adjuncts

In the previous section, we saw that adjunct adpositional phrases are predicative. They modify the main core and we place them in the syntactic periphery. Other words and phrases can have this modifying function and we will examine these in this section.

So far we have only looked at peripheral elements that modify the core in time or space. Recall from chapter 3 that operators modify various levels of the clause. Operators are a closed set of grammatical morphemes whereas adjuncts are an open set of lexical items (adverbs and adpositional phrases, for example). However, like operators, adjuncts also modify various levels of the clause – nuclear, core and clause – depending on their meaning, and so we can, in fact, have peripheries at any of those levels.

In this section we will look at adjuncts that modify each level: nucleus, core, clause.

4.1 Adjuncts modifying the clause

Adjuncts that modify the whole clause are analogous to the epistemic and evidential operators, which also operate at the clause level. English examples are given in (58).

- (58) (a) Heather will probably find her keys tomorrow. EPISTEMIC
 (b) Tim has evidently won the lottery. EVIDENTIAL

Where these meanings are carried by lexical items such as adverbs we represent them in the constituent representation as peripheral to the clause; in other words, with the arrow pointing at ‘clause’, as shown in [Figure 6.19](#).²⁶

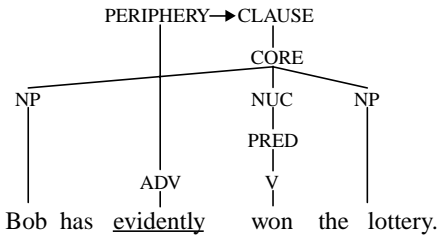


Figure 6.19 Constituent representation of clause-level adjunct

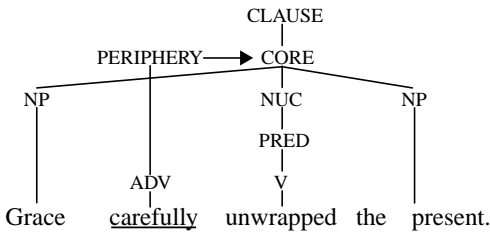


Figure 6.20 Constituent representation of core-level adjunct

In (59), we see examples of clause-level adjuncts in Finnish (Uralic, Finland). All the underlined words are adverbs with epistemic or evidential meanings (Holmberg *et al.* 1993: 202–3).

- (59) Jussi ei ehkä / todella / kai / ilmeisesti pidä sinusta.
 Jussi NEG perhaps/truly/presumably/obviously like you
 ‘Perhaps/truly/presumably/obviously Jussi doesn’t like you.’

Draw the constituent representation for (59) (with just one adverb).

4.2 Adjuncts modifying the core

Adjuncts that modify the core express three types of meaning. Just like temporal and locative prepositional phrases, adverbs can also express something about the time or place of an event (e.g. *yesterday*, *here*). The other two core-level adjunct types have to do with **PACE** (e.g. *quickly*, *with great haste*) and **MANNER** (e.g. *carefully*, *with great care*), as illustrated in (60a) and (b) respectively.

- (60) (a) Oscar runs quickly.
 (b) Grace carefully unwrapped the present.

The constituent representation for (60b) is given in Figure 6.20.

In sign languages, the ‘modifying’ relationship of adjuncts is clear as the verb signs themselves are often modified. In Australian Sign Language (Auslan) for example, manner may be conveyed through modifying the movement of the verb sign and through facial expression, while frequency can be conveyed by repeating

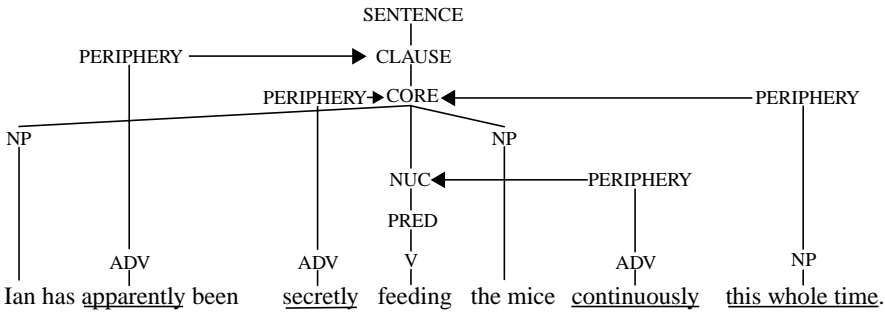


Figure 6.21 *Constituent representation of adjuncts at all three levels*

the sign in a particular way (Johnston 1996: 58). In British Sign Language, the meaning of ‘with great speed’ is conveyed by reducing the movement of the hand(s) and repeating the movement rapidly. Meanwhile, the body also leans forward and the mouth is closed with the cheeks puffed out (Kyle and Woll 1998: 152–3).

4.3 Adjuncts modifying the nucleus

Finally, we turn to nuclear-level adjuncts. Just as aspectual operators have scope over the nucleus, aspectual adjuncts are represented in the constituent representation as peripheral to the nucleus. As we might expect, adjuncts peripheral to the nucleus typically tell us something about the duration or completion of the event. Examples from English with the adverbs *completely* and *continuously* are given in (61).

- (61) (a) I have completely finished my homework.
 (b) I am continuously sneezing.

When we looked at operators we noted that there are restrictions on their ordering: we expect clause-level operators to appear further from the nucleus than core operators, and core operators to appear further away than nuclear operators. The same tendency applies to adjuncts. Look at Figure 6.21, with adverb adjuncts at all three levels. Try to re-order the adverbs in terms of their closeness to the verb.²⁷ Note too that *this whole time* illustrates a noun phrase functioning as an adjunct.

Section summary

In this section you have learned:

- to recognize adjunct types and their representation in the periphery of different levels of the constituent representation.
- **KEY TERMS:** adjuncts, adverbs, pace, manner.
- **EXERCISES:** A4, B11

Further reading

On noun phrases: Rijkhoff (2004). Van Valin and LaPolla (1997: 52–66), Van Valin (2005: 19–30).

Exercises

A. Exercises from English

1. *Noun phrases

Draw the internal constituent and operator representations for the following noun phrases.

- (1) Darren's three stuffed penguins
- (2) the capture of the lion by those six evil poachers
- (3) parking attendant attacks
- (4) no good thing
- (5) the captain of a team in the third row

2. *Prepositional phrases

Find the prepositional phrases in the following data and decide what type they are (argument, argument-adjunct or adjunct). Give reasons for your answer. Draw the constituent representations for the sentences, including the internal structure of the NPs and PPs.

- (1) Mary arranged the display in the hall.
- (2) William received a medal from the Queen.
- (3) Andrew gave Maureen her birthday present on Saturday.
- (4) In 2003, Thomas went to Spain to seek his fortune.
- (5) They gave their money to the donkey charity.

3. **Prepositional phrases

Sentences (1–3) and (4–6) differ syntactically in terms of what happens when the order of their post-verbal arguments is reversed. How does the semantic role or type of the prepositional phrases involved explain the difference in behaviour?

- (1) a. George gave Tony a big hug.
b. George gave a big hug to Tony.
- (2) a. Ellie showed Harry her sculpture.
b. Ellie showed her sculpture to Harry.
- (3) a. Charlie offered Lola his chocolate.
b. Charlie offered his chocolate to Lola.
- (4) a. Fiona loaded the wheelbarrow with the potatoes.
b. Fiona loaded the potatoes into the wheelbarrow.
- (5) a. Jonathan sprayed the wall with paint.
b. Jonathan sprayed paint onto the wall.

- (6) a. I packed ice-cream into my freezer.
 b. I packed my freezer with ice-cream.

4. *Adjuncts

Find the adjuncts in the following sentence and decide what type they are. Draw the constituent representation for (1).

Then, think of a sentence that contains adjuncts at all three levels.

- (1) She has evidently completely persuaded him.
 (2) He'll gradually get weaker, apparently.
 (3) They carelessly got caught.
 (4) Unfortunately, you are utterly wrong.
 (5) Surprisingly, she covered herself completely with the blanket quite quickly.

B. Exercises from other languages

1. *Gùrdùng (Chadic, Nigeria)²⁸

In Gùrdùng noun phrases there are two possessive constructions shown in Set 1 and Set 2. The Set 1 strategy involves the use of the possessive marker *gə* while the Set 2 strategy does not.

What determines when the strategy in Set 1 is used, and when the strategy in Set 2 is used?

- | | | | |
|-----|----|----------------------------|---------------------|
| (1) | a. | <i>lùurùni gə gəru</i> | 'the boy's shirt' |
| | b. | <i>shooròì gə maazii</i> | 'the woman's pot' |
| | c. | <i>shing'ùruŋ gə marii</i> | 'the man's money' |
| | d. | <i>məshii gə rēenai</i> | 'the king's people' |
| | e. | <i>gàrii gə rēenai</i> | 'the king's town' |
| (2) | a. | <i>lāam dōoro</i> | 'goat's meat' |
| | b. | <i>nga gəru</i> | 'boy's head' |
| | c. | <i>yiriŋ marii</i> | 'the man's eye' |
| | d. | <i>maasi rēenai</i> | 'the king's wife' |
| | e. | <i>gər Audù</i> | 'Audu's son' |

2. *Toqabaqita (Oceanic, Solomon Islands)²⁹

Examine the following data and provide the constituent and operator representations for all the examples.

- (1) *subuni baqita baa*
 spoon be.big that
 'that big spoon'
- (2) *naifa faqekwa nau baa*
 knife be.small 1SG that
 'that small knife of mine'

- (3) roo wela inomae
two child be.orphaned
'two orphaned children'
- (4) biqu baqita ki
house be.big PL
'big houses'
- (5) toqa liotoqo
people be.wise
'wise people'

3. *Gawri (Indo-Aryan, Pakistan)³⁰

Gloss the following data and provide a list of morphemes, glosses and example numbers in a table, arranged by word type. (Note: some words may contain variations in their vowels.)

Draw the constituent and operator representations for (3) and (6).

- | | | |
|------|--------------------------------------|---|
| (1) | ä bāč̣a | 'a king' |
| (2) | ä is | 'a woman' |
| (3) | silix ä bire | 'a pretty girl' |
| (4) | ī bire | 'this girl' |
| (5) | äthā̄ pō | 'that boy' |
| (6) | ǰāndūl-ā̄ tāthī dū gān kiṣān pātilā̄ | 'those two big black pots of Jandool
(out of sight)' |
| (7) | ami dū gān pātilā̄ | 'these two big pots' |
| (8) | bire-ā̄ bob | '(the) girl's father' |
| (9) | äthā̄ baṭ | 'that rock' |
| (10) | ī kitāb | 'this book' |
| (11) | gānār ä mīš | 'an old man' |
| (12) | dū zīr rupey | 'two thousand rupees' |
| (13) | sulux ä čāmān | 'a pretty garden' |

4. *Lezgian (East Caucasian, Russian Federation)³¹

Describe the structure of the noun phrase in Lezgian, as represented by the following data.

Draw syntactic templates that will account for all the data.

Draw the constituent and operator representation for (1), (4) and (8).

- (1) a insar-ar
that human-PL
'those people'
- (2) ḡweč'i küče-jr
little street-PL
'little streets'

- (3) gzaf mal
 many goods
 ‘many goods’
- (4) aq’ullu ajal-r.i
 intelligent child-PL
 ‘intelligent children’
- (5) sa fenžan čaj
 one cup tea
 ‘one cup of tea’
- (6) qaji hawa.di
 cold air
 ‘cold air’
- (7) har jis.u
 every year
 ‘every year’
- (8) wiri hajwan-r.i
 all animal-PL
 ‘all the animals’

5. **Lezgian (East Caucasian, Russian Federation)³²

Add the following second set of data to your analysis of Lezgian in the previous exercise. (Ignore case marking for the moment, except to note that genitive case marks possession.)

Draw syntactic templates that will account for all the data.

Draw the constituent and operator representation for 9, 11 and 17.

- (9) Dağustan.di-n šeher-r
 Dagustan-GEN city-PL
 ‘the cities of Dagustan’
- (10) gatfar.i-n čimi juğ
 spring-GEN warm day
 ‘a warm day of spring’
- (11) külü qūš-ar.i-n pud mug
 little bird-PL-GEN three nest
 ‘3 nests of little birds’
- (12) zi dust-ar
 I:GEN friend-PL
 ‘my friends’
- (13) zi gat.u-n kanikul-ar
 I:GEN summer-GEN vacation-PL
 ‘my summer vacations’

- (14) kesib-r.i-n ümür
poor-PL-GEN life
'poor people's life'
- (15) ruš-ar.i-n q̄ifle
girl-PL-GEN crowd
'the crowd of girls'
- (16) pud žüt č'uru čubaruk-ar
five couple wild swallow-PL
'five couples of wild swallows'
- (17) wiš-er.a-ldi insan-r.i-n ura.di-n wan
hundred-PL-SRDIR person-PL-GEN hurrah-GEN sound
'the sound of cheering of hundreds of people'

6. **West Greenlandic (Eskimo, Greenland)³³

Examine the following data and discuss the structure of noun incorporation constructions in West Greenlandic.

To illustrate your discussion, provide constituent and operator representations (remembering that each semantic argument needs to be represented in the syntax).

NB: the noun *qamut* 'sled' in (2a) is semantically singular but agreement is syntactically plural; this has to do with the root to which it is historically related.

- (1) a. Ammassannik marlunnik nerivunga.
ammassak-nik marluk-nik neri-vunga
sardine-INS.PL two-INS.PL eat-1SG.IND
'I ate two sardines.'
- b. Marlun-nik ammassak-tor-punga.
marluk-nik ammassak-tor-punga
two-INS.PL sardine-eat-1SG.IND
'I ate two sardines.'
- (2) a. Hansi ataatsinik qamuteqarpoq.
Hansi-Ø ataaseq-nik qamut-qar-poq
Hansi-ABS one-INS.PL sled-have-IND.3SG
'Hans has one sled.'
- b. Qisummik illoqarpoq.
qisuk-mik illo-qar-poq
wood-INS house-have-IND.3SG
'He has a wooden house.'
- c. Kissartumik kavvisurput.
kissartu-mik kavvi-sur-put
hot-INS coffee-drink-IND.3PL
'They drank hot coffee.'
- d. Nutaamik piilisiurpunga.
nutaam-mik piili-siur-punga
new-INS car-look.for-IND.1SG
'I am looking for a new car.'

- (3) a. Kunngi-p paneqarpoq.
 kunngi-p panik-qar-poq
 king-ERG daughter-have-IND.3SG
 ‘There is a king’s daughter (i.e. princess).’
- b. Kunngi-p panippassuaqarpoq.
 kunngi-p panik-passuaq-qar-poq
 king-ERG daughter-many-have-IND.3SG
 ‘There are many king’s daughters (i.e. princesses).’
- (4) a. Joorut palasiuvoq tusaamasoq.
 Joorut-Ø palasi-u-voq tusaamasoq-Ø
 Jorgen-ABS priest-be-IND.3SG famous-ABS
 ‘Jorgen is a famous priest.’
- b. Joorut tassa palasi tusaamasoq.
 Joorut-Ø tassa palasi-Ø tusaamasoq-Ø
 Jorgen-ABS that priest-ABS famous-ABS
 ‘Jorgen is the famous priest.’
- (5) a. Hansi nukappiaraavoq.
 Hansi-Ø nukappiaraq-u-voq
 Hansi-ABS boy-be-IND.3SG
 ‘Hans is a boy.’
- b. Hansi nukappiaraavoq mikisoq.
 Hansi-Ø nukappiaraq-u-voq mikisoq-Ø
 Hansi-ABS boy-be-IND.3SG little-ABS
 ‘Hans is a little boy.’

7. **Halkomelem (Salishan, Canada)³⁴

How would you describe precisely the function of the marker *-(e)lh* on the meaning of the noun phrases in (2)–(8)? How does that function relate to its meaning when attached to a verb, as in (1)?

- (1) i-lh ímex tel sí:le.
 AUX-PST walk my grandfather
 ‘My grandfather walked.’
- (2) a. tel sí:le
 my grandfather
 ‘my grandfather’
- b. tel sí:la-lh
 my grandfather-PST
 ‘my late grandfather’
- (3) a. te sqwemá:y
 the dog
 ‘the dog’

- b. te sqwemá:y-elh
the dog-PST
'the dead dog'
- (4) a. tel xeltel
my pencil
'my pencil'
- b. tel xeltel-elh
my pencil-PST
'my former pencil' or 'my broken pencil'
- (5) a. tel kopú
my coat
'my coat'
- b. tel kopú-lh
my coat-PST
'my former coat'
- (6) a. stó:les
'wife'
- b. stó:les-elh
wife-PST
'dead wife' or 'ex-wife'
- (7) a. siyó:ye
'friend'
- b. siyó:ye-lh
friend-PST
'dead friend' or 'former friend'
- (8) a. skw'iyeth
'slave'
- b. skw'iyeth-elh
slave-PST
'dead slave' or 'former slave'

8. **Chichewa (Narrow Bantu: Malawi)³⁵

Examine the noun phrases in the Chichewa data.

Draw the constituent and operator representation for (2d), including the internal structure of the noun phrases.

- (1) a. Njûchi zi-na-lúm-á alenje.
10-bees 10SBJ-PST-bite-FV 2-hunters
'The bees bit the hunters.'
- b. Zi-na-lúm-á alenje njûchi.
10SBJ-PST-bite-FV 2-hunters 10-bees
'The bees bit the hunters.'

- (2) a. Njûchi izi zi-ná-lúm-á álenje awa
 10-bees 10PROX.DEM 10SBJ-PST-bite-FV 2-hunters 2PROX.DEM
 ópúsa.
 2SBJ-foolish
 ‘These bees bit these foolish hunters.’
- b. *Awa njûchi izi zi-ná-lúm-á álenje
 2PROX.DEM 10-bees 10PROX.DEM 10SBJ-PST-bite-FV 2-hunters
 ópúsa.
 2SBJ-foolish
 (‘These bees bit these foolish hunters.’)
- c. *Awa ópúsa njûchi izi zi-ná-lúm-á
 2PROX.DEM 2SBJ-foolish 10-bees 10PROX.DEM 10SBJ-PST-bite-FV
 álenje.
 2-hunters
 (‘These bees bit these foolish hunters.’)
- d. Awa njûchi izi zi-ná-wá-lum-a álenje
 2PROX.DEM 10-bees 10PROX.DEM 10SBJ-PST-2OBJ-bite-FV 2-hunters
 ópúsa.
 2SBJ-foolish
 ‘These bees bit these foolish hunters.’
- e. Álenje zi-ná-wá-lum-a njûchi izi awa
 2-hunters 10SBJ-PST-2OBJ-bite-FV 10-bees 10PROX.DEM 2PROX.DEM
 ópúsa.
 2SBJ-foolish
 ‘These bees bit these foolish hunters.’

9. **Kwak’wala (Wakashan, Canada)³⁶

Describe and explain how both the case-marking elements and noun phrase operators work in Kwak’wala. Include an explanation of why a dummy pronoun is needed in (2b).

Draw the syntactic representations for the sentence in (1a), (1d) and (2b), and include the noun phrase operator representation. Remember that every semantic argument has to have a representation in the syntax and vice versa.

- (1) a. yəlk^wəmas=ida bəg^wanəma=χ=a ’watsi=s=a g^waχχ uχ^w.
 cause.hurt=DEM man=OBJ=DEM dog=INS=DEM stick
 ‘The man hurt the dog with a stick.’
- b. χ^wəsʔid=ida bəg^wanəma=χ=a gənanəma=s.
 struck=DEM man=OBJ=DEM child=INS
 ‘The man struck the child with it.’
- c. χ^wəsʔid=ida bəg^wanəma=q.
 struck=DEM man=OBJ
 ‘The man struck him.’
- d. χ^wəsʔid=∅=q=s.
 struck=he=OBJ=INS
 ‘He struck him with it.’

- (2) a. *ḡuxda gənanəm.
 b. yi=ḡuxda gənanəm.
 DUMMY=DEM child
 ‘(It’s) that child.’

10. *Dolakha Newar (Tibeto-Burman, Nepal)³⁷

The following data illustrate the use of the enclitics =*ku*, =*na* and =*lān*. Determine which of the following data contain argument-adjuncts and which contain adjuncts. For the purposes of the exercise treat the clitics as postpositions.

Draw the constituent representations of (1a), (1b) and (3b). Remember that every semantic argument needs to be represented once in the constituent representation, and include the internal structure of the noun phrase in (3b).

- (1) a. ām chē=ku on-a.
 3SG house=LOC go-3SG.PST
 ‘S/he went to the house.’
 b. ām chē=ku con-a.
 3SG house=LOC stay-3SG.PST
 ‘S/he stayed at the house.’
 c. jāki naspuṭi=ku ta-en bir-ju.
 uncooked.rice ear=LOC put-PTCL give-3SG.PST
 ‘He put the rice into his ear.’
- (2) a. tarawāra=na pwāl-en bi-sāt . . .
 sword=INS strike-PTCL give-as.soon.as
 ‘As soon as he struck him with the sword. . .’
 b. dukha=na tuṅ coṅ-an con-hin.
 trouble=INS FOC stay-PTCL stay-3PL.PST
 ‘They lived with trouble (i.e. unhappily, with difficulty).’
 c. pus=na phoṅ-a rā?
 Pus=TEMP ask-NMLZ Q
 ‘Was it during Pus [a festival] that he asked?’
- (3) a. libi gāũ=lān phark-ai jur-a.
 later village=ABL return-BV happen-3SG.PST
 ‘Later he returned from the village.’
 b. nis-mā misā=e lon=lān=uṅ santān ma-da.
 two-CLF woman=GEN womb=ABL=EXT offspring NEG-have
 ‘From the wombs of the two women there were no offspring.’

11. *Ma’Di (Central Sudanic, Uganda and Sudan)³⁸

Indicate the level at which the underlined adjuncts in the following sentences operate. Based on the evidence in (5), what seems to determine the interpretation of the adverb *tʃétʃé*? (Note: *kpɔ́* indicates completion of the action.)

Draw the constituent representation for (2), (3) and (5b). Assume the language to be head-marking, and do not include the internal structure of the noun phrases in your representations.

- (1) ɲ-ógù ófò ɔ́pí ʔà gárì ɲī ʔī.
 2SG-steal IND-say Opi POSS bicycle 2SG FOC
 ‘It is said/allegedly you (were the one who) stole Opi’s bicycle.’
- (2) ɔ́pí ò-mū ínìrì.
 Opi 3-go recently
 ‘Opi went recently.’
- (3) k’ò-sī-ā ðbù.
 3-NPST-build-OBJ tomorrow
 ‘She will build it tomorrow.’
- (4) má dī màdí kpɔ́ rá.
 1SG kill person dead AFF
 ‘I have certainly killed a person (before).’
- (5) a. ɔ́pí kɔ́-sɔ́ sáti rì tʃétʃé.
 Opi 3(NPST)-sew shirt DEF slowly
 ‘Opi sews/will sew the shirt slowly.’
- b. ɔ́pí ɔ́-sɔ́ sáti rì tʃétʃé.
 Opi 3-sew shirt DEF gently
 ‘Opi sewed the shirt gently.’

7 Complex structures

KEY TOPICS

- Complex sentences
- Serial verb constructions
- Relative clauses

1 Complex construction levels and types

So far we have looked at simple sentences. Simple sentences contain one clause which contains one core, which in turn contains one nucleus. Each nucleus corresponds to one semantic predicate. The core contains the nucleus and the arguments of that predicate, as shown in [Figure 7.1](#).

However, most of the sentences we use to communicate are more complex. Sentences may contain more than one clause, more than one core, and/or more than one nucleus. In (1) we see examples from English with two nuclei (1a), two cores (1b), and two clauses (1c), and the predicates are underlined.

- | | | |
|---------|--|-------------|
| (1) (a) | Jake [<u>forced</u>] _{NUC} [<u>open</u>] _{NUC} the door. | TWO NUCLEI |
| (b) | [Jake <u>told</u> Gary] _{CORE} [to <u>leave</u> the room] _{CORE} . | TWO CORES |
| (c) | [Gary <u>bought</u> some puppies] _{CLAUSE} and [he <u>gave</u> them to
Jake] _{CLAUSE} . | TWO CLAUSES |

The complex sentences in (1) are pictorially illustrated with the diagrams in [Figure 7.1](#). (We will see later in this chapter how to represent these sentences more precisely in the constituent representation.)

In studying complex sentences, we need to look at two questions:

- i. At what level is the connection between the units (clause, core, nuclear)?
- ii. What kind of connection is there between the units?

We will look at the different levels of connection in section 1.1 and then the type of connection in section 1.2. We will put the two halves of the puzzle together in section 2.

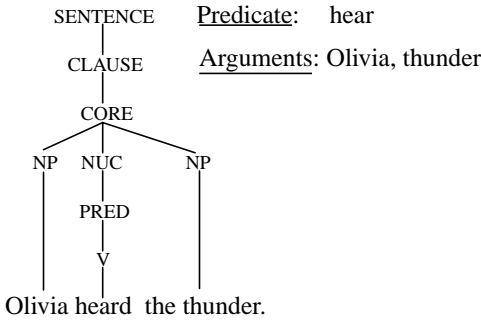


Figure 7.1 Simple clause in English

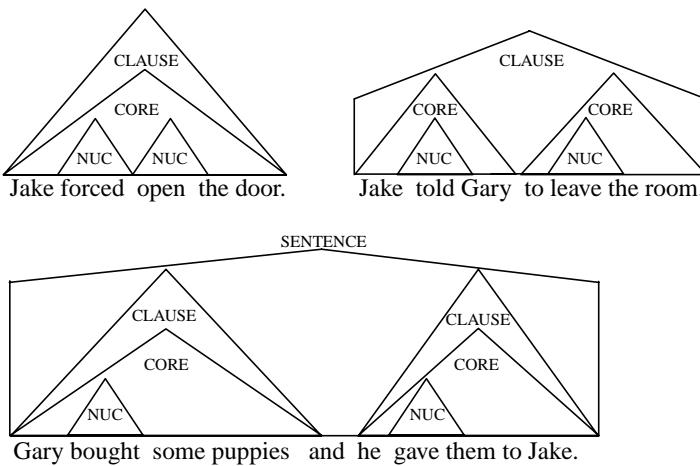


Figure 7.2 Visual representation of complex constructions

1.1 Level of connection

As we saw in the examples in (1), we find sentences composed of multiple clauses, cores or nuclei, or combinations of all of these. We refer to the level of connection (clause, core, nuclear) as the level of **JUNCTURE**: thus we have clause juncture where clauses combine, core juncture and nuclear juncture. Strictly speaking, juncture refers to the level at which the linkage occurs, not to the type of units that are joined, although these will often be the same.

1.1.1 Clause level

Clause juncture constructions contain two (or more) independent clauses which have all their own arguments. In some cases, clause junctures are linked with **CLAUSE LINKAGE MARKERS** like the **CONJUNCTIONS** *and* or *but* in the English examples in (2). In clause juncture constructions, then, the juncture occurs at the clause level.

- (2) (a) Milissa watched television and Jay washed the dishes.
 (b) Angela is happy to go but Paul wanted to stay.

In (3), we see an example of clause juncture from Fongbe (Atlantic-Congo, Benin).

- (3) [Kòkú jè àzò̀n] [bó d̀ò xwégbè].
 Koku fall ill and.he be.at home
 ‘Koku is ill and he is at home.’

Two predicates are each expressed with their own arguments, together forming one sentence. The form *bó* is a conjunction that is also marked for the single argument of the predicate in the second clause (Lefebvre and Brousseau 2001: 305).

1.1.2 Core level

Sentences with more than one core inside a single clause are a little more complicated. We will see in the [next section](#) that there are different types of core juncture, but in every case, each core has its own nucleus and at least some of its own arguments. In every case, one clause contains two cores. Examples are given in (4).

- (4) (a) Peggy told Phil to hit Bradley.
 (b) Peggy tried to run away.

In core juncture sentences like the ones illustrated in (4), the two cores share one argument; what this means is that an argument appears in the semantic representation of both predicates but only appears once in the syntax. In (4a), *Phil* is the shared argument: semantically it is both the undergoer of the verb *tell* and the actor of the verb *hit*, even though it is only expressed once in the syntax. In (4b), on the other hand, *Peggy* is the argument shared between both predicates *try* and *run*.

We can see a similar pattern in the core juncture example in (5) from Paamese (Oceanic, Vanuatu), with a shared argument (*vuasi*) (Crowley 2002: 55).

- (5) (a) inau nuas vuas he:mat.
 inau ni-uasi vuasi hee-mate
 1SG 1SG.DFUT-hit pig 3SG.DFUT-die
 ‘I will hit the pig to death.’

Explain how *vuasi* is a shared argument in (5).

We will look at other types of core juncture in section 2.2.

1.1.3 Nuclear level

In sentences with more than one nucleus, the nuclei combine to form a nuclear juncture with one set of arguments expressing a single, complex event. Sentences with two nuclei may often (but not only) be used to express causative events.

In (6), for example, we have a causative accomplishment expressed using two nuclei, the two predicates *pushed* and *open*.

- (6) Kerry [pushed]_{NUC} [open]_{NUC} the door.
 [do' (Kerry, [push' (Kerry, door)))] CAUSE [BECOME open' (door)]

The arguments *Kerry* and *the door* are syntactic arguments of the complex nucleus *pushed open*. In section 2.3 we will look at some other types of nuclear junctures.

The examples from two Malayo-Polynesian languages of Indonesia in (7) and (8) further illustrate the ‘sharing’ of all the arguments of two predicates within a single core. In the Kambera example in (7), the actor is marked as a proclitic *na=* on the first verb, while the undergoer is marked as an enclitic *=ha* on the second verb (Klamer and Klamer 1998: 277).

- (7) Na=pa.lài nyara=ha da ahu la mbomang.
 3SG.NOM=run chase=3PL.ACC ART dog LOC space.under.house
 ‘He ran after the dogs under the house.’

In the Indonesian example in (8), we see a causative meaning ‘kill’ expressed by the combination of the two verbs *kasih* ‘give’ and *mati* ‘die’ (Englebretson 2003: 138).

- (8) Baru gua kasih mati.¹
 just 1SG give die
 ‘I’ll kill you.’

In nuclear junctures, very little can occur between the two nuclei, as the examples in (7) and (8) illustrate. In sentences with two cores, on the other hand, the two cores will tend to appear with something between them, such as the clause linkage marker *to* in (4a). Nuclear juncture constructions are perceived and understood as referring to a single event. Core junctures may refer to a sequence of events (see section 3).

1.2 Type of connection

In the previous section, we looked at the different levels at which complex constructions can occur, describing clause, core and nuclear juncture. In this section we will look more closely at the different types of connection or relationship (known as **NEXUS** relations) that are possible at each level of juncture. There are three types of connection that can occur at each of the three levels: coordination, subordination and cosubordination.

In this section, then, we will look at the types of connection and it may help you to review what we learned about operators before you read this section (see chapter 3). Then, in section 2, we will look at how levels of connection and types of connection work together to form different sentence types.

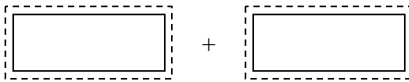


Figure 7.3 Diagram representing coordination

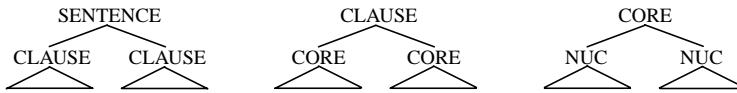


Figure 7.4 Constituent representation of coordinate constructions

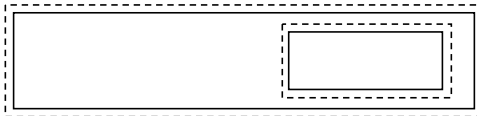


Figure 7.5 Diagram representing subordination

1.2.1 Coordination

COORDINATION involves connecting two or more independent units of the same type: these are therefore **SYMMETRICAL** constructions. ‘Independent’ does not necessarily mean that the unit can stand alone as a complete utterance; it means that the unit has its own operators at the level at which it is connected. In [Figure 7.3](#) the lines represent any one type of syntactic unit (nucleus, core or clause) and the dashed lines represent the operators at that level; we can see the ‘independence’ of the coordinated units.

The clearest example of coordination is at the clause level, as illustrated in (2) repeated here as (9).

- (9) Angela is happy to go but Paul wanted to stay.

Note that in (9) the two clauses have different (and therefore independent) tense operators.

Coordination is also possible at the other levels of juncture, as we will see in later sections. In drawing constituent representations for coordinate constructions, the two coordinated units will be daughters of a node of a higher level. In other words, coordinated nucleus nodes will connect to a core node, coordinate cores will link up to a clause node, and so on, as illustrated in [Figure 7.4](#).

1.2.2 Subordination

SUBORDINATION involves one unit inside another (or **EMBEDDED** in another). In this sense, the subordinate clause is structurally dependent on the main clause. Subordinate clauses are usually finite; that is, marked for tense and agreement because, in a sense, they express an event within another event.

As [Figure 7.5](#) shows, subordinate constructions are asymmetrical; rather than two equal units alongside each other, subordinate constructions involve one unit inside the other.

There are two main types of subordination. The first involves a subordinate clause (or core) functioning as an argument, as illustrated by the core subordination in (10).

- (10) [[That he won the competition]_{ARG} came as no surprise to Eric.]_{CORE}

This is a core juncture because the level of linkage is at the core level; the clause is a daughter of the main core node. It is subordination because we have a clause embedded within the main core, as in the diagram in Figure 7.5. In English, subordinate clauses may be introduced by *that*, a type of clause linkage marker commonly termed a **COMPLEMENTIZER**.

The second type of subordination, again asymmetric, involves a subordinate clause or core modifying the main core, as we see in (11) where, as part of a prepositional phrase, it provides information about the time of the event.

- (11) [Nancy saw Dave]_{CORE} [after she left the restaurant]_{MODIFIER}.

Notice that, as shown in (11), we are interested here in cases where the main core is modified by a clause (containing a predicate), not just a phrase (such as *after the party*).

In (12) and (13) we see similar examples from Lengo (Oceanic, Solomon Islands) and Paamese (Oceanic, Vanuatu). In (12) we see a clause functioning as an argument of the verb *ghilaghana* ‘know’ in Lengo (Unger 2008: 197). We can see that Lengo also makes use of a complementizer *tha* to mark a clause as subordinate.

- (12) [E ghilaghana-a [na tha t-e doku vani-ghita]_{ARG}]_{CORE}.
 3SG KNOW-OBJ.3SG ART COMP RL-3SG good DAT-OBJ.1INCL.PL
 ‘He knows what is good for us.’

In (13), a modifying type of subordinate clause provides information about the time of the event described by the main clause in Paamese.

- (13) nalesik [navoŋ komul komun malou].
 na-lesi-ko navoŋi ko-mule ko-muni malou
 1SG.RL-see-2SG time 2SG.RL-stay 2SG.RL-drink kava
 ‘I saw you when you were drinking kava.’

Notice too that the bracketed subordinate clause in (13) also contains two predicates. See section 3 for discussion (Crowley 2002: 55). We will see more examples of subordination in section 2.

1.2.3 Cosubordination

COSUBORDINATE complex structures are similar to coordinate sentences in that they too involve two (or more) of the same units linked together, and so are also symmetrical constructions.² They are also similar to subordinate structures in the sense that one of the units is dependent on the other. In cosubordinate structures,

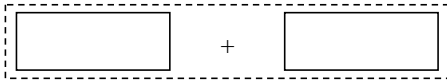


Figure 7.6 Diagram representing cosubordination

however, the dependency is in terms of an operator. The two units always share at least one operator *at the level of juncture*; in other words, an operator will be expressed in one of the units but will be interpreted as having scope over both units.

For example, in a cosubordinate construction at the core level, two cores appear and they have to share at least one core-level operator (such as internal negation or deontic modality), as illustrated in (14).

- | | | |
|----------|--|----------------------|
| (14) (a) | Tom <u>must</u> try to open the door ; | CORE COSUBORDINATION |
| (b) | Tom <u>must</u> tell Bill to open the door. | CORE COORDINATION |

In (14a), the core-level deontic modality operator *must* have scope over both cores as indicated by the dotted line: the operator reaches across both units and so we have a cosubordinate construction. This ‘shared’ interpretation is tied to the fact that Tom is interpreted as the actor of both *try* and *open* and the obligation expressed by *must* affects everything that Tom does: this is called an **ACTOR-CONTROL CONSTRUCTION** because the actor of the first predicate controls the identity of the privileged syntactic argument of the second predicate. The second core is also ‘dependent’ on the first for the expression of an operator.

We can compare this with the core coordinate construction in (14b), where the *must* only obliges John to tell Bill, but does not oblige Bill to open the door. The sentence in (14b) is an **UNDERGOER-CONTROL CONSTRUCTION**, because the undergoer of the first predicate controls the identity of the PSA of the second predicate.³

If you benefit from metaphors, think of the three types of connection like a growing child. A baby is totally dependent on its parent; it literally cannot stand alone. It is subordinate, to the point of being physically inside the parent (normally the mother) for nine months. A teenager is cosubordinate; she may look like an independent adult but she is still dependent on her parent for something, perhaps money, perhaps chocolate cake, or maybe a roof over her head. Two independent adults – the parents let’s say – are coordinate. In a healthy relationship at least, they are not dependent on each other and do not usually need to carry each other around.

In the constituent and operator representations of cosubordinate structures, the two units join up to another node of the same type, as shown in Figure 7.7. This gives us a single shared node in the operator representation for the shared operators. (Compare also the two core-level structures in Figure 7.14 which contrast the representation of coordinate and cosubordinate structures.)

In this section we have seen that complex sentences can contain various combinations of smaller units. These units can be combined through coordination,

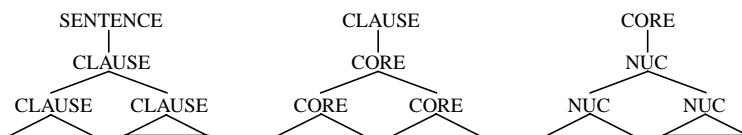


Figure 7.7 *Constituent representation of cosubordinate constructions*

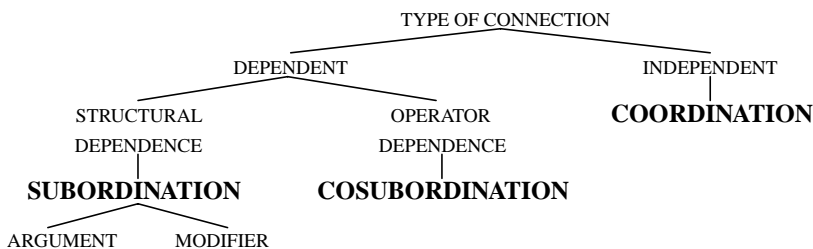


Figure 7.8 *Types of connection in complex constructions*

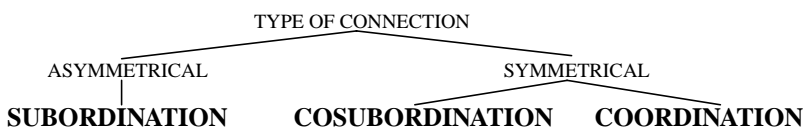


Figure 7.9 *Symmetry in complex constructions*

subordination or cosubordination. With coordinate structures, the two units are independent of each other for their operators. In the case of subordination we have structural dependence: one unit is within another or acts as a modifier to another. Finally, in cosubordinate structures, the two units share an operator expressed only once in the syntax: one unit is dependent on the other for its operator. These different types of connection are shown in [Figure 7.8](#).⁴

As we have seen, we can also divide up the constructions according to whether they are syntactically symmetrical or asymmetrical, as shown in [Figure 7.9](#).

Section summary

In this section you have learned:

- to describe the levels at which complex constructions occur: clause, core and nucleus,
- to identify the types of connection between elements of a complex sentence: coordination, subordination and cosubordination.
- **KEY TERMS:** juncture, clause linkage marker, embedding, dependence, coordination, subordination, cosubordination.
- **EXERCISES:** A1, A2, A3

2 Complex constructions

In section 1 I introduced the levels of juncture in complex constructions, and the types of connection that occur. There are three levels of juncture and three types of connection, and this leads to nine possible combinations.

CLAUSE COORDINATION

CLAUSE SUBORDINATION

CLAUSE COSUBORDINATION

CORE COORDINATION

CORE SUBORDINATION

CORE COSUBORDINATION

NUCLEAR SUBORDINATION

NUCLEAR COSUBORDINATION

NUCLEAR COORDINATION

In this section we will look in more detail at examples of each of these types of complex constructions beginning with clause junctures and moving on to core and nuclear junctures. We will see how useful this typology of complex constructions is to accurately and helpfully describe and explain the structures we find in languages.

Recall that when we analyse complex constructions we should ask ourselves firstly what the level of juncture is. Here we need to look at syntactic clues as well as semantics. Secondly, we want to know what the relationship is between the two units.

2.1 Clause level

The main clausal subordination construction type involves a clause appearing as a peripheral modifier. These subordinate clauses are structurally dependent; they only ‘make sense’ when they occur in relation to the main core. A subordinate unit expresses, in a sense, a secondary event within the main event, so it may also have its own arguments and operators. The clauses in brackets in (15) are subordinate and connect with the main clause as peripheries at the clause level.⁵

- (15) (a) Scott will take Molly to the park [if_{CLM} he finishes work on time]_{CLAUSE}.
 (b) Billy kicked Bob after school [because_{CLM} he stole Sally’s money]_{CLAUSE}.

The subordinate clauses in (15) modify the main clause in a manner similar to adverbs, and as such they are also termed **ADVERBIAL CLAUSES** (or ad-clausal subordination). In parallel with operators at the clause level, adverbial subordinate clauses that modify at the clause level have to do with expressing reason, condition, possibility or likelihood. The constituent representation for (15b) is shown in Figure 7.10.

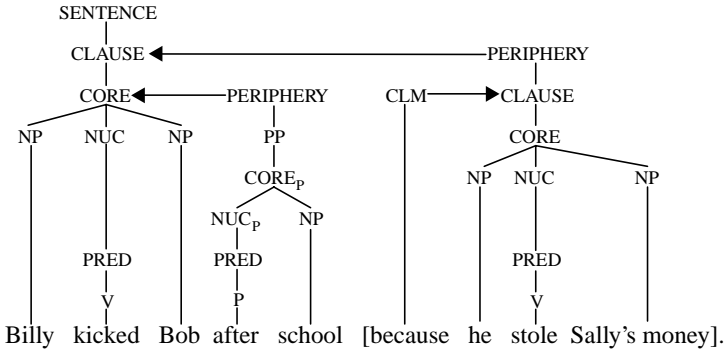


Figure 7.10 *Constituent representation of ad-clausal subordination*

In the example of clausal subordination from Taba (Malayo-Polynesian, Indonesia) in (16), the subordinate clause appears before the main clause (Bowden 2001: 371).

- (16) [Polo John n=am] n=heran.
 if John 3SG=see 3SG=be.astonished
 'If John saw it, he would be astonished.'

Moving on to clausal coordination and cosubordination, recall from section 1.2 that coordinate units have their own operators at the level of juncture while cosubordinated units share at least one operator at that level. The distinction between coordination and cosubordination at the clause level thus involves the scope and sharing of clause-level operators (tense, evidentials, status and external negation). We can illustrate this with the sentences in (17) and (18) from Kewa (Trans-New Guinea, Papua New Guinea; Franklin 1971: 115, 117). The relevant operators are underlined and a dashed box shows their scope within each sentence.

- (17) (a) Nipú ípu-la pare ní paalá na-píá.
 3SG come-3SG.PRS but 1SG afraid NEG-be.1SG.PRS
 'He is coming but I am not afraid.'
- (b) Roto-mé tá-a pae áke-me tá-a pae?
 stick-SBJ hit-3SG.PST or what-SBJ hit-3SG.PST or
 'A stick hit (him), or what hit (him)?'

In the sentences in (17), each clause in each sentence is independent: it could stand alone and it has its own clause-level operators, which can differ from each other. The two clauses in (17a) differ in terms of negation, and each verb is also independently marked for tense. The two clauses in (17b), on the other hand, differ in illocutionary force. The sentences in (17) are therefore examples of clausal coordination. It may help you to draw square brackets around the two clauses (excluding the two clause linkage markers *pare* and *pae*).

In (18), in contrast, we have two clauses and only the second one carries marking for tense and person agreement.

- (18) Nipú tá-ri pámua-la. CLAUSAL COSUBORDINATION
 3SG hit-SIM.SS walk-3SG.PRS
 ‘He is hitting (it) while he is walking.’

The present tense operator *-la* has to be interpreted as having **SCOPE** over both clauses; in other words, both the action of hitting and the action of walking are described as happening in the present, and so this sentence is an example of a clausal cosubordination construction (Franklin 1971: 106). These sentence types, where only the final verb is finite, are often called **CLAUSE CHAINS** and are most common in predicate-final languages.

We can see that the first clause in (18) is not a subordinate clause by comparing it with the first clause in (19), which is a subordinate clause. We can see in (19) that, as we would expect, subordinate clauses in Kewa are marked for person and tense (Franklin 1971: 118).

- (19) [Épo lá-lo-pulu] irikai épa-lia. CLAUSAL SUBORDINATION
 whistle say-1SG.PRS-CAUS dog come-3SG.FUT
 ‘Because I am whistling the dog will come.’

Notice too that in (18) the verb *tá* ‘hit’ has a marker *-ri* glossed ‘SIM.SS’ which means simultaneous action and same subject. This marker indicates that the event depicted by the second clause occurs at the same time as the first and has the same ‘subject’ (PSA). These are both functions associated with **SWITCH REFERENCE** markers, so called because they mark whether the referent of the ‘subject’ is the same in the subsequent clause or is ‘switched’. Switch reference constructions are clausal cosubordination constructions.

The cosubordinate medial verbs in a chain of clauses may carry markers; these are sometimes called **CONVERBS**, which are typically bound, non-finite verbal forms, in a subordinate relationship with the main verb they are attached to. Converbs are found most commonly in Eurasian languages as a way of combining clauses; they often lend either an adverbial meaning (‘when’, ‘because’, etc.) or a meaning associated with the temporal order of events to the clause they mark (Bisang 2001: 1407, Janhunen 2003: 25).⁶

We can see examples of converbs from Wolaitta (Omotic, Ethiopia) in (20) and from Selkup (Samoyed, Russian Federation) in (21) (Amha and Dimmendaal 2006: 322, Valijarvi 2008: 170).

- (20) bitánee ?oós-uwa wurs-ídí femp-eési.
 man.M.NOM work-M.ABS finish-CVB rest-3SG.M.IPFV
 ‘Having finished work, the man is resting.’
- (21) Lōs-ira néńńymōl-lä laŋkyšqolam-ny [. . .]
 devil-old.man get.angry-CVB shout.start-PRES.SG
 ‘Getting angry, the old devil starts to shout . . .’

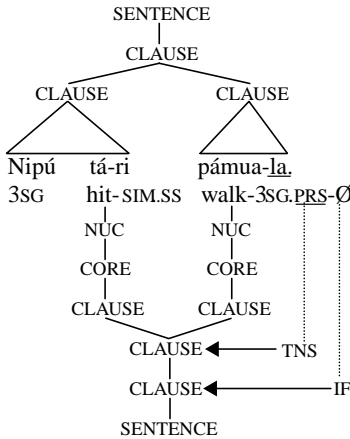


Figure 7.11 Syntactic representation of clausal cosubordination

In both cases, only the final verb is marked for aspect (20) or tense (21), and it agrees with the privileged syntactic argument in number and person. In Figure 7.11 we have the syntactic representation for clause cosubordination constructions, using sentence (18) to illustrate.

Draw the syntactic representations for (17a) and (19).

The tense operator modifies the shared clause node in the operator representation.

In the additional example from Yimas (Sepik-Ramu, Papua New Guinea) in (22), we can see that an epistemic modality operator, the prefix *ka-* ‘likely’, has scope over both clauses (Foley 1991: 447).

- (22) wayk-mpi mnta ka-n-na-awramu-n.
 buy-SEQ then LIKELY-3SG.S-DEF-enter-PRS
 ‘He can buy (them) and then come inside.’

Decide if (22) is an example of clausal coordination or clausal cosubordination.

2.2 Core level

Moving down to the core level, we will look at core subordination first. In one type of core subordination construction, the subordinate clause modifies the core. It may provide information about the time, space, manner or pace of the event described by the main core. We have seen this type of modification expressed by adverbs and adpositional phrases containing noun phrases, like (23a) and (b) respectively.

- (23) (a) The snow fell [yesterday].
 (b) The snow fell [at night].
 (c) The snow fell [after I washed my car].

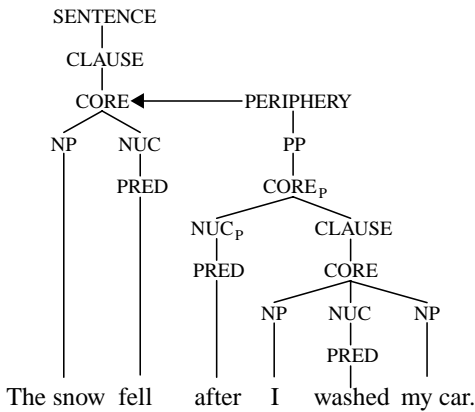


Figure 7.12 *Constituent representation of ad-core subordination*

In (23c) we see a clause within a predicative adjunct prepositional phrase. That prepositional phrase provides information about the time of the event in the main core (the snow falling) and so this subordinate clause is represented as within the PP and peripheral to the core, as shown in Figure 7.12.⁷

In the examples from Catalan (Romance, Spain) in (24), the subordinate clause appears before the main core in (24a) and after the main core in (24b) (Hualde 2002: 61–2).

- (24) (a) [Després que mengem], anirem al parc.
 after that eat.SBJ.2PL go.FUT.1PL to.the park
 ‘After you eat, we will go to the park.’
- (b) Comprava mocadors [quan anava a París].
 buy.IPFV.1SG handkerchiefs when go.IPFV.1SG to Paris
 ‘I used to buy handkerchiefs whenever I went to Paris.’

In the other type of core subordination structures, a core or clause functions as a core argument of the main predicate.⁸ In (25), for example, a clause is functioning as the ‘x’ argument of the verb *surprise*, as the brackets show.

- (25) [[That Shane won the competition]_{CLAUSE} surprised everybody]_{CORE}.
 [do’ (x, Ø)]_{CAUSE} [INGR feel’ (z, [surprised’])]

Remember that, in subordinate constructions, the dependent unit can have its own operators because subordinate clauses describe, in a sense, events within other events. Hence the subordinate clause in (25) has its own tense operator, which could be different from the main clause (e.g. *That Shane won the competition surprises Mary*).

Some languages mark subordinate clauses and cores functioning as arguments as **NOMINALIZED**, so that they not only function like noun phrase arguments but look like them in syntactic form too. In Fijian (Oceanic, Fiji), the complete utterance in (26a) appears as a subordinate unit in (26b) with the addition of an

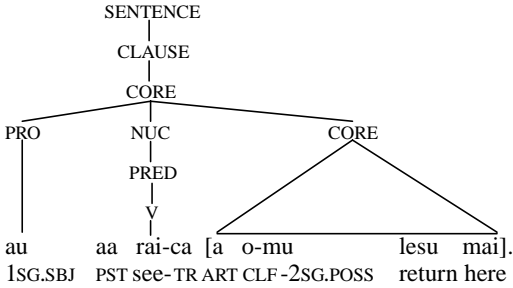


Figure 7.13 *Constituent representation of core subordination*

article *a* and a possessive pronoun (Dixon 1988: 37). In (26b) the core functions as an argument of the main verb *rai* ‘see’. (See (12a) for an example of a nominalized clause in Lengo.)

- (26) (a) o lesu mai.
2SG.SBJV return here
‘You return here.’
- (b) au aa rai-ca [a o-mu lesu mai].
1SG.SBJV PST see-TR ART CLF-2SG.POSS return here
‘I saw [your returning here].’

In the constituent representation, the core functioning as an argument is simply a daughter of the main core node, just as any other argument constituent would be. In Figure 7.13, we see the constituent representation for (26b).

Moving on to core coordination and core cosubordination constructions, we find that in both cases the two cores share an argument, as we discussed in section 1.1.2. To understand the distinction between core coordination and cosubordination, we return to English examples; (4a) is repeated here as (27a) along with another example in (28a).

- (27) (a) Peggy told Phil [to hit Bradley].
(b) *[To hit Bradley] was told Phil by Peggy.
(c) *It was [to hit Bradley] that Peggy told Phil.
- (28) (a) Billy tried [to open the door].
(b) *[To open the door] was tried by Billy.
(c) *It was [to open the door] that Billy tried.

In (27a) and (28a) the second core (in square brackets) forms a semantic argument of the predicate in the first core (*tell* and *try*). However, these second cores are not *syntactic* arguments; in other words, they are not subordinate clauses or cores.

We can see that they are non-subordinate if we compare the ungrammaticality of the (b) and (c) examples in (27) and (28) with the sentences in (29) containing a subordinate clause (also in square brackets).

- (29) (a) Don noticed [that Gloria had cut her hair].
 (b) [That Gloria had cut her hair] was noticed by Don.
 (c) It was [that Gloria had cut her hair] that Don noticed.

As (29b) and (c) respectively show, subordinate clauses can be the privileged syntactic argument in a passive construction and the focused element in a cleft construction. These are two properties we expect of arguments, and neither hold of the non-subordinate core constructions in (27) and (28).

In both (27a) and (28a) there are two cores which share a semantic argument; in other words, one of the arguments of the predicate in the first core is also a semantic argument of the predicate in the second core. In (27a), for example, *Phil* is the undergoer of *tell* and the actor of *hit*. Both (27a) and (28a) have this sharing feature in common, but they are nonetheless different types of construction, as we shall see.

As we saw in section 1.2.3, if we add a core-level operator, we can see the contrast between the two structures in terms of the scope of that operator, just as we saw for the scope of clause-level operators in clause juncture constructions in the previous section. In (30), sentences (14a) and (b) are repeated as illustrations.

- (30) (a) Tom must try to open the door CORE COSUBORDINATION
 (b) Tom must tell Bill to open the door. CORE COORDINATION

In (30a), the core-level deontic modality operator *must* (underlined) has scope over both cores, and so because we have a shared operator at the level of juncture (i.e. a core-level operator in a core juncture), we have a core cosubordinate construction. The second core in (30a) is, in this sense, dependent on the first core for the expression of that deontic modality operator.

In (30b), on the other hand, the operator has scope only over the first core; the obligation is only on Tom to tell Bill something and so because the operator is not shared we have a core coordinate construction.

Notice that in (30a), as we noted above, *Tom* is interpreted as the actor of both *try* and *open*. In (30b), on the other hand, we have different actors. It makes sense, then, that where the two predicates have different actors, the deontic modality operator only places the first actor under obligation (coordination). And consequently, when the predicates have the same actor, both of that actor's actions are under the scope of the operator (cosubordination).

We indicate core cosubordination by having two cores join up to one core. The shared operator modifies the combined core, as we see in Figure 7.14, which provides the syntactic representation for (30a) and (b).⁹

2.3 Nuclear level

At the nuclear level, we also find all three types of connection. In English, however, we only have nuclear cosubordination at the nuclear level.

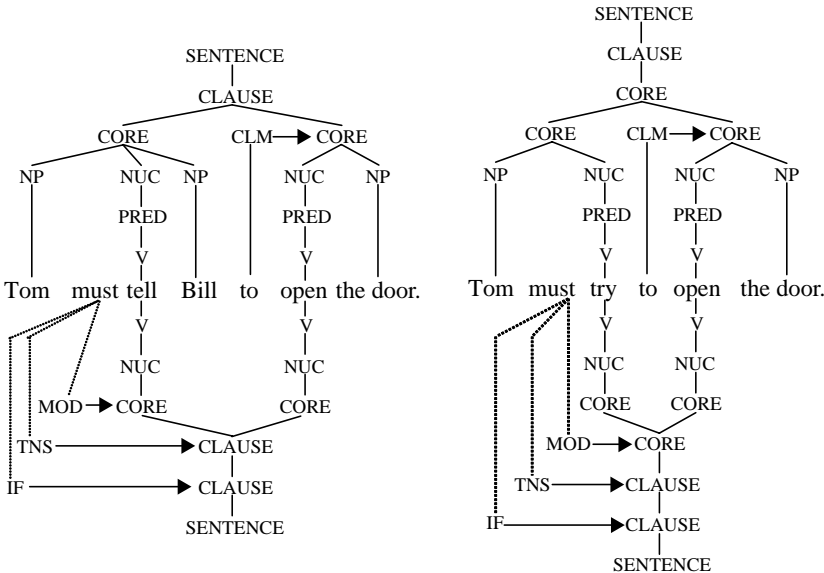


Figure 7.14 *Syntactic representation of core coordination and core cosubordination*

Example (6) is repeated here as (31) as an example. Note that the sentence features progressive aspect, and aspect is a nuclear level operator. It is clear that the nuclear level operator has scope over the whole complex nuclei ‘push open’. Since the aspectual operator has to have scope over both nuclei this is a case of nuclear cosubordination.

- (31) Kerry is pushing open the door. NUCLEAR COSUBORDINATION

In contrast, the example in (32) from Khwe (Khoisan, Namibia) illustrates nuclear subordination with a type of serial verb construction (SVC). In section 3 we will look at serial verb constructions in more detail. For now, note that in this case the second of the two verbs in (32), *té* ‘stay’ has an aspectual meaning, specifically conveying continuous aspect (Kilian-Hatz 2006: 116).¹⁰

- (32) Xámá thám à ||gàrá-ná t́-è-tè.
 3SG.M letter OBJ write-LNK stay-LNK-PRS
 ‘He is writing a letter.’

The second verb is a lexical item that has a subordinate, modifying function in this construction and so will appear as peripheral to the main nucleus *gàrá* ‘write’ in the constituent representation as well as appearing in the operator representation, as shown in Figure 7.15.

In Goemai (Chadic, Nigeria) we find examples of both coordination and cosubordination at the nuclear level, again both expressed as serial verb constructions.

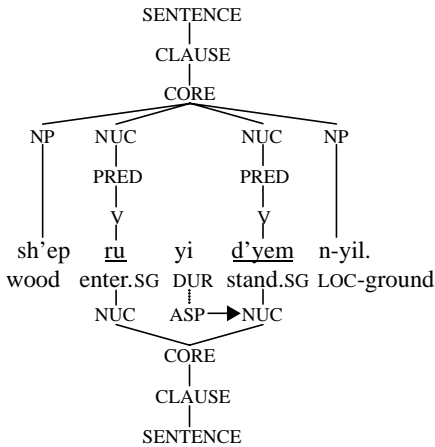


Figure 7.16 *Syntactic representation of nuclear coordination*

Section summary

In this section you have learned:

- to recognize types of complex constructions through examples from various languages.
- **KEY TERMS:** juncture, coordination, cosubordination, subordination, switch-reference, converb, complementizer, conjunction.
- **EXERCISES:** B1, B2, B3, B4

3 Serial verb constructions

Serial verb constructions (SVCs) deserve their own section because they are often treated as one type of construction even though in fact some are core junctures and some are nuclear junctures. Essentially, in SVCs, two or more verbs are used to express one complex event.¹¹ What language communities consider ‘one complex event’ can vary from culture to culture, as we shall examine further in chapter 9. In terms of syntactic form, the serialized verbs share at least one argument and constitute a single syntactic and intonational clause.

3.1 Syntactic properties of serial verb constructions

In this section we will look at some syntactic properties of serial verb constructions, specifically the difference between core-level and nuclear-level juncture, as well as the types of connection possible between the units.

Before doing that, it is worth us noting that serial verb constructions may often be translated into clause-level juncture constructions in languages (like English) that do not use SVCs as readily (if at all) and so they may be difficult to recognize

and analyse. Notice that both the examples in (35) from Ewe (Atlantic-Congo, Ghana) have similar translations into English even though these clearly contain different syntactic patterns in Ewe (Ameke 2006: 131).

- (35) (a) ku tsi klɔ̃ ɲkúme.
 2SG.SCOOP water wash face
 ‘Fetch water and wash your face.’
- (b) ku tsi né na-klɔ̃ ɲkúme.
 2SG.SCOOP water CONSEC 2SG.SBJV-wash face
 ‘Fetch water and (then you should) wash your face.’

In (35a) we have a serial verb construction with both verbs interpreted as imperative. In (35b), on the other hand, we see a sequence of two clauses linked with the consecutive marker *né*. The first clause is imperative while the second is marked as subjunctive. This difference in clause-level operators means that this must be a sequence of clauses; in other words, a clause-level juncture and so not a serial verb construction. Notice too that there is person and number agreement with the PSA on just the first verb in (35a), but on both verbs in (35b), indicating a structural difference.

Again in Fongbe (Atlantic-Congo, Benin), we see an SVC in (36a) and a clause coordination structure in (36b) although here the English translation is able to reflect those differences a little more (Lefebvre and Brousseau 2001: 400). Notice that in (36b) the two clauses are connected with *bó* which is absent from (36a) since (36a) only contains one clause. (See (47a) and (b) for a third example of this contrast.)

- (36) (a) Kɔ̀kú sɔ̃ kòklò yì àxì mɛ̃.
 Koku take chicken go market in
 ‘Koku brought the chicken to the market.’
- (b) Kɔ̀kú sɔ̃ kòklò ð bó yì àxì mɛ̃.
 Koku take chicken DEF and.he go market in
 ‘Koku took the chicken and went to the market.’

3.1.1 Level of juncture in serial verb constructions

Once we have distinguished SVCs from clause-level constructions we need to further determine if the SVC in question contains a core-level or nuclear-level juncture. Let us examine two SVCs from Taba (Malayo-Polynesian, Indonesia) (Bowden 2001: 297–8).

- (37) (a) Nbabas welik nmot do.
 n=babas welik n=mot do
 3SG=bite pig 3SG=die RL
 ‘It bit the pig dead.’
- (b) Ncopang nmul hu.
 n=sopang n=mul hu
 3SG=descend 3SG=return CONT
 ‘S/he’s still coming back down (descending and returning simultaneously).’

Looking at (37a) first, we can see that the argument *welik* ‘pig’ appears between the predicates. Secondly, notice that there is only one argument shared between the predicates: *welik* ‘pig’ is the undergoer of *babas* ‘bite’ and the single argument (also the undergoer) of *mot* ‘die’, but the ‘it’ doing the biting is not an argument of the second predicate. Together these two features are clues that this is a core-level serial verb construction.

In (37b), on the other hand, all the arguments (though in this case there is only one) are shared between both predicates. In addition, the continuous aspect marked with the particle *hu* has scope over both nuclei, and so since this is a nuclear-level operator these must be in a nuclear cosubordinate construction. This, then, is a nuclear-level serial verb construction.

We see a similar contrast in *Tukang Besi* (Malayo-Polynesian, Indonesia) (Donohue 1999: 182).¹²

- (38) (a) No-helo’a te roukau ako te ana-no.
 3.RL-COOK CORE vegetables do.for CORE child-3POSS
 ‘She cooked the vegetables for her children.’
- (b) No-helo’a-ako te ana-no te roukau.
 3.RL-COOK-do.for CORE child-3POSS CORE vegetables
 ‘She cooked the vegetables for her children.’

Determine which sentence in (38) is a core-level SVC and which is nuclear level.

As we see, then, one syntactic feature of core-level SVCs is that lexical elements can appear between the two predicates. We may sometimes find nuclear SVCs that also allow elements to appear between them, so this feature is not definitive evidence of a core-level SVC. However, if the two predicates do not allow anything to appear between them, we know we have a nuclear-level SVC. We also see an argument appearing between the predicates in the Tetun Dili (Malayo-Polynesian creole, East Timor) example in (39a).

- (39) (a) tuda bola mai.
throw ball come
 ‘Throw the ball over here.’
- (b) sira bá fali hariis iha tasi.
 3PL go again bathe LOC sea
 ‘They went to swim in the sea again.’

In (39b) a modifying element appears between the two predicates (Hajek 2006: 243).

3.1.2 Type of connection in serial verb constructions

Once we establish whether we have core or nuclear-level SVCs, we can turn to examining the type of connection between the two units. As described in sections 2.2 and 2.3, we may find subordination, coordination or cosubordination at these two levels. Remember too that in distinguishing coordination from cosubordination we need to focus our attention on operators that occur at the level of juncture.

We will see examples of subordinate SVCs in the following section, and we already encountered one such example in Khwe, repeated here as (40).

- (40) Xámá thám à ||gàrá-ná té-è-tè.
 3SG.M letter OBJ write-LNK stay-LNK-PRS
 ‘He is writing a letter.’

The second verb *té*, while a lexical verb, has the function of modifying the first in terms of aspect. The second verb is subordinate to the first, as shown in Figure 7.15, leading to an asymmetric structure.

In distinguishing between coordinate and cosubordinate SVCs, we need to assess whether operators are shared between both the predicates. In section 2.3 we saw examples of this contrast at the nuclear level, examining the sharing of aspect in Goemai in (33) and (34) (cosubordinate and coordinate nuclear SVCs respectively). Those examples are repeated in (41).

- (41) (a) mutane d’e t’ong s’arap yi t’ong s’oe.
 person.PL exist.PROG PROG trade.PL PROG PROG eat
 ‘People are trading (them and) eating (them).’
 (b) sh’ep ru yi d’yem n-yil.
 wood enter.SG DUR stand.SG LOC-ground
 ‘The stick has entered (and) stands in the ground.’ (i.e. it entered and then stood continuously.)

Example (42) provides another example of a nuclear-level coordinate SVC, this time from Toqabaqita (Oceanic, Solomon Islands).

- (42) wela e lae qaru-qaru.
 child 3SG.NFUT go RED-fall
 ‘The child is beginning to walk.’

The reduplication has an aspectual meaning, marking frequency in this example, where *lae qaru qaru* means ‘go frequently falling’ (Lichtenberk 2006: 263). This nuclear-level operator only affects the second verb, and so we see a coordinate relationship between the two nuclei since the operator is not shared.

For core-level SVCs we are interested in core-level operators such as negation and deontic modality. Examine the data from Leti (Malayo-Polynesian, Indonesia) in (43) (van Engelenhoven 2004: 251).

- (43) (a) Tanodi pranse nsapli nure.
 tan-odi pransa=e n-sapli nura=e
 NEG.3SG-carry.DEX chisel=DEX 3SG-slash.DEX coconut=DEX
 ‘He slashes the coconut not with the chisel (but with something else).’
 (b) Nodi pranse tansapli nure.
 n-odi pransa=e tan-sapli nura=e
 3SG-carry.DEX chisel=DEX NEG.3SG-slash.DEX coconut=DEX
 ‘He does not slash the coconut with the chisel (but he does something else with it).’

- (c) Tanodi pranse tansapli nure.
 tan-odi pransa=e tan-sapli nura=e
 NEG.3SG-carry.DEX chisel=DEX NEG.3SG-slash.DEX coconut=DEX
 ‘He does not slash the coconut without the chisel.’

The core-level negation operators can occur independently on each of the serialized cores and so we have coordination here. The fact that each verb can have negation operators independently of the other verb is evidence that we have a core-level juncture.

Determine whether the data in (43) are coordinate or cosubordinate core-level SVCs.

3.2 Semantic properties of serial verb constructions

In this section I introduce some of the main sub-types of serial verb constructions, sub-divided according to their meaning.

The motion/direction (3.2.1) and aspectual (3.2.3) sub-types of SVCs are generally expressed by syntactically asymmetrical SVCs; these are SVCs where one of the verbs comes from a closed or restricted class and modifies the main verb(s) in some way (a subordinate relationship, as illustrated in section 3.1.2). Symmetrical SVCs involve two (or more) lexical verbs from open classes in a syntactically coordinate or cosubordinate relationship: SVCs involving cause and sequential or simultaneous events may often be expressed with symmetrical SVCs.

3.2.1 Motion or direction

A common type of serial verb construction includes a verb which specifies motion that precedes an action or describes a direction in which it occurs. In the nuclear SVC examples from Äiwoo (East Papuan, Solomon Islands) in (44), the second verbs *woli* and *lä* define the direction of movement (Næss and Boerger 2008: 196).

- (44) (a) i-tälu-woli-kä-i.
 PFV-cut.flexible.object-go.down-DIR.3-3AUG.A
 ‘They cut down (the vine).’
 (b) i-luwo-i-lä-gu-i-le.
 PFV-rush-COM-go.out-3MIN.A-3AUG.U-AUG
 ‘She rushed out with (i.e. carrying) them.’

In Paamese (Oceanic, Vanuatu), the added directional verb disambiguates the meaning of the verb describing the action, as the examples in (45) illustrate (Crowley 2002: 70–1).

- (45) (a) namual em leiai.
 na-muali eni leiai
 1SG.RL-walk SP bush
 ‘I walked to/from/in the bush.’

- (b) namual nauva: en leiai.
 na-muali nau-vaa eni leiai
 1SG.RL-walk 1SG.RL-go SP bush
 ‘I walked to the bush.’
- (c) namual naumai en leiai.
 na-muali nau-mai eni leiai
 1SG.RL-walk 1SG.RL-come SP bush
 ‘I walked from the bush.’
- (d) namual naumul en leiai.
 na-muali nau-mule eni leiai
 1SG.RL-walk 1SG.RL-stay SP bush
 ‘I walked in the bush.’

The single verb *muali* in (45a) is ambiguous as the translation shows, while the various second verbs in (45b–d) provide specific direction or location for the action of walking.

3.2.2 Sequence of events

Serial verb constructions may describe two consecutive aspects of an event, as in example (46) from Zhuang (Tai-Kadai, China) where the action of inviting precedes the drinking (Luo 2008: 371).

- (46) te¹ ɕa:ŋ⁶ŋi⁴ ɕiŋ³ vai⁶tsi² kuu¹ lau³.
 3SG often invite friends eat wine
 ‘S/he often invites friends for a drink.’

This SVC category is tricky because although serial verb constructions may express a sequence of events, in order to be classified as an SVC (rather than a series of clauses) the sequence has to be interpretable as a single complex event. However, there will often also be syntactic clues that differentiate an SVC from a sequence of clauses.

Compare the pair of causative examples from Taba in (47). In (47a) (repeated from (37)) we see an SVC while in (47b) there is a sequence of clauses.

- (47) (a) Nbabas welik nmot do.
 n=babas welik n=mot do
 3SG=bite pig 3SG=die RL
 ‘It bit the pig dead.’
- (b) Nbabas welik, namot i.
 n=babas welik n=ha-mot i
 3SG=bite pig 3SG=CAUS-die 3SG
 ‘It bit the pig and killed it.’

Sentence (47a) refers to a single event: the death was directly and immediately connected to the biting of the pig. In (47b), on the other hand, neither the immediacy nor the direct consequence are inherent in the meaning of the sentence

(Bowden 2001: 297). Notice too the difference in syntactic form, namely the causative prefix and additional pronoun in the second clause of (47b).

We saw in section 3.2.1 that verbs meaning ‘come’ and ‘go’ may express the direction of movement when they appear second in the sequence. It is not uncommon to find that the same verbs, when appearing *before* another verb in a series, describe a sequence of events: a motion followed by an action. The examples from Lengo (Oceanic, Solomon Islands) in (48) illustrate this alternation.

- (48) (a) Ighamu na leoni tinoni k-amu rongo mai.
 EP.2PL ART all person IRR-2PL listen come
 ‘You, all the people – listen here (i.e. this way, in the speaker’s direction)!’
- (b) k-amu mai rongo-ni-a na tha ba k-a ghali-a.
 IRR-2PL come hear-TR-OBJ.3SG ART COMP FUT IRR-1INCL.PL do-OBJ.3SG
 ‘Come (and) listen to what we’re going to do.’
- (c) ...m-e mai na ara sule.
 CONJ-3SG come ART wind big
 ‘... and a big wind came.’

In (48a), the verb *mai* ‘come’ appears after the verb *rongo* ‘listen’ and indicates the direction in which the people should listen. In (48b), on the other hand, *mai* appears before the other verb and the SVC describes a sequence of events; a motion followed by an action. The sentence in (48c) provides evidence that the verb *mai* is a lexical verb, not merely a grammatical marker, since it can appear as the main verb in a simple sentence (Unger 2008: 139, 143).

Compare also the Tetun Dili examples in (39): you might like to try and describe the use of ‘come’ and ‘go’ in those examples.

3.2.3 Aspectual

We saw an example of an aspectual SVC in Khwe in (32), which is repeated again here as (49a), along with other examples of SVCs where one verb has an aspectual meaning.¹³

- (49) (a) Xámá thám à ||gàrá-ná tɛ̀-è-tè.
 3SG.M letter OBJ write-LNK stay-LNK-PRS
 ‘He is writing a letter.’
- (b) Xámá ú-á xéri-na-xu-a-hã.
 3SG.M hunt-LNK be.at.an.end-LNK-COMPL-LNK-PST
 ‘He already stopped hunting.’
- (c) n|í ||gèɛ-khòè-hè yà ||ó-à-tè.
 DEM female-person-3SG.F come die-LNK-PRS
 ‘This woman is about to die.’
- (d) Xámá nyám-á ú-à-tè.
 3SG.M start-LNK hunt-LNK-PRS
 ‘He starts hunting.’

As we saw, the second verb modifies the first, conveying continuous aspect. Completive aspect, indicating the end of an event, can also be expressed with an SVC in Khwe, as we see in (49b). In (49c) and (d) the first verb in the series is the ‘minor’ verb, expressing that the event described by the second is about to happen in (c) and that it is starting (inchoative aspect) in (d) (Kilian-Hatz 2006: 116–17).

3.2.4 Causative and cause-effect

In a cause-effect SVC, the ‘cause’ and the ‘effect’ are expressed by the two serialized verbs as we see in (50) and (51). In the symmetrical example from Dumo (Sko, Papua New Guinea) in (50), the notion of ‘kill’ is expressed with the combination of the verbs ‘hit’ and ‘die’ (Ingram 2006: 218).

- (50) deh gheh ta wah.
 3PL 3SG.M 3NSG.SBJ.hit 3SG.M.SBJ.die
 ‘They killed him (i.e. they hit him and he died).’

In (51), from Alamblak (Sepik-Ramu, Papua New Guinea), the complex meaning conveyed by the English translation is expressed with the sequence of predicates *hay* ‘give’ and *noh* ‘unconscious’ (Bruce 1988: 37).

- (51) Yimar fêrpam hay-noh-më-r-a.
 man potion give-unconscious-REM-3SG.M-1SG
 ‘The man gave me a potion (causing me to become unconscious).’

Likewise in the Edo (Atlantic-Congo, Nigeria) data in (52), the second verb describes the consequence or outcome of the event described by the first verb.

- (52) (a) úkpù dègbé òtò guòghó.
 cup hit ground break
 ‘The cup smashed against the ground.’
 (b) òzó suá úkpù guòghó.
 Ozo push cup break
 ‘Ozo pushed the cup and it got broken.’
 (c) ózó suá úyì gué ùvún.
 Ozo push Uyi cover hole
 ‘Ozo pushed Uyi to cover the hole.’
 (d) ózó sí íràn kòkó yè òwá.
 Ozo draw them gather in house
 ‘Ozo gathered them together in the house.’

Note that the SVCs in all the examples in (52) are still expressing two facets of one complex event (Stewart 1994: 4, 5, 11).

3.2.5 Instrumental

In section 3.1 we saw examples of SVCs with an instrumental meaning in Leti (see (43)). These SVCs are commonly core-level SVCs since the undergoer of the

first verb is different from the actor of the second and may often appear between the two predicates.

SVCs that involve an instrument may be translated into clauses with adpositional phrases as third arguments. Notice that each of the examples from Taba in (53) is translated with the same English sentence.

- (53) (a) Npun bobay npake sandal.
 n=pun bobay n=pake sandal
 3SG=kill mosquito 3SG=use thong
 ‘He killed the mosquito with a thong.’
- (b) Npunak bobay sandal.
 n=pun-ak bobay sandal
 3SG=kill-APPL mosquito thong
 ‘He killed the mosquito with a thong.’
- (c) Npun bobay ada sandal.
 n=pun bobay ada sandal
 3SG=kill mosquito with thong
 ‘He killed the mosquito with a thong.’

In Taba, however, there are three separate syntactic constructions for expressing the instrument: a serial verb construction (53a), an applicative construction (53b) and a prepositional phrase (53c) (Bowden 2001: 306).

3.2.6 Simultaneous event(s)

In a symmetrical SVC, the two full verbs each describe aspects of one single complex event. As an example, look at the data from Lengo in (54), which consists of three consecutive lines from a text.

- (54) (a) ‘K-a-tu oli ba t-i,’ una m-u tapa.
 IRR-1INCL.PL-PAU return FUT RL-LOC 1SG.say CONJ-1SG run
 ‘“We need to go back now,” I said and I ran.’
- (b) I vi ga t-e dea ga na igha e tumuri po na vonu.
 LOC where there RL-3SG go there ART fish 3SG follow LIM ART turtle
 ‘Wherever the fish went the turtle just followed.’
- (c) m-ara-ko tapa tumuri-u.
 CONJ-3PL-DU run follow-OBJ.1SG
 ‘and they two ran after me.’

The first two examples show the verbs *tapa* and *tumuri* as main predicates in simple clauses. In (54c), on the other hand, the two verbs combine to form a symmetrical serial verb construction expressing simultaneous facets of an event (Unger 2008: 136).

In this section we have seen the importance of studying the data closely, looking for syntactic and semantic evidence for different structures in the language itself, particularly when such structures translate similarly in our language or are difficult to translate and conceptualize.

Section summary

In this section you have learned:

- to identify and categorize serial verb constructions.
- **KEY TERMS:** serial verb construction, symmetrical, asymmetrical.
- **EXERCISES:** B5, B6, B7

4 Syntactic and semantic relations between clauses

It should be clear by now that there is no one-to-one correspondence between the meaning of a sentence and the syntactic form it will take. However, you may also have noticed that there is a broadly iconic relationship between the two. What we find across languages is that where the events or situations described by two predicates are closely interconnected, they will tend to be expressed by a more tightly connected syntactic structure. On the other hand, when two events or situations are only weakly connected in their meaning, they will generally be more loosely connected in their syntactic representation.

For example, we saw in section 3.2.2 that in Taba the more tightly connected SVC syntactic structure in (47a), repeated here as (55a), correlates with a more direct and consequential connection between the two events. In the case of (55b), however, as we noted above, the two events are less closely connected, both syntactically (as a clause-level juncture construction) and semantically; the sense of a direct consequence is not inherent.

- (55) (a) Nbabas welik nmot do.
 n=babas welik n=mot do
 3SG=bite pig 3SG=die RL
 'It bit the pig dead.'
- (b) Nbabas welik, namot i.
 n=babas welik n=ha-mot i
 3SG=bite pig 3SG=CAUS-die 3SG
 'It bit the pig and killed it.'

Again, in Tetun Dili we see a distinction between a causative marked morphologically with a prefix in (56a) and with a nuclear-level SVC in (56b). As the translations reflect, the more tightly connected morphological causative implies a more direct connection in the meaning of the sentences (Williams-van Klinken, Hajek and Nordlinger 2002: 96–7).

- (56) (a) ...hodi ha-mate lai-lais tiha ahi.
 to cause-die RED-quick PFV fire
 '(Wrap the person who is on fire in a blanket) to quickly extinguish the fire.'

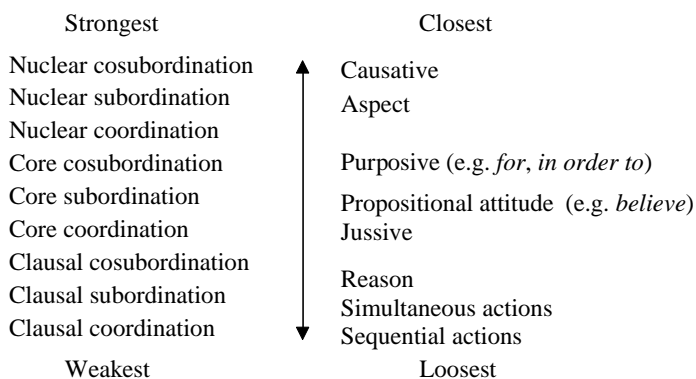


Figure 7.17 *Interclausal relations hierarchy*

- (b) Sira halo mate ikan.
 3PL make die fish
 ‘They killed the fish (by neglecting to feed them).’

The data in (57) reproduce examples from chapter 2. These data present a slightly different variation between morphological and syntactic reduplication in Mualang (Malayo-Polynesian, Indonesia).

- (57) (a) Kacung N-lompat-lompat.
 frog ATV-jump
 ‘The frog jumped around (i.e. up and down aimlessly).’
- (b) Kacung N-lompat, N-lompat (sampay jauh).
 frog ATV-jump ATV-jump until far
 ‘The frog jumped, and jumped (until it was far away).’

The morphological (word-internal) reduplication in (57a) indicates repetition of the action where the repetitions form a single complex event. In (57b), on the other hand, the repeated verb indicates two separate events (Tjia 2007: 187). Again we see that the ‘tighter’ morpho-syntactic construction in (57a) correlates with the depiction of a single event while the ‘looser’ syntactic reduplication expresses a sequence of events.

Understanding this tendency can help us to understand and explain the structures and patterns we find in languages and to make educated guesses in analysing languages. The general principle is shown in the hierarchy in Figure 7.17, where we can see the parallel between syntactic form and semantic meaning.¹⁴

Section summary

In this section you have learned:

- to understand the connection between semantics (meaning) and syntax (form) in complex constructions.
- **KEY TERMS:** iconicity, interclausal relations hierarchy.

5 Relative clauses

In chapter 6 we looked at the internal structure of noun phrases and their operators. In this section we will look at some of the more complex noun phrases we find in languages, specifically at types and features of relative clauses. Before discussing types of relative clauses found in different languages, this section introduces some of the main features to be aware of, using English to illustrate.

A relative clause is a clause inside a noun phrase that provides more information about the referent of the head noun.¹⁵ We saw above that, in a number of complex constructions, an argument may control the identity of a corresponding argument in another clause that is syntactically ‘missing’. A similar pattern occurs in noun phrases with relative clauses. The head noun in a noun phrase corefers with (that is, has the same referent as) an argument of the predicate within the relative clause, but that argument is ‘missing’ from the relative clause and the head noun controls the identity of this argument.

Some examples will make this clear. In each noun phrase in (58) a determiner is followed by the head noun, which in turn is followed by a clause and these three elements make up a noun phrase.

- | | HEAD | RELATIVE CLAUSE | |
|----------|---|-----------------------------|----------------------------------|
| (58) (a) | the man | that sold me this computer | (should be arrested). |
| (b) | the soap | I washed it with | (hasn't rinsed out). |
| (c) | a place | where I always sit | (has been taken by a stranger). |
| (d) | the thing | that I really wanted to say | (is that you have strange ears). |
-

Looking at (58a) in more detail we can see that the relative clause is introduced by the clause linkage marker *that* and that within the clause itself there is no actor argument syntactically expressed. However, the referent of the head noun *man* is understood to be the actor of the predicate *sell* in the relative clause: hence the head noun (in the box) controls the identity of the **COREFERRING ARGUMENT** in the relative clause. The same principle applies to the other noun phrases in (58b–d).

These examples from English also show that even within one language there are variations in how relative clauses are expressed. In (58a) and (58d) the relative clause is introduced by a complementizer *that*, (58c) contains a relative pronoun *where*, while (58b) has neither of these. In section 5.2.2 we will look at how other languages introduce relative clauses.

In English the relative clause appears after the head noun in a noun phrase. In sections 5.1.1 and 5.1.2 we look at other possible patterns.

The coreferring argument in the relative clause can often have different semantic roles within that clause, as the examples in (58) illustrate. In (58a) the coreferring argument is the actor of *sell*. In (58b) it is the instrument argument of *wash*.

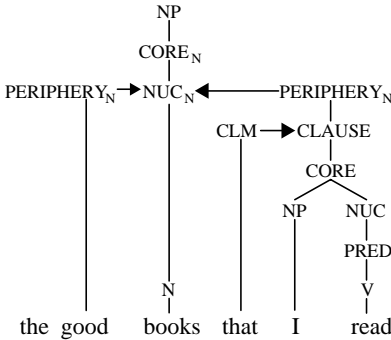


Figure 7.18 *English restrictive relative clause*

In (c) the head noun corefers with an adjunct, peripheral element (describing location), and in (d) the coreferring argument is the undergoer of *say*.¹⁶

As you can see in (58), in English we use word order to identify the role of the coreferring syntactic argument (just as we do in main clauses). As the examples in (59) illustrate, relative pronouns can also provide clues, if one is inclined to use the correct form.

Determine the role of the coreferring argument in (59a) and (b).

- (59) (a) [The bear that/who ate Amy]_{NP} was a bit too careless.
 (b) [The bear that/whom Amy ate]_{NP} was a bit too careless.

Other languages use different methods to identify the role of the coreferring argument, as we will see in section 5.2.

5.1 Relative clause types

Some languages (such as English) place the head noun outside the relative clause, either before or after it; such constructions are termed **EXTERNALLY HEADED** relative clauses. Other languages place the head noun inside the relative clause, and these are, not surprisingly, called **INTERNALLY HEADED** relative clauses. We will look at these types, as well as **HEADLESS RELATIVE CLAUSES**, in this section, beginning with externally headed relative clauses.

5.1.1 Externally headed relative clauses

Externally headed relative clauses are the most common type, with the head noun appearing either before or after the relative clause. In Figure 7.18 we see an example from English, showing that the relative clause *that I read* appears after the head noun *books*.

Restrictive relative clauses are modifiers with a function similar to that of adjectives, and this is reflected in the constituent representation. These are examples of nuclear_N subordination, a clause modifying the nucleus of the noun phrase.

5.1.1.1 *Noun + relative clause*

Of the two types, a relative clause following the head noun is more common. In (60) and (61) we see noun phrase examples from Brazilian Portuguese (Romance, Brazil) and Maltese (Semitic, Malta) respectively where the underlined head noun is followed by the relative clause in square brackets.

- (60) todos os homens [que eu conheço] BRAZILIAN PORTUGUESE
 all.M.PL the.M.PL man.M.PL that I know
 ‘all the men that I know’
- (61) il-qattus [li t-tfal xtraw il-bierah] MALTESE
 DET-cat CLM DET-children bought.3PL DET-yesterday
 ‘the cat which the children bought yesterday.’

Notice that, like in English, the relative clause is introduced with a clause linkage marker, *que* in Portuguese and *li* in Maltese (Schmitt 2000: 313, Borg and Azzopardi-Alexander 1997: 35).

In Indonesian (Malayo-Polynesian, Indonesia), the relative clause also follows the noun, but then the determiner follows the relative clause, as we see in the context of a sentence in (62) (Cole and Hermon 2005: 61).

- (62) Perempuan [yang pergi] itu menangis.
 girl CLM leave that is.crying
 ‘That girl who left is crying.’

As the syntactic representation in Figure 7.19 shows, this ordering can be neatly dealt with in the framework we have learned; in fact, we expect the nuclear_N-level relative clause to appear closer to the head noun than the NP-level definiteness operator. Only the operators within the noun phrase are shown in Figure 7.19.

5.1.1.2 *Relative clause + noun*

The other possible order for externally headed relative clauses is to have the relative clause followed by the head noun. This is found particularly frequently in predicate-final (or, more generally, head-final) languages like Korean (Isolate, Korea), shown in (63) and Japanese (Isolate, Japan), shown in (64) (Han and Kim 2004: 315, Andrews 2007: 208).

- (63) [ppang-ul mek-nun] ai KOREAN
 bread-ACC eat-ADN kid
 ‘the kid who is eating bread’
- (64) [Yamada-san ga kat-te i-ru] saru JAPANESE
 Yamada-Mr NOM keep-PTCP be-PRS monkey
 ‘the monkey that Mr Yamada keeps’

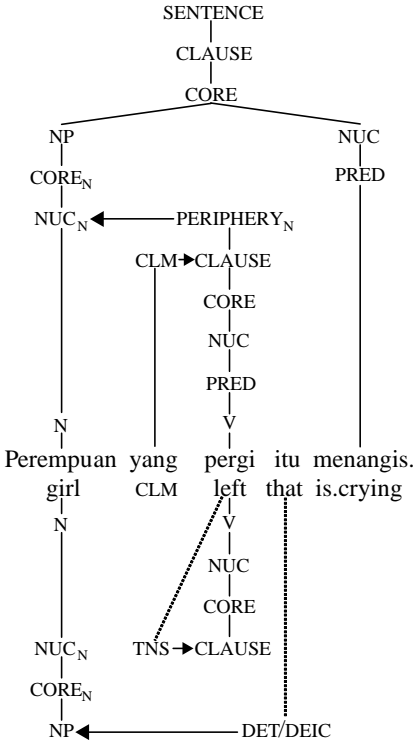


Figure 7.19 Indonesian restrictive relative clause

In Mangghuer (Mongolic, China), the relative clause appears closer to the head noun than other noun phrase elements, reflecting the fact that the relative clause modifies the very nucleus of the noun phrase. In (65), the relative clause appears closer to the head noun than the possessive phrase *baying kongni* and the determiner *ti* (Slater 2003: 233).

- (65) [ti baying kong=ni [bieqiere-sang-ni]_{RC} aguer=ni]_{NP}
 that rich person=GEN be.ill-PFV-NMLZ daughter=ACC
 (dawenla-jiang).
 (ask.about-OBJV.PFV)
 ‘(He asked about) that rich man’s daughter who had become sick.’

It is of course possible to find relative clauses within relative clauses. The example from Basque in (66) uses this principle for literary effect, and is reminiscent of the English nursery rhyme ‘The House That Jack Built’. A morpheme gloss is not given, but the clauses are bracketed and numbered, and the head noun underlined. Notice that Basque places relative clauses before the head noun (*ura* ‘water’) making the sentence almost the reverse of the English translation (Hualde and Ortiz de Urbina 2003: 770).

- (66) Ai ardia, indartsua zara, [((((((((gatibatu nauen⁹) elurra urtzen duen⁸) eguzkia gelditzen duen⁷) orma zulatzen duen⁶) sagua jaten duen⁵) katua ausikitzen duen⁴) zakurra kolpatzen duen³) makila erretzen duen²) sua amatatzen duen¹] ura edaten baituzu.

‘Oh sheep, you are strong, because you drink the water [¹that puts out the fire [²that burns the stick [³that hurts the dog [⁴that bites the cat [⁵that eats the mouse [⁶that pierces the wall [⁷that stops the sun [⁸that melts the snow [⁹that makes me a prisoner]]]]]]]]].’

There are also languages where the order of head noun and relative clause is flexible. Two such languages are Dime (Omotic, Ethiopia), shown in (67) and Manipuri (Tibeto-Burman, India)¹⁷, shown in (68) (Seyoum 2008: 113; Kachru, Kachru and Sridhar 2008: 63).¹⁸

- (67) (a) [bay-im ʔist-ée-b-is] goštú č’ək’k’-ub. DIME
 food-ACC eat-IPFV-M.REL-DEF man small-M
 ‘The man who eats food is small.’
 (b) goštú [ʔist-ée-b-is bay-im] č’ək’k’-ub.
 man eat-IPFV-M.REL-DEF food-ACC small-M
 ‘The man who eats food is small.’
- (68) (a) [phurit angangba litpə] nupamaca adu ngasi laki. MANIPURI
 shirt red wearing boy that today came
 ‘The boy wearing a red shirt came today.’
 (b) nupamaca [phurit angangba litpə] adu ngasi laki.
 boy shirt red wearing that today came
 ‘The boy wearing a red shirt came today.’

Draw the constituent representations for the sentences in (67) and (68).

5.1.2 Internally headed relative clauses

We saw in the [previous section](#) that some languages have externally headed relative clauses, where the head noun is positioned outside the relative clause. Some languages (mostly with an undergoer-predicate constituent order) have internally headed relative clauses where, as the name suggests, the ‘head noun’ appears within the relative clause. Internally headed relative clauses can look very similar to main clauses but they may be marked with a particle and/or carry noun phrase operators: this indicates that the clause has been nominalized. In other words, it is now a clause that is part of a referring expression.

In (69) and (70), we see examples of internally headed relative clauses in Belhare (Tibeto-Burman, Nepal) and Miskitu (Misumalpan, Nicaragua) respectively (Bickel 2004: 151, Hale 2001: 88).

- (69) [ŋka asen pepar in-u-ŋ-na] mann-har-e. BELHARE
 1SG yesterday cigarette buy-3PL-1SG.A-ART finish-TEL-PST
 ‘The cigarettes that I bought yesterday are used up.’

- (70) [Yang sula kaik-ri ba] plap-an. MISKITU
 I deer see-PST.1 the run-PST.3
 ‘The deer I saw ran away.’

The underlined nouns appear inside the square-bracketed relative clauses in each case. Notice too that in both examples the clause is marked with an article (*-na* in Belhare and *ba* in Miskitu), reflecting the fact that these relative clauses are inside noun phrases.

Internally headed relative clauses have a different function from subordinate complement clauses (see section 2.2), although they may be expressed similarly in the syntax: both constructions may be marked as nominalized clauses but in internally headed relative clauses one of the arguments is the main referent while the clause gives extra information. In a subordinate complement clause, on the other hand, the whole event (the whole clause) is the argument. This contrast is illustrated by the two examples from Mongsen Ao (Tibeto-Burman, India) in (71).

- (71) (a) nì kà? [àtì na asə à ənəɪ ɹàpà?
 nì kà? [à-tì na a-sə à ən-əɪ ɹà-pà?
 1SG also VOC-sibling AGT NRL-shawl one take-SEQ come-NMLZ
 pʰ] mùk.
 pʰ] mùk.
 PROX wrap.PST
 ‘I also wore this shawl [that Elder Sister brought].’
- (b) [tsəhŋi ku hwaŋkə mənpai] a.u.ù?
 [tsəhŋi ku hwaŋ-əkə mən-pà? i] a.u.-əɪ-ù?
 sun LOC roast-SIM sit-NMLZ PROX be.good-PRS-DECL
 ‘[This sitting (and) bathing] in the sun is good.’

Sentence (71a) contains a noun phrase with an internally headed relative clause and a head noun *sə* ‘shawl’, while (71b) contains a complement clause that serves as the single argument of the predicate *a.u* ‘be good’. Notice that both subordinate clauses are marked with the same nominalizer morpheme *-pà?* (Coupe 2007: 224, 237).

In the constituent representation of internally headed relative clauses, the head noun and the whole argument constituent are both marked with subscript ‘i’ to show which is the head noun within the clause. Figure 7.20 shows the constituent representation for (70).

Tukang Besi (Malayo-Polynesian, Indonesia) is unusual in having both internally and externally headed relative clauses illustrated in (72a) and (72b) respectively (Donohue 1999: 368, 373).

- (72) (a) No-wila-mo [ku-‘ita-‘e na mia].
 3RL-go-PFV 1SG-see-3OBJ NOM person
 ‘The person I saw has left.’ (Literally ‘[I saw the person] has gone.’)

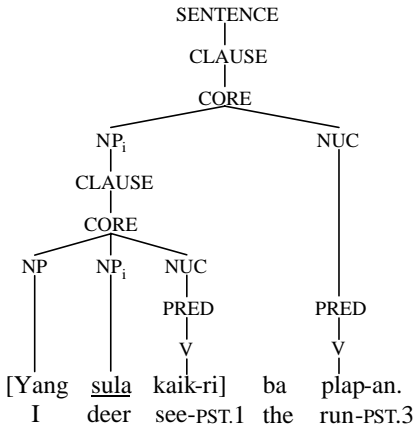


Figure 7.20 Internally headed relative clause in Miskitu

- (b) Ku-sepa-‘e na mia [t<um>opa te La Udi].
 1SG-kick-3OBJ NOM person slap<SBJ> CORE La Udi
 ‘I kicked the person who was slapping Udi.’

Draw the constituent representation for (72a) (Tukang Besi is head-marking).

In (72a), there is no special marker but the head noun is always marked with nominative *na* when it appears within the relative clause. In (72b), we see the head noun *mia* followed by a relative clause, which is marked with the infix <um> in agreement with the actor argument (instead of a prefix).

5.1.3 Headless relative clauses

It is also possible to find relative clauses that refer on their own; in other words that function as referring expressions without a head noun. English examples are given in (73), enclosed in square brackets.

- (73) (a) [What Lesley did] was very wrong.
 (b) I’ve put the treasure map [where no-one will find it].
 (c) The question is [who did it].

In the examples from Turkish (Turkic, Turkey) in (74), we see a contrast between an externally headed relative clause in (74a) (with the relative clause preceding the underlined head noun), and a headless relative clause in (74b) where the attached case and number markers help define the ‘missing’ head (Göksel and Kerslake 2005: 449).

- (74) (a) [opera-yı sev-me-yen]-kişi-ler-e (şaşıyorum).
 opera-ACC like-NEG-PTCL-person-PL-DAT
 ‘(I am surprised) at people who don’t like opera.’
 (b) [opera-yı sev-me-yen]-ler-e (şaşıyorum).
 opera-ACC like-NEG-PTCL-PL-DAT
 ‘(I am surprised) at those who don’t like opera.’

Similarly, in Halkomelem (Salishan, Canada) a relative clause may modify a (preceding) head noun as in (75a) or appear ‘headless’ with a determiner, as in (75b) (Suttles 2004: 76).

- (75) (a) tə swəʔyqeʔ [ni:n kʷəcnəxʷ]
 tə swəʔyqeʔ [niʔ-ən kʷəc-nəxʷ]
 ART man AUX-1 look-TR
 ‘the man (that/whom) I saw’
- (b) tə [ni:n kʷəcnəxʷ]
 tə [niʔ-ən kʷəc-nəxʷ]
 ART AUX-1 look-TR
 ‘the one (that/whom) I saw’

5.2 Inside relative clauses

When we look inside relative clauses, there are two main areas to consider. Firstly, what patterns do we find in terms of the semantic roles the coreferring argument can have in the relative clause and how is the role of the coreferring argument shown? Secondly, how are relative clauses indicated in the syntax; what markers are used? We will look at these questions in this section.

5.2.1 Semantic role(s) of the coreferring argument

In the introduction to section 5 we looked at the semantic roles that the coreferring argument can have in English. In (76), the examples from (58) are repeated, along with a few more to illustrate more possible semantic roles.¹⁹

- | | | |
|----------|--|------------|
| (76) (a) | the <u>man</u> [that sold me this computer] | ACTOR |
| (b) | the <u>soap</u> [that I washed it with] | INSTRUMENT |
| (c) | the <u>box</u> [that I keep it in] | LOCATION |
| (d) | the <u>thing</u> [that I really wanted to say] | UNDERGOER |
| (e) | the <u>shop</u> [that I got this stapler from] | SOURCE |
| (f) | the <u>friend</u> [that I gave the gift to] | RECIPIENT |
| (g) | the <u>town</u> [that I walked to] | GOAL |

As we can see, the coreferring argument in English relative clauses can have almost any semantic role; there is no neutralization. However, some languages do have restrictions on the semantic role that the coreferring argument can have. In the examples in (77) from Malagasy (Malayo-Polynesian, Madagascar) we see the roles that the coreferring argument in the relative clause have within the relative clause when its verb is in unmarked voice; either the single argument of an intransitive predicate or the actor of a transitive predicate (77b), a nominative-accusative pattern (Keenan 1985: 157–8).

- (77) (a) Manasa ny lamba ny vehivavy. SIMPLE CLAUSE
 wash the clothes the woman
 ‘The woman is washing the clothes.’

- (b) ny vehivavy (izay) manasa ny lamba NOUN PHRASE
 the woman that wash the clothes
 ‘the woman who is washing the clothes’
- (c) *ny lamba (izay) manasa ny vehivavy
 the clothes that wash the woman
 (‘the clothes that the woman is washing’)

In (77b) the coreferring argument is the actor of the transitive verb *manasa* ‘wash’ within the relative clause, while (77c) is ungrammatical because the coreferring argument is the undergoer argument of the verb *manasa*.

However, Malagasy also has marked voice constructions that enable other arguments to be the PSA, and therefore acceptable as the coreferring argument. In (78a) a passive voice construction promotes the undergoer to PSA, enabling it to be the coreferring argument in the relative clause. In (78b), another marked voice (the ‘instrumental voice’) promotes the instrument in a similar way.

- (78) (a) ny lamba (izay) sasan-’ny vehivavy
 the clothes that wash.PASS-the woman
 ‘the clothes that are washed by the woman’
- (b) ny savony (izay) anasan-Rasoala lamba
 the soap (that) wash.INS.PASS-Rasoala clothes
 ‘the soap that Rasoala washed clothes with’

In Dyirbal (Pama-Nyungan, Australia) we find a different pattern (Dixon 1972: 100–2).

- (79) (a) ŋaɖa balan ɖugumbil [ŋina-ŋu] buɕa-n.
 I.NOM DEIC.II.ABS woman.ABS sit-REL see-NFUT
 ‘I am watching the woman who is sitting down.’
- (b) ŋaɖa ŋina-ŋu yugu-ŋga [yaɕa-ŋgu nudi-ŋu-ra].
 I.NOM sit-NFUT tree-LOC man-ERG cut-REL-LOC
 ‘I am sitting on the tree the man felled.’
- (c) bayi yaɕa [bagal-ŋa-ŋu ba-gu-l yuɕi-gu]
 DEIC.I.ABS man.ABS spear-ANTIP-REL DEIC.I-DAT-I kangaroo-DAT
 banaga-ŋu.
 return-NFUT
 ‘The man who speared the kangaroo is returning.’

Describe the pattern you see in (79).

5.2.2 Marking of relative clauses

Languages have various strategies for marking or introducing relative clauses. The strategies used in English are illustrated in (80).

- (80) (a) the girl that I adopted
 (b) the girl who I adopted
 (c) the girl I adopted

Some languages introduce relative clauses with clause linkage markers, like *that* in (80a), and some use relative pronouns whose form often provides information

about the semantic role of the coreferring argument. In English, we use both of these strategies; *who(m)*, *when*, *where* and *why* can all be used as relative pronouns; *who* is illustrated in (80b).²⁰ We might also find neither of these features used, the ‘gap’ strategy, as in (80c).

Cross-linguistically, the gap strategy as exemplified in (80c) is the most common, with particular frequency in east and south-east Asia. In relative clauses such as these, as well as those that use clause linkage markers, one of the arguments of the predicate in the relative clause is syntactically ‘missing’. We see the ‘gap’ strategy used in the Tatar (Turkic, Russian Federation) data in (81) (Comrie 1981: 81).

- (81) (a) [bar-gan] keše
 go-PST.PTCP man
 ‘the man who went’
- (b) [bez söjlä-š-kän] keše
 we talk-RECP-PST.PTCP man
 ‘the man who we talked with’

The relative clauses in square brackets in (81a) and (b), occurring before the head nouns, are missing a syntactic argument. There is no relative clause marker or relative pronoun in the relative clauses.

We saw examples of languages that use clause linkage markers to introduce relative clauses in (60)–(62), from Brazilian Portuguese, Maltese and Indonesian respectively. In (65) and (71a) we illustrated the use of ‘nominalizer’ morphemes in Mangghuer and Mongsen Ao, which indicate that the clause has the function of modifying a noun.

In American Sign Language, restrictive relative clauses are indicated by non-manual features: raised eyebrows, a backwards tilt of the head and a contraction of the facial muscles of the cheeks and upper lip while signing a clause signify a relative clause (Liddell 2003: 54).

Relative pronouns are most common in the Indo-European languages of Europe (Comrie and Kuteva 2008). In Russian, for example, the relative pronoun *kotorei* (который) agrees with the coreferring argument in gender and number and appears in the case form appropriate for its role in the relative clause. Hence in (82a) the relative pronoun is marked with the feminine singular accusative suffix *-yu* (ю) in agreement with the undergoer role of the feminine noun *kniga* within the relative clause.

- (82) (a) Vot kniga kotoryu ya chital.
 here book which.ACC I was.reading
 ‘Here is the book which I was reading.’
- (b) Vot djevushka kotoroi ya dal knigu.
 here girl which.DAT I gave book
 ‘Here is the girl who I gave the book to.’

In (82b), on the other hand, the relative pronoun is marked with the feminine singular dative suffix *-oi* (ой), reflecting the role of *djevushka* as recipient (Kemple 1993: 38). In relative clauses containing relative pronouns, the argument in the clause is not ‘missing’ because the pronoun represents the coreferring argument. The relative pronoun often appears in initial position within the relative clause, as we see in the Russian data in (82) as well as the English translations. I will describe this special position in more detail in chapter 8.

In this section we have seen that all relative clauses share the function of modifying a noun, but that there are variations in how these subordinate clauses are expressed syntactically.

Section summary

In this section you have learned:

- to differentiate externally headed, internally headed and headless relative clauses,
- to be aware of restrictions on the role of the coreferring argument in the relative clause,
- to look for ways that languages mark relative clauses.
- **KEY TERMS:** (restrictive) relative clause, relative pronoun, coreferring argument, externally headed, internally headed, headless.
- **EXERCISES:** A4, A5, B8, B9, B10

Further reading

For other types of complex noun phrases, see Van Valin (2005: 260–7). For discussion and analyses of serial verb constructions, see Aikhenvald and Dixon (2006).

Exercises

A. Exercises from English

1. *Complex sentences

The constituent representation of a complex English sentence involving all three levels of juncture and two types of connection is given in Figure 7.21. Identify the complex constructions in this sentence.

2. *Complex sentences

Match the sentences with the type: put one number in each blank box in the table.

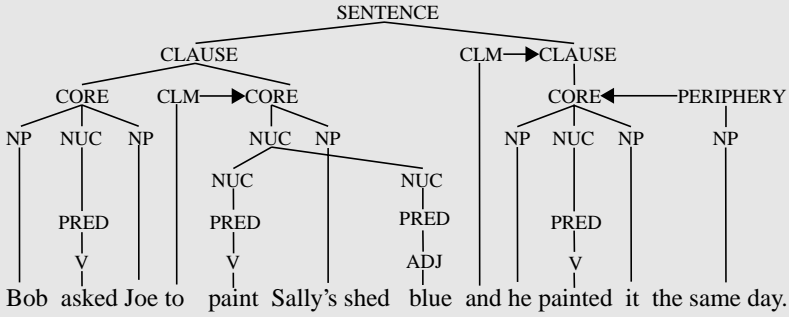


Figure 7.21 English complex sentence for exercise A1

- (1) I told him but he doesn't listen.
- (2) Leah tipped over the pot of soup.
- (3) I'll go to Spanish classes before I travel to Spain.
- (4) Ryan must try to walk to Melbourne.
- (5) That Dave is bald won't bother Cheryl.
- (6) Bob has to order Jane to walk to Berlin.
- (7) I'm going to hit you if you don't stop it.

Table 7.1 Complex construction table for exercise A2

	Coordination	Subordination	Cosubordination
Clausal			
'ad-clause' modifier			
Core			
'ad-core' modifier			
Nuclear			

3. **Complex sentences

Determine the level and type of connection in the (a) sentences below. The (b) and (c) sentences are there to help you analyse the (a) sentences.

Draw the constituent and operator representations for (1a), (4a) and (6a).

- (1) a. Kelly can run fast but will she win?
b. *Kelly can run fast and will she win?
- (2) a. An officer can command a soldier to fight.
- (3) a. Mary understood Bob lying to her.
b. *Mary understood yesterday Bob lying to her.
- (4) a. Bob informed Mary yesterday that Jack can lift a car.
b. *That Jack can lift a car Bob informed Mary yesterday.

- (5) a. Bob must promise to stop lying.
 (6) a. Bob might sit down and consider his decision.
 b. *Bob might sit down and might not consider his decision.
 (7) a. Jack booked a table before he had dinner.
 b. Jack had dinner with Mary yesterday.
 c. Before he had dinner, Jack booked a table.

4. *Relative clauses

Identify and draw brackets around the noun phrases that contain relative clauses in these sentences, draw a second set of square brackets around the relative clauses, and underline the head nouns.

Give the semantic role of the coreferring argument in the relative clause in each sentence as actor, undergoer or non-macrorole argument. For non-macrorole arguments, specify the semantic role (*accompaniment, benefactive, instrument, etc.*).

- (1) E.g. I ate [all the leftover cake [that no-one else wanted]]. UNDERGOER
 (2) Jennifer caught the dog that fell out of the window.
 (3) A kid I went to school with is now a famous chef.
 (4) She hasn't seen the film you're going to watch this evening.
 (5) He licked the spoon you're eating your yogurt with.
 (6) The shop that sells those fluffy toys that your little sister likes is having a sale.

5. **Relative clauses

In section 5.2.2 we saw that English sometimes marks relative clauses with *that* or with relative pronouns, and sometimes does not use either one.

Determine when it is acceptable to have relative clauses unmarked using the following data or your own. ('Ø' indicates the absence of marking.) Why do you think English patterns this way?

- (1) a man that/who/Ø I saw
 (2) the man that/who/Ø I used to dance with
 (3) the woman that/who/Ø I sold my car to
 (4) the kid that/who/Ø I got conjunctivitis from
 (5) the dogs that/who/*Ø chased me.

B. Exercises from other languages

1. *Mangghuer (Mongolic, China)²¹

The following sentences are examples of core coordination (actor-control) constructions that express purpose.

Draw the constituent and operator representations for all the examples. Include the internal structure of the noun phrases where they consist of more than one word. (Treat *-la* 'PURP' as a clause linkage marker for the purposes of the exercise.)

- (1) Bi qimai heghe-la ri-ba.
1SG 2SG.DAT take-PURP come-SBJ.PFV
'I've come to take you.'
- (2) Dasi qijighe chuangmu-la yao-a.
1PL flower pick-PURP go-VOL
'Let's go to pick flowers.'
- (3) Gan=ni kao jiaoduer asi dangla-la xi-ku, ...
3SG=GEN son every.day livestock herd-PURP go-IPFV
'(When) her son went to herd livestock every day ...'
- (4) Bersi liang-ge ti kong=ni beila-la ri-jiang gelang.
tiger two-CLF that person=ACC carry-PURP come-OBJV.PFV HSY
'(Actually), two tigers came to carry that person (away), they say.'

2. **Bengali (Indo-Iranian, Bangladesh)²²

All the following sentences are the same type of complex construction. Determine the juncture level and then the type of connection involved.

- (1) aami cheleṭike kaaj korte bollaam.
I boy.DAT work do.INF said
'I told the boy to (do) work.'
- (2) aami cheleṭike boste hokum korlaam.
I boy.DAT sit.INF ordered
'I ordered the boy to sit.'
- (3) a. aami cheleṭike kaaste sunlaam.
I boy.DAT cough.INF heard
'I heard the boy cough.'
- b. O bosome aami cheleṭike naa kaaste sunlaam.
finally I boy.DAT NEG cough.INF heard
'Finally I heard the boy not cough.'
- c. aami cheleṭike kaaste sunlaam naa.
I boy.DAT cough.INF heard NEG
'I didn't hear the boy cough.'
- d. aami cheleṭike kichukkhon kese jete sunlaam.
I boy.DAT awhile cough go.INF heard
'I heard the boy go on coughing for a while.'
- (4) a. aami cheleṭike kaaj korte dekhlaam.
I boy.DAT work do.INF saw
'I saw the boy work.'
- b. aami cheleṭike kaaj naa korte dekhlaam.
I boy.DAT work NEG do.INF saw
'I saw the boy not working.'
- c. aami cheleṭike kaaj kore jete dekhlaam.
I boy.DAT work do go.INF saw
'I saw the boy go on working.'

3. **Korean (Isolate: Korea)²³

Examine the following Korean data – all these sentences are examples of the same complex construction. What level and type is the construction? What is the evidence for your conclusion?

Draw the constituent and operator representations for (2d).

- (1) a. Emeni-ka atul-eykey nol-key hay-ss-ta.
mother-NOM son-DAT play-CLM do-PST-DECL
'The mother made the son play.'
- b. Emeni-ka atul-eykey nol-swiiss-key ha-lswueps-ess-ta.
mother-NOM son-DAT play-ABLE-CLM do-UNABLE-PST-DECL
'The mother could not make the son be able to play.'
- c. Emeni-nun nol-swiiss-key atul-eykey ha-lswueps-ess-ta.
mother-TOP play-ABLE-CLM son-DAT do-UNABLE-PST-DECL
'The mother could not make the son be able to play.'
- (2) a. Chelswu-ka Swunhi-eykey chayk-ul ilk-key hay-ss-ta.
Chelswu-NOM Swunhi-DAT book-ACC read-CLM do-PST-DECL
'Chulsoo made Soonhi read the book.'
- b. Chelswu-ka Swunhi-eykey chayk-ul ilk-ulswueps-key
Chelswu-NOM Swunhi-DAT book-ACC read-UNABLE-CLM
ha-lswuiss-ss-ta.
do-ABLE-PST-DECL
'Chulsoo could make Soonhi be unable to read the book.'
- c. Chelswu-ka Swunhi-eykey chayk-ul ilk-cimosha-key
Chelswu-NOM Swunhi-DAT book-ACC read-NEG-CLM
ha-lswuiss-ss-ta.
do-ABLE-PST-DECL
'Chulsoo could make Soonhi not read the book.'
- d. Chelswu-nun chayk-ul ilk-ulswueps-key Swunhi-eykey
Chelswu-TOP book-ACC read-UNABLE-CLM Swunhi-DAT
ha-lswuiss-ss-ta.
do-ABLE-PST-DECL
'Chulsoo could make Soonhi be unable to read the book.'
- e. Chelswu-nun chayk-ul ilk-cimosha-key Swunhi-eykey
Chelswu-TOP book-ACC read-NEG-CLM Swunhi-DAT
ha-lswuiss-ss-ta.
do-ABLE-PST-DECL
'Chulsoo could make Soonhi be unable to read the book.'

4. **Chechen (East Caucasian, Chechnya, Russian Federation)²⁴

Determine the level of juncture in the data and then the type of connection (one coordination, one subordination and one cosubordination) in each set.

All morphemes glossed with CVB . . . are non-finite verbal suffixes; CVB stands for converb. B, D, J and V are gender prefixes. Ignore the placement of commas in the sentences.

- (1) a. Ahwmada ch'aara iicara, t'q'a Marjamas cicig doexkira.
Ahmed:ERG fish buy:WP CLM Mary:ERG cat sell:WP
'Ahmed bought a fish, and Mary sold a cat.'
- b. Ahwmad ch'aara uecush vu, t'q'a Marjam cicig
Ahmed fish buy:CVB.SIM v:be:PRS CLM Mary:ERG cat
uecush ju.
buy:CVB.SIM J:be:PRS
'Ahmed is buying a fish, and Mary is buying a cat.'
- c. Maliika loomax hwal jeelira, amma (iza) oahwa ca
Malika mountain:LAT DEIC J:go:WP CLM 3SG:ABS down not
joessara.
J:descend:WP
'Malika climbed up the mountain but (she) didn't climb down.'
- d. Ahwmad ch'aara uecush vu, amma ahw ma ieca!
Ahmed fish buy:CVB.SIM v:be:PRS CLM 2SG:ERG not buy:IMP
'Ahmed is buying a fish, but don't you buy (one), too!'
- e. Ahwmad loomax cheakhka hwal veelara amma
Ahmed mountain:LAT quickly up v:ascend:WP CLM
mialligsh oahwa voessara?
slowly down v:descend:WP
'Ahmed ascended the mountain quickly, but descended it slowly?'
(Interrogative illocutionary force only on second conjunct.)
- (2) a. Ahwmad, zhwała 'a iecna, vilxira.
Ahmed dog CLM buy:CVB.ANT v:cry:WP
'Ahmed bought a dog and cried.'
- b. Ahwmad, loomax cheaxka hwal 'a vialla, mialligsh
Ahmed mountain:LAT quickly DEIC CLM v:go:CVB.ANT slowly
oahwa voessarii?
down v:descend:WP:INT
'Did Ahmed climb up the mountain quickly and down slowly?'
- c. Maliika, tykana 'a jaghna, c'a je'arii?
Malika store:DAT CLM J:go:CVB.ANT house J:come:WP:INT
'Did Malika go to the store and come home?'
- d. Ahwmad, niaw 'a joellush, chuehwa veelara.
Ahmed door CLM J:open:CVB.SIM inside v:go:WP
'Opening the door, Ahmed went inside.'
- e. Cicko, ch'aara 'a goj, 'i ca bu'u.
cat:ERG fish CLM see:CVB.PROG.ANT 3SG:ABS not B:eat:PRS
'The cat, having seen the fish, doesn't eat it.'
- (3) a. Ahwmada zhwała ieccha, Marjam jilxira.
Ahmed:ERG dog buy:CVB.TEMP Mary J:cry:WP
'When Ahmed bought a dog, Mary cried.'
- b. Maliikina Ahwmad gaalie, iza dwa-vuedu.
Malika:DAT Ahmed see:CVB.POST 3SG:ABS DEIC-V:come:PRS
'Before Malika sees Ahmed, he leaves.'

- c. Maliika c'a je'acha, Ahwmad irs dolush
 Malika house J:come:CVB.TEMP Ahmed happiness D:be:CVB.SIM
 vaacara.
 v:be:WP:NEG
 'When Malika came home, Ahmed wasn't happy.'
- d. Maliika c'a ca je'acha, Ahwmad irs
 Malika house not J:come:CVB.TEMP Ahmed happiness
 dolush vara.
 D:be:CVB.SIM v:be:WP
 'When Malika didn't come home, Ahmed was happy.'
- e. As kinchka jiishira, so dwa-vizhalc.
 1SG:ERG book J:read:WP 1SG:ABS DEIC-V:sleep:CVB.UNTIL
 'I read the book until I fell asleep.'

5. *Tetun Dili (Malayo-Polynesian creole, East Timor)²⁵

Describe the types of serial verb constructions you see in the following sets of data in terms of the meaning of the combined predicates. Comment too on syntactic patterns you see.

- (1) a. Labarik oan monu tún hosi kadiera.
 child offspring fall descend from chair
 'The small child fell from the chair.'
- b. Ami halai sae tó Dare nebá.
 1PL.EXCL run ascend until Dare there
 'We ran up there to Dare.'
- (2) a. Tuda bola mai.
 throw ball come
 'Throw the ball over here.'
- b. Ami sae bá tó foho leten.
 1PL.EXCL ascend go until mountain top
 'We climbed up to the summit (away from here).'
- (3) a. Prima Maria bá vizita amá iha ospítal.
 cousin.F Mary go visit mum LOC hospital
 'Cousin Mary went to visit mum in the hospital.'
- b. Ami mai han fali.
 1PL.EXCL come eat again
 'We again came and ate.'
- c. Ami bá sosa paun.
 1PL.EXCL go buy bread
 'We went and bought bread.'
- (4) a. Abó lori tudik ko'a paun.
 grandparent take knife cut bread.
 'Grandfather used the knife to cut the bread.'

- b. Abó ko'a paun lori tudik.
grandparent cut bread take knife
'Grandfather cut the bread with the knife.'
- c. Sira funu lori fatuk.
3PL war use stones
'They fight with stones.'
- d. Sira lori tudik sona malu.
3PL take knife stab RECP
'They use knives to stab each other.' (or 'They stab each other with knives.')
- (5) a. Sira halo mate ikan.
3PL make die fish
'They killed the fish (by neglecting to feed them).'
- b. Nía fó hán bebé.
3SG give eat baby
'She feeds the baby.'
- c. Nía fó bé ba labarik hemu.
3SG give water to child drink
'She gave the child water to drink (and he drank it).'

6. *Paamese (Oceanic, Vanuatu)²⁶

In the following Paamese data, there are core-level serial verb constructions and clause coordination constructions. All the (a) examples represent one of those types and all the (b) sentences are the other type. Which is which, and how do you know?

- (1) a. inau nuas vuas he:mat.
inau ni-uasi vuasi hee-mate
1SG 1SG.DFUT-hit pig 3SG.DFUT-die
'I will hit the pig to death.'
- b. inau nuas vuas kai he:mat.
inau ni-uasi vuasi kaie hee-mate
1SG 1SG.DFUT-hit pig 3SG 3SG.DFUT-die
'I will hit the pig and it will die.'
- (2) a. *inau nuas vuas ka: he:mat.
inau ni-uasi vuasi kaa hee-mate
1SG 1SG.DFUT-hit pig and 3SG.DFUT-die
- b. inau nuas vuas ka: kai he:mat.
inau ni-uasi vuasi kaa kaie hee-mate
1SG 1SG.DFUT-hit pig and 3SG 3SG.DFUT-die
'I will hit the pig and it will die.'
- (3) a. inau nuas vuas he:matemau.
inau ni-uasi vuasi hee-mate-mau
1SG 1SG.DFUT-hit pig 3SG.DFUT-die-first
'I will hit the pig to death first.'

- b. inau nuas vuasimau he:mat.
 inau ni-uasi vuasi-mau hee-mate
 1SG 1SG.DFUT-hit pig-first 3SG.DFUT-die
 ‘I will hit the pig first and it will die.’
- b'. kail amuas vuas ro:mattei.
 kaile a-muasi vuasi Ø-roo-mate-tei
 3PL 3PL.RL-hit pig 3SG.RL-NEGI-die-NEGII
 ‘They hit the pig but it did not die.’
- (4) a. sa:k nakuri naha:.
 saaki na-kuri-e na-ha:
 shark 3SG.POT-take-3SG 3SG.POT-go
 ‘A shark might take him away.’
- b. sa:k nakuri va:.
 saaki na-kuri-e Ø-vaa
 shark 3SG.POT-take-3SG 3SG.RL-go
 ‘A shark might have taken him but it went away.’

7. **Saramaccan Creole (creole, Suriname)²⁷

Examine the following data from Saramaccan Creole. The verb *túwε* has the basic meaning ‘throw’ as shown in (1a) and can retain this meaning in serial verb constructions, as shown in (1b).

However, it has also developed beyond this basic meaning in its use in transitive serial verb constructions, as shown in the examples in (2). Give, as far as you can, a unified account of the meaning of *túwε* when it appears as the final verb in a serial verb construction in the data in (2).

- (1) a. Mi túwε dí súndju a dí can.
 I throw DEF dirt LOC DEF trashcan
 ‘I threw the dirty thing into the trashcan.’
- b. A ba pɔtɔpɔtɔ túwε a wáta.
 he carry mud throw LOC water
 ‘He carried mud to the water (and threw it in).’
- (2) a. Kobi tɔtɔ dí wómi túwε.
 Kobi push DEF man throw
 ‘Kobi pushed the man down.’
- b. A kóti dí páu túwε.
 he cut DEF tree throw
 ‘He cut the tree down.’
- c. Kobi fáa dí páu túwε.
 Kobi fell DEF tree throw
 ‘Kobi felled the tree.’ (*fáa* = ‘to make fall’)
- d. De kándi té túwε a kíiki.
 they pour tea throw LOC creek
 ‘They poured tea into the creek.’

- e. Kokú tutu dí wáta túwe a gɔ́.
Koku pour DEF water throw LOC ground
'Koku spilled water on the floor.'
- f. A súti dí patupátu túwe gó kaí a wáta.
he shoot DEF duck throw go fall LOC water
'He shot the duck (and) it fell into the water.'
- g. A jáka déé ganíã túwe gó a dɔ́.
he chase DEF.PL chicken throw go LOC outside
'He chased the chickens outside.'
- h. Háí mi túwe a dí wáta kó.
pull me throw LOC DEF water come
'Pull me in onto the shore.'
- i. Vínde ã túwe gó naandé.
throw it throw go there
'Throw it over (onto) there.'

8. *Kagayanen (Malayo-Polynesian: Philippines)²⁸

Examine the following Kagayanen data and identify the noun phrases containing relative clauses by putting square brackets around the noun phrases and underlining the relative clauses within them.

Describe how relative clauses are introduced. Also indicate based on the data which semantic/syntactic roles the 'missing' argument in the relative clause can have and how this is morpho-syntactically expressed. (Ignore the difference between *di* and *unti*, both glossed as 'here'.)

The sentences in (8) are for reference, to help with your analysis.

- (1) Ake na magulang na ga=iling di gibii
1SG.POSS LNK older.sibling LNK ATV.S.RL=go here yesterday
ga=larga gina.
ATV.S.RL=depart earlier
'My older sibling who came here yesterday left on a trip earlier.'
- (2) patay na itaw na ga=balik
dead LNK person LNK ATV.S.RL=return
'a dead person who came back'
- (3) Ake na magulang na ga=kaan unti gibii
1SG.POSS LNK older.sibling LNK ATV.S.RL=eat here yesterday
ga=larga gina.
ATV.S.RL=depart earlier
'My older sibling who ate here yesterday left on a trip earlier.'
- (4) mama na ga=sakay ta kabaw
man LNK ATV.S.RL=ride OBL carabao
'a man riding a carabao'
- (5) Ake na magulang na pa=tiro no gibii
1SG.POSS LNK older.sibling LNK ATV.U.RL=hit 2SG.ERG yesterday

ga=larga gina.

ATV.S.RL=depart earlier

‘My older sibling who you hit yesterday left on a trip earlier.’

- (6) Ake na magulang na pa=iling=an
 1SG.POSS LNK older.sibling LNK ATV.LOC.RL=go=APPL
 nay gibii ga=larga gina.
 1PL.EXCL.ERG yesterday ATV.S.RL=depart earlier
 ‘My older sibling who we went to yesterday left on a trip earlier.’
- (7) mga dlaga na ga=tabang ki kami
 PL single.girl LNK ATV.S.RL=help OBL 1.PL.EXCL.OBL
 ‘the single girls who were helping us’
- (8) a. Pa=batang [din] [bulak an] [naan ta lamisa].
 ATV.U.RL=put 3SG.ERG flower(ABS) DEF.M SP.DEF OBL table
 ‘She put the flower on the table.’
- b. Ga=batang [kanen] [ta bulak an] [naan ta lamisa].
 ATV.ACT.RL=put 3SG.ABS OBL flower DEF.M SP.DEF OBL table
 ‘She put the flower on the table.’
- c. Pa=batang=an [din] [lamisa an] [ta bulak].
 ATV.LOC.RL=put=APPL 3SG.ERG table(ABS) DEF.M OBL flower
 ‘She put some flowers on the table.’
- d. Pa=utod [ta mama] [kaoy ya].
 ATV.U.RL=cut ERG man wood(ABS) DEF.F
 ‘The man cut the wood.’

9. **Logba (Atlantic-Congo, Togo)²⁹

Examine the following Logba noun phrases containing relative clauses. Put square brackets around the relevant noun phrases and underline the relative clauses.

Example 1 has been done for you.

What semantic roles can the ‘missing’ argument have within the relative clause?

Describe what the verb agreement in the relative clause tells us about the grammatical relations system. (Count *ɔ*-, *ɔ*-, *o*- and *i*- as variants of the same morpheme for the sake of the exercise.)

What is the order of elements within the noun phrase as a whole? In other words, in what order do the head noun, operators and relative clause appear? How does the theory we have learned predict these facts?

Draw the syntactic and operator representation for the noun phrase in (4).

- (1) [ɔ-sa=a xé ɔ-nɛ i-mbi=é] ɔ-gá gú.
 CLF-man=DET RPRO 3SG-buy CLF-rice=DET 3SG-pay price
 ‘The man who bought the rice paid.’
- (2) iva=á xé e-te-mí be u-wá i-ɖu i-fiami.
 thing=DET RPRO 3PL-HAB-take clear CLF-forest 3SG-be CLF-cutlass
 ‘The thing they use to clear the forest is (a) cutlass.’

- (3) e-bi-twɔ a-mɛ xé ma-lá suku i-dzɛ e-ɖu
 CLF-child-PL AGR-this RPRO 1SG-beat school CLF-today 3PL-be
 a-kpana-wo.
 CLF-logba-PL
 ‘These children who I beat today in school are Logba citizens.’
- (4) a-sá nango ata a-mé xé e-fezi e-bá.
 CLF-men big five AGR-those RPRO 3PL-cry 3PL-come
 ‘Those three big men who cried came.’
- (5) e-bití=é xé ɔ-baa o-ɖu amu bí.
 CLF-child=DET RPRO 3SG-come 3SG-be 1SG.POSS child
 ‘The child who came was my child.’
- (6) i-mb=é xé ma-nɛ i-kanyi.
 CLF-rice=DET RPRO 1SG-buy 3SG-burn
 ‘The rice that I bought was burnt.’
- (7) ma-lá a-klɔ́ xé amú má ɔ-lé.
 1SG-beat CLF-goat RPRO 1SG mother 3SG-buy
 ‘I beat the goat that my mother bought.’

10. **Tongan (Oceanic: Tonga)³⁰

Tongan has two strategies in relative clauses: in some cases the relativized argument does not appear in the relative clause, while in other cases there is a pronominal copy or element *ai* in the relative clause.

For what types of arguments does each strategy apply? (The case markers should give you a clue.)

- (1) e fefine na'e tangi
 REF woman PST cry
 ‘the woman who cried’
- (2) e fefine na'e fili 'e Sione
 REF woman PST choose ERG Sione
 ‘the woman whom Sione chose’
- (3) *e fefine na'a fili 'a Sione
 REF woman PST choose ABS Sione
 (‘the woman who (she) chose Sione’)
- (4) e fefine na'a ne fili 'a Sione
 REF woman PST 3.SG choose ABS Sione
 ‘the woman who (she) chose Sione’
- (5) e fefine na'e sio ki ai 'a Sione
 REF woman PST see to RSM ABS Sione
 ‘the woman whom Sione saw’

11. **TEXT-BASED EXERCISE: Qiang (Tibeto-Burman, China)³¹

The Qiang language is spoken by about 70,000 people in the Sichuan province of China (LaPolla and Huang 2003: 251–2).

This exercise requires you to analyse a text rather than a selection of ‘pre-cooked’ sentences. At this point, you should be able to look through the text and pick out some of the language structure features we have examined so far. Exploring the typology of the language will also help you know what features to expect in the text: the Ethnologue (Gordon 2005) is a good starting point.

The text is a complete story which has already been divided into chunks, broken down into morphemes and glossed by the person who collected the text. Begin by locating the predicate(s) of each sentence (which may not be the verb) and where you think the clause and noun phrase boundaries are. Then see what else you can identify, for example, a basic core template, operators, adjuncts, complex constructions, morphological patterns, etc. You will also be able to develop a preliminary lexicon of words and morphemes.

As well as noting what you find, note the parts of the text that were difficult to analyse, and why. Remember to base your analysis on the Qiang data and not on the English translation (although the English may give you some guidance).

The story of the creation of the world

- (1) qe¹lotʂu-ka, mutu-la mujuqũ zguə-zì we-i, zəp-le:
 in.the.past-LOC heaven-LOC sun nine-CLF exist-HSY earth-DEF.CLF
 ə-tʂhəqha-z-əi.
 DIR-burn-CAUS-HSY
 ‘Long, long ago, there were nine suns in the heaven which burned the earth.’
- (2) mə ŋa ɣlu jə-tʂ-ŋuəŋi, zuamə-φu o-zgu-ta
 older.brother COM younger.sister two-CLF-TOP cypress-tree one-CLF-LOC
 i-pi-χua-ŋi, fiə-mu-xtɕu-wei.
 DIR-hide-because-ADV DIR-NEG-burn-HSY
 ‘Because a brother and younger sister hid in a great cypress (that honoured the gods), they were not burned to death.’
- (3) steke-ta mi pe¹zə-s ŋuə-χua-ŋi, mə
 later-LOC people raise(child)-NOM COP-because-ADV older.brother
 ŋa ɣlu lə-zì i-dzi-tɕi,
 COM younger.sister DEF-CLF DIR-discuss-3PL
 ‘Later, in order to propagate descendents, the brother and sister talked it over (and decided that)’
- (4) ŋutɕuku dzuabɿ e-xʂe fiə-bi-ŋi,
 each stone.mill one-CLF DIR-carry.on.back-ADV
 ku-q-ta-wu fiə-ɣlu,
 mountain-head-LOC-ABL DIR-roll
 ‘each would carry a stone mill on his or her back and roll it down from the mountain peak,’

- (5) dzuaʁl jə-xʂe e-tʂetup-tu, ɲizzi oqpi pə-s,
stone.mill two-CLF DIR-bump.into-LNK 3DU one.family do-NOM
'If the two stone mills joined together, the two could get married.'
- (6) dzuaʁl jə-xʂe fiə-ɣlu-s-ta, qhuat e-tʂetup-wei,
stone.mill two-CLF DIR-roll-NOM-LOC as.it.happens DIR-bump.into-HSY
fiatsəi-ɲike,
this.manner-after
'As it happened, when the two stone mills rolled down (to the river bank), they joined together.'
- (7) mə ɲa ɣlu lə-zi oqpi fiə-pə-i.
older.brother COM younger.sister DEF-CLF one.family DIR-do-HSY
'(and so) the brother and sister married.'
- (8) ə-jə-p pe-ɲi, ɣlu-le: mi qes
1-2-year become-ADV younger.sister-DEF.CLF people form
mə-ɲuə ke: i-çi.
NEG-COP INDF.CLF DIR-release
'After a few years, the younger sister gave birth to a monster not of human form.'
- (9) mə-le: tə-khueq, duʁl-le:-wu sə-xte-ɲi
older.brother-DEF.CLF DIR-angry scythe-DEF.CLF-INS DIR-chop-LNK
tʂetçi-la da-bũ.
everywhere-LOC DIR-throw(away)
'The older brother was so angry he used a scythe to chop it into pieces and scattered them wildly everywhere.'
- (10) steke la-s-ka, tʂetçi-la-wu mufũ tə-laji,
later DEF-one.day-LOC everywhere-LOC-ABL smoke DIR-come
'The next day when they got up, they saw the smoke (of cooking fires) everywhere.'
- (11) fiatsəi-ɲike, mi luji.
this.manner-after people come
'and henceforth there was humankind.'

8 The structure of information

KEY TOPICS

- Describing participants
- Information structure in sentences
- Focus types
- Questions, commands and other sentence types

So far we have looked at morpho-syntactic structure and semantic meaning. The third aspect of language structure that we turn to now is **INFORMATION STRUCTURE**. When we think about language as a way of communicating, we need to think about how people choose to structure their utterances, based on what they know and what they think their hearer might already know.

Take a look at the sentences in (1). They all describe the same basic situation and have the same basic semantic content but would be used in different circumstances: describe the situations in which each one would be appropriate.

- (1) (a) There is a spider on your back.
(b) It's a spider that's on your back.
(c) The spider, it's on your back.
(d) It's on your back.
(e) What's on your back is a spider.

1 Information structure terms and concepts

Before we discuss information structure in detail, this section deals with some key terminology.

1.1 Describing referents

When we talk about referents, we choose how to describe them based on a number of factors. One factor is how well our hearer knows the person we are talking about. Another factor is whether we have recently been talking about that person or not. Look at the sentences in (2) as examples.

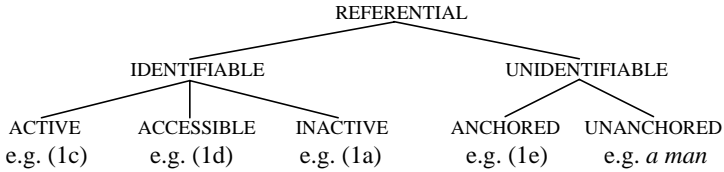


Figure 8.1 *The cognitive status of referents*

- (2) (a) Barack Obama likes knitting.
 (b) The US president likes knitting.
 (c) He likes knitting.
 (d) That man over there likes knitting.
 (e) A man I know likes knitting.

All of the underlined noun phrases in (2) could refer to the same person. The description we chose would depend on the factors given above. For example, we would normally only use a proper name like *Barack Obama* if we could be sure the hearer would have heard of the person that we were thinking about, even if we had not recently been talking about them. The use of a definite noun phrase also implies the speaker thinks the hearer will associate the description (*the US president*) with the same referent as she has in mind, because that referent is **IDENTIFIABLE** to them.

We would only use a **PRONOUN** such as *he* in (2c) if we had recently been talking about the person (in other words, if the referent were active in the conversation). Only then would the hearer connect the pronoun with the intended referent.

In sentence (2d), the description, using a demonstrative *that*, ‘points to’ a referent that may be physically present or may have been a topic of discussion at an earlier time. In examples (2a–d), the referent is identifiable to the hearer: in other words, upon hearing the noun phrase the hearer can identify the referent either because it is someone they know about already or because it is present in the text, the conversation or physical space. Identifiable referents are often expressed using either pronouns, proper names or definite noun phrases (if languages have determiners, see below).

On the other hand, in (2e) the hearer cannot know (and perhaps is not intended to know) who the speaker is referring to. The referent is **UNIDENTIFIABLE** to the hearer and most likely new to the conversation and to the hearer. In the example the referent is, however, **ANCHORED**: some extra information is given in a relative clause that describes the referent and, in this case, makes a connection with the speaker (*a man I know*). Unidentifiable referents are often expressed with indefinite determiners.

These features are summarized in [Figure 8.1](#).¹

Languages that do not use definiteness markers may mark the identifiability of referents in other ways. In Czech (Slavic, Czech Republic), the identifiability of

the noun phrase *kniha* ('book') is expressed through its syntactic position, as we see in (3) (Lambrecht 1994: 86).

- | | | |
|---------|--|----------------|
| (3) (a) | <u>Kniha</u> je na stole.
book is on table
'The book is on the table.' | IDENTIFIABLE |
| (b) | Na stole je <u>kniha</u> .
'On the table (there) is a book.' | UNIDENTIFIABLE |

In (3a) the identifiable referent appears clause-initially while the unidentifiable referent in (3b) appears clause-finally. (We will look later in this chapter at the connection between word order and focus.)

In some languages, identifiability may only be marked on certain noun phrases while in other languages, there may be only definite markers or only indefinite markers.² In Latvian (Baltic, Latvia), markers that indicate definiteness appear attached to adjectives that accompany the noun, as we see in (4) where *jaun* 'new' is an adjective characterizing 'boy', itself modifying the head noun *krēsls* 'chair' (Christen 2001: 515).

- | | |
|---------|--|
| (4) (a) | jaun-ais zēn-a krēsls
new-NOM.DEF boy-GEN chair
'the new boy's chair' |
| (b) | jaun-s zēn-a krēsls
new-NOM.INDF boy-GEN chair
'a new boy's chair' |

The adjective *jaun* is marked with a definite suffix *-ais* in (4a) and an indefinite suffix *-s* in (4b).

1.2 Presupposition and assertion, topic and focus

When we communicate and choose how to express what we want to say, we take into account the context. The context, as we saw above for noun phrases, includes what we think the hearer knows and what we have been recently talking about. We do not generally utter sentences that contain all-new information, that are 'out of the blue'. Sentences usually contain some information, some proposition, that the speaker thinks the hearer already knows or can accept as background information: this is called the **PRESUPPOSITION**. The speaker begins with this presupposed information and builds onto it some 'new' information, a new proposition that relates to the 'old' proposition in some way: this 'new' information forms the **ASSERTION** and may be morpho-syntactically marked to indicate that it is in focus.

The example in (5) illustrates these notions of presupposition and assertion. The sentence is a cleft construction, which is a particular syntactic structure used

Table 8.1 *Terms associated with information structure*

PRESUPPOSITION	ASSERTION
TOPIC	FOCUS
GIVEN/OLD	NEW
IDENTIFIABLE	UNIDENTIFIABLE
BACKGROUND	FOREGROUND

to place focus on a single constituent. (We examine cleft constructions further in section 2.2.3.)

- (5) It was Jane who witnessed the robbery.
 PRESUPPOSITION: Someone witnessed the robbery.
 ASSERTION: the identity of that ‘someone’ was ‘Jane’
 FOCUS: Jane

In uttering (5), the speaker assumes, or presupposes, that the hearer already knows that someone witnessed the robbery (as well, of course, as assuming the hearer knows that a robbery took place). What he is asserting (linked to that shared proposition) is that the person that witnessed that robbery was Jane. The syntactic element in **FOCUS**, or the **FOCUS DOMAIN**, in this sentence is *Jane*. Constituents that are part of the background or presupposition are **TOPICAL**. It is important to remember that presuppositions and assertions consist of propositions, while focus and topic apply to constituents.

All languages have some kind of grammatical system for marking this ‘old’ and ‘new’ information (or topical and focal information), using word order, intonation, morphological marking, or some combination of these strategies, as we will discover shortly.

As we have seen so far in this chapter, a number of the terms to do with information structure fall into two groups depending on whether they generally relate to the ‘old’ or ‘new’ information in a sentence. These are presented in the two columns in Table 8.1.

1.3 Focus types

In order to analyse how information structure ties in with syntactic structure, we need a way of describing which elements of the sentence are in focus. Sentences can contain different amounts of new information; the focus domain might be one constituent, as in (5), the whole sentence, or some part of it. We will examine these possibilities in this section, looking at the three types of focus structure that we find expressed in languages.³

PREDICATE FOCUS

SENTENCE FOCUS

NARROW FOCUS

Imagine the three sentences in (6) were said to you, one after the other. You might like to circle the information in each sentence that would be new to you in that context; in other words, circle the focus domain within each sentence.

- (6) (a) There's a bee on your hand . . .
 (b) It's looking hungry . . .
 (c) It's your donut that it wants to eat.

These three sentences illustrate the three types of focus structure that we will look at in this section. As we go through each type, go back and label each sentence in (6) with its focus type.

1.3.1 Sentence focus

In a sentence-focus construction the entire clause is focused (in other words, within the focus domain); everything is asserted and there is no presupposition. Many stories or conversations start with a sentence-focus construction since the speaker is setting the scene and introducing the participants to be talked about: an existential construction such as the one in (7a) is one syntactic strategy for expressing sentence focus. Sentence-focus constructions might also answer the general question *What happened?*, as in (7b), or be uttered out of the blue, as in (7c).

- (7) (a) There was once a small, tired-looking elephant. (. . .)
 (b) My television exploded during the season finale.
 (c) I can lick my own elbow!

In the sentences in (7), the whole sentence is underlined to show it is in focus; in English sentence focus normally includes placing a degree of stress on the privileged syntactic argument. We have created contexts where the sentences in (7) have sentence focus but it is important to note that each of the sentences would be ambiguous out of context. This is because the *potential* focus domain within a particular construction is distinct from the *actual* focus domain in a particular utterance.

In (7c), for example, the potential focus domain is the whole sentence. In the 'out of the blue' interpretation we assigned in (7c), the whole sentence is also the actual focus domain, but if we were to place narrow focus on *elbow*, for example, through intonation ((*No*), *I can lick my own ELBOW*) then the actual focus domain would be restricted to *elbow*.

1.3.2 Predicate focus

In all languages **PREDICATE FOCUS** is the unmarked (or 'default') type of focus structure.⁴ Sentences with predicate focus contain a topical constituent and an assertion made about that topic. The presupposition in these sentences is that the topical referent is familiar to the hearer (or something that the hearer can accept

as background information) and therefore a referent about which something can be asserted. The focus domain includes everything except the topical constituent.

In looking at the two examples in (8), imagine the two sentences are uttered by a speaker immediately after each other in a conversation. Sentence (8a) sets up the referent for the hearer so that in (8b) he is topical information and can be referred to with the pronoun *he* and the rest of the sentence is the assertion about that referent.

- (8) (a) This guy I know has a large collection of novelty spoons.
 (b) He is not married.

Sentence (8b), then, has a predicate focus structure.

1.3.3 Narrow focus

In sentences with narrow focus, as the name suggests, the focus domain is a single constituent. This has already been illustrated by the cleft construction in (5).⁵ Narrow focus is often used to provide the identity of a referent, as it does in (5). It picks out a single referent to the exclusion of others. It may also be used to correct or contrast, as illustrated in (9), in which the response by B in (9b) corrects the identity of one of the referents in A's statement in (9a).

- (9) (a) A: Taylor married Ridge.
 (b) B: No, it was BROOKE who married Ridge.

As you see in (9b), narrow focus (particularly when marked through intonation) is commonly indicated using small capital letters.

1.4 Focus structure and identifiability

In section 1.1 we looked at the factors that affect how we describe a referent. There is a connection between whether a noun phrase is focused and whether its referent is identifiable or unidentifiable. Let us look at the Czech example in (3) again, repeated here as (10).

- | | | |
|----------|---|----------------|
| (10) (a) | <u>Kniha</u> je na stole.
'The book is on the table.' | IDENTIFIABLE |
| (b) | Na stole je <u>kniha</u> .
'On the table (there) is a book.' | UNIDENTIFIABLE |

In (10a) the purpose, or 'assertion' of the sentence is to inform the hearer where the book is; we have predicate focus and so the noun *kniha* is not within the focus domain. In other words, in (10a) the noun *kniha* is the topic, referring to a specific identifiable book that the hearer already knows about. In (10b), on the other hand, *kniha* is within the focus domain since the purpose of the sentence is to assert the existence of a book; in other words, it is a 'new' or unidentifiable book that is referred to.

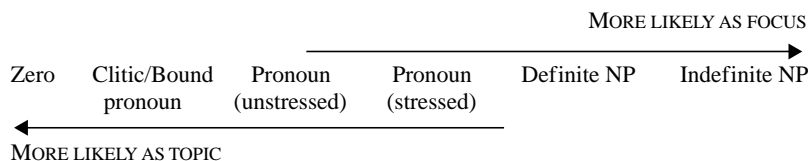


Figure 8.2 *Relationship between the expression of an NP and its pragmatic status*

We noted in section 1.1 that there is a connection between the identifiability of the referent and the way it is expressed (e.g. as a pronoun, a definite noun phrase, and so on). We can also now see that there is a connection between the form chosen to represent a referent and whether that referent is in focus or is a topical element. This correlation is represented in Figure 8.2.⁶

Section summary

In this section you have learned:

- to apply terminology associated with information structure,
- to recognize and describe different focus structure types.
- **KEY TERMS:** identifiability, definiteness, topic, focus, focus domain, presupposition, assertion, sentence focus, predicate focus, narrow focus, cleft construction.
- **EXERCISES:** A1

2 The morpho-syntactic marking of information structure

Languages mark focus structure in various ways. We have seen that in English we can use intonation or a combination of intonation and syntactic focus constructions. In this section we look at how other languages express the various focus types. Since predicate focus is the unmarked type, it generally has the least additional morpho-syntactic marking in clauses. Sentence focus and, in particular, narrow focus constructions often involve either the use of extra morphemes and/or syntactic constructions in their expression.

2.1 Morphological strategies

2.1.1 Focus marking

Many languages use extra morphemes to indicate focus, and narrow focus in particular. These may be affixes or independent particles that mark the element in focus. Aghem (Atlantic-Congo, Cameroon), for example, has a focus particle

nô that appears after a narrowly focused constituent, underlined in the examples in (11) (Hyman, Anderson and Watters 1979: 166).

- (11) (a) fú kí m̄ nyìŋ nô á kí'-bé.
 rat it PST run FOC in CLF-compound
 'The rat RAN (did not walk) in the compound.'
- (b) fú kí m̄ nyìŋ á kí'-bé nô.
 rat it PST run in CLF-compound FOC
 'The rat ran INSIDE THE COMPOUND (not inside the house).'

Thus in (11a), the particle appears after the verb *nyìŋ* 'run', marking that as in narrow focus, while in (11b) the locative prepositional phrase *á kí'bé* 'inside the compound' is marked as focused.

St'át'imcets (Salishan, Western Canada) is a head-marking language that has a default constituent order (with independent noun phrases) of Predicate Undergoer Actor, as we see in the square brackets in (12a).

- (12) (a) [ts'um'-qs-án'-Ø-as] [ti sqáycw-a] [ti syáqtsʔ-a].
 lick-nose-TR-3OBJ-3SBJ DET man-DET DET woman-DET
 'The woman kissed the man.'
- (b) nilh ti syáqtsʔ-a ts'um'-qs-án'-Ø-as ti sqáycw-a.
FOC DET woman-DET lick-nose-TR-3OBJ-3SBJ DET man-DET
 'It was the woman who kissed the man.'

When a constituent is narrowly focused, it appears clause-initially in a special position and a focus particle *nilh* also appears before the focused constituent, as shown in (12b) (Roberts 1999: 280).⁷

2.1.2 Topic marking

In Argentinian Sign Language, as in many sign languages, a topical referent is signed before the main clause, and the lexical sign is accompanied by simultaneous non-manual markers that indicate it is identifiable, background information. The non-manual sign in Argentinian Sign Language involves a slight backward tilt of the head, open eyes and raised brows, and is symbolized in (13) by *t* above the section of the sentence where this modification occurs simultaneously with the lexical signs (Massone and Curiel 2004: 85; see also section 2.2.2).

- (13) t
 CHILDREN CANDY PRO.3PL LIKE
 'As for the children, they like candy.'

The words in small capitals represent signs with roughly the same meaning as the English word, presented in the order in which the corresponding signs occur.

In Japanese (Isolate, Japan), the particle *wa* marks a referent as topical information, as the examples in (14) illustrate (Fry 2003: 122–4). The rest of each sentence is, in a sense, about that topic.

- (14) (a) [uindoozu] wa sugoi koutyou da si.
Windows TOP terrible good.shape COP and
'As for Windows, it's terribly successful.'
- (b) [nanka dizunii no hon] wa nanka ippai katte.
uh Disney GEN book TOP uh lots buying
'Uh, I've been buying lots of Disney books.'
- (c) [watasi no toko no ie kara] wa kanari tooi no.
1SG GEN place GEN house from TOP pretty far PTCL
'From my house, (it's) pretty far.'

The morphological particle *wa* occurs after the constituent it marks (given in square brackets in the data). As we have seen in this section, there is a tendency for narrowly focused and topical constituents to appear towards the beginning of a sentence. We will examine these syntactic patterns in the following section.

2.2 Syntactic strategies

In chapter 3, we looked at ways of representing the core and periphery. These elements are based on the universal distinction between predicates, arguments and non-arguments, and as such are universal; that is, expected to be found in all languages. We can now add other syntactic structures which are not universal; in other words, some languages have them and some languages do not. These elements have a fixed position in the clause (unlike core and peripheral constituents, which, as we have seen, do not have a fixed order).

In addition, the syntactic structures we will examine in this section are motivated by pragmatics. In other words, they are important for their function in the sentence, and are associated with particular information structure properties.

2.2.1 Extra-core slots

One syntactic strategy that languages use to express narrow focus is extra-core slots. Extra-core slots are special positions outside the core, either immediately before it (**PRE-CORE SLOTS**) or after it (**POST-CORE SLOTS**). These positions are often used for question words, but also may be the place for other elements in narrow focus. Note that each clause can only contain one **EXTRA-CORE SLOT**.

2.2.1.1 Pre-core slot

We already saw an example of a pre-core slot in St'át'imcets in (12b). The narrowly focused element appears before the predicate. Since the predicate is core-initial in St'át'imcets, the focused element is in the pre-core slot. We see further examples of the pre-core slot in English in the examples in (15), where the element in the pre-core slot is underlined.

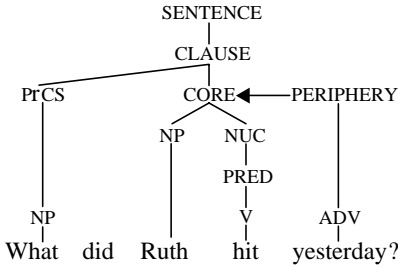


Figure 8.3 *Constituent representation of the pre-core slot*

- (15) (a) What [did Ruth hit]_{CORE} yesterday? (*What did Ruth hit a tree yesterday.)
 (b) Who [did Keith give the book to]_{CORE}?
 (c) Who [came to the show]_{CORE}?⁸
 (d) BROCCOLI [I like]_{CORE}.

The data in (15) illustrate that when there is a pre-core slot that is filled by one of the semantic arguments of the predicate in the core, the syntactic core is ‘missing’ an argument. In (15a), for example, the undergoer of the verb *hit* is not expressed within the main core. Instead it appears in the pre-core slot, before the core. In (15) we have examples of both questions (15a–c) and a statement with narrow focus on *broccoli* in (15d): what is important to note is that all the elements in the pre-core slot are in narrow focus.

The constituent representation for (15a) is shown in Figure 8.3. The pre-core slot is outside the core but inside the clause.

These examples illustrate an important point: semantic arguments and syntactic arguments are not always the same thing. In (15a), there are two semantic arguments of *hit* in the sentence, but the core itself only contains one core syntactic argument (because one appears in the pre-core slot).

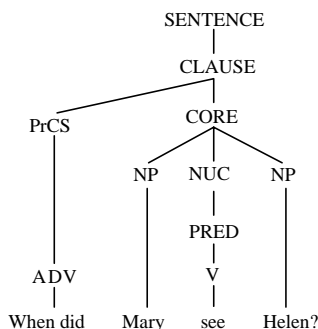
Of course, it is not only arguments of the main predicate that can appear in the pre-core slot. In (16b), for example, an adjunct appears in the pre-core slot.⁹

- (16) (a) [Mary saw Helen] yesterday_{PERIPHERY}.
 (b) When [did Mary see Helen]?

In this case, all the arguments of the predicate in the nucleus appear in the core as usual, shown in Figure 8.4.

In Chitumbuka (Narrow Bantu, Malawi), which has a basic word order of Actor Predicate Undergoer, there are several strategies for marking narrow focus. The one we are interested in here is illustrated in (17).

- (17) (a) Ma-búuku [βa-ka-pása β-ána]_{CORE}.
 6-book 2-TAM-give 2-child
 ‘They gave the children BOOKS.’

Figure 8.4 *Pre-core slot containing adjunct constituent*

- (b) Ngóoma [ti-zamu-limilíra namachéero]_{CORE}.
maize we-TAM-weed tomorrow
'We will weed MAIZE tomorrow.'
- (c) Kwa βa-léendo [βa-ka-wonésya mínda yáawo]_{CORE}.
to 2-visitor 2-TAM-show fields their
'TO THE VISITORS they showed their fields.'

In these examples, the underlined focused constituents are in the pre-core slot (Downing 2006: 62).

2.2.1.2 *Post-core slot*

Some languages place narrowly focused elements after, rather than before, the core. A particular language will most often have either pre-core slots or post-core slots, but not both. To illustrate the post-core slot position, we have the data in (18) from Sinhala (Indo-Iranian, Sri Lanka) which has a basic Actor Undergoer Predicate order in the core.

- (18) (a) gunəpaalə kəranne monəwa də?
Gunapala do-PRS-EMPH what INT
'What does Gunapala do?'
- (b) laŋkaawe di mamə yanne ee gamətə.
Sri Lanka-GEN while I go-PRS-EMPH that village-DAT
'It is to that village that I go while in Sri Lanka.'
- (c) laŋkaawe di ee gamətə yanne mamə.
Sri Lanka-GEN while that village-DAT go-PRS-EMPH I
'It is I who go to that village while in Sri Lanka.'
- (d) mamə ee gamətə yanne laŋkaawe di.
I that village-DAT go-PRS-EMPH Sri Lanka-GEN while
'It is while in Sri Lanka that I go to that village.'

The data show that in Sinhala, both question words (18a) and other narrowly focused constituents (18b–d) can appear in the post-core slot. In addition, when elements are in narrow focus, the verb appears with an emphatic marker (Gair 1998: 155–7).

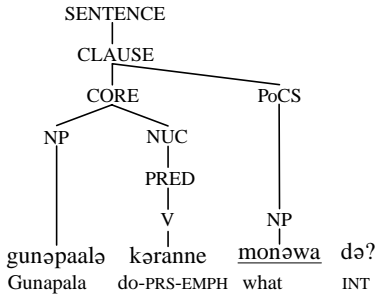


Figure 8.5 *Constituent representation of the post-core slot*

The constituent representation for sentence (18a) is given in Figure 8.5. As you can see, it is simply a mirror image of the representation of the pre-core slot, a position outside the core but inside the clause.

2.2.2 Detached positions

In addition to extra-core slots, there is another pair of structures both of which also appear at the beginning or end of a clause, but that function differently from those in the extra-core slots. These are called **DETACHED POSITIONS**; if the element appears on the left, it is in left-detached position (LDP), and if on the right, it is in right-detached position (RDP).

One difference between detached positions and extra-core slots is that while the latter are always in narrow focus, detached positions contain topical information. Examples of detached positions in English are shown underlined in (19).

- (19) (a) As for me, I'm going to Mexico next week.
 (b) Yesterday, where did you go?
 (c) I know them, those girls.

Unlike for extra-core slots, a particular language may have both left and right-detached positions; thus we see left-detached positions in (19a) and (b), and a right-detached position in (19c).

In terms of their constituent representation, we place detached positions inside the sentence, but outside the clause, as we see in the representation of (19a) and (c) in Figure 8.6.

Detached positions are represented as outside the clause for several reasons. Firstly, there is usually a pause between the detached element and the main clause (often represented by a comma in the written form). Secondly, the detached position is outside the scope of the clause-level illocutionary force operator.

Thirdly, if the detached element is a semantic argument of the predicate in the main clause, there is another expression of that argument (a **COREFERENTIAL COPY**) *within* the core. This copy often takes the form of a **RESUMPTIVE PRONOUN**, 'resuming' the referent with a pronominal form in the main clause. Hence, in (19a), the first person singular actor of *go* is represented by *me* in the

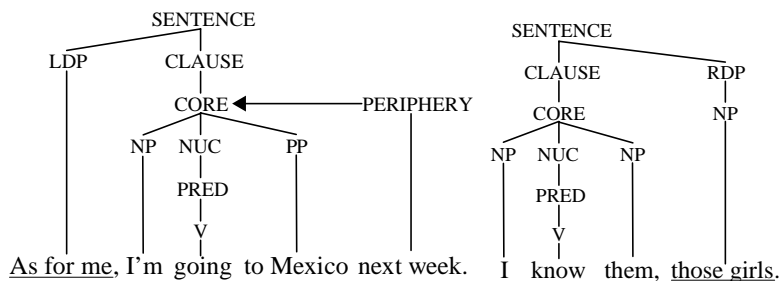


Figure 8.6 *Constituent representation of left- and right-detached positions*

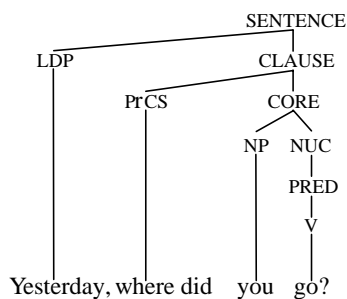


Figure 8.7 *Constituent representation of left-detached position and pre-core slot*

left-detached constituent and also by the pronoun *I* inside the main core. Likewise in (19c), *them* and *those girls* refer to the same referents. Recall that for extra-core slots, there is not a ‘copy’ of the argument within the core; see (15a) for example.

Detached positions appear further from the core than extra-core slots. We can see this illustrated in (19b) where we have an LDP (*yesterday*) followed by a pre-core slot (*where*), followed by the core; the opposite ordering of the core-external constituents is ungrammatical: **Where yesterday did you go?*

In Figure 8.7 we see the constituent representation for (19b), where you can clearly see the elements ‘nested’ inside each other.

As mentioned above, the function of detached positions is to provide topical information. Left-detached positions may set up a referent who is then talked about in the following clause. Right-detached positions may have a similar function, often expressing an afterthought, some extra information in case the referents in the main core are not clearly identified.

In (20) and (21) we see data from Mina (Chadic, Cameroon). The deictic elements *wà* and *wàcín* (underlined and glossed DEM) appear with topical referents and have two functions. In (20) the deictic markers effectively indicate sentence focus since the sentences consist of just the ‘topic’ marker and a noun phrase in an existential construction.

- (20) (a) hìd-yî wà í tètè màkáf.
 man-PL DEM 3PL 3PL three
 ‘There were three men.’
- (b) wàcín mèndəvəŋ.
DEM rabbit
 ‘This one [is about] a rabbit.’

In (21a) the two sentences, (a) and (b), follow each other in a story. The actor of each sentence is set up in a left-detached position with the marker *wàcín* before the main clause: notice that there is a pronominal copy of the referent, the third singular form *à*, in the main clause in both (21a) and (b) (Frajzyngier and Johnston 2005: 357, 359).

- (21) (a) [kwáyàŋ wàcín] à ndè kó n kó màrà-há á
 squirrel DEM 3SG go INF PREP INF graze-GOAL PRDR
 dàmù ndè dzáj á dzáj làkáf.
 bush go find 3SG find baboon
 ‘The squirrel, he went to graze in the bush and found a baboon.’
- (b) [làkáf wàcín] à zá hà nd-á kímí.
 baboon DEM 3SG COMP 2SG go-GOAL why
 ‘The baboon, he said, “Why did you come?”’

As an example of a right-detached position, look at sentence (22) from Kabyle (Berber, Algeria). The underlined final noun phrase clarifies the referent not mentioned since the beginning of the sentence (Mettouchi 2008: 26).

- (22) ye-qqaz tasraft / ye-qqaz ye-qqaz ye-qqaz ye-qqaz /
 SBJ.3SG.M-dig.IPFV pit.ABS / SBJ.3SG.M-dig.IPFV (x4) /
 armi=tt i-fukkk sebɛa yyam / tesraft=nni.
 until=ACC.3SG.F SBJ.3SG.M-finish.PFV seven days.CASE / pit.CASE=DET
 ‘He dug a hole, he dug and dug, until he finished it at the end of seven days,
 the hole.’

As noted in section 2.1.2, Argentinian Sign Language marks topical referents with non-manual markers that indicate it is background information. In addition, as we see in example (23), the topical element appears at the beginning of the sentence and there is a pronominal copy of the referent in the main clause, indicating that this topic constituent is in the left-detached position (Massone and Curiel 2004: 85).

- (23) _____ t
 CHILDREN CANDY PRO.3PL LIKE
 ‘As for the children, they like candy.’

Similarly, in Finnish Sign Language and Indo-Pakistani Sign Language the topical referent is signed before the main clause, and the scope of non-manually marked negation (through a headshake ‘hs’ in both languages) indicates that the topical

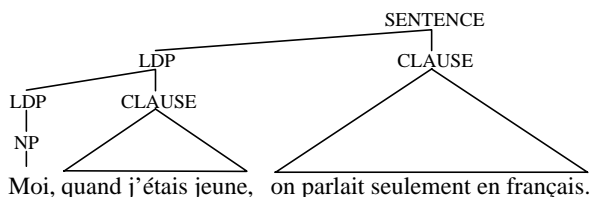


Figure 8.8 *Constituent representation of two left-detached positions in French*

element is outside the scope of the negation and therefore outside the clause. We see this in (24) and (25) respectively, where the scope of the negative headshake is indicated by *hs* (Zeshan 2004: 21).¹⁰

(24) $\frac{t}{\text{TOMORROW}} \frac{hs}{\text{CANNOT 2:VISIT:1}}$ FINNISH SIGN LANGUAGE
 ‘Tomorrow, you cannot visit me.’

(25) $\frac{hs}{\text{SIBLING INDEX-upr SCHOOL INDEX-upr}}$ INDO-PAKISTANI SIGN LANGUAGE
 ‘For the sibling, there was no school.’

It is only possible to have one extra-core element in any one sentence, but detached positions are another matter. One sentence may have more than one detached element in it. In (26), we see an example from French (Romance, France). In this sentence, the left-detached clause has its own left-detached position within it, all before the main clause (Pavey 2001: 33).

(26) Moi, quand j'étais jeune, on parlait seulement en français.
 me when I was young one spoke only in French
 ‘Me, when I was young, we spoke only in French.’

An abbreviated constituent representation for (26) is given in Figure 8.8.

In this section we have examined extra-core slots and detached positions, two syntactic strategies available to many languages for representing focal and topical constituents. Let us review the properties of each.

Pre- and post-core slots prototypically contain items in narrow focus: they appear inside the clause, closer to the core than detached positions, and if they contain an argument of the main predicate, there is a syntactic ‘gap’ in the core. Languages only have either one pre-core or post-core slot.

Detached positions contain topical material. A pause generally separates them from the main clause, and if an argument appears in a detached position, there will be a co-referential copy of the referent within the main clause. Multiple detached positions on either side of the clause are theoretically possible.

It is important to reiterate that extra-core slots and detached positions are not universal; in other words, we should not necessarily expect to find them in all languages.

Create an English sentence that contains both a left- and a right-detached constituent.

2.2.3 Other focus constructions

In sections 2.2.1 and 2.2.2 we examined some syntactic strategies that languages use to express information structure. As well as these special syntactic positions, many languages also make use of other focus constructions, most commonly to express narrow focus. Focus constructions are syntactic structures that come with specific focus structures associated with them.

In (5), repeated here as (27b), we saw an example of a cleft construction in English. In (28b), we see an example of a cleft construction in French (Pavey 2001: 17).

- (27) (a) JANE witnessed the robbery.
 (b) It was Jane who witnessed the robbery.
- (28) (a) *Mon MARI a demenagé.
 ('My HUSBAND moved.')
- (b) C'était mon mari qui a demenagé.
 'It was my husband who moved.'

A cleft construction has the function of placing a constituent unambiguously in narrow focus. Since cleft constructions can only have a narrow focus structure, they are often used when a speaker wants to express particularly clear focus structure.

French uses cleft constructions more widely than English does because in French elements in narrow focus have to appear after the verb; there is not the possibility, as there is in English, of using intonation alone to place an element in narrow focus. This contrast between the languages is illustrated with (27a) and (28a).

In terms of syntactic structure, cleft constructions have some key features cross-linguistically. They normally include a copular verb, which will appear in a core with the focused element. In English '*it*-cleft' constructions, as we see in (27), we also find a 'dummy' pronoun in the main core. (A copular verb might not occur in languages that do not use a copular verb for non-verbal predicates.) In addition, the rest of the sentence appears as a subordinate clause of some type. Given formal and functional similarities with relative clauses, cleft constructions have a similar constituent representation, which is shown with an English example of an *it*-cleft construction in Figure 8.9 (Pavey 2008b: 316).

As we see in Figure 8.9, the subordinate clause is peripheral to the nucleus of the main core.¹¹ The element that fills the nucleus is not the normal type of semantic predicate. The main core of a cleft construction does not contain a semantic predicate; in fact, the clefted constituent is a referring expression. However, the clefted constituent does serve the main communicative function of the sentence in providing more information about the referent (the thing that made me ill, in the case of Figure 8.9). The clefted constituent is therefore, in a sense, a **PRAGMATIC PREDICATE** (Lambrecht 1994), and we can use this to

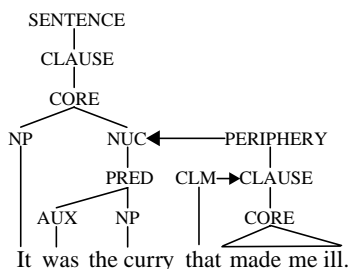


Figure 8.9 *Constituent representation of it-cleft construction*

fill the nucleus slot in the main core. Recall that we used a similar strategy for specificational sentences in chapter 3.

In sign languages, non-manual markers may be used simultaneously with manual signs, in order to convey narrow focus. Croatian Sign Language uses different non-manual markers depending on the constituent that is being focused, as we see illustrated in (29).

- (29) (a) hn
WOMAN READ BOOK
'The WOMAN reads a book.'
- (b) bf
GIRL PUSH GIRL
'A girl PUSHES another girl.'
- (c) br
MAN NEWSPAPER READ
'A man reads the NEWSPAPER.'

Actors with contrastive narrow focus occur with a head nod (marked as *hn* in (29a)), focused predicates are accompanied by a 'brow furrow', as illustrated in (29b), and a contrastively focused undergoer is marked with a 'brow raise', as we see in (29c) (Milković, Bradarić-Jončić and Wilbur 2007: 1011).

2.3 Constituent order and information structure

In the previous section, we began to see differences in how languages mark focus types. We noted that in French it is not possible to mark the subject as focused through intonation alone: French has a fairly rigid or fixed focus structure: within the core the focus has to fall after the verb. In English we can mark narrow focus on any element in the core with stressed intonation so we can say that English has a flexible focus structure. However, in both English and French, the constituent order is fairly rigid or fixed; in other words, one cannot focus a constituent by changing its position inside the core, we have to use special syntactic constructions such as cleft constructions.

We can see that there is interaction between the rigidity of syntactic constituent order and the rigidity of information structure and this affects how languages mark focus (Van Valin 1999). If we know something about the order of constituents and about focus structure in a language, we can understand more about why it marks focus in the way it does.

As another example, we will look at some data from Toura (Mande, Ivory Coast). In Toura, constituent order is relatively fixed as Actor Undergoer Predicate, as shown in (30).

- (30) Tìà ké gwéé lǎ'.
Tia PRED.MKR peanuts bought
'Tia bought peanuts.'

As we see by comparing (30) with (31a), Toura places question words in the same position as non-question words with the same role would appear. Question words that appear in their 'normal' position are termed (in situ) (see section 3.1.2). Toura also makes use of the narrow focus markers -' and -le, as the responses in (31b) and (c) respectively illustrate.

- (31) (a) Tìà-' mæ lǎ' le?
Tia-PRED.MKR what bought TM
'WHAT did Tia buy?'
(b) Tìà-' gwéé-' lǎ' le.
Tia-PRED.MKR peanuts-FOCI bought TM
'Tia bought PEANUTS.' (*non-contrastive*)
(c) Tìà ké gwéé-le lǎ'.
Tia PRED.MKR peanuts-FOCII bought
'Tia bought PEANUTS.' (*contrastive*)

In addition, Toura makes use of a pre-core slot and left-detached position (shown in (32a) and (b) respectively) to mark information structure (Beath 1992: 89).

- (32) (a) Gwéé-' Tìà-' lǎ' le.
peanuts-FOCI Tia-PRED.MKR bought TM
'PEANUTS Tia bought.' (or 'It is PEANUTS (not potatoes) that Tia bought.')
- (b) Gwéé (láà), Tìà ké à lǎ'.
peanuts (TOP) Tia PRED.MKR 3PL bought
'As for peanuts, Tia bought them.'

Like English, Toura has rigid syntax but flexibility in its focus structure.

In contrast, take a look at the Italian (Romance, Italy) data in (33).

- (33) (a) Che compri? (Compro) IL PANE.
what buy-2SG buy-1SG the bread
'What are you buying?' 'I'm buying some bread.'

- | | | |
|-----|---|---|
| (b) | Chi arriva?
who arrive-3SG
'Who is arriving?' | (Arriva) TUO ZIO.
arrive-3SG your uncle
'Your uncle is arriving.' |
| (c) | Che fai?
what do-2SG
'What are you doing?' | GUARDO UN FILM.
watch-1SG a film
'I'm watching a film.' |
| (d) | ARRIVA TUO ZIO!
arrive-3SG your uncle
'Your uncle is arriving!' | |

In Italian, the focus domain cannot include the pre-verbal elements: in (33a) and (b), the narrowly focused constituent appears after the nucleus, while in the predicate focus construction in (33c) and the sentence focus construction in (33d) the focus domain includes the verb and the post-verbal element (Bentley 2008: 267). Italian, then, has rigid information structure but flexible syntax.

For languages which have flexible syntactic ordering but rigid ordering of information structure units, it is less relevant to talk about their basic constituent order in terms of actor and undergoer and more relevant to consider the pragmatic function of the elements in the sentence and the order in which they must occur.

Section summary

In this section you have learned:

- how to recognize and analyse functionally motivated syntactic positions: extra-core slots and detached positions.
- **KEY TERMS:** Pre-/post-core slot, detached position, co-referential copy, cleft construction.
- **EXERCISES:** B1, B2, B3, B4, B5, B6, B7

3 Questions and commands

In chapter 3 we looked at illocutionary force. This is a clause-level operator that marks the basic function of sentences as statements, questions, commands or other sentence types. In this chapter we will look a little further at questions (with interrogative illocutionary force) and commands (with imperative illocutionary force).¹²

3.1 Questions

There are two basic types of question, which languages often express differently. The first type questions the truth of a proposition: these are called **POLAR** or yes/no questions. The second type are **CONTENT QUESTIONS**, which

request some information (some ‘content’). Examples from English of each of these types are given in (34).

- (34) (a) Do you like cheese? POLAR QUESTION
 (b) What are you cooking? CONTENT QUESTION

From these examples you can see that English often uses the auxiliary verb *do* to form polar questions and uses question words in the pre-core slot to form content questions. Both question types involve a word order that is different from statements and a different intonation pattern.

3.1.1 Polar questions

Many languages have a special intonation pattern for polar questions. In English, it is possible to form polar questions solely by changing the intonation on a statement to a rising pattern, as illustrated in (35b).

- (35) (a) You stayed up till three o'clock. STATEMENT
 (b) You stayed up till three o'clock? POLAR QUESTION

Other strategies include a change in word order, verbal morphology or morpho-syntactic particles that act as clause-level illocutionary force operators, marking a polar question. Lao (Tai-Kadai, Laos), for example, has several polar question markers, one of which (*bòð³*) is illustrated in (36b) and (c). These polar question markers are clause-final particles and so we know that in (36c) the noun phrase *saam³ khon²* ‘three people’ is in right-detached position, outside the clause (Enfield 2007: 41–2).

- (36) (a) *saam³ khon² taaj³*.
 three person die
 ‘Three people died.’
 (b) *saam³ khon² taaj³ bòð³?*
 three person die Q
 ‘Is it the case that three people died?’
 (c) *taaj³ bòð³ saam³ khon²?*
 die Q three person
 ‘(They) died, three people?’

Draw the constituent and operator representation for (36b).

In many sign languages, polar questions are indicated by non-manual markers; in a sense, as noted by Zeshan (2003), this is analogous to the marking of polar questions by intonation alone in spoken languages. In Austrian Sign Language, for example, the most prominent non-manual marker of a polar question is that the chin is down. This may be joined by a head and body lean, the head thrust forward and squinted eyes, all in addition to the manual signs, as illustrated in Figure 8.10 (Šarac, Schalber, Alibašić and Wilbur 2007: 227). The final sign ‘5-5’ in the right-most image in Figure 8.10 is suggested to be an optional polar question marker (Zeshan 2003: 228).

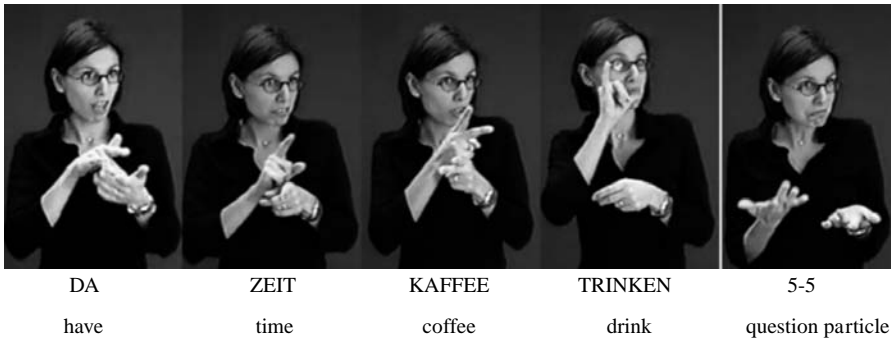


Figure 8.10 *Polar question in Austrian Sign Language* (Šarac, Schalber, Alibašić and Wilbur 2007: 227)

In Indo-Pakistani Sign Language, on the other hand, polar questions are indicated by the eyes being wide open, the head leaning forward, and with eye contact with the addressee, in addition to the manual signs. The dashes after *EXIST* in (37b) reflect the fact that this final sign is also held a little longer in a polar question (Zeshan 2003: 198–9).

- (37) (a) FATHER CAR EXIST
 ‘(My) father has a car.’
 Q-----
 (b) FATHER CAR EXIST--
 ‘Does (your/his/her/their) father have a car?’

The scope of the non-manual polar question markers in Indo-Pakistani Sign Language can vary, notably if there are topical elements in the sentence. In (38), for example, all but the predicate *DEAF* is topicalized and so the non-manual question marker only marks *DEAF*.

- (38) Q----
 MOTHER FATHER BIRTH DEAF--
 ‘The mother, the father and the children – (are they all) deaf?’

Recall that illocutionary force is a clause-level operator, and that topical elements that are in left-detached position are outside the clause (while still inside the sentence). This variation, then, is predictable from what we have learned about sentences with topical elements in detached positions; it is analogous to the situation with right-detached positions in Lao illustrated in (36c).

3.1.1.1 *Biased questions*

Many languages have a way of forming polar questions that implies bias towards a ‘yes’ or ‘no’ answer. In English, we can bias questions by using tag question constructions, which have the opposite polarity to the main clause; in other words,

if the main clause is positive, as in (39b), the tag question is negative, and vice versa (39c).¹³

- | | | |
|----------|-------------------------|---------------|
| (39) (a) | Did he jump? | NEUTRAL |
| (b) | He did jump, didn't he? | POSITIVE BIAS |
| (c) | He didn't jump, did he? | NEGATIVE BIAS |

In some varieties of English, clause-final particles mark a polar question that asks for confirmation, looking for agreement. In Canadian English, the particle *eh* performs this function, as illustrated in (40), while in certain London teenagers' English, the particle is *innit* ('isn't it') (Anderson 2001: 97, 100).¹⁴

- (40) You shot a moose, eh?
- (41) A: She just needs to cut back on her chocolate. She love her chocolate,
innit?
B: Yeah!

In Mupun (Chadic, Nigeria), there are clause-final interrogative particles in polar questions, some of which bias the questions or seek confirmation. The sentences in (42) contrast the 'neutral' polar question marker *-e* in (42a) with the marker *-a* in (b). The *-a* marker is used when the speaker wants the hearer to confirm his or her beliefs as true (Frajzyngier 1993: 362).

- (42) (a) a jep fua mo-e?
COP children 2M PL-INT
'Are they your children?'
- (b) a jep dʒəsə mo a jep fua-a?
COP children DEM PL COP children 2M-INT
'These are your children, aren't they?'

In (43), on the other hand, we see a contrast between the neutral *e* and a third marker *wo*, which a speaker may use when checking the truth of something unbelievable, unexpected or startling (Frajzyngier 1993: 363).

- (43) (a) wur lap mpuo e?
3M marry another INT
'Did he marry another one?'
- (b) wur lap mpuo wo?!
3M marry another INT
'Did he marry another one?!'

3.1.1.2 Alternative questions

Another polar question type is **ALTERNATIVE QUESTIONS**, which give a number of possibilities for the hearer to choose from. In (44) we see examples from English. Notice that in (44b) the 'alternative' proposition is simply expressed with the word *not* following the clause linkage marker *or*.

- (44) (a) Did you get your hair cut or did you lose a fight with a lawn-mower?
 (b) Are you coming or not?

We see a similar strategy in Lezgian (East Caucasian, Russian Federation) in the data in (45).

- (45) (a) Professordi ktab k'el-zawa-j-di ja-ni, ja taʕajt'a
 professor.ERG book read-IPFV-PTCP-SBST COP-INT or or
 kʰi-zwa-j-di ja-ni?
 write-IPFV-PTCP-SBST COP-INT
 'Is the professor reading or writing a book?'
 (b) Am paka q̄we-ka-ni ja taʕajt'a waʔ?
 she.ABS tomorrow come-FUT-INT or or not
 'Is she coming tomorrow or not?'

In (45a), both clauses are marked with the interrogative suffix *-ni* and separated by the clause linkage marker *ja taʕajt'a* 'or' (Haspelmath 1993: 418–19). Example (45b) is similar to the English example in (44b) in simply following 'or' with 'not' (*waʔ*).

3.1.2 Content questions

Content questions (also called information questions or WH-questions) ask for specific information, represented by a question word. This question word is in narrow focus. In (46) we see illustrations of some of the question words and the different constituents that can be questioned in English.

- (46) (a) Who told you to do that?
 (b) What did the boy say?
 (c) When do the fireworks start?
 (d) How did you know?
 (e) Where has it gone?
 (f) Why must you do that in public?

As we see in (46), and discussed in section 2.2.1.1, in English the question word usually appears in the pre-core slot. However, it is also possible for the question word to appear *in situ*; in other words, in the same position where that constituent occurs in a declarative sentence. In English, this is a less common strategy that may, however, be used to 'echo' the form of a previous statement, as illustrated in the exchange in (47a) and (b). The question word *what* in (47b) occurs *in situ*, in the same position as the constituent it is questioning, as the square brackets show.

- (47) (a) He said [that you hit him].
 (b) He said [what]?

In some languages *in situ* questions are used more widely and, in some cases, exclusively. In Tshangla (Tibeto-Burman, Bhutan), for example, the question

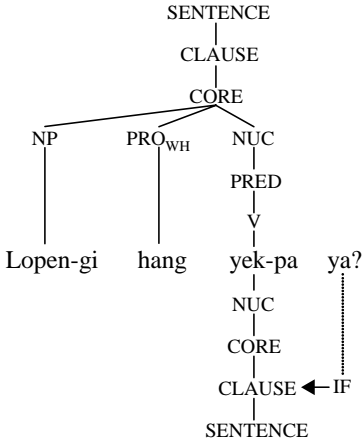


Figure 8.11 Syntactic representation of in-situ question in Tshangla

word appears *in situ*, in the same position as it would in a declarative sentence. The square brackets enclose the question word in (48a) and the corresponding constituent in the response in (48b), to highlight the parallel.

- (48) (a) Lopen-gi [hang] yek-pa ya?
 teacher-AGT what speak-NOM Q
 ‘What did the teacher say?’
- (b) Lopen-gi [ai-ba namnying lok ru-me an] yek-pa.
 teacher-AGT 3-PL tomorrow return meet-INF do speak-NOM
 ‘The teacher said, “We’ll meet again tomorrow!”’

As we see in (48a), Tshangla also marks content questions with the clause-final particle *ya*, a clause-level operator marking illocutionary force, though this is frequently omitted (Andvik 1999: 294). The constituent and operator representation for (48a) is given in Figure 8.11.

Languages also differ in terms of how many question words they have. English no longer distinguishes source and goal with *whence* (‘from where’) and *whither* (‘to what place’) and has replaced *wherefore* with *why* (but has kept *therefore*). Indo-Pakistani Sign Language is highly unusual in only having one content-question word, *KYA*, which stands for all question words, although it can sometimes be modified with a mouth pattern to help disambiguate certain meanings (Zeshan 2003: 201).

Draw the constituent representation for (48b) (abbreviating the clausal argument).

In this section, we have discussed the ways in which languages express various question types. In the next section, we turn our attention to sentences with imperative illocutionary force: commands.

3.2 Commands

Commands carry imperative illocutionary force. They express a desire or need on the part of the speaker that the hearer perform some action. Since commands expect a future action from the hearer, they cannot be marked for past tense and are quite often not marked for tense at all. The PSA (if it is expressed) is in the second person but the verb may not be marked to agree with it.¹⁵ These features are illustrated by the English example in (49).

(49) Come here! / *Came here! / *Coming here!

In Greek (Indo-European, Greece), shown in (50), and in Bulgarian (Slavic, Bulgaria) in (51), the verb appears in the imperative form. In these languages, the verb is marked to agree with the second person PSA (Isac and Jakab 2004: 319, 330).

(50) Diavase to! GREEK
read.2SG.IMP 3SG.N.ACC.CL
'Read it!'

(51) Konjaka mi donesi! BULGARIAN
cognac-the 1SG.DAT.CL bring.2SG.IMP
'Bring me the cognac!'

Example (52) illustrates imperative illocutionary force in Manambu (Sepik, Papua New Guinea), where, as you can see, the verb carries no tense markers, and the verbal agreement marker *a-* only marks person, not number (Aikhenvald 2008b: 277, 279).

(52) (a) da:n a-da!
go.down.SEQ 2-sit.IMP
'Sit down!'
(b) mən a-kər kə ta:kw Kamkudi!
you.M 2-marry.IMP DEM.PROX.F.SG woman Kamkudi
'You marry this woman, Kamkudi!'

In (52a) we see a serial verb construction in imperative form; notice that only the final verb in the series appears in imperative form. In (52b) we see that it is possible for the second person PSA to be expressed in an imperative construction, as an independent pronoun (*mən*).

In chapter 3 I mentioned the term *irrealis*. This is a type of status operator category that includes hypothetical, conditional, possible, future or imaginary events (events that are 'unreal', in this sense). In this general area of meaning we may see an overlap in the uses of future, subjunctive or more general *irrealis* markers to express imperative illocutionary force, since the imperative also implies a possible future action on the part of the addressee.

In Rajbanshi (Indo-Iranian, Nepal), for example, there are two ways of forming commands, depending on whether the speaker wants the action performed immediately or later, a contrast shown by the pairs of examples in (53) and (54).

- (53) (a) ja- Δ !
go-IMP.2PL
'Go (now)!'
(b) ja-n!
go-SBJV.2PL
'Go (later)!'
- (54) (a) ja- Δ mui lik^h-ec-u! t Δ m^ha b^hat nad^h- Δ !
go-IMP.2PL 1SG write-PRS-1SG 2PL rice cook-IMP.2PL
'Go (away), I am writing!' (As for) you, cook rice (now)!'
(b) mui lek^h-ba d^h Δ r-im. t Δ m^ha b^hat nad^h- Δ n!
1SG write-INF begin-FUT.1SG 2PL rice cook-SBJV.2PL
'I will start writing. (As for) you, cook me rice (later on)!'

Draw the constituent and operator representation for (53a) and (54b) (assuming Rajbanshi is head-marking).

Thus in (53a) and (54a), the imperative form $-\Delta$ is used, implying an urgency to the command, while in (53b) and (54b) the subjunctive form $-(\Delta)n$ is used to command the hearer to do something after a little while (Wilde 2008: 203).

As a final example of imperative illocutionary force, Galo (Tibeto-Burman, India) has two imperative markers $-t\acute{o}$ and $-l\grave{a}(a)$, glossed IMP.A and IMP.B in (55a) and (b) respectively (Post 2007: 599–600). Notice the addition of the polite hortative enclitic $=k\acute{e}e$ to 'soften' the command. How would you describe the difference between the two imperative markers $-t\acute{o}$ and $-l\grave{a}(a)$?

- (55) (a) amín= ∂ am mèn-zí- $t\acute{o}$ = $k\acute{e}e$!
name=ACC say-BEN-IMP.A=HORT.POL
'Tell him/her/it(/*me) your name!'
(b) amín= ∂ am mèn-zí- $l\grave{a}(a)$ = $k\acute{e}e$!
name=ACC say-BEN-IMP.B=HORT.POL
'Tell me (*him/her/it) your name!'

3.3 Indirect speech acts

We have looked at ways in which languages express statements, questions and commands. It is worth adding here that speakers may sometimes use one form to express a different function, as illustrated in (56) for English. These are known as **INDIRECT SPEECH ACTS**. The hearer has to derive the meaning from the context and from her knowledge of the culture.

- | | | FUNCTION | SYNTACTIC FORM |
|------|-------------------------------------|-----------------|----------------|
| (56) | | | |
| (a) | Would you mind closing the door? | command/request | interrogative |
| (b) | Who cares? | statement | interrogative |
| (c) | I don't suppose you'd pay for this. | question | declarative |
| (d) | Please come in! | invitation | imperative |

In (56a) and (b) we see examples of rhetorical questions: that is, interrogatives used for commands or statements that do not really call for an answer.

In the example from Kashmiri (Indo-Iranian, India) in (57), a rhetorical content question expecting a negative answer is formed with the expression *kas pata:* ‘who knows’ (Wali, Koul and Kaula 1997: 10).

- (57) kas pata:, su yiya: kini na?
 who knows he come.3SG.FUT.INT or not
 ‘Who knows if/whether he’ll come or not?’

The intended meaning may be even more distant from the sentence form: for example, *It’s hot in here, isn’t it?* may have the implication that the speaker would like the hearer to open a window.¹⁶ These layers of meaning are highly culture-specific and take time to understand when learning a new language.

3.4 Constructional templates

In this chapter we have seen that certain syntactic structures have focus structure patterns associated with them: in cleft constructions, for example, there is always narrow focus on the clefted constituent, while questions may be expressed by a particular syntactic template (such as a pre-core slot) and always carry interrogative illocutionary force. We find that sentence structures often have particular morpho-syntactic, semantic and/or pragmatic properties and that the structures and properties come packaged together as **CONSTRUCTIONS**.

Let us examine some further examples. In chapter 5 we noted that the English passive construction has particular morpho-syntactic properties: it requires the use of the auxiliary verb *be* and the past participle form of the verb. In chapter 7, we noted that English restrictive relative clauses have particular PSA properties: they allow the ‘missing’ argument in the relative clause to have any semantic role; it is not restricted to macroroles. These three constructions are illustrated in (58–60).

- (58) It was Robert that threw the melon. CLEFT CONSTRUCTION
 (59) The melon was thrown by Robert. PASSIVE CONSTRUCTION
 (60) (a) the melon that Robert threw RELATIVE CLAUSE CONSTRUCTION
 (b) the melon that Robert hit the cow with
 (c) the melon that hit the cow, etc.

In chapter 3 I introduced the notion of syntactic templates, an inventory of core structures available in a particular language. These also form part of the morpho-syntactic, semantic and pragmatic properties of a construction, properties which we represent in a **CONSTRUCTIONAL TEMPLATE**. A constructional template is simply a table that lists the attributes of a particular construction. In Table 8.2

Table 8.2 *Constructional template for English content question construction*

CONSTRUCTION:	English content question
SYNTAX:	<p>Template: pre-core slot, plus another core template (unspecified)</p> <p>PSA: no particular specification</p> <p>Linking: link the WH-word to the pre-core slot</p>
MORPHOLOGY:	Default
SEMANTICS:	Contains an open proposition with a variable. The WH word provides the value for that variable.
PRAGMATICS:	<p>Illocutionary force: interrogative</p> <p>Focus structure: narrow focus on element in the pre-core slot.</p>

we see an illustration: the English content question construction (Van Valin and LaPolla 1997: 434).

The only aspect of this constructional template that we have not encountered is the linking component in the syntax ‘box’. The theory of language structure that we have used in this book (Role and Reference Grammar) includes linking algorithms which take us step by step from the semantics to syntax (reflecting a speaker’s perspective) and from syntax to semantics (representing an addressee’s process). The theoretical details of these linking algorithms are not discussed in this book, but can be found in the references provided in the further reading section of this chapter.

Since the constructional template in Table 8.2 is for a question construction, the syntactic and pragmatic boxes are the most interesting. Other constructions may have more information in the morphology or semantics boxes.

Write out a constructional template for the English *it*-cleft construction.

Section summary

In this section you have learned:

- to recognize different types of commands and questions,
- to be aware of indirect speech acts,
- to represent the properties of constructions in constructional templates.
- **KEY TERMS:** polar question, content question, alternative question, tag question, *in situ*, indirect speech act, constructional template.
- **EXERCISES:** B8, B9, B10

Further reading

On the representation of referents, see Gundel, Hedberg and Zacharski (1993). On a framework of information structure, see Lambrecht (1994). On linking algorithms in Role and Reference Grammar, see Van Valin (2005) and Van Valin and LaPolla (1997).

Exercises

A. Exercises from English

1. *Focus types

Write a three-sentence story like the ‘bee’ story in section 1.3, that contains one sentence focus sentence, one predicate focus sentence and one narrow focus sentence.

2. *Pre-core slots and detached positions

Draw the constituent representation for the following sentences. You do not need to include the internal structure of NPs and PPs.

- (1) The guy that presents that game show has quit.
- (2) They were boisterous, the audience.
- (3) Last week, he ran off the stage, the presenter.
- (4) Laughing he doesn’t mind, but he can’t handle booing when he’s presenting the show.
- (5) What will he do now, that guy?

3. *Tag questions and indirect speech acts

What is the expected answer for the following tag questions? How do different intonation patterns influence those expectations? What other culturally determined implications might the sentences have?

- (1) a. That’s a lovely view, isn’t it?
b. That isn’t a lovely view, is it?
- (2) a. You like my new haircut, don’t you?
b. You don’t like my new haircut, do you?
- (3) a. He’s very neat and tidy, isn’t he?
b. He’s not very neat and tidy, is he?
- (4) a. They love their dog, don’t they?
b. They don’t love their dog, do they?
- (5) a. You clearly don’t worry about what other people think of you, do you?
b. You clearly worry about what other people think of you, don’t you?

B. Exercises from other languages

1. *Udi (East Caucasian, Azerbaijan)¹⁷

Person agreement in Udi appears on (or, rather, inside) the verb root in (1a) and the first clause of (4), both of which exhibit predicate focus. It appears on the element preceding the verb in the other sentences.

Excluding (1a) and the first clause of (4), what generalization can you make about the element the person marker is attached to? In other words, what feature do all the person-marked constituents in those examples have in common?

Would you describe this agreement marker as an affix or a clitic? Given your answer, what makes the person-marking data in (1a) and the first clause in (4) unusual? Note: in (1a) and (4), the marker appears inside the root.

- (1) a. äyel-en p'ə ěš a-ne-q'-e.
 child-ERG two apple take₁-3SG-take₂-AORII
 'The child took two apples.'
- b. äyel-en p'ə ěš-ne aq'-e.
 child-ERG two apple-3SG take-AORII
 'The child took TWO APPLES.'
- c. äyel-en-ne aq'-e p'ə ěš-n-ux.
 child-ERG-3SG take-AORII two apple-OBL-DAT
 'THE CHILD took two apples.'
- (2) a. aïl-ux ma-q'un tace?
 child-PL.ABS where-3PL go
 'Where have the children gone?'
- b. šonor kala xunče k'ua-q'un tace.
 they.PL.ABS big sister.GEN house.DAT-3PL go
 'They have gone to [their] big sister's house.'
- (3) me xinär-en täksa k'inig-iḡ-o laxo-ne fikirbesa?
 this girl-ERG only books-PL-DAT about-3SG think
 'Does this girl think only ABOUT BOOKS?'
- (4) k'ic'k'e vič-en-gena furu-ne-xa, ek'al te-ne boḡabsa.
 little brother-ERG-CST search₁-3SG-search₂ nothing NEG-3SG find
 'The youngest brother, though, searches, [but] does NOT find anything.'

2. **Beria (Saharan, Chad)¹⁸

Beria marks narrow focus with two enclitics: =*gu*/=*gō* and =*dî*.

Examine the following data and determine when each is used. Note: the third person subject marker in (2c) and (2d) is 'impersonal' and can be ignored for the purposes of the exercise.

- (1) a. báǵú-ǵǵ=ǵú kú-ǵú-ǵ-í.
 wife-POSS.3SG=FOC 3OBJ.3PFV-call-3SBJ-PFV
 'It's his wife who called him.'

- b. jàá bɔ̃rō=gū sàì gí-n-Ø-í.
child.ABS man=FOC hit 3OBJ.3PFV-AUX-3SBJ-PFV
'It's the man who hit the child.'
- c. òrfū=gū kǐjí sè-ì-ɾ-í.
fever=FOC tremble 3OBJ.CAUS-AUX-3SBJ-PFV
'The FEVER made him tremble.'
- d. àràbíé=gū ðɔ̃=níí éǵéǵé gí-n-Ø-í.
car=FOC person=ID.ABS run.over 3OBJ.3PFV-AUX-3SBJ-PFV
'The CAR has run over a certain person.'
- (2) a. náá=dí nè-gèr-g-ì.
2SG=FOC 2OBJ-look.for-1SG.SBJ-IPFV
'It's you I am looking for.'
- b. áí=dí kǐ è-g-ì.
1SG=FOC leave AUX-1SG.SBJ-IPFV
'It's me who will leave.'
- c. áí=dí é-géǵé-Ø-í.
1SG=FOC 1SG.OBJ-fall-3SBJ-PFV
'It's me who has fallen.'
- d. sòltàn=dí ní-Ø-í.
sultan=FOC 3OBJ.die-3SBJ-PFV
'It's the sultan who has died.'

3. **Udihe (Tungusic, Russian Federation)¹⁹

The data in (1) illustrates basic constituent order in Udihe.

Determine the focus type of the sentences in (2) and describe how Udihe expresses that type, based on the data you have.

- (1) a. Mamasa ule:-we olokto-ini.
old.woman meat-ACC cook-3SG
'The old woman is cooking meat.'
- b. Omölo-i wopti-we kimpigi-e-ni.
granddaughter-1SG door-ACC close-PST-3SG
'My granddaughter closed the door.'
- (2) a. Um'a i:-du xuaja:-i?
hook WH-DAT break.PST-2SG
'Why did you break the hook?'
- b. Sugzä:-wa j'eu diga-gi-e-ni?
fish-ACC WH eat-again-PST-3SG
'WHO ate the fish again?'
- c. Ei kusige-we min-du Iwana bu-ge.
this knife-ACC me-DAT Ivan give-PFV
'This knife was given to me by IVAN.'
- d. Susana timana eme-zeje-ni?
Susan tomorrow come-FUT-3SG
'Will Susan come TOMORROW?'

- e. Ei tege-we ge:-zi wo:-ti.
 this gown-ACC bad-INS make.PST-3PL
 'They had sewn this gown BADLY.'

4. **Mupun (Chadic, Nigeria)²⁰

Mupun has a basic constituent order of [Actor/Single argument Predicate Undergoer Other argument]. In the data here, negation is expressed with the discontinuous morpheme *ba...kàs*. The *bà* component appears clause-initially while *kàs* appears clause-finally.

Examine the data given here. Describe how the constituent order differs from the basic order, and describe the pragmatic function of the element that appears in a different position. Draw the syntactic representation (constituent and operator representation) for (3).

- (1) səm bature mo an tu nə n-ba kə nə too
 name European PL 1SG kill it 1SG-throw.away with it like
 səm fen sə.
 name 1SG away
 'European names, I will eliminate them as [I did with] my name.'
- (2) pak a das kə gwam mo.
 some FOC men HAB deceive PL
 'Some [of the girls], it is the men who deceive them.'
- (3) a. namwes ba an mbə sin siwol n-war kas.
 Namwes NEG 1SG FUT give money to-3F NEG
 '(As for) Namwes, I am not going to give her money.'
- b. *n-namwes ba an mbə sin siwol kas.
 to-Namwes NEG 1SG FUT give money NEG
- (4) a. kampyor, ba mu sese si nə kas.
 kampyor NEG 1PL eat with DET NEG
 'We do not eat with kampyor.' (Kampyor is a stick with hooks used to stir soup and pick up meat.)
- b. *si kampyor, ba mu sese kas.
 with kampyor NEG 1PL eat NEG

5. **Mupun (Chadic, Nigeria)²¹

Here is a second set of Mupun data (and see also example (2) in question 4 above). Describe how contrastive narrow focus is expressed in Mupun. Draw the syntactic representation for sentence (2) from question 4.

- (1) a an sat kə sə.
 FOC 1SG say so
 'It was I who said so.'

- (2) n-tal a am siwa (ba a gwom kas).
1SG-ask FOC water drink NEG FOC food NEG
'I asked for WATER to drink (not for FOOD).'
- (3) war cet a lua (ba a pulwap kas).
3F cook FOC meat NEG FOC fish NEG
'She cooked MEAT (not FISH).'
- (4) n-tal t̄aba a p̄ə wur (ba a ha kas).
1SG-ask tobacco FOC PREP 3M NEG FOC 2M NEG
'I asked HIM for tobacco (not YOU).'
- (5) wu gap soŋ t̄əŋ nə a si sep (ba a cu kas).
3M cut branch tree DEF FOC with axe NEG FOC knife NEG
'He cut a tree branch with an AXE (not with a KNIFE).'
- (6) wur a wuraj.
3M FOC tall
'He is TALL [rather than short].' (Note: *wur wuraj*. 'He is tall.')
- (7) a. mo cet a cet lua nə (ba mo sur a sur kas).
3PL boil/cook FOC boil/cook meat DEF (NEG 3PL fry FOC fry NEG)
'They boiled/cooked the meat, they didn't fry it.'
- b. wa cet lua nə.
3F boil/cook meat DEF
'She boiled/cooked the meat.'
- (8) n-tal p̄ə wur a nə ket gwar kat k̄ə nalep-e.
1SG-ask PREP 3M FOC COMP whether 3M meet with Nalep-INT
'I asked him whether he met Nalep.'
- (9) wu la J a k̄ə n-war cet mbise d̄i n-wur.
3M marry J FOC COMP PREP-3F cook food COMP PREP-3M
'He married J so that she would cook for him.'

6. *American Sign Language (Sign language, North America)²²

American Sign Language (ASL) has the option of placing constituents at the beginning of a sentence, marking them with one of three types of non-manual markers. In this data, these are labelled m^1 , m^2 and m^3 (Aarons 1994: 156).

- m^1 = raised brows, head tilted slightly back and to the side, eyes widened, head moves down and forward
- m^2 = large movement of head back and to the side, eyes very wide, head moves down and forward
- m^3 = head forward, jerked slightly up and down, mouth open, upper lip raised, eyebrows raised, eyes wide open, fixed gaze, slight rapid head nods

From the data given in sets 1–3, determine the pragmatic function and syntactic structure of the sentence-initial elements in each set.

Based on your analysis, describe why the ungrammatical sentences in set 4 are ungrammatical.

- (1) a. $\frac{m^1}{\text{MARY JOHN LOVE}}$
 'MARY John loves.'
- b. $\frac{m^1}{* \text{MARY}_i \text{ JOHN LOVE IX-3}_i}$
 (*MARY John loves her.')
- c. $\frac{m^1}{\text{JOHN LOVE MARY}}$
 'JOHN loves Mary.'
- (2) a. $\frac{m^2}{* \text{MARY JOHN LOVE}}$
 (*As for Mary, John loves.')
- b. $\frac{m^2}{\text{JOHN}_i \text{ IX-3}_i \text{ LOVE MARY}}$
 'As for John, he loves Mary.'
- c. $\frac{m^2}{\text{VEGETABLE, JOHN LIKE CORN}}$
 'As for vegetables, John likes corn.'
- d. $\frac{m^2}{\text{VEGETABLE IX}_i, \text{ JOHN LIKE IX-3}_i}$
 'As for those vegetables, John likes them.'
- e. $\frac{m^2}{\text{IX-3 GRADUATE, MANY PEOPLE CELEBRATE}}$
 'When she graduates, many people will celebrate.'
- (3) a. $\frac{m^3}{* \text{MARY JOHN LOVE}}$
 (*You know Mary, John loves.')
- b. $\frac{m^3}{\text{MARY}_i \text{ JOHN LOVE IX-3}_i}$
 '(You know) Mary, John loves her.'
- c. $\frac{m^3}{\text{JOHN}_i \text{ IX-3}_i \text{ LOVE MARY}}$
 '(You know) John, he loves Mary.'
- (4) a. $\frac{m^2 \quad m^1}{\text{JOHN}_i \text{ MARY}_j \text{ IX-3}_i \text{ LOVE}}$
 'As for John, MARY he loves.'²³
- b. $\frac{m^1 \quad m^2}{* \text{MARY}_j \text{ JOHN}_i \text{ IX-3}_i \text{ LOVE}}$
 (*MARY, as for John, he loves.')
- c. $\frac{m^3 \quad m^1}{\text{JOHN}_i \text{ MARY}_j \text{ IX-3}_i \text{ LOVE}}$
 'You know John, MARY he loves.'

- d. $\frac{m^1}{*MARY_j} \frac{m^3}{JOHN_i \text{ IX-3}_i \text{ LOVE}}$
 (*MARY, you know John, he loves.)
- e. $\frac{m^1}{*MARY_j} \frac{m^1}{JOHN_i \text{ LOVE}}$
 (*MARY, JOHN, (he) loves (her).)
- f. $\frac{m^3}{JOHN_i, MARY_j, \text{ IX-3}_i \text{ LOVE}} \frac{m^3}{\text{IX-3}_i}$
 'You know John, you know Mary, he loves her.'
- g. $\frac{m^2}{CHINA \text{ IX, VEGETABLE, PEOPLE PREFER BROCCOLI}}$
 'In China, as far as vegetables are concerned, people prefer broccoli.'

7. **American Sign Language (Sign language, North America)²⁴

This exercise builds on your analysis from exercise 6.

Examine the data in sets 1, 2 and 3, which contain complex constructions. In set 1 there are core-level junctures where the second core is non-finite. Sets 2 and 3 consist of sentences containing finite subordinate clauses. Examine the grammatical and ungrammatical data and describe the restrictions on the 'm¹' type of construction.

- (1) a. TEACHER REQUIRE JOHN LIPREAD MOTHER
 'The teacher requires John to lipread Mother.'
 $\frac{m^1}{}$
- b. JOHN TEACHER REQUIRE LIPREAD MOTHER
 'JOHN the teacher requires to lipread Mother.'
 $\frac{m^1}{}$
- c. MOTHER TEACHER REQUIRE JOHN LIPREAD
 'MOTHER the teacher requires John to lipread.'
- (2) a. TEACHER REQUIRE JOHN MUST LIPREAD MOTHER
 'The teacher requires that John must lipread Mother.'
 $\frac{m^1}{}$
- b. TEACHER REQUIRE JOHN MUST LIPREAD MOTHER
 'The teacher requires that JOHN must lipread Mother.'
 $\frac{m^1}{}$
- c. TEACHER REQUIRE MOTHER JOHN MUST LIPREAD
 'The teacher requires that MOTHER John must lipread.'
 $\frac{m^1}{}$
- d. *JOHN TEACHER REQUIRE MUST LIPREAD MOTHER
 (*JOHN the teacher requires that must lipread Mother.)
 $\frac{m^1}{}$
- e. *MOTHER TEACHER REQUIRE JOHN MUST LIPREAD
 (*MOTHER the teacher requires that John must lipread.)
- (3) a. TEACHER SAY JOHN LIPREAD MOTHER
 'The teacher said John lipread Mother.'

- m¹
- b. TEACHER SAY JOHN LIPREAD MOTHER
'The teacher said JOHN lipread Mother.'
- m¹
- c. TEACHER SAY MOTHER JOHN LIPREAD
'The teacher said MOTHER John lipread.'
- m¹
- d. *JOHN TEACHER SAY LIPREAD MOTHER
(*JOHN the teacher said lipread Mother.')
- m¹
- e. *MOTHER TEACHER SAY JOHN LIPREAD
(*MOTHER the teacher said John lipread.')

8. *Pazeh (Formosan, Taiwan)²⁵

Based on the data in set 1, what generalizations can you make about basic constituent order in Pazeh? (Ignore the variations in verb morphology for the purposes of the exercise.)

Examine set 2 and describe the formation of content questions in Pazeh.

Examine set 3 and describe the formation of polar questions in Pazeh.

- (1) a. mubaket rakihan ki saw.
beat child NOM person
'The person beat a child.'
- b. xinazingan ni saw ki dadas.
throw GEN person NOM sweet.potato
'People threw away the sweet potatoes.'
- c. muxe'et nuang ki yaku.
tie cow NOM 1SG.NEUT
'I tied a cow.'
- d. mudaux aku dalam.
drink 1SG.NOM water
'I drink water.'
- e. mituki isiw.
sit 2SG.NEUT
'You(SG) are sitting.'
- f. pazih yaku.
Pazeh 1SG.NEUT
'I am a Pazeh.'
- g. ni taruat ki babizu.
GEN Taruat NOM book
'The book is Taruat's.'
- h. mabazu syatu di xuma ki mamais.
wash clothes LOC house NOM woman
'The woman washes clothes at home.'
- (2) a. meken asay pai siw?
eat what Q 2SG.NOM
'What do you eat?'

- b. musay asay pai isiw?
go where Q 2SG.NEUT
'Where are you going?'
- c. musay asay pai ki awi?
go where Q NOM Awi
'Where is Awi going?'
- d. hapet mu'asay pai isiw?
want what Q 2SG.NEUT
'What do you want?'
- e. ima pai imisiw?
who Q 3SG.M.NEUT
'Who is he?'
- (3) a. mineken siw sumay lia?
eat 2SG.NOM rice ASP
'Have you eaten rice?'
- b. musuzuk naki a paray siw?
hide 1SG.GEN money 2SG.NOM
'Did you hide my money?'
- c. mabaza mutu'ul lalawa siw?
know weave cloth 2SG.NOM
'Do you know how to weave cloth?'
- d. mabaza mukawas pazih a rahan siw?
know speak Pazez words 2SG.NOM
'Do you know how to speak Pazez?'

9. *Koromfe (Atlantic-Congo, Burkina Faso)²⁶

Based on the data in set 1, what generalizations can you make about basic constituent order in Koromfe? Draw the syntactic templates needed to account for the data.

Examine set 2 and describe the formation of polar questions in Koromfe.

Examine set 3 and describe the formation of content questions in Koromfe.

- (1) a. a vɛŋa koŋ nɛ̃naa.
ART rain DET.NH.SG defecate.PROG
'It is raining.'
- b. a vaga koŋ bɛ.
ART dog DET.NH.SG come
'The dog came/comes (back).'
- c. n zɔmmaa a m̄i.
2SG want.PROG ART rice
'You want some rice.'
- d. dɔ bellaa s̄a.
3SG.H come.PROG tomorrow
'He will come tomorrow.'
- e. a bɔrɔ hoŋ pa dɔ kɛ̃ɔ a f̄a.
ART man DET.H.SG give 3SG.H woman ART porridge
'The man gave/gives the porridge to his wife.'

- (2) a. a vεηa koη nēnaa bɪ?
ART rain DET.NH.SG defecate.PROG Q
'Is it raining?'
- b. a vaga koη bε bɪ?
ART dog DET.NH.SG come Q
'Has the dog come (back)?'
- c. n zommaa a mūi bɪ?
2SG want.PROG ART rice Q
'Do you want some rice?'
- d. də bellaa sã bɪ?
3SG.H come.PROG tomorrow Q
'Will he come tomorrow?'
- e. a bɔɔ hoη pa də kēš a fãi bɪ?
ART man DET.H.SG give 3SG.H woman ART porridge Q
'Did the man give the porridge to his wife?'
- (3) a. alama pa a vaga koη a mūi?
who.PL give ART dog DET.NH.SG ART rice
'Who(PL) gave the dog rice?'
- b. ase na zōmmš?
what 2PL want.DUR
'What do you want?'
- c. ase a kēš hoη panε a vaga koη?
what ART woman DET.H.SG give.PST ART dog DET.NH.SG
'What did the woman give to the dog?'
- d. ala də panε a fãi koη?
who.SG 3SG.H give.PST ART porridge DET.NH.SG
'Who did she give the porridge to?'
- e. sefu də na a manε hēη?
when 3SG.H see ART money DET.NH.PL
'When did he find the money?'

10. **Northern Sotho (Narrow Bantu, South Africa)²⁷

The data in set 1 present the basic constituent order in Northern Sotho. Sets 2 and 3 contain content questions. The numbers indicate noun classes.

Which constituents are being questioned in the data in set 2 and which in set 3?

Describe the morpho-syntactic strategies used in set 2, and then those in set 3, to form content questions. For set 3, keep in mind the difference between noun phrases and clauses and recall that the question word in content questions is in narrow focus.

- (1) a. Mo-nna o ngwal-ela ba-sadi lehono.
CLF1-man sc1 write-APPL CLF2-woman today
'The man writes (to the) women today.'

- b. O fa mo-kgalabje se-hla:re.
 SC1 give CLF1-old.man CLF7-medicine
 ‘He gives the old man medicine.’
- c. mo-šemane yo a šoma-ng
 CLF1-young.man RPRO.CLF1 SC1 work-REL
 ‘the boy who works’
- (2) a. O bona mang ka me:hla?
 SC.2SG see who always
 ‘Who do you always see?’
- b. Mo-kgalabje o jwala e:ng?
 CLF1-old.man SC1 plant what
 ‘What is the old man planting?’
- c. O fa mo-kgalabje e:ng?
 SC1 give CLF1-old.man what
 ‘What does he give the old man?’
- d. Mo-kgalabje o nyaka ngaka ka:e?
 CLF1-old.man SC1 look.for CLF9.doctor where
 ‘Where is the old man looking for the doctor?’
- e. Mo-kgalabje o jwala mo-hlare ne:ng?
 CLF1-old.man SC1 plant CLF3-tree when
 ‘When is the old man planting a tree?’
- (3) a. Ké mang yo a nyaka-ng nga:ka?
 COP who RPRO.CLF1 SC1 look.for-REL CLF9.doctor
 ‘Who is looking for the doctor?’
- b. Ké mang yo a bolela-ng ma-a:ka?
 COP who RPRO.CLF1 SC1 tell-REL CLF6.lie
 ‘Who is telling lies?’
- c. Ké mang yo a rekiša-ng ma-swi ko toropo:-ng?
 COP who RPRO.CLF1 SC1 sell-REL CLF6.milk in town-LOC
 ‘Who is selling milk in town?’

9 Language structure in context

KEY TOPICS

- Language typology
- Language families
- Language, culture and thought
- Language contact and change

Having examined the areas of morphology and syntax over the past chapters, in this chapter we look outwards to other, broader areas of linguistics that ‘share a border’ with the land of morpho-syntax. Each is, of course, a field of its own, so we will focus on some of the key topics and examples in each area to show how they connect with the topics we have covered.

For the purposes of linguistic analysis we usually separate out language’s component parts (morphology, syntax, semantics, etc.) in order to explain how those parts are in fact fully interconnected. The same applies to language structure in context. Whenever we use language we do so in a specific socio-cultural context and while our brains are simultaneously doing other things. Nonetheless, linguists argue about precisely how the context ties into our processing and our use of language.

In addition, understanding how a language fits into its socio-linguistic and typological context gives us a headstart in our analysis of its structure. If we understand how ‘related’ languages work, this will give us clues as to which structures we are likely to find, and avoid us having to ‘reinvent the wheel’.

Finally, languages and their speakers do not exist in isolated bubbles, separate from all other language communities. In this chapter we will conclude by looking at language in the context of related languages and in the context of the culture in which they are spoken. We will also briefly examine ways in which contact with other languages can influence language structure.

1 Language, cognition and communication

Back in chapter 1, I mentioned some broad factors that affect how languages are structured and how we communicate – these are a reflection of the

fact that language production and comprehension is a cognitive process and so connected to more general cognitive functions. We are now in a position to revisit this topic and recall examples we have seen in the preceding chapters.

The development of the language capability itself was motivated by the need to communicate, and this still drives the shape and use of language. We noted in chapter 1 the tension between understandability and economy; in other words, language speakers seek to express meaning clearly while avoiding redundancy. For example, all languages need to mark who did what to whom, but most do so by grouping two roles together and patterning them the same, either the single argument and the actor of a transitive clause (a nominative system) or the single argument and the undergoer (an ergative system). These systems economize to a degree on marking while retaining the distinctions necessary for understanding, an illustration of the balance between understandability and economy.

We also noted that languages may reflect a degree of iconicity in their syntactic structures. This was illustrated in chapter 7 where we saw the relationship between the syntactic structure of complex sentences and the meaning they convey.

Finally, we have seen the broad concept of markedness illustrated by language structures. There are a number of aspects to the notion of markedness: the marked item will have more morpho-syntactic marking and it may also be less common, less ‘neutral’ and/or perceived by the speakers as not the ‘normal’ structure. One example of a marked/unmarked distinction is voice, where active voice is unmarked and many languages also make use of various marked voice constructions such as passive or applicative constructions; the ‘marked’ voice has additional morpho-syntactic marking.¹

Section summary

In this section you have learned:

- to connect universal concepts in language with examples.
- **KEY TERMS:** understandability, economy, iconicity, markedness
- **EXERCISES:** 1, 2

2 Typology

As we have studied various aspects of language structure, certain features were said to be universal; that is, found in all languages. In chapter 3 we noted that all languages draw a distinction between elements that predicate and those that refer. We also noted that all languages express a distinction between statements and questions; that is, between declarative and interrogative illocutionary force. We also noted that languages tend to make a distinction between

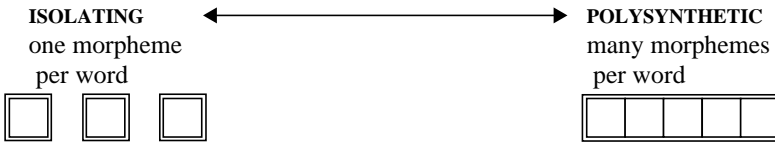


Figure 9.1 *Scale of isolating and polysynthetic morphological types*

states and activities and that they have morpho-syntactic strategies for indicating the ‘old’ and ‘new’ information in a sentence.

There are few syntactic structures that can be said to be universal. However, we do find certain tendencies. The general principles of a hierarchy are seen throughout languages, where constituents have a structured relationship to each other. For example, languages almost always allow **RECURSION**, which refers to the embedding of clauses inside clauses. We saw an example of this in Basque (and English) in chapter 7 where relative clause after relative clause was embedded within a noun phrase.²

TYPOLGY looks for ‘types’ of languages; we find we can group languages together based on the presence (or absence) of certain morphological or syntactic features. In this section, we will look at some of the key features that we can use to characterize languages across the world.

2.1 Morphological typology

In this section I will show how languages may be classified into groups according to their morphological type. Languages are usually compared along two scales: synthesis and fusion (Comrie 1989).

SYNTHESIS: how many morphemes can occur in each word

FUSION: whether each morpheme carries only one meaning, or several at a time.

This morphological typology is a helpful guide for us in the task of analysing and describing morphology in a language. Languages will usually not fall completely into a particular type, but we can use this typology to make general statements about the morphological patterns we find.

2.1.1 Synthesis

Synthesis has to do with the number of morphemes in a word and can be represented as the scale in Figure 9.1. The inner boxes are morphemes and the outer boxes represent words. What this means is that in a language with **ISOLATING** morphology, every word consists of a single morpheme with no affixes.³ In a language with **POLYSYNTHETIC** morphology, on the other hand, words tend to consist of several morphemes and may contain many morphemes. Such languages can allow the incorporation of one word into another to create very long words which may be translated as whole sentences in English. We will

look at an example of each of these types; remember that these are scales so we expect to find degrees of each type, rather than extremes.

2.1.1.1 *Examples of isolating languages: Lisu and Mandinka*

The most frequently cited examples of isolating languages are those of southeast Asia, such as Mandarin Chinese and Vietnamese. In east Asian languages in particular, many words are not only mono-morphemic, but also monosyllabic, as we see in the example from Lisu (Tibeto-Burman, China; Yu 2007: 215).⁴

- (1) gua²¹ ʂɿ⁵⁵ wa³⁵ zɿ³³ zɛ²¹ xu³³ li³³.
 buckwheat seed that take come.down free come.downward
 ‘Please get the buckwheat seed down here.’

Isolating languages are also found elsewhere: in Mandinka (Mande, Senegal) there are very few words in the language consisting of more than one morpheme, as illustrated by the data in (2).

- (2) (a) wulɔɔ ye ɲamɔ tee.⁵
 dog PFV grass cut
 ‘The dog has already cut the grass.’
 (b) lamin buka ɲambo sɛnɛ
 Lamin NEG cassava grow
 ‘Lamin is no longer growing cassava.’
 (c) jaba ye lamin suna ndi.
 Jaba PFV Lamin sad CAUS
 ‘Lamin made Jaba sad.’

In example (2) all the words consist of just one morpheme, even those that represent operators, such as *ye* ‘perfective aspect’ in (2a) and *buka* ‘negation’ in (2b) (Childs 2003: 109).

2.1.1.2 *Examples of polysynthetic languages: Dalabon and Tariana*

Dalabon (Gunwingguan, Australian) is a polysynthetic language, as the example in (3) illustrates; many of the words contain multiple syllables (Evans 2006: 36).

- (3) Ka-Ing-yurdmi-nj bulu=ka-h-yelûng-berrû-bawo-ng
 3-SEQ-run-PST.PFV them=3-ASRT-SEQ-many-leave-PST.PFV
 bala-buh-ngong-boyenj-ni-nj mahkih.
 3PL.IRR-because-mob-big-be-PST.PFV indeed
 ‘Then he ran away then and left them all, because there were so many
 of them.’

In example (4) from Tariana (Amazonian, Brazil) one word is translated into a whole sentence in English (Aikhenvald 1999: 87).⁶



Figure 9.2 *Scale of agglutinative and fusional morphological types*

- (4) na-matfi-ka-i-ta-kaka-tha-sina-bala.
 3PL-be.bad-THEMATIC-CAUS1-CAUS2-RECP-FRUST-REM.NVIS-EVERYWHERE
 ‘They had transformed each other (into something) everywhere in vain.’

2.1.2 Fusion

Fusion is an index of how many units of meaning are ‘fused’ into single morphemes. It is not to do with the number of morphemes but with how many jobs those morphemes do. This idea is represented in Figure 9.2: the different meanings are represented by the different shapes inside the morpheme boxes.

In a language with **AGGLUTINATIVE** morphology, each morpheme has only a single unit of meaning associated with it. In a language with **FUSIONAL** morphology, on the other hand, a single morpheme can have many meanings associated with it.⁷

With fusional morphology, the morphemes are like one-man (or one-woman) bands where one person plays all the instruments. Agglutinative morphology is like a group of musicians, each playing their own instrument; the music ‘glues’ them together and they all play their part.

2.1.2.1 *Example of an agglutinative language: Hungarian*

In the Hungarian (Uralic, Hungary) example in (5) you can see from the glosses that each morpheme carries only one meaning so we have an agglutinative morphological pattern (Gergely and Pléh 1994: 179).

- (5) barát- ság- a- i- di- tól
 friend- ship- LNK- PL- your- from
 ‘from your friendship’

Decide if Hungarian is isolating or polysynthetic.

2.1.2.2 *Example of a fusional language: Spanish*

Spanish (along with all languages of the Romance family, such as French and Italian) has fusional morphology. In languages with fusional morphology, affixes can often mark several grammatical features at once. The *-ó* in (6), for example, expresses indicative mood, third person, singular number, past tense and perfective aspect.

- (6) habl-ó ‘he spoke’

With fusional morphology, we may also find suppletion. Two sets of examples from English of tense-marking on a verb and comparative adjective formation are given in (7) and (8) respectively.

- | | | |
|-----|---------|---------------|
| (7) | PRESENT | PAST |
| (a) | go | went (*go-ed) |
| (b) | am | was (*be-ed) |
-
- | | | |
|-----|------|-------------------|
| (8) | BASE | COMPARATIVE |
| (a) | bad | worse (*badd-er) |
| (b) | good | better (*good-er) |
| (c) | much | more (*much-er) |

In cases like these, the word carries both the lexical meaning and the grammatical meaning. For example, *went* in (7a) means ‘go’ and ‘past tense’.

As mentioned above, a language may well display more than one type of morphology. For example, English, with its diverse historical origins, has both agglutinative (9a) and fusional (9b) morphology.

- | | | |
|---------|---------------------|------------------------------------|
| (9) (a) | mis-under-stand-ing | AGGLUTINATIVE |
| (b) | sing / sang / sung | FUSIONAL (verb meaning plus tense) |

Using the two scales of synthesis and fusion we can characterize the general morphological patterns we find in languages. For a fuller picture, however, we also need to examine syntactic patterns, and we will do this in the next section.

2.2 Syntactic typology

Any of the areas of syntax we have studied in preceding chapters can be used to classify languages; for example, types of complex construction, the presence or absence of various valence-changing constructions, or whether a language has internally headed or externally headed relative clauses.

In this section, we look at some of the more common categories used to arrange languages into types.

2.2.1 Basic constituent order

One of the main ways that languages are classified is by their **BASIC CONSTITUENT ORDER**. This is taken to be the order of the two independent noun phrases and the verb in a ‘basic’ or unmarked sentence; ‘basic’ is generally taken to mean a declarative, active voice, predicate focus main clause with lexical noun phrases (rather than pronouns). As we have seen in preceding chapters, changing one of these features often changes the word order and so we want to find as ‘neutral’ an environment as possible.

In the area of basic constituent order what seems to be particularly relevant is whether a language is ‘head-final’ or ‘head-first’ as this has implications for other structures in the language, as we will see in section 2.2.3. The head of a clause is

the predicate, so essentially we are interested in whether languages position the predicate at the end of the clause or before the undergoer.

There are two types of structures that complicate the issue of basic constituent order: head-marking constructions and ‘free’ word order languages. We will take a closer look at these structures in this section.

Head-marking constructions are problematic for two reasons. Firstly, as we saw in chapter 3, the only required expression of the arguments is as affixes on the verb and we interpreted these as the arguments in the core. The independent noun phrases, when they occur, provide additional information for identifying the referent, but they are often optional, as is the case in Laz (Kartvelian, Turkey). The examples in (10) form complete sentences without independent noun phrases. Noun phrases may be added to give more identificational information, as we see in (11) (Kutscher and Genç 2006: 238–9).

- (10) (a) cemçam.
hit:2A.1U.SG.PRS
‘You beat me.’
- (b) bulur.
go:1SG.PRS
‘I go.’
- (11) (a) baba pencere kosuy.
father window clean:3A.3U.SG.PRS
‘Father wipes the window.’
- (b) biçi aşkurinen.
boy be.afraid:3U.PRS
‘The boy is afraid.’

Secondly, in a head-marking construction the ordering of the noun phrases with respect to the verb may often be flexible depending on information structure. However, the order of the affixes is often fixed. For languages with head-marking in the clause, it may be advisable, then, to take into account the placement of the affixes in addition to the placement of the noun phrases when considering what constitutes basic constituent order.

This leads us to the second problematic category. As we noted in chapter 8, some languages have what appears to be ‘free’ word order in terms of the order of grammatical roles and the predicate. One example of such a language is Ojibwa (Algonquian, Canada), in which all of the word orders in (12) are grammatical (Grafstein 1989: 166).

- (12) (a) animoš onosine:wa:an bo:žēsan.
the.dog is.chasing the.cat
‘The dog is chasing the cat.’
- (b) bo:žēsan onosine:wa:an animoš.
- (c) onosine:wa:an bo:žēsan animoš.

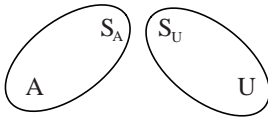


Figure 9.3 *Split intransitive grammatical relations system*

However, as we noted in chapter 8, these languages may have restrictions in terms of their focus structure, and so in such cases it may be a worthwhile endeavour to integrate the position of focus and topic into a discussion of basic constituent order.

2.2.2 Grammatical relations

Another area of language structure commonly used to differentiate languages is grammatical relations. As we saw in chapter 5, we can distinguish languages based on their system for expressing syntactic and semantic roles. The two most common systems are the nominative-accusative system and the ergative-absolutive system.

There are of course other patterns to be found, such as **SPLIT INTRANSITIVITY**, a semantic system where single argument actors pattern like actors of transitive verbs and single argument undergoers pattern like the undergoers of transitive verbs. This is shown in the diagram in Figure 9.3 (see Farrell 2005).

As noted in chapter 5, it is important to study the various PSA properties independently, as we may find a split system, where some properties follow a nominative pattern while others follow an ergative one. Case marking, verb agreement, and the control of ‘missing’ arguments, for example, should all be studied separately.

2.2.3 Correlations and implications

As suggested above, the presence of certain structures in a language may imply the presence of other structures. The best example of this relates to the position of the ‘head’ of a phrase or clause, which tends to follow the same pattern in various structures. There is an implicational tendency that if a language is ‘head-first’ in the clause (in other words, if the predicate precedes the undergoer), it will also have prepositions since the adposition is the head of an adpositional phrase. On the other hand, if a language has Actor Undergoer Predicate basic constituent order, if it is head-final in the clause, an implicational tendency is for it to be head-final in adpositional phrases too; in other words, to have postpositions (Comrie 1981: 17–19).

2.2.4 Sign language typology

Sign languages present a further challenge to a neatly ordered typology of human languages. Sign languages are fully developed modes of communication that

differ from spoken languages in their means of transmission (their **MODALITY**). In sign languages, messages can be created with several strategies that can occur simultaneously, including hand-shape, movement of the hands, and non-manual features (eye-gaze, brow-raising, etc.).

On the one hand, this diversity of features arguably presents advantages to those who communicate using sign languages. On the other hand, it proves to be an ongoing challenge to their linguistic description. This challenge includes everything from conventional methods of glossing data and the interpretation of non-linearly expressed elements to the analysis, labelling and typological classification of the structures that are found in sign languages (Slobin 2006).

Much of the typological criteria we have examined in this section can be (and is) applied in a useful way to sign languages. For example, sign languages in general are commonly ‘topic-prominent’ in their information structure; in other words, making frequent use of left-detached positions to place the topical information at the beginning of the sentence.

In addition, many sign languages can be considered to exhibit head-marking properties, and a general propensity for complex morphology. The verb LOOK-AT in American Sign Language, for example, can be marked for agreement with actor and undergoer, marked to indicate the time of the event and can also be modified by a non-manual manner morpheme. This makes a total of five morphemes: what is notable is that some of these morphemes are expressed simultaneously (rather than linearly, as they would be in a spoken language) (Aronoff, Meir and Sandler 2005: 302).

In seeking criteria to apply to a typology of all languages, cognitive, pragmatic and semantic features can be added to the mix. The challenge for sign language linguists is to develop ways to describe, analyse and categorize sign languages without having to squeeze them into spoken language ‘boxes’, but in a way that still recognizes the aspects of structure common to the cognitive apparatus and mechanisms that unite both signed and spoken languages (Sandler and Lillo-Martin 2006: 4, Zeshan 2005).

Section summary

In this section you have learned:

- to recognize morphological typology along the scales of synthesis and fusion,
- to recognize the key areas of syntactic typology.
- **KEY TERMS:** synthesis, isolating, polysynthetic, agglutinative, fusional, basic constituent order, modality.
- **EXERCISE:** 3

3 Language families

By studying features such as those discussed in sections 2.1 and 2.2, languages are placed in **LANGUAGE FAMILIES** according to their genetic affiliation, just as we might declare people to be related based on their genetic make-up. These ‘families’ can then be divided multiple times into branches, again depending on the sharing of distinctive sets of innovative features. Given what is known about the ways languages change, linguists also work to reconstruct language change by comparing languages, and use that as an additional way to determine if languages are related through having a common ancestor. The finer details of languages’ classifications, particularly when they are little known beyond their speech community, are often the subject of debate.

According to the Ethnologue, the language families with the most members are Indo-European, Austronesian, Niger-Congo, Trans-New Guinea, Sino-Tibetan and Afro-Asiatic (Gordon 2005). Because of the size of some of these families, I have generally described the language family of the languages referred to in this book by the second level of branching (except when they are members of small language families).

Let us look at a couple of examples. In (13a) and (b) we see typological classification of the Zome (Myanmar) and Koireng (India) languages. Both of these are Tibeto-Burman languages, but then they differ in the lower branches of their classification.

- (13) (a) Sino-Tibetan, Tibeto-Burman, Kuki-Chin-Naga, Kuki-Chin, Northern,
Zome
- (b) Sino-Tibetan, Tibeto-Burman, Kuki-Chin-Naga, Naga, Zeme, **Koireng**

As with family relationships, the relationships between language families can be represented as a tree. The languages in (13) are represented in Figure 9.4 (‘[...]’ indicates that there are more branches at this level that have been omitted in the figure.)

Groups speaking languages in the same language family will tend, broadly speaking, to be geographically centred near each other. This means that if we know the language family or classification of the language groups surrounding the one we are studying, we can form a hypothesis about the classification of the one we are studying. This will clearly need to be fully tested, with assessments of similarities in structural innovations, but it can provide a direction for study; if we are studying a language of China, for example, it is a pretty safe bet that it is not from the Niger-Congo language family. Or, if all we knew about a language was that it was from the Tai-Kadai family, we could have the expectation that it would be a tonal language (marking differences in meaning with the use of different tones).

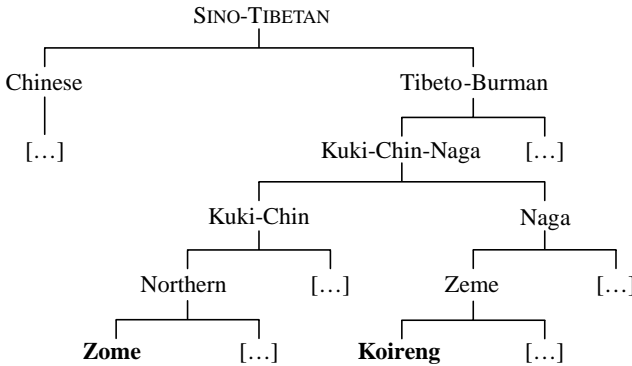


Figure 9.4 *Language family tree for Zome and Koireng*

Section summary

In this section you have learned:

- to understand the reasoning behind identifying languages as ‘related’.
- **KEY TERMS:** language family, genetic affiliation.

4 Language, culture and thought

Languages are inextricably connected to, and influenced by, the cultural contexts of the people who speak them. For example, languages may have words for culturally specific concepts that are very difficult to translate into other languages; the Japanese word *amae* and its verbal form *amaeru* describe an emotion that is connected with the notion of dependence and this is a concept considered to be central to the Japanese psyche, but for which there is no single word in English (Goddard 2005: 90).

The etymology of words may also reflect cultural values. In Selkup (Samoyed, Russian Federation), for example, the root of the word for ‘five’ *somb-* means ‘sound, song’ and relates to the domain of the sacred and taboo, a connection borne out by the tradition of not naming the fifth-born child in a family (Bykonja 2004: 162).

There is also evidence of this connection between language, culture and thought in some morpho-syntactic structures, and these will be the focus of this section.

4.1 Serial verb constructions

In chapter 7, we saw that serial verb constructions describe a single complex event and that in a symmetrical SVC each predicate describes one facet

of that event. Languages differ in terms of the pairs of predicates they consider to represent facets of one complex event and those that represent two separate events. As we saw in chapter 7, we can expect to see this distinction iconically reflected, in this case in terms of whether serial verb constructions can be used. Let us look at some examples.

In White Hmong (Hmong-Mien, China), the activities of dancing and blowing bamboo pipes are considered one complex event in that culture, and can be syntactically represented by an SVC.⁸ Dancing and listening to music, on the other hand, are viewed as separate events and cannot be expressed with an SVC (Jarkey 1991: 169).⁹

In Lisu (Tibeto-Burman, China), singing and dancing are expressed as an SVC, as illustrated in (14), because these activities are often performed at the same time by Lisu speakers (Yu 2007: 215).

- (14) za²¹ le⁵⁵ mu²¹ le⁵⁵ bu³³ gua³³ tɕ^he³⁵ tia⁵⁵ dza³³.
 son young daughter young COLL sing dance DUR.stay NVIS.INFR
 ‘The group of young people are (singing and) dancing.’

Again, in Alamblak (Sepik-Ramu, Papua New Guinea), we can see in (15a) that the predicates *muh* ‘climb’ and *hamb-ray* ‘search for’ can be put together in an SVC because these activities typically occur together as one complex event in the culture of the Alamblak speakers (Bruce 1988: 29–30).

- (15) (a) miyt ritm muh-hamb-ray-an-m.
 tree insects climb-search.for-1SG-3PL
 ‘I climbed the tree looking/and looked for insects.’
 (b) *miyt guñm muh-hēti-an-m.
 tree stars climb-see-1SG-3PL
 (‘I climbed the tree seeing the stars.’)
 (c) miyt guñm muh-hīti-marña-an-m.
 tree stars climb-see-well-1SG-3PL
 ‘I climbed the tree (and) saw the stars clearly.’

The predicates in (15b), on the other hand, cannot appear in an SVC, because there isn’t perceived to be an obvious justification for connecting these two events; in other words, climbing a tree is not a required component of the event of seeing the stars since it can be done from the ground. The addition of the modification *-marña* ‘well’, however, makes the combination possible because it gives a reason for climbing the tree. As Bruce points out, these interpretations of acceptability are thus intricately and inseparably connected to the world view of a particular language group (Bruce 1988: 29–30).

These examples have illustrated that there may be culturally specific associations between certain events in a particular language community that are reflected in how these events are morpho-syntactically expressed.

4.2 Evidential and tense systems

In chapter 3, we learned that evidential markers are clause-level operators that indicate the source of a speaker's information, without direct reference to whether that information is necessarily true. They may mark, for example, whether the speaker witnessed the event first-hand, heard about it from someone else, knows it as part of common knowledge, and so on. They bring shades of meaning to statements and stories that are left vague in languages without evidential markers. Example (16) from Jarawara (Arauan, Brazil) occurs when someone has been telling a story about the burial of his father using the first-hand evidential up to this point.

- (16) faha kasiro-tee-hamone.
 water(F) be.a.lot-HAB-REP.F
 'There was a lot of water (in the grave, it is said).'

In the sentence in (16) the speaker switches to the reported evidential marker, and this indicates that he did not actually look into the grave himself but heard about the water from other people (Aikhenvald 2004: 334).

In languages that use evidential markers, they are often obligatory: the inclusion of the source of one's information in what one says is of vital ethnolinguistic importance. As such, using evidential markers incorrectly may lead to being considered at best stupid or a poor speaker of the language, and at worst crazy or dangerous.¹⁰

In addition, languages vary in terms of the evidential markers they use for events on the edge of first-hand experience, such as dreams or spiritual experiences. In this way, the use of morphological evidential markers interacts in interesting ways with culture and perceptions of different types of events and experiences.

For example, Cuzco Quechua (Quechuan, Peru) speakers use a reported evidential to mark myths and dreams, since they are only indirectly experienced (Shulman and Stroumsa 1999: 93). In Wintu (Penutian, USA), on the other hand, which does not mark tense, the marker *-nt^he* is used for sensed experiences that are not literally seen, including prophecies or predictions about the future based on intuition or dreams (Schlichter 1986: 47–8).¹¹ The meaning of the evidential marker is illustrated in the examples in (17).

- (17) (a) Heket wira waça·bi-nt^he·m.
 someone come cry-IPFV-SENS-DUB
 'Someone is coming crying.' (I hear.)
 (b) ɔ̌otisa-bi-nt^here-sken.
 strong-IPFV-SENS-you
 'You're strong!' (I feel; said while wrestling.)
 (c) Po·m yel-hurawi-nt^he·m.
 earth destroy-SEQ-SENS-DUB
 'The earth will be destroyed.' (I know, I feel.)

These examples illustrate that the correct use of morphological evidential markers ties language structure closely to cultural conventions, practices and beliefs.

The expression of tense and the location of events in time may also be interconnected with culture concepts and values. To take an example, recall that in relative tenses, the reference time is different from the time of speech. One has to, in a sense, imagine oneself in that reference time in order to understand the sentence. In (18), the time of the described event (the singing) and the reference time are different, but both before the time of the utterance. In English, the tense in (18) is called past perfect.

(18) Jamin had already sung the song (before the special guest arrived).

The Pirahã (Mura, Brazil) language does not have perfect (relative) tenses (Everett 2005: 631). All its tenses are absolute, which means the reference time is always the same as the time of speech. Everett makes the strong (and not uncontroversial) claim that this is because the culture of the Pirahã people actually constrains the structures of their grammar: in other words, they do not have relative tenses because they live within the time and space of their immediate environment, and relative tenses require one to metaphorically place oneself outside that world of immediate experience.

As another example, consider Yimas (Sepik-Ramu, Papua New Guinea). In addition to marking tense, Yimas marks realis and irrealis, distinguishing ‘real time’ events from events outside what is perceived as real, whether that be in the distant past or the distant future (Foley 1991: 237). Examples (19a) and (20a) illustrate the two uses of the irrealis marker that differ in terms of the time of the event but are similar in treating the event as beyond what they perceive as ‘real’ time in their worldview (Foley 1991: 238).

(19) (a) tan impa-ampu-mpi-awl-k.
there 3DU.S-float-SEQ-take-IRR
‘They both drifted there.’

(20) (a) ama patn wayk-k.
1SG betelnut buy-IRR
‘I want to/will buy betelnut.’

(b) patn na-ka-wayk-kt.
betelnut it-1SG-buy-REMF
‘I will buy betelnut after tomorrow.’

Examples (20a) and (b) contrast the use of the irrealis marker for a future event with the use of the remote future marker *-kt*, the latter indicating that the speaker believes the event is definite or highly likely to occur (Foley 1991: 239).

The use of irrealis for both ‘legendary’ past and indefinite future leads Foley to suggest that Yimas speakers may conceive of time as a circle, as represented in Figure 9.5, rather than as a line running between the present and the past (1991: 237).

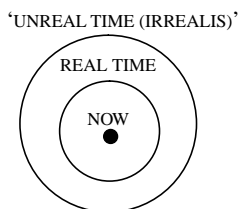


Figure 9.5 *Representation of the Yimas view of time*

Others have taken the cultural connection further. Telban (1998) observes that in the related Karawari (Sepik-Ramu, Papua New Guinea) language, the same *-k* marker is used to denote the mythical past and is used for telling legends but, unlike in Yimas, is not used for marking the indefinite future.¹² Telban attributes this difference to the way that Yimas speakers expect the end of the world in the future, the end of their ‘real’ time (Telban 1998: 46). You might like to consider whether you think the Yimas speakers might conceptualize time as a circle because of their language structure, or whether the structure of their language prompts them to conceptualize time this way.

As we have seen in this section, cultural perceptions of time and reality are closely connected to their linguistic expression in many languages, particularly those rooted in their immediate environment. We will examine another connection between local environment, culture and language structure in the following section.

4.3 Direction and location

As we saw in chapter 3, directional morphemes may indicate the goal of an action or the direction of an action, or may be used to describe the location of something.

We can make a distinction between **CARDINAL DIRECTIONS**, such as north, south, east and west, which are fixed points no matter which direction you are facing, and **RELATIVE DIRECTIONS** such as the notions of left, right, in front of and behind. Thus, if a group of people are facing in all different directions and someone tells them to face north (cardinal), they will end up facing the same way. If, however, they are asked to look to their left (relative), they will end up facing different ways (but having performed the same action).¹³

Of course, not all cultures make reference to the compass points of north, south, east and west. Many cultures use other landmarks to code their cardinal coordinates. In Mwotlap (Oceanic, Vanuatu), the language of an island-based community with a seafaring past, there are two sets of geographically based directionals. In common with many island language communities, there is one axis differentiating ‘landward’ from ‘seaward’; the watershed line through the middle of the island determines which terms are used, although this is sometimes

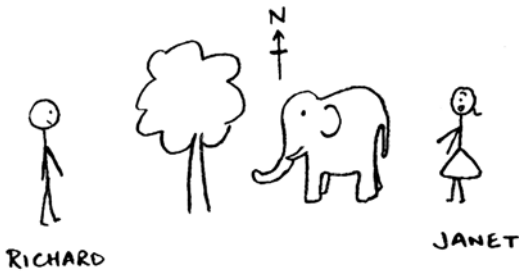


Figure 9.6 *Relative and absolute reference points*

geographically unmarked and children have to learn where the watershed line supposedly lies (Francois 2003: 417).

The second main axis in Mwootlap essentially divides south-east from north-west. In addition, the word for 'south-east' also means 'up', and this is also the direction of the trade winds (i.e. from the south-east). The reason why 'south-east' means 'up' is that to sail south-east, into trade winds, is as difficult as going up, while sailing in the other direction is as easy as going down.

These absolute frames of reference are used widely, down to the smallest movement, as the example in (21) illustrates.

- (21) En malig hag.
 AOR.lie shift east
 'Please shift yourself eastward.'

The hypothesis known as **LINGUISTIC RELATIVITY** suggests that the structure of a particular language has an impact on thought processes; this principle is argued to be influential in languages that make very wide use of cardinal directionals. Speakers, it is suggested, may develop a 'mental compass', the ability to always know which way they are facing (Levinson 2003: 168); in other words, the structure of their language may affect the way their brain works.¹⁴

Speakers of the Guugu Yimithirr language (Pama-Nyungan, Australia), for example, use absolute points of reference almost exclusively in describing spatial relations, including many contexts where English speakers would use relative coordinates. As an example, take a look at Figure 9.6. In English, Richard might say that the elephant is behind the tree, while Janet may describe it as in front of the tree. In Guugu Yimithirr, both speakers would say it is 'east' of the tree (Levinson 2003: 115). In order for this system to work, speakers must always know which way is north on their 'mental compass'. It may be, then, that this ability and tendency to connect an object to absolute physical reference points is connected to, and perhaps dependent on, the physical immediacy of the landscape in which speakers live, where the necessary known landmarks are always present.

As we can see, directionals provide us with yet another example of the complex interaction between language structures, thought and culture.

4.4 Classifying referents

In this section we will look at three ways in which culture impacts the classification and quantification of referents.

4.4.1 Noun classes

Languages vary in how they differentiate classes of nouns. In some cases, noun classifier markers are selected on the basis of physical properties of the referent. Many American languages operate with this type of classifier.

In Jacaltec (Mayan, Guatemala), there are twenty-four classifiers grouped into two classes. The first class marks nouns denoting people and the classification is based on distinctions linked to sex, age, respect, kinship and divinity (Craig 1986: 250). The classifier used may vary depending on who is using it and their relationship to the person to whom they are referring. The second type of classifier concerns the physical objects that people use or interact with in some way. The basis for classification of these items is the material from which they are made, such as ‘animal’, ‘corn’, ‘rock’ and ‘water’, and as such it is not variable (Craig 1986: 251).

What is most pertinent to us here is that the perception of which physical characteristic of the object is most salient may vary across cultures and so there is variety in how objects are classified and morpho-syntactically expressed. In chapter 6, we saw examples of noun classifiers from Nambiquara (Amazonian, Brazil) where, unlike in Jacaltec, shape is a relevant characteristic. Those examples are repeated here in (22) (Lowe 1999: 281).

- (22) (a) $wa^3lin^3-su^3-su^2$
 manioc-CLF(BONE.LIKE)-INDF
 ‘manioc root’ (indefinite)
- (b) $huk^3-ēn^1-su^2$
 shooter-CLF(HOLE.LIKE)-INDF
 ‘shotgun’
- (c) $huk^3-ki^3-su^2$
 shooter-CLF(ROUND)-INDF
 ‘bow’
- (d) $wā^2la^2 wi^3win^3-ka^3lo^3-a^2$
 cloth blue-CLF(FLAT.SHEET.LIKE)-DEF
 ‘the blue cloth’

Finally, consider Mparntwe Arrernte (Pama-Nyungan, Australia). In this language, particular nouns occur with different morphological classifiers depending on the property or function of the noun that is most relevant in the discourse and cultural context. The noun *arlkerke*, for example, refers to the ‘meat-ant’. When it occurs with the classifier noun *yerre* ‘ant’ (*yerre arlkerke*), it is in order to focus on its properties as an ant. If, on the other hand, it is preceded by *awelye* ‘medicines’ (*awelye arlkerke*), its medicinal properties are at the fore. Finally, if it occurs with *ampere* ‘socially relevant places’ (*ampere arlkerke*), the pertinent

property of the ant for the discourse at hand is as the ‘Dreaming place’ of the meat-ant ancestors (Wilkins 2000: 148).

4.4.2 Inalienable and alienable possession

The notion of possession can be divided into **INALIENABLE** and **ALIENABLE POSSESSION**. At one end of the scale, body parts and family members are examples of items that are generally inalienably possessed (e.g. your arms, your brother, etc.); that is, items that are not normally separable from the ones that own them (Heine 1997: 10). At the other end of the scale, items of property that you temporarily own are generally considered alienable (e.g. your car, your train ticket, etc.).

In English, as the preceding examples show, we express both types of possession with the same morpho-syntactic structure(s). However, this is not the case in many other languages, where alienable nouns are generally expressed with a more marked construction than inalienable nouns.

We can see different morpho-syntactic expressions of alienable and inalienable possession in Tauya (Trans-New Guinea, Papua New Guinea). The inalienable category is largely restricted to body parts. When the possessor is pronominal (e.g. *my*, *your*, *his*, etc.), it is expressed with a prefix on the noun (the prefix form of the corresponding independent pronoun), as shown in (23) with the first person singular possessive prefix *ya-*. When pronominal possessors possess alienable nouns, on the other hand, the possessor appears as an independent noun marked with the genitive case suffix *-pi*, as we see in the data in (24) (MacDonald 1990: 131).

- (23) (a) *ya-neme* ‘my head’
 (b) *ya-potiyafu* ‘my hand, arm’
 (c) *ya-otamo* ‘my knee’

- (24) (a) *wate ne-pi*
 house 3SG-GEN
 ‘his/her house’
 (b) *fai na-pi*
 net.bag 2SG-GEN
 ‘your(SG) net bag’
 (c) *awa ten-pi*
 father 2PL-GEN
 ‘your(PL) father’

What is most significant to us here is that cultures differ quite widely in what they consider to be alienably or inalienably possessed; thus, this is another area of language structure impacted by cultural values. In Iraputu (Malayo-Polynesian, Indonesia), for example, some body parts and kinship terms are considered inalienable while others are alienable. Body parts treated as alienable are, curiously, mainly internal organs such as *doje* ‘brain’ and *rut* ‘vein’, while alienable

kinship terms include *den* ‘mother’, *die* ‘father’ and *mo* ‘child’ (van den Berg and Matsumura 2008: 219).

In other languages, the same noun may be considered alienable or inalienable depending on the context. In Lango (Eastern Sudanic, Uganda), the same noun can be indicated by either the alienable or inalienable possessive form, altering the interpretation of the noun, as we see in (25) (Noonan 1992: 157).

- | | | |
|----------|----------------------------|-------------|
| (25) (a) | wì rwòt | INALIENABLE |
| | head king | |
| | ‘the king’s (own) head’ | |
| (b) | wìcc à rwòt | ALIENABLE |
| | head ATTR king | |
| | ‘the king’s (animal) head’ | |

In the further examples from German (Germanic, Germany) in (26), the noun *Hose* ‘trousers’ receives different morpho-syntactic coding depending on whether the trousers are being worn (and thus treated like an inalienable body part), as in (26a), or not being worn, as in (26b) (Heine 1997: 17).

- | | | |
|----------|---------------------------|-------------|
| (26) (a) | Ich zerriß mir die Hose. | INALIENABLE |
| | I tore to.me the trousers | |
| | ‘I tore my trousers.’ | |
| (b) | Ich zerriß meine Hose. | ALIENABLE |
| | I tore my trousers | |
| | ‘I tore my trousers.’ | |

4.5 Language and gender

Many languages show differences in the ways that men and women communicate, often reflecting cultural and gender-based differences in group formation processes or perceptions of the differences between men and women. In this section, we are specifically interested in differences in morpho-syntactic patterning.

Leeson (2005) describes several structures in Irish Sign Language which are often expressed slightly differently by men and women. One example is the expression of the topic construction where one referent is expressed at the beginning of a clause, before the main core. The topic element is prototypically marked by a backwards head tilt and a raising of the eyebrows; however, Leeson found that while men tend to use the prototypical marking, women often leave out the head tilt (2005: 261).

A more extreme divergence in the language structures of men and women occurs in the Yanyuwa (Pama-Nyungan) language community of Australia. The two versions of the same sentence in (27) illustrate the differences between the women’s dialect in (27a) and the men’s dialect in (27b) (Bradley 1998: 14).

- (27) (a) Nya-ja nya-wukuthu nya-rduwarra niya-wini nya-Wungkurli kiwa-wingka
 this-ML ML-short ML-initiated.man his-name ML-Wungkurli he-go
 wayka-liya ji-wamarra-lu niwa-yirdi na-ridiridi ji-walya-wu.
 down-wards M-sea-ALL he-bring CLF-harpoon M-dugong-DAT
 ‘This short initiated man whose name is Wungkurli, went down to the sea,
 taking a harpoon with him for dugong.’
- (b) Jinangu wukuthu rduwarra na-wini Wungkurli ka-wingka
 this short initiated.man his-name Wungkurli he-go
 wayka-liya ki-wamarra-lu na-yirdi na-ridiridi ki-walya-wu.
 down-wards M-sea-ALL he-bring CLF-harpoon M-dugong-DAT
 ‘This short initiated man whose name is Wungkurli, went down to the sea,
 taking a harpoon with him for dugong.’

The reason behind the difference in language varieties is unknown; speakers seem to perceive it as stemming naturally from the difference in the roles of men and women (Bradley 1998: 15). When asked for the reason for the extensive differences, Bradley reports that the speakers thought the question itself a little ridiculous (1998: 19).¹⁵

Note all the differences between the data in (27).

Yanyuwa presents a rather extreme case of difference, but throughout this section we have seen that in analysing the structure of a language, it is clearly vital to be aware of potential culturally related distinctions and differences in structure in a number of areas.

Section summary

In this section you have learned:

- to be aware of the interplay between morpho-syntactic structure, cultural context and thought processes.
- **KEY TERMS:** linguistic relativity, inalienable and alienable possession
- **EXERCISES:** 4, 5, 6, 7

5 Language change and language contact

The multitude of factors that interact when languages come into contact are beyond the scope of our discussion here; the goal of this section is to provide a glimpse of this area of linguistics. In analysing the morpho-syntactic structure of a language it is important to be aware of the consideration that no language exists in a static bubble.

5.1 Language change

Even without ‘outside interference’, all languages are constantly in a process of shift and change in terms of their sounds, their vocabulary and their

syntactic structure. This is partly due to the competing communicative demands of economy and understandability that affect the structures we use in conversations. Also influential are socio-cultural factors that determine which words and structures will undergo the common socio-cultural process of **CONVENTIONALIZATION**: that is, adoption by agreement within a social group (Burling 2005: 105).

One syntactic change in English happened to the modal auxiliary verbs (*can*, *will*, *must*). Over time, the verb *will* has developed a function as a grammatical marker of future tense or epistemic modality (certainty), having previously been a full lexical verb. This change largely happened around the sixteenth century (Aitchison 2001: 108). Changes such as this are examples of the process of **GRAMMATICALIZATION**, whereby lexical items lose their lexical meaning and develop into grammatical markers.

Serial verb constructions once again serve as another illustration of internal language change. The set of minor or modifying verbs used in asymmetrical SVCs (such as those with directional or aspectual meaning) is often limited and may become a closed class. From there, these verbs may become grammatical markers rather than lexical items.

We can see an example of this process in Yabem (Oceanic, Papua New Guinea), where the direction verb *-sa* ‘ascend’, shown in (28a), has also come to be used as a grammatical morpheme, the directional operator morpheme ‘upwards’, as in (28b). Notice that in (28b) the directional operator *sa* does not carry the agreement markers that the verb *-sa* does in (28a) (Ross 2004: 309, 311).

- (28) (a) Lau s-è wəŋ aŋga saləŋ ke-sa ge-meŋ.
 people 3PL.S-pull canoe from forest 3SG.S-ascend 3SG.S-go.towards.speaker
 ‘The people pulled the canoe up here out of the forest.’
- (b) Se-balaŋ boʔ sa.
 3PL:S-carry.on.shoulders pig upwards
 ‘They lifted the pole with the pig tied to it.’

Akan (Atlantic-Congo, Ghana) provides another illustration of the process of grammaticalization in SVCs (Lord, Yap and Iwasaki 2002: 218). The sentence in (29) illustrates the core meaning and function of *ma* ‘give’, as a verb with two ‘object’ noun phrases.

- (29) o-ma-a me akutu.
 he-give-PST me orange
 ‘He gave me an orange.’

However, as we see in (30), *ma* has also come to be used in SVCs to create a benefactive meaning (‘for him’), either ‘for his benefit’ or ‘in his place’.

- (30) (a) me-kyerew krata ma no.
 I-write letter give him
 ‘I write a letter for him.’

- (b) ɔ-yɛ adwuma ma ne nua barima no.
 he-do work give his brother
 ‘He works for his brother.’

In (31a), we see yet another step away from the core meaning of *ma*: the sentence shows that the effect on the object referent need not be positive, and yet *ma* still marks the referent that is affected by the situation. In (31b), we see a permissive use of *ma*, this time with an inanimate object, while in (31c), we see that the sense of deliberate intention that ‘give’ has is not maintained. Finally in (31d) we see an example with the sense of consequence or purpose of ‘give’ but without control being transferred (Lord, Yap and Iwasaki 2002: 228).

- (31) (a) ɛ-yɛ den ma me.
 it-is difficult give me
 ‘It is difficult for me.’
- (b) ma no tena hɔ.
 give it.OBJ stay there
 ‘Let it stay there.’
- (c) ɔ-ma polisfo no bɛ-kyee no.
 he-give police the FUT-catch him
 ‘He let the police catch him.’
- (d) ɔ-bɔɔ no ma ɔ-hwe ase.
 he-struck him give he-fall down
 ‘He struck him so that he fell.’

In the uses of *ma* illustrated in (30) and (31), then, the word *ma* loses some components of its lexical meaning when it appears within an SVC. It appears to bear more of the characteristics of a grammatical preposition than those of a lexical verb.

These examples have shown that languages are constantly shifting and evolving to meet the needs of their speakers, and through language-internal pressures and processes. In the next section, we will turn to looking at external influences on languages.

5.2 Language contact

As well as undergoing ‘internal’ changes, the structure of a language may change upon external contact between its speakers and speakers of other languages (assuming the speakers of the one language do not simply switch completely to using the other). Once again, this may be in any area of the grammar, and be subject to a wide variety of socio-political, cultural, economic and even environmental factors. In this section, we will touch on a number of examples of morpho-syntactic structure change in response to language contact.

If a language has features not associated with its linguistic ‘relatives’ within its language family, this is often because of contact with an unrelated language, and consequent **BORROWING** of those features. In parallel, if a pair of unrelated

languages share a particular feature, this is also often attributed to the effect of language contact. The result is layers of foreign components being added to languages, and these elements may adjust in various ways to the structure of the language they are added to (Aikhenvald 2008a: 4–5).

It is relatively rare that speakers will borrow syntactic structures directly from another language. However, it is by no means impossible. Bengali (Indo-Iranian, Bangladesh) speakers borrowed not only the plural suffixes from Dravidian language family sources, but also the human (*-rā*) vs. non-human (*-gulō/gulī*) noun classification system that the suffixes brought with them (Thomason and Kaufman 1991: 15–16).¹⁶

What is more common than direct syntactic borrowing is that lexical items will be borrowed, and structural elements associated with them seem to tag along. For example, speakers of Middle English (spoken from around the eleventh to the fifteenth century) borrowed derivational morphemes such as *-tion* and *-able* from French, but not as independent morphemes. Rather, lexical items containing those morphemes were borrowed and the derivational morphemes came with them (Winford 2003: 62).

If languages are already reasonably closely related, language contact may result in **CONVERGENCE**, matching the form and use of structures in the languages. Thus in the Spanish spoken in Los Angeles, USA, existing Spanish structures are used in ways that mirror English more closely, as we see by comparing the examples in (32) with the English translation and the ‘general’ Spanish translation underneath.

- (32) (a) Mi padre es seis pies (de altura).
 ‘My dad is six feet (tall [lit. ‘of height’]).’
 General Spanish: Mi padre mide (‘measures’) seis pies.
- (b) Estábamos en el patio cuando este niño se me acercó . . .
 ‘We were in the school yard when this boy came up to me . . .’
 General Spanish: ‘Estábamos en el patio cuando *un niño* (‘a boy’) se me acercó . . .’¹⁷
- (c) . . . y quebraron mi, mi jaw.
 ‘and they.broke my, my jaw.’
 General Spanish: y me quebraron la mandíbula.
 and to-me they-broke the jaw

In (32a) we see the use of the copular verb form *es* rather than the standard *mide* ‘measures’, mirroring English use of *is*. In (b) we see a use of *este* ‘this’ in a use only recently developed in English, to mark a new referent (Silva-Corvalán 2001). In (32c) we see the structure to mark affected alienable objects extended to mark inalienable objects, which again results in a structure more similar to English than general Spanish (Winford 2003: 66).¹⁸

As we saw in section 4, cultural practices and values interact with language structure in interesting ways. This is also evident when languages with different structures come into contact. For example, as Aymara (Aymaran, Bolivia) speakers have switched to using Spanish in recent times, they have retained

the expression of evidential meanings in their variety of the Spanish language, since in their ethnolinguistic culture the marking of the source of information is obligatory for communication (Aikhenvald 2004: 335).

As well as selective borrowing, languages may ‘combine’ in more systematic ways to form new mixed languages, as is the case for Michif (Mixed, Canada). This language developed in North America from the need for communication between French fur traders and native peoples, and, broadly speaking, it uses French (Romance, France) nouns and Cree (Algonquian, Canada) verbs. The people that speak this language, the Métis, have their own ethnic and cultural identity (Bakker 1997).

PIDGINS and **CREOLES** are two particularly interesting types of mixed languages. Pidgins arise when people need to communicate but have no common language; many of the world’s pidgin languages are found in the Caribbean, the south Pacific islands and west Africa. The communicative need added to a restricted domain of use means that pidgin languages begin with very simple structures: a limited vocabulary, little or no inflectional morphology and no syntactic embedding. Pidgin languages are nobody’s first language and this differentiates them from creoles, which are pidgin languages that have become a ‘native’ language and which develop more morpho-syntactic complexity over time (McMahon 1994: 253–64).

In this section we have taken a lightning tour of the issues surrounding internally and externally motivated language change, examining ways in which languages shift, evolve and adapt to the communicative and interactional needs of their speakers. It is important to have an awareness and understanding of these processes when seeking to analyse the morpho-syntactic structure of a language.

In this chapter as a whole we have seen how closely a language is intertwined with the mindset and culture (past, present and future) of its community of speakers. While there is debate about exactly how these elements of our humanity are connected, there is today a recognition that a diversity of languages represents at the very least a diversity of viewpoints and identities, if not a diversity of ‘worlds’. With this view, the current push for the documentation of endangered languages is not only prompted by a desire for academic facts but in many cases by the recognition that a person’s mother tongue is intimately connected to their mind, emotions and soul.

Section summary

In this section you have learned:

- to be aware of the factors involved in internal language change,
- to recognize the issues surrounding external language change from language contact.

- **KEY TERMS:** conventionalization, grammaticalization, internal/external change, borrowing, convergence, mixed language, pidgin, creole
- **EXERCISE:** 8

Further reading

The World Atlas of Linguistic Structures is available in print but also online as a resource on the distribution of various features in languages across the planet (Haspelmath, Dryer, Gil and Comrie 2005).

For more on language universals and typology, see Comrie (1989), Croft (2002) and Whaley (1997). For more discussion of space and directionals, see Levinson (2003) and Senft (1997). For more on noun classification systems, see Senft (2000). For studies of the interaction of language and cultural/interactional context, see Enfield (2005), Aikhenvald and Dixon (2008) and Duranti and Goodwin (1997).

For more discussion of grammaticalization, see Hopper and Traugott (2003). For more on language contact and change, see Thomason and Kaufman (1991).

Exercises

1. *Iconicity

In this chapter one example of structural iconicity was discussed. What are some other examples that we have studied of an iconic relationship between meaning and form?

2. *Markedness

In this chapter one example of markedness in language structure was discussed. What are other examples that we have studied that reflect the concept of markedness in language structure?

3. *Morphological typology: Kabardian (West Caucasian, Russian Federation)¹⁹

Given the following data from Kabardian, describe the morphological type of the language in terms of the scales of synthesis and fusion.

- (1) sa wa mə-tʰəʎ-ha-r Ø-w-a-s-tə-aγ-ha-ś.
 I you this-book-PL-ABS 3-you-DAT-I-give-PST-PL-AFF
 'I gave these books to you.'

- (2) a-sa-šx^wa-m-k^ya x'ə-r Ø-x'a-žə-aγ-ś.
that-knife-big-OBL-INS man-ABS 3-die-finally-PST-AFF
'The man died by the sword.'
- (3) a-bə ś'ə-m Ø-yə-γ^wəna-r Ø-y-ə-γ^watə-aγ-q'm.
3-OBL earth 3-POSS-boundary-ABS 3-3-NPRS-find-PST-NEG
'He did not find the edge of the earth.'

4. *Syntactic typology: Tujia (Tibeto-Burman, China)²⁰

Given the following data from Tujia, and the order of the underlined elements in particular, would you expect this language to have prepositions or postpositions? Why?

- (1) guo² xie¹hu² mo³ xi⁴ca³ lu³.
3SG quickly ADV run DIR
'He ran away quickly.'
- (2) se² da² nie³ luo⁴die¹ kuo¹ba¹ a²hu¹ mo³ xi⁴ca³ ji² lu³.
die NEG ASSOC people heads support ADV run TEL DIR
'Those who had not died escaped, clutching their heads.'
- (3) nga² nie³ biu² ye³ se¹tong¹ xiao².
1SG ASSOC daughter eight years have.now
'My daughter is eight years old.'

5. *Directionals

When you give, or ask for, directions, do you prefer to use cardinal directionals (*turn north, then turn east. . .*) or relative directionals (*turn right, go straight, then turn left. . .*)? Why?

6. *Evidentials

While we do not use evidential affixes in English, speakers have other ways of expressing the source of the information they utter. What are those morpho-syntactic strategies? When might speakers choose to use, or not use them?

7. **Language and culture

Research the following references (using the list of references in this book for more information), and compare the viewpoints they present concerning the connection between language and culture. You may find other references to add to this list.

- Newman (2005) 'Culture, cognition and the grammar of "give" clauses'.
Baker (2001) *The Atoms of Language*.
Sapir (1985) *Selected Writings in Language, Culture and Personality*.

Pinker (1994) *The Language Instinct: How the Mind Creates Language*.

Everett (2005) 'Cultural constraints on grammar and cognition in Pirahã'.

8. *Language change

Do you ever use the word *whom*? Do you know when it ought to be used? Would you ever use the progressive form of *love*, as in *I'm loving it*? What other words or structures do you consider to be changing in English?

List of Languages

In the majority of cases, languages have been labelled in this book according to the second branch of their classification. E.g. ABKHAZ: North Caucasian, West Caucasian, Abkhaz-Abazin. There are a few exceptions: Narrow Bantu and Oceanic languages have been labelled as such, since they are sub-groups studied more extensively in the literature under those family names. Where there is little branching in the family, or the family is very small, the highest family label has been used, e.g. MANDARIN CHINESE: Sino-Tibetan, Chinese.

The classification follows the Ethnologue (Gordon 2005). Some language names differ from the primary name given in the Ethnologue; this is either explained in a footnote or, when the name used here is listed as a dialect or alternative name, it is searchable in the online version of the Ethnologue database.

	Family	Country	Chapter: section, source
Abkhaz	West Caucasian	Georgia	3: 3 Helmbrecht 2001
African American English	Germanic	United States of America	3: 2.4, 6: 2.2 Green 2002
Afrikaans	Germanic	South Africa	3: 1.2 Donaldson 1993
Aghem	Atlantic-Congo	Cameroon	8: 2.1 Hyman <i>et al.</i> 1979
Äiwoo	East Papuan	Solomon Islands	7: 3.2 Næs and Boerger 2008
Akan	Atlantic-Congo	Ghana	9: 5.1 Lord <i>et al.</i> 2002
Alamblak (Karawari)	Sepik-Ramu	Papua New Guinea	7: 3.2, 9: 4.1 Bruce 1988, Telban 1998
Amele	Trans-New Guinea	Papua New Guinea	3: 1.3 Roberts p.c.
American Sign Language	Sign Language	United States of America	2: 5.3, 5: 3.5, 7: 5.2, 8: Ex, 9: 2.2 Sandler and Lillo-Martin 2006, Aarons 1994, Aronoff <i>et al.</i> 2005

	Family	Country	Chapter: section, source
Arabic	Semitic	Middle East & North Africa	2: Ex Childs 2003
Arabic, Iraqi	Semitic	Iraq	3: Ex Cowan and Rakušan 1998
Argentinian Sign Language	Sign Language	Argentina	8: 2.1, 2.2 Massone and Curiel 2004
Armenian	Indo-European, Armenian	Armenia	3: 2.1 Kozintseva 1995, Miestamo 2005
Atkan Aleut	Eskimo-Aleut	United States of America	2: Ex Bergsland and Dirks 1978
Australian Sign Language	Sign Language	Australia	6: 4.2 Johnston 1996
Austrian Sign Language	Sign Language	Austria	8: 3.1 Šarac <i>et al.</i> 2007
Aymara	Aymaran	Bolivia	9: 5.2 Aikhenvald 2004
Balinese	Malayo-Polynesian	Indonesia	5: 2.7 Wechsler and Arka 1998
Bari	Eastern Sudanic	Sudan	5: 3.2 Creissels <i>et al.</i> 2008, Spagnolo 1933
Basque	Isolate	Spain	2: 5.5, 7: 5.1 Hualde and Ortiz de Urbina 2003
Baure	Arawakan	Bolivia	5: 1.1, 6: 1.1 Danielson 2007
Belhare	Tibeto-Burman	Nepal	3: 3.1, 7: 5.1 Nichols and Bickel 2005, Bickel 2004
Bella Coola	Salishan	Canada	3: Ex, 4: Ex Davis and Saunders 1997
Bengali	Indo-Iranian	Bangladesh	7: Ex, 9: 5.2 Klaiman 1986
Beria	Saharan	Chad	8: Ex Jakobi 2006
Bonggi	Malayo-Polynesian	Malaysia	4: Ex Boutin 2004
Brazilian Portuguese	Romance	Brazil	7: 5.1 Schmitt 2000

	Family	Country	Chapter: section, source
British Sign Language	Sign Language	United Kingdom	6: 4.2 Kyle and Woll 1996
Bulgarian	Slavic	Bulgaria	4: 1.2, 8: 3.2 Dimitrova-Vulchanova 1999
Burmese	Tibeto-Burman	Myanmar	4: Ex Romeo 2008
Catalan	Romance	Spain	7: 2.2 Hualde 2002
Central Arctic	Eskimo	Canada	4: 3.3 Bok-Bennema 1991
Chamorro	Malayo-Polynesian	Guam	2: Ex Topping and Dungca 1973
Chechen	East Caucasian	Chechnya, Russian Federation	7: Ex Good 2003
Chichewa	Narrow Bantu	Malawi	3: Ex, 6: Ex Mchombo 2001
Chitumbuka	Narrow Bantu	Malawi	8: 2.2 Downing 2006
Ch'orti'	Mayan	Guatemala	3: 3.1, 5: 2.7 Quizar 1994
Chukchee	Paleo-Siberian	Russian Federation	5: 3.5 Muravyova 2001, Dunn 2000
Cree	Algonquian	Canada	9: 5.2 Bakker 1997
Croatian	Slavic	Croatia	3: 3.1, 6: 1.2 Van Valin 2005
Croatian Sign Language	Sign Language	Croatia	8: 2.2 Milković <i>et al.</i> 2007
Czech	Slavic	Czech Republic	8: 1.1, 1.4 Lambrecht 1994
Dagbani	Atlantic-Congo	Ghana	2: 4.2, 3: 1.5 Olawsky 2004
Dalabon	Gunwinguan	Australia	9: 2.1 Evans 2006
Desano	Eastern Tucanoan	Colombia and Brazil	3: 1.5 Miller 1999

(cont.)

	Family	Country	Chapter: section, source
Dhangar-Kurux	Dravidian	Nepal	4: Ex Gordon 1973
Dime	Omotic	Ethiopia	3: 2, 7: 5.1 Seyoum 2008
Dolakha Newar	Tibeto-Burman	Nepal	5: 2.7, 6: Ex Genetti 2007
Dong	Tai-Kadai	China	3: 2, 4: Ex Lóng and Zhèng 1998
Dumo (Vanimo)	Sko	Papua New Guinea	7: 3.2 Ingram 2006
Dyirbal	Pama-Nyungan	Australia	5: 3.2, 3.6 Dixon 1972, 1994, Van Valin 2005
Eastern Bontoc (Finallig)	Malayo- Polynesian	Philippines	6: 2.1 Fukuda 1997
Edo	Atlantic-Congo	Nigeria	7: 3.2 Stewart 1994
Enga	Trans-New Guinea	Papua New Guinea	5: 2.5 Van Valin and LaPolla 1997
English	Germanic	United Kingdom	– –
Evenki	Tungus	China	3: 2.3 Nedjalkov 1997
Ewe	Atlantic-Congo	Ghana	3: 2.4, 7: 3.1 Payne 1997, Ameka 2006
Faroese	Germanic	Faroe Islands	3: 1.1 Barnes 1994, Lockwood 1977
Fijian	Oceanic	Fiji	3: 3, 4: Ex, 5: 3.2, 7: 2.2 Dixon 1988
Filipino	Malayo- Polynesian	Philippines	3: Ex Adeva p.c.
Finnish	Uralic	Finland	3: 3, 6: 4.1 Nelson 1998
Finnish Sign Language	Sign Language	Finland	8: 2.2 Zeshan 2004
Fongbe	Atlantic-Congo	Benin	7: 1.1, 3.1 Lefebvre and Brousseau 2001

	Family	Country	Chapter: section, source
French	Romance	France	2: 5.7, 5: 3.6, 6: 2.2, 8: 2.2, 9: 2.1 –
Gaagudju	Gunwingguan	Australia	6: 1.1 Harvey 2002
Galo	Tibeto-Burman	India	8: 3.2 Post 2007
Gawri	Indo-Aryan	Pakistan	2: 2.3, 5: 3.3, Ex, 6: Ex Baart 1999
Georgian	Kartvelian	Georgia	2: 5.1, 5.3 Boeder 2005
German	Germanic	Germany	2: 5.1, 3: 2.4, 3, 6: 2.2, 9: 4.4 Butt 2006, Heine 1997
Goemai	Chadic	Nigeria	7: 2.3, 3.1 Hellwig 2006
Greek	Indo-European, Greek	Greece	8: 3.2 Isac and Jakab 2004
Guató	Amazonian	Brazil	5: Ex Rodrigues 1999
Gùrdùng	Chadic	Nigeria	2: 5.3, 6: Ex Haruna 2003
Guugu Yimithirr	Pama-Nyungan	Australia	9: 4.3 Levinson 2003
Hakha Lai	Tibeto-Burman	Myanmar	5: 3.4 Peterson 2003
Halkomelem	Salishan	Canada	2: 4.1, 6: Ex, 7: 5.1 Suttles 2004
Hausa	Chadic	Nigeria	4: 2.3 Botne 2003
Hebrew	Semitic	Israel	2: 5.3 Shimron 2006
Hill Madia	South-Central Dravidian	India	3: 2.1 Vaz 2005
Hopi	Uto-Aztecan	United States of America	9: 4.3 Whorf 1956
Hungarian	Uralic	Hungary	2: 3.2, 9: 2.1 Spencer 1991, Gergely and Pléh 1994

(cont.)

	Family	Country	Chapter: section, source
Hup	Nadahup	Brazil	2: 5.7 Epps 2007
Indonesian	Malayo-Polynesian	Indonesia	7: 1.1, 5.1 Englebretson 2003, Cole and Hermon 2005
Indo-Pakistani Sign Language	Sign Language	India and Pakistan	8: 2.2, 3.1 Zeshan 2003
Irarutu	Malayo-Polynesian	Indonesia (Papua)	9: 4.4 van den Berg and Matsumura 2008
Irish Gaelic	Celtic	Ireland	3: Ex Dochartaigh 1992
Irish Sign Language	Sign Language	Ireland	9: 4.5 Leeson 2005
Italian	Romance	Italy	6: 3.1, 8: 2.3, 9: 2.1 Bentley 2006
Jacaltec	Mayan	Guatemala	9: 4.4 Craig 1986
Jahai	Mon-Khmer	Malaysia	6: 2.1 Burenhult 2005
Japanese	Isolate	Japan	5: 3.2, 7: 5.1, 8: 2.1, 9: 4 Watanabe 1996, Goddard 2005
Jarawara	Arauan	Brazil	9: 4.2 Aikhenvald 2004
Jero	Tibeto-Burman	Nepal	6: 3 Opgenort 2005
Jiwarli	Pama-Nyungan	Australia	3: 1.4 Austin 2001
Kabardian	West Caucasian	Russian Federation	5: 3.3, 9: Ex Matasović 2009, Colarusso 1992
Kabyle	Berber	Algeria	8: 2.2 Mettouchi 2008
Kagayanen	Malayo-Polynesian	Philippines	7: Ex Pebley 1999
Kalam	East New Guinea	Papua New Guinea	2: 2.2, 7: 3 Pawley 1993
Kamaiurá	Tupi-Guarani	Brazil	5: Ex Seki 2000, Farrell 2005

	Family	Country	Chapter: section, source
Kambera	Malayo-Polynesian	Indonesia	7: 1.1 Klamer and Klamer 1998
Kashmiri	Indo-Iranian	India	8: 3.3 Wali, Koul and Kaula 1997
Kayardild	Pama-Nyungan	Australia	6: 1.1 Evans 1995b
Kewa	Trans-New Guinea	Papua New Guinea	7: 2.1 Franklin 1971
Kham	Tibeto-Burman	Nepal	2: 3.1, 3: 2.2, 6: 2.2 Watters 2002
Khwe	Khoisan	Namibia	7: 2.3, 3.2 Kilian-Hatz 2006
Kimaragang Dusun	Malayo-Polynesian	Malaysia	3: 2.2 Kroeger 2005
Kisi	Atlantic-Congo	Liberia	5: 3.4 Childs 1995
Koireng	Tibeto-Burman	India	9: 3 Gordon 2005
Kol	Narrow Bantu	Cameroon	2: Ex, 6: 2.2 Henson 2007
Korean	Isolate	South Korea and North Korea	7: 5.1, Ex Han and Kim 2004
Koromfe	Atlantic-Congo	Burkina Faso	8: Ex Rennison 1997
Koyra Chiini	Songhai	Mali	3: Ex Heath 1998
Koyraboro Senni	Songhai	Mali	4: Ex Heath 1999
Kukú	Eastern Sudanic	Sudan and Uganda	2: 5.3 Cohen 2000
Kurdish	Indo-Iranian	Turkey, Iraq and Iran	5: 2.7 Haig 1998
Kwak'wala	Wakashan	Canada	3: Ex, 6: Ex Anderson 2005
Kwaza	unclassified	Brazil	2: 2.2 van der Voort 2004
Ladakhi	Sino-Tibetan	India	3: Ex Koshal 1979, Palmer 2001

(cont.)

	Family	Country	Chapter: section, source
Lakota	Siouan	United States of America	6: 3 Pustet 2000
Lango	Eastern Sudanic	Uganda	9: 4.4 Noonan 1992
Lao	Tai-Kadai	Laos	8: 3.1 Enfield 2007
Latvian	Baltic	Latvia	8: 1.1 Christen 2001
Laz	Kartvelian	Turkey	9: 2.2 Kutscher and Genç 2006
Lengo	Oceanic	Solomon Islands	2: Ex, 3: Ex, 7: 1.2, 3.2 Unger 2008
Lepcha	Tibeto-Burman	India	3: 2.4 Plaisier 2007
Leti	Malayo-Polynesian	Indonesia	2: 5.7, 4: 3.4, 6: 2.1, 7: 3.1 van Engelenhoven 2004
Lezgian	East Caucasian	Russian Federation	3: Ex, 5: 1.2, 6: Ex, 8: 3.1 Haspelmath 1993
Lisu	Tibeto-Burman	China	9: 2.1, 4.1 Yu 2007
Logba	Atlantic-Congo	Togo	7: Ex Dorvlo 2008
Luisseño	Uto-Aztecan	United States of America	6: 1.1 Kathol 2002
Luo	Eastern Sudanic	Kenya	3: 1.5, 6: 1.1, 2.1 Tucker 1994
Maonan	Tai-Kadai	China	3: 1.1 Luo 2008
Ma'Di	Central Sudanic	Uganda and Sudan	6: Ex Blackings and Fabb 2003
Malagasy	Malayo-Polynesian	Madagascar	7: 5.2 Keenan 1985
Malay	Malayo-Polynesian	Malaysia	5: 3.2 Kroeger 2005
Maltese	Semitic	Malta	7: 5.1 Borg and Azzopardi-Alexander 1997
Manambu	Sepik	Papua New Guinea	8: 3.2 Aikhenvald 2008b
Mandarin Chinese	Sino-Tibetan	China	6: 2.2, 2.3, 9: 2.1 —

	Family	Country	Chapter: section, source
Mandinka	Mande	Senegal	9: 2.1 Childs 2003
Mangghuer	Mongolic	China	2: Ex, 3: 1.5, 5: 3.1, 3.3, Ex, 6: 2.2, 2.4, 7: 5.1, Ex Slater 2003
Mapudungun	Araucanian	Chile	5: Ex Baker <i>et al.</i> 2005
Matses	Panoan	Peru	5: 1.2 Fleck 2006
Mayali	Gunwingguan	Australia	3: 2.3 Evans 1995a
Mazandarani	Indo-Iranian	Iran	3: Ex Fakhr-Rohani p.c.
Meithei / Manipuri	Tibeto-Burman	India	3: 2.3, 7: 5.1 Chelliah 1997, Kachru <i>et al.</i> 2008
Michif	Mixed	Canada	9: 5.2 Bakker 1997
Mina	Chadic	Cameroon	8: 2.2 Frajzyngier and Johnston 2005
Miskitu	Misumalpan	Nicaragua	7: 5.1 Hale 2001
Mongsen Ao	Tibeto-Burman	India	3: Ex, 7: 5.1 Coupe 2007
Mordva	Mordvin (Uralic)	Russian Federation	6: 2.2 Zaicz 1998
Mori Bawah	Malayo- Polynesian	Indonesia	2: 5.1 Mead 2005
Mparntwe Arrernte	Pama-Nyungan	Australia	9: 4.4 Wilkins 2000
Mualang	Malayo- Polynesian	Indonesia (Kalimantan)	2: 5.2, 5.3, 5.7, Ex, 3: 2.2, 7: 4 Tjia 2007
Mupun	Chadic	Nigeria	8: 3.1, Ex Frajzyngier 1993
Mwotlap	Oceanic	Vanuatu	9: 4.3 François 2003

(cont.)

	Family	Country	Chapter: section, source
M̃ky (Irantxe)	Arawakan	Brazil	3: 2.2 Monserrat and Dixon 2003
Nambiquara	Amazonian	Brazil	3: 1.3, 6: 2.3, 9: 4.4 Lowe 1999
Nen	South-Central Papuan	Papua New Guinea	6: 2.2 Evans 2009
Netherlands Sign Language	Sign Language	Netherlands	2: 5.7 Crasborn <i>et al.</i> 2008
Ngiti	Central Sudanic	DR Congo	2: 5.4, Ex, 3: Ex, 6: 2.4 Kutsch Lojenga 1994
Niuean	Oceanic	Niue	3: 2.2 Otsuka 2006a
Norwegian	Germanic	Norway	4: 2.4 Garvik p.c.
Nupe	Atlantic-Congo	Nigeria	3: 1.2 Kandybowicz 2008
Ojibwa	Algonquian	Canada	9: 2.2 Grafstein 1989
O'odham	Uto-Aztecan	United States of America	4: 1.4 Hirose 2003
Paamese	Oceanic	Vanuatu	7: 1.1, 1.2, 3.2, Ex Crowley 2002
Papuan Sulka	East Papuan	Papua New Guinea	3: 1.3 Reesink 2005
Pazeh	Formosan	Taiwan	8: Ex Li 2000
Pirahã	Mura	Brazil	9: 4.1 Everett 2005
Plains Cree	Algonquian	Canada	4: Ex Hirose 2003
Qiang	Tibeto-Burman	China	3: 2.4, 4: 1.4, 7: Ex, LaPolla with Huang 2003
Quechua, Cuzco	Quechuan	Peru	9: 4.2 Shulman and Stroumsa 1999
Rajbanshi	Indo-Iranian	Nepal	8: 3.2 Wilde 2008
Russian	Slavic	Russia	2: 4.1, 3: 1.5, 2.4, 4: 2.3, 5: Ex, 7: 5.2 Van Valin 2005, Kemple 1993

	Family	Country	Chapter: section, source
Saami	Uralic	Norway	4: 1.4 Julien 2007
Samoan	Oceanic	Samoa	3: Ex Jonsson p.c.
Saramaccan Creole	English-based creole	Suriname	7: Ex McWhorter 2008
Selkup	Samoyed	Russian Federation	7: 2.1, 9: 4 Valijarvi 2008, Bykonja 2004
Semelai	Mon-Khmer	Malaysia	2: 5.1 Kruspe 2004
Shipibo-Konibo	Panoan	Peru	3: 2.2 Valenzuela 2003
Sinhala	Indo-Iranian	Sri Lanka	3: 1.5, 8: 2.2 Gair 2007
Sm'algyax	Penutian	Canada	2: Ex Stebbins 2003
Somali	Cushitic	Somalia	5: 3.5 Tosco 2004
Sotho, Northern	Narrow Bantu	South Africa	8: Ex Zerbian 2006
Southern Tiwa	Kiowa Tanoan	United States of America	5: 3.5 Rosen 1990, Allen <i>et al.</i> 1984, Margetts and Austin 2007
Spanish	Romance	Spain	6: 2.1, 9: 2.1, 5.2 —
St'át'imcets	Salishan	Canada	3: 3, 5: 2.9, 8: 2.1, 2.2 Roberts 1999
Swahili	Narrow Bantu	Tanzania	2: Ex, 5: 1.2, Ex Katamba 1993, Farmer and Demers 2001
Swedish	Germanic	Sweden	6: 3.1 Sorilla and Svensson p.c.
Taba	Malayo- Polynesian	Indonesia	5: 3.4, Ex, 7: 2.1, 3.1, 3.2 Bowden 2001
Tariana	Amazonian	Brazil	9: 2.1 Aikhenvald 1999
Tatar	Turkic	Russian Federation	7: 5.2 Comrie 1981

(cont.)

	Family	Country	Chapter: section, source
Tauya	Trans-New Guinea	Papua New Guinea	9: 4.4 MacDonald 1990
Tetun Dili	Malayo-Polynesian creole	East Timor	7: 3.1, 4, Ex Hajek 2006, Williams-van Klinken <i>et al.</i> 2002
Thai	Tai-Kadai	Thailand	3: 2.3, 6: 1.1 Iwasaki and Ingkaphirom 2005, Van Valin and LaPolla 1997
Tinrin	Oceanic	New Caledonia	6: 2.2 Osumi 1995
Tondi Songway Kiini	Songhai	Mali	3: 2.1 Heath 2005
Tongan	Oceanic	Tonga	2: 2.3, 5: Ex, 7: Ex Hopper and Thompson 1980, Otsuka 2006b
Toqabaqita (To'abaita)	Oceanic	Solomon Islands	6: Ex, 7: 3.1 Lichtenberk 2006
Toura	Mande	Ivory Coast	8: 2.3 Bearth 1992
Tsafiki	Barbacoan	Ecuador	4: 2.3 Dickinson 2000, Aikhenvald 2007
Tshangla	Tibeto-Burman	Bhutan	8: 3.1 Andvik 1999
Tujia	Tibeto-Burman	China	9: Ex Brassett <i>et al.</i> 2006
Tukang Besi	Malayo-Polynesian	Indonesia	3: 1.5, 6: 3.1, 7: 3.1 Donohue 1999
Turkish	Turkic	Turkey	2: 4.2, 7: 5.1 Göksel and Kerslake 2005
Tuwuli	Atlantic-Congo	Ghana	4: 1.1 Harley 2005, 2008
Udi	East Caucasian	Azerbaijan	8: Ex Harris 2002
Udihe	Tungusic	Russian Federation	5: Ex, 8: Ex Nikolaeva and Tolskaya 2001
Ukrainian	Slavic	Ukraine	3: 1.2 Féry, Paslawska and Fanselow 2007
Urarina	Isolate	Peru	5: 3.3 Olawsky 2006

	Family	Country	Chapter: section, source
Vietnamese	Mon-Khmer	Vietnam	9: 2.1 –
Vitu (Muduapa)	Malayo-Polynesian	Papua New Guinea	5: 3.2 van den Berg 2007
Wanano	Eastern Tucanoan	Brazil	3: 2.4 Stenzel 2008
Warlpiri	Pama-Nyungan	Australia	5: 2.9, 6: 2.4 Legate 2006
Washo	Hokan	United States of America	3: 2.2 Mithun 1999
Welsh	Celtic	United Kingdom	6: 2.2 Watkins 1993
West Greenlandic	Eskimo	Greenland	6: Ex Sadock 1991, 2004, Fortescue 1984
White Hmong	Hmong-Mien	China	9: 4.1 Jarkey 1991, cited in Aikhenvald 2006
Wintu	Penutian	United States of America	9: 4.2 Schlichter 1986, Mithun 1999
Wolaitta	Omotic	Ethiopia	7: 21 Amha and Dimmendaal 2006
Yabem	Oceanic	Papua New Guinea	9: 5.1 Ross 2004
Yakan	Malayo-Polynesian	Philippines	4: 1.4, 5: 3.2 Brainard and Behrens 2002
Yanyuwa	Pama-Nyungan	Australia	9: 4.5 Bradley 1998
Yatê	Amazonian	Brazil	2: 4.1 Rodrigues 1999
Yimas	Sepik-Ramu	Papua New Guinea	7: 2.1, 9: 4.2 Foley 1991
Yoruba	Atlantic-Congo	Nigeria	4: 2.3 Botne 2003
Zhuang	Tai-Kadai	China	7: 3.2 Luo 2008
Zome	Tibeto-Burman	Myanmar	9: 3 Gordon 2005

Glossary

Term	Definition	See chapter	Section
ABSOLUTIVE CASE	The case marked on the privileged syntactic argument (S, U) in an ergative-absolutive grammatical relations system.	5	2.7.2
ACCOMPLISHMENT	A predicate class with internal duration and an inherent endpoint.	4	1.1.4
ACCUSATIVE CASE	The case marked on the undergoer of a transitive clause (U) in a nominative-accusative grammatical relations system.	5	2.6
ACHIEVEMENT	A predicate class with no internal duration and an inherent endpoint.	4	1.1.3
ACRONYM	A new word formed from the first letters of a series of words.	2	5.7.2
ACTIVE ACHIEVEMENT	A predicate class formed by an activity with an endpoint.	4	1.2.1
ACTIVE VOICE	An unmarked voice where the most agentive argument is privileged.	5	3.2.1
ACTIVITY	A predicate class that is dynamic and has no inherent endpoint.	4	1.1.2
ACTOR	A semantic macrorole; usually the most agentive argument.	4	3
ACTOR-CONTROL CONSTRUCTION	A core-level complex construction where the actor of the first core controls the identity of the 'missing' argument in the second core.	7	1.2.3
ACTOR-UNDERGOER HIERARCHY	A hierarchy of semantic roles based on the position of arguments in semantic representations.	4	3.2

Term	Definition	See chapter	Section
ADJUNCT	A constituent that modifies the nucleus, core or clause. Also known as an adverbial.	6	4
ADPOSITIONAL PHRASE	A phrase headed by a preposition or postposition.	6	3
ADVERBIAL CLAUSE	Subordinate clause that modifies the main clause.	7	2.1
ADVERSATIVE	A valence-increasing construction that adds an argument adversely affected by an action.	5	3.2.1
AFFIX	A morpheme that is phonologically bound to another morpheme.	2	2.2
AGENT	A wilful, intentional type of effector.	4	2.3.6
AGGLUTINATIVE	A morphological type where each morpheme carries one meaning.	9	2.1.2
AGREEMENT	Markings on one word that correspond to features of another word.	2	4.1
ALIENABLE POSSESSION	Possession type where the possessed item is perceived as separable from its possessor.	9	4.4.2
ALLOMORPH	A variant of a morpheme.	2	5.2
ALTERNATIVE QUESTION	A question that presents a number of possibilities for the addressee to choose from.	8	3.1.1
ANALYTIC	A morphological pattern where words have only one syllable.	9	2.1.1
ANCHORED	An unidentifiable referent that is presented with some identifying information; e.g. <i>a man that I know</i> .	8	1.1
ANTIPASSIVE VOICE	A marked voice construction that promotes the actor and demotes the undergoer.	5	3.2.2
APPLICATIVE	A valence-increasing construction that promotes an oblique argument to be a core argument.	5	3.4
ARGUMENT-ADJUNCT ADPOSITIONAL PHRASE	A predicative adpositional phrase that introduces an argument of the main predicate.	6	3.2.3

(cont.)

Term	Definition	See chapter	Section
ARGUMENT	Item that represents a participant in an event or situation.	3	1.3
ASPECT	A nuclear-level operator that tells us about the internal temporal structure of the event.	3	2.4.1
ASSERTION	The 'new' proposition in a sentence.	8	1.2
ATTRIBUTIVE	A clause containing an adjective as a predicate.	3	1.5
AUTOSEGMENTAL VARIATION	See SUPRASEGMENTAL VARIATION.	2	5.4
BACK FORMATION	The reanalysis of the morpheme breaks in a word which are applied to form a new word.	2	5.7.2
BASE	A cover term for both stems and roots.	2	4.2.1
BASIC CONSTITUENT ORDER	The default, unmarked order of the constituents in a transitive sentence.	8	2.3
BENEFACTIVE	A sub-type of applicative that introduces an argument with a beneficiary role.	5	3.4.1
BLEND	A new word formed from combining parts of two other words.	2	5.7.2
BORROWING	The adoption of one language's features into another language.	9	5.2
BOUND MORPHEME	A morpheme that cannot appear alone, but becomes part of the word to which it is attached.	2	2.2
CARDINAL DIRECTION	A direction with absolute points of reference.	9	4.3
CASE (MARKING)	Morphological marking on nouns that marks syntactic and semantic roles.	5	1.2.1
CAUSATIVE	A valence-increasing construction that adds the causer argument.	4	1.2.2
CIRCUMFIX	A type of affix with two parts that appears both before and after the root.	2	5.1

Term	Definition	See chapter	Section
CLAUSE CHAIN	Sequence of clauses where only the final clause is finite.	7	2.1
CLAUSE LINKAGE MARKER	A grammatical element that introduces linked clauses.	7	1.1.1
CLEFT CONSTRUCTION	A focus construction that normally contains a copula verb and a backgrounded clause.	8	2.2.3
CLIPPING	A new word formed by ‘clipping’ part of another word.	2	5.7.2
CLITIC	A grammatical morpheme that is syntactically free but phonologically bound to its host.	2	6
CLOSED SET	A group of elements to which no more can be added. Grammatical morphemes often form a closed set.	2	2.2
COMPLEMENT CLAUSE	A subordinate clause that functions as an argument within the main core.	7	2.2
COMPLEMENTIZER	A type of clause linkage marker that introduces a subordinate clause.	7	1.2.2
COMPLETIVE	An aspectual operator that refers to an activity carried out to its endpoint.	3	2.4.1
COMPLEX CONSTRUCTION	A construction with more than one nucleus.	7	1
COMPOSITIONAL	Made up of the sum of its parts.	2	3
COMPOUND	A word comprised of more than one root.	2	5.7.1
CONJUNCTION	A type of clause linkage marker that connects two independent clauses.	7	1.1.1
CONSTITUENT	A group of words that function as a unit.	3	1
CONSTITUENT REPRESENTATION	The ‘tree’ that generally contains the lexical items in a sentence and shows the hierarchical relationship between them.	3	1.3
CONSTRUCTION	A sentence with its particular morpho-syntactic, semantic and/or pragmatic properties.	8	3.4

(cont.)

Term	Definition	See chapter	Section
CONSTRUCTIONAL TEMPLATE	A table that lists the particular morpho-syntactic, semantic and/or pragmatic properties associated with a sentence.	8	3.4
CONTENT QUESTION	A question that calls for information, often involving 'WH' words.	8	3.1.2
CONTROL	When an item determines properties of another item; e.g. an argument may control the form of verb agreement.	5	2.2.1
CONVENTIONALIZATION	Adoption by agreement within a social group.	9	5.1
CONVERB	A non-finite verb in a cosubordinate chain of clauses. Sometimes called medial verbs.	7	2.1
CONVERGENCE	Closely related languages becoming more similar as a result of contact.	9	5.2
COORDINATION	The connection of two independent units of the same type.	7	1.2.1
COPULA VERB	A linking verb used in some languages, e.g. in association with non-verbal predicates.	3	1.5
CORE	A syntactic unit consisting of a nucleus and its arguments.	3	1.2
COREFERENTIAL COPY	A second expression of an argument within the clause, often a pronoun.	8	2.2.2
COREFERRING ARGUMENT	An argument with the same referent as another argument in the same sentence.	7	5
COSUBORDINATION	A type of connection between units in a complex construction where an operator is shared between the two units at the level of juncture.	7	1.2.3
COUNT (NOUN)	A noun that can be counted, e.g. <i>two coins</i> .	6	2.3
CREOLE	Language that develops from pidgin language and has mother-tongue speakers.	9	5.2
DECLARATIVE	A sentence with the illocutionary force of a statement.	3	2.2.4

Term	Definition	See chapter	Section
DEFINITENESS	An NP-level operator that generally marks whether the referent is known or unknown.	6	2.1.1
DEIXIS	An NP-level operator that marks the distance of the referent from the speaker as close (proximal) or far (distal).	6	2.1.2
DEMONSTRATIVE	A grammatical element that marks deixis and sometimes also definiteness. May also occur as a pronominal referring expression.	6	2.1.2
DEONTIC MODALITY	A core-level operator that expresses permission, obligation and ability. A core-level operator.	3	2.3.3
DEPENDENT	An element in a constituent that is not the head of that constituent.	3	3
DEPENDENT-MARKING CONSTRUCTION	Grammatical roles and relationships are morphologically marked on the dependents (e.g. the arguments in a clause).	3	3
DERIVATIONAL MORPHEME	A morpheme that forms a new word with the root it attaches to, sometimes changing the word class of that word.	2	4.2
DERIVATIONAL NEGATION	Nuclear-level negation expressed through morphology on the word.	2	2.1
DETACHED POSITION	A pragmatically motivated syntactic position to the left or right of the clause.	8	2.2.2
DEVERBAL NOUN PHRASE	Noun phrase that is related to a clause; e.g. <i>the arrest of Bill by agents</i> .	6	1.1.2
DIRECT CORE ARGUMENT	An argument in the core that is not adpositionally marked.	6	3.1.2
DIRECTED PERCEPTION	A controlled sensory activity (e.g. <i>watch, listen (to)</i>).	4	1.1.2
DIRECTIONAL	An operator that expresses the direction of an action or of a participant in an action.	3	2.3.1
DISTAL	See DEIXIS.	6	2.1.2

(cont.)

Term	Definition	See chapter	Section
DISTRIBUTION	The location and context of a word in phrases and sentences, to test for word class.	3	1.1.2
DITRANSITIVE	Describing a predicate with three arguments.	4	3.4
DUMMY ARGUMENT	A syntactic argument that does not refer to a participant.	4	3.4.1
DURATIVE	A type of aspect operator that indicates the activity took place for an extended period of time.	3	2.4.1
DYNAMIC	Events that involve action.	4	1.1.2
EFFECTOR	A semantic role of a referent that is doing something, wilfully or not.	4	2.2.2
EMBEDDED	Another term for subordinate.	7	1.2.2
ENCLITIC	A clitic that attaches to the end of its host.	2	6
EPISTEMIC MODALITY	A clause-level operator that expresses certainty or possibility.	3	2.2.1
EQUATIONAL CLAUSE	A clause containing two referring phrases that asserts that the two referents are one and the same.	3	1.5.1
ERGATIVE CASE	The case marked on the actor of a transitive clause (A) in an ergative-absolutive grammatical relations system.	5	2.7.2
ERGATIVE-ABSOLUTIVE	A grammatical relations system where the privileged syntactic argument is the least agentive argument (S, U).	5	2.7
EVENT QUANTIFICATION	A clause-level operator that indicates there were multiple actions of the verb.	3	2.3.2
EVIDENTIAL	A clause-level operator that indicates the source of the speaker's information.	3	2.2.3
EXISTENTIAL CLAUSE	A type of clause that serves to introduce a participant; e.g. <i>There is...</i>	3	1.5.1

Term	Definition	See chapter	Section
EXPERIENCER	A semantic role involving the five senses.	4	2.2.1
EXTERNAL NEGATION	Clause-level negation that operates on the whole clause.	3	2.1
EXTERNALLY HEADED RELATIVE CLAUSE	A noun phrase where the head noun appears outside of the relative clause.	7	5.1.1
EXTRA-CORE SLOT	A pragmatically motivated syntactic position to the left (pre-core slot) or right (post-core slot) of the core.	8	2.2.1
FINITE CLAUSE	A clause marked for tense and other agreement.	7	1.2.2
FIXED ORDER	A restriction on the sequence of units.	8	2.2
FOCUS	The part of a sentence that contains the new or asserted information.	8	1.2
FOCUS CONSTRUCTION	A syntactic structure associated with narrow focus, such as a cleft construction.	8	2.2.3
FOCUS DOMAIN	The parts of a sentence which contain 'new' information.	8	1.3
FORCE	An inanimate effector that acts without deliberate will (e.g. <i>wind</i>)	4	2.2.2
FORM	The shape or features of an item.	1	1.3
FORMAL SYNTAX	The study of syntactic structure and rules.	1	1
FREE MORPHEME	A morpheme that can stand alone without any other morphemes added.	2	2.2
FUNCTION	The purpose or use of an item.	1	1.3
FUNCTIONAL SYNTAX	The study of syntax in its communicative context.	1	1
FUSION	How many meaning units are 'fused' into single morphemes.	9	2.1.2
FUSIONAL	A morphological pattern where one morpheme carries several meanings.	9	2.1.2
GENERATIVE GRAMMAR	An approach to linguistics that focuses on the formal characteristics of our internal language competence.	1	1
GLOSS	The meaning of a morpheme, usually presented under the morpheme itself.	2	2.3

(cont.)

Term	Definition	See chapter	Section
GOAL	A semantic role describing the endpoint of a motion.	4	1.2.1
GRAMMATICAL MEANING	Morphemes with grammatical meaning (inflectional morphemes) tell us more about lexical morphemes. Examples include tense, aspect and definiteness morphemes.	2	2.2
GRAMMATICAL RELATIONS	A pattern of neutralizing semantic roles in some way, creating a privileged syntactic argument.	5	2
GRAMMATICALIZATION	A process of language change where lexical items lose their meaning and become grammatical markers.	9	5.1
GROUNDING	See LOCALITY/GROUNDING		
HABITUAL	An aspectual operator that refers to regularly repeated events.	3	2.4.1
HEAD	The most important word in a unit that determines many grammatical properties of that unit.	3	1.1.1
HEADLESS RELATIVE CLAUSE	A relative clause without a head noun that functions as a referring expression.	7	5.1.3
HEAD-MARKING CONSTRUCTION	Grammatical roles and relationships are morphologically marked on the head (e.g. the predicate in a clause).	3	3
HOST	The element to which another element attaches. Typically used in reference to clitics.	2	6
ICONICITY	The mirroring between the form of a structure and its meaning or function.	1	1.1
IDENTIFIABILITY	The degree to which the referent is known to the speaker and/or addressee, often coded with definiteness markers.	6	2.1.1
ILLOCUTIONARY FORCE	A universal clause-level operator that expresses whether a sentence is a statement, question, command etc.	3	2.2.4
IMPERATIVE	The illocutionary force associated with commands.	8	3.2

Term	Definition	See chapter	Section
IMPERFECTIVE	An aspect to do with ongoing or habitual events.	3	2.4.1
INALIENABLE POSSESSION	Possession type where the possessed item is perceived as inseparable from its possessor.	9	4.4.2
INDIRECT SPEECH ACT	An utterance with one illocutionary force that expresses a different function, e.g. a statement being used as a question.	8	3.3
INFIX	A type of affix that is inserted into the middle of a root.	2	5.1
INFLECTIONAL MORPHEME	Provides grammatical information; addition does not change the word class, and comes from a closed set.	2	4.1
INFORMATION STRUCTURE	The structure of new and old information and propositions in a sentence.	8	1
INTERNALLY HEADED RELATIVE CLAUSE	A noun phrase where the head noun appears inside the relative clause.	7	5.1.2
INTERNAL NEGATION	Core-level negation that only involves one of the participants, not the whole event.	3	2.1
INTERROGATIVE	The illocutionary force associated with questions.	8	3.1
INTRANSITIVE	Describing a predicate with one argument.	4	3.4
IRREALIS	See REALIS		
ISOLATING	A morphological pattern where words have only one syllable.	9	2.1.1
ITERATIVE	An aspect indicating an action that is repeated.	3	2.4.1
JUNCTURE	The level of connection in complex constructions.	7	1.1
JUSSIVE	Verbs that express one referent's desire to influence another's actions; e.g. <i>command, ask, tell</i> .	7	1.2.3
LANGUAGE FAMILY	Hierarchically arranged groups of families, arranged according to genetic affiliation.	9	3

(cont.)

Term	Definition	See chapter	Section
LEXICAL MEANING	Items with lexical meaning are often in open sets and found listed in a dictionary; includes most nouns, verbs and adjectives.	2	2.2
LINGUISTIC RELATIVITY	The theory that our language constrains or determines our thought processes.	9	4.3
LOCALITY / GROUNDING	NP-level operators to do with placing the referent in the world.	6	2.1
LOCUS	A semantic role depicting the site or place of an activity.	4	2.2.2
MACROROLE	Macroroles (actor and undergoer) are subsumed groups of semantic roles.	4	3
MACROROLE VALENCE	The number of macroroles a predicate has.	4	3.4
MANNER	A category of core-level adjuncts that describes the way in which an action is performed.	6	4.2
MARKED	The less common, less 'normal' item in a set, often involving more morpho-syntactic complication.	9	1
MARKED VOICE CONSTRUCTION	These constructions select a non-default argument to be the privileged syntactic argument.	5	3.2
MASS (NOUN)	A noun that cannot be counted, e.g. <i>*two moneys</i> .	6	2.3
MODALITY	The means of transmission of a language; e.g. signed, spoken.	9	2.2.4
MORPHEME	The smallest unit of grammatical or lexical meaning.	2	2.1
MORPHOLOGY	The study of the form and function of morphemes.	2	2.1
MOVEMENT	Test for constituency involving placing groups of words in different positions in a sentence.	3	1.2.1
MUTUALLY SUBSTITUTABLE	Words or phrases that can replace each other; a test for constituency.	3	1.2.1

Term	Definition	See chapter	Section
NARROW FOCUS	A type of information structure where only one constituent is focused.	8	1.3.3
NEOLOGISM	New word.	2	5.7.2
NEUTRALIZATION	When the distinction between semantic roles is not relevant for the way they pattern in the syntax.	5	2.3.9
NEXUS	The type of connection between units in complex constructions.	7	1.2
NODE	Point of connection in a syntactic tree diagram.	3	1.4
NOMINAL ASPECT	Nuclear-level operators in the noun phrase to do with the internal structure or form of the referent, e.g. the count/mass distinction.	6	2.3
NOMINALIZATION	When clauses that are functioning as arguments carry marking associated with noun phrases.	7	2.2
NOMINAL PREDICATE	A predicate expressed by a noun phrase.	3	1.5
NOMINATIVE CASE	The case marked on the privileged syntactic argument (S, A) in a nominative-accusative grammatical relations system.	5	2.6
NOMINATIVE-ACCUSATIVE	A grammatical relations system where the most agentive argument is the privileged syntactic argument (S, A).	5	2.4
NON-CONCATENATIVE MORPHOLOGY	The formation of words by modifying the root rather than by adding morphemes.	2	5.3.2
NON-LINEAR MORPHOLOGY	Morphological processes other than those that involve prefixes or suffixes. E.g. suppletion and reduplication.	2	5
NON-MACROROLE ARGUMENT	An argument that is neither the actor nor the undergoer macrorole.	4	3.3.1
NON-VERBAL PREDICATE	Any kind of predicate not expressed by a verb.	3	1.5

(cont.)

Term	Definition	See chapter	Section
NOUN CLASSIFICATION	Nuclear-level operators in the noun phrase that mark referents in classes, often based on features of their shape or substance.	6	2.3
NOUN INCORPORATION	A construction where one argument (normally the second) appears as attached to the predicate word.	5	3.5
NOUN PHRASE	A constituent with a noun as its head. Often used as a referring expression.	6	1
NOUN PHRASE INITIAL/FINAL POSITION	A syntactic position outside the core of a noun phrase where we may find possessives, demonstratives or question words.	6	1.1.2
NUCLEAR DIRECTIONAL	Operator which indicates the direction of the action itself.	3	2.4.2
NUCLEUS	A syntactic unit that contains the predicate.	3	1.2
NULL MORPHEME	A morpheme without an actual form.	2	5.2
NUMBER	A core-level grammatical operator in the noun phrase that marks singular and plural.	6	2.2.1
NUMERAL	A number word or phrase, e.g. <i>one</i> , <i>seventy-seven</i> .	6	2.2.2
OBLIQUE CORE ARGUMENT	An argument in the core that is adpositionally marked.	6	3.1.2
OPEN SET	A group of elements to which more can be added.	2	2.2
OPERATOR	A grammatical element that modifies a clause or noun phrase.	3	2
OPERATOR REPRESENTATION	The diagram showing the operators and the layer at which they operate, drawn extending below the sentence.	3	2.5
PACE	A category of core-level adjuncts that describe the speed with which an action is performed.	6	4.2
PARADIGM	An organized set of data.	2	4.1
PARTICLE	A small grammatical word.	3	2

Term	Definition	See chapter	Section
PASSIVE VOICE	A marked voice construction that promotes the undergoer and demotes the actor.	5	3.2.1
PATIENT	A semantic role of a referent that is in a certain condition or state.	4	2.2.1
PERFECTIVE	An aspect that views the event in its entirety.	3	2.4.1
PERIPHERY	A syntactic unit that contains elements that are not the main predicate or its arguments.	3	1.2
PERSON	Grammatical elements that relate to the speaker (1st person), the addressee (2nd person) or other participants (3rd person).	2	4
PHONAESTHEME	Partial morpheme with meaning correlations.	2	5.3.2
PHRASE	A headed constituent that does not contain a predicate.	3	1
PIDGIN	A language formed from a mix of other languages in a context where there is no shared language of communication.	9	5.2
PIVOT	The 'missing' argument in a linked clause.	5	2.2.3
POLAR QUESTION	A question that calls for the answer 'yes' or 'no'.	8	3.1.1
POLYSYNTHETIC	A morphological pattern where words have many syllables.	9	2.1.1
PORTMANTEAU	A morpheme that carries more than one meaning or function.	2	5.3.3
POSITION CLASS CHART	A chart with columns for the position of each morpheme in relation to the root.	2	3.2
POST-CORE SLOT	See EXTRA-CORE SLOT.	8	2.2.1
POSTPOSITIONAL PHRASE	An adpositional phrase where the adposition follows the noun phrase.	6	3
PRAGMATICS	The study of information structure.	8	2.2

(cont.)

Term	Definition	See chapter	Section
PRAGMATIC PREDICATE	A referring expression whose identity serves as the communicative function of a sentence.	8	2.2.3
PRE-CORE SLOT	See EXTRA-CORE SLOT.	8	2.2.1
PREDICATE	The word in a clause that describes the action or event.	3	1.3
PREDICATE FOCUS	A type of information structure where everything but the actor is focused.	8	1.3.2
PREFIX	A type of affix that appears before the base to which it is attached.	2	2.2
PREPOSITIONAL PHRASE	An adpositional phrase where the adposition precedes the noun phrase.	6	3
PRESUPPOSITION	The proposition(s) shared by the speaker and addressee.	8	1.2
PRIVILEGED SYNTACTIC ARGUMENT (PSA)	The argument in a syntactic construction that has 'special' functions like controlling verb agreement or cross-reference.	5	2.2.1
PROCLITIC	A clitic that attaches to the front of its host.	2	6
PRODUCTIVITY	A pattern or morpheme is productive if it applies widely.	2	4.1
PROGRESSIVE	An aspectual operator that refers to ongoing events.	3	2.4.1
PRONOUN	A grammatical word from a closed set that can substitute for a noun phrase if the referent is active in the discourse. Often marked for person, number and gender.	6	1.2
PROPOSITION	A whole thought, often correlating to a clause.	3	2.1
PROXIMAL	See DEIXIS.	6	2.1.2
QUANTIFICATION	A core-level operator in a noun phrase that includes quantifiers (e.g. <i>many</i>) and numerals and indicates the quantity or amount of a referent.	6	2.2.2

Term	Definition	See chapter	Section
QUANTIFIER	An item that delimits the quantity of a referent.	6	2.2.2
REALIS: IRREALIS	The distinction between 'real' and 'unreal' (e.g. hypothetical, future, conditional) events.	3	2.2.1
REANALYSIS	A morphological process whereby speakers reinterpret where the morpheme boundaries in a word lie.	2	5.7.2
RECIPIENT	A semantic role for a referent that ends up in possession of something given by another referent.	4	3.3.3
RECURSION	The syntactic property of embedding within another unit, particularly more than once.	9	2
REDUPLICATION	A morphological process whereby part of the root gets repeated.	2	5.3.4
REFERENCE PHRASE	A constituent that refers to a participant in an event or situation; often expressed by a noun phrase.	3	1.4
REFERENT	The 'real world' item to which a referring expression points.	2	4.1
REFERRING EXPRESSION	Item that represents a participant in an event or situation.	3	1.3
REFLEXIVE	A construction where two semantic arguments refer to the same participant.	5	3.6
RELATIVE CLAUSE	A subordinate clause within a noun phrase that gives more information about the referent, either required (restrictive) or more parenthetical (non-restrictive).	7	5
RELATIVE DIRECTION	A direction with varying points of reference depending on the orientation of the speaker; e.g. <i>left</i> , <i>right</i> .	9	4.3
RESTRICTED NEUTRALIZATION	A privileged syntactic argument pattern with only certain (restricted) sets of macrorole arguments (neutralization).	5	2.2.1

(cont.)

Term	Definition	See chapter	Section
RESUMPTIVE PRONOUN	A pronoun that is coreferential with another argument within the clause.	8	2.2.2
ROOT	The morpheme in a word with the central lexical meaning.	2	4.2.1
SCOPE	The parts of a sentence over which an element (e.g. an operator) has an effect.	3	2.1
SEMANTIC VALENCE	The number of semantic arguments a predicate has.	4	3.4
SEMANTICS	The study of meaning.	4	
SEMELFACTIVE	A predicate class that is instantaneous but involves no change of state (e.g. <i>clap</i>).	4	1.1.5
SENTENCE FOCUS	A type of information structure where the whole sentence is focused.	8	1.3.1
SERIAL VERB CONSTRUCTION	A series of two or more verbs used to express a single complex event.	7	3
SOURCE	The point of origin of a motion.	6	3.1.2
SPECIFICATIONAL CLAUSE	A clause with two noun phrases where one NP specifies more clearly the identity of the referent of the other NP.	3	1.5.1
SPEECH ACT	An utterance, with types such as statement, question, command etc.	3	2.2.4
SPLIT INTRANSITIVITY	A semantic system where all actors pattern alike and all undergoers pattern alike.	9	2.2.2
SPLIT SYSTEM	A situation where some constructions in a language follow an ergative-absolutive pattern while others follow a nominative-accusative pattern.	5	2.9
STATE	A predicate class that does not involve action and has no inherent endpoint.	4	1.1.1
STATIC	Feature of predicate classes that don't describe a 'happening' or action.	4	1.1.1

Term	Definition	See chapter	Section
STATUS	A group of clause-level operators (external negation, epistemic modality, realis:irrealis) to do with how 'real' the proposition is.	3	2.2.1
STEM	A root morpheme plus any derivational affixes. In the word <i>governments</i> , <i>govern</i> is the root, <i>government</i> is the stem.	2	4.2.1
STIMULUS	The object or focus of a directed perception activity.	4	2.2.2
STRUCTURAL AMBIGUITY	Multiple meanings arising from different syntactic structures.	3	1
SUBJECT	A traditional term usually referring to the most agentive argument in a sentence.	5	2.1
SUBORDINATION	A type of connection between units in a complex construction where one unit is structurally dependent on another.	7	1.2.2
SUBSTITUTION	A way of determining constituency by replacing a group of words, often with either a pronoun or a question word.	3	1.2.1
SUFFIX	A type of affix that appears after the base to which it is attached.	2	2.2
SUPPLETION	Grammatical meaning expressed through a change in the root form (rather than through extra morphemes).	2	5.3.3
SUPRASEGMENTAL VARIATION	Meaning changes carried out by altering a 'higher' feature of a sound, such as stress or tone.	2	5.4
SWITCH REFERENCE	A syntactic construction where the first clause is marked to indicate whether a second clause has the same or different privileged syntactic argument.	7	2.1
SYNTACTIC REPRESENTATION	The operator and constituent representation of a sentence or phrase.	3	1.4

(cont.)

Term	Definition	See chapter	Section
SYNTACTIC TEMPLATE	An 'empty' syntactic tree that is one of a language-specific inventory of such templates used to form utterances.	3	1.6
SYNTACTIC VALENCE	The number of syntactic arguments a predicate has.	4	3.4
SYNTAX	The study of how words pattern together in sentences.	3	1
SYNTHESIS	A morphological scale to do with the number of morphemes in a word.	9	2.1.1
SYNTHETIC	A morphological pattern where one morpheme carries several meanings.	9	2.1.2
TAG QUESTION	A question clause that appears after a main clause.	8	3.1.1
TARGET	The object or focus of a sensory predicate (e.g. <i>Rita</i> in <i>Jim loves Rita</i>).	4	2.3.7
TELICITY	The question of whether a predicate has (telic) or does not have (atelic) an endpoint.	4	1.1
TENSE	A clause-level operator that indicates the relationship between the time of the event and the time of speech.	3	2.2.2
THEMATIC RELATIONS	The semantic roles of arguments.	4	2
THEME	The semantic role of a participant in a particular location.	4	2.2.1
TOPIC	A constituent that carries background or shared information.	8	1.2
TRANSITIVE	Describing a predicate with two arguments.	4	3.4
TRANSITIVITY	The number of syntactic, semantic or macrorole arguments a predicate has.	4	3.4
TREE DIAGRAM	An informal name for the constituent representation of a sentence.	3	1.3
TYPOLOGY	The study of groups (types) of languages based on the presence or absence of linguistic features.	9	2
UNDERGOER	A semantic macrorole; the least agentive argument is the default choice to be the undergoer.	4	3

Term	Definition	See chapter	Section
UNDERGOER-CONTROL CONSTRUCTION	A core-level complex construction where the undergoer of the first core controls the identity of the ‘missing’ argument in the second core.	7	1.2.3
UNIVERSAL GRAMMAR	The structures that human languages have in common and that we may be born with the capacity to use	1	1
UNMARKED	The default, or most common, or ‘normal’ item in a set.	9	1
VALENCE	The number of syntactic, semantic or macrorole arguments a predicate has.	4	3.4
VERB AGREEMENT	Marking on the verb that corresponds to characteristics of an argument (e.g. in person, number, gender, grammatical role).	2	4.1
WORD	A phonologically and syntactically independent item.	2	1
ZERO DERIVATION (CONVERSION)	A derivational change that occurs without changes in the root.	2	5.2.1

Notes

Chapter 2 The structure of words

- 1 We shall see in section 6 that this definition needs some elaboration.
- 2 These are the default plural and past tense forms in English. If you were being clever, you might have come up with others, like *bleeken*, or *plept*.
- 3 Note that verbs and nouns do not form open sets in all languages. Kalam (East New Guinea, Papua New Guinea), for example, has an inventory, a closed set, of about 100 verb stems (Pawley 1993: 87).
- 4 Linguists may invent their own set of glossing abbreviations but they will at least usually provide a list of them. Here we follow the ‘Leipzig’ glossing and abbreviation rules, a widely accepted list of conventions available online. This is supplemented where needed with extra abbreviations.
- 5 If there are complex morphological processes involved in word formation, you might see one line for the words, then one line with the morpheme breakdown, then the gloss and finally the free translation. Some examples in this book are presented that way.
- 6 We will assume for the moment that language is **COMPOSITIONAL**, that is, that meaning is made up of the sum of its parts (a string of morphemes in a word, words in a sentence). We will see later that life is not always this straightforward.
- 7 In this chapter, we will not examine *why* the affixes are ordered the way they are. It could be for a number of reasons, semantic (particularly with regard to tense and aspect affixes, see chapter 3), syntactic (affixing in the order that the syntax ‘needs’ them; this is known as the ‘mirror’ principle) or phonological. See Katamba (1993) for further discussion.
- 8 We will examine all these properties further in chapters 3 and 6.
- 9 Third person plural is optionally marked with *ʔéʔən* indicating plurality.
- 10 Note that derivational morphemes are not usually shown as separate morphemes when glossing data.
- 11 You may also come across the term **BASE**. This a cover term for stems and roots. Affixes attach to bases. In other words, roots are bases for derivational morphemes and stems are bases for inflectional affixes.
- 12 See section 5.7.1.
- 13 A lot of these issues are examples of **NON-CONCATENATIVE MORPHOLOGY** because the meanings are not (‘non’) expressed with (‘con’) a chain (‘catena’) of morphemes.
- 14 In fact, many languages associate certain sound combinations with certain meanings, though not necessarily through the regular consonant-root system associated with Semitic languages (known as non-concatenative morphology). In English, for example, the sequence *gl-* is associated with words to do with vision or light

(e.g. *glisten, glare, glow, glimmer, gleam*). These partial morphemes with meaning correlations are called **PHONAESTHEMES**.

- 15 According to Cohen, QUAL (qualitative) may indicate telicity (having an endpoint – see chapter 4).
- 16 *N-* is a nasal prefix marking active voice whose form is phonologically conditioned (Tjia 2007: 147).
- 17 Tjia contrasts this morphological reduplication with syntactic reduplication where two separate events are described (2007: 187).

- (i) Kacung N-lompat, N-lompat (sampay jauh).
 frog ATV-jump ATV-jump until far
 ‘The frog jumped, and jumped (until it was far away).’

- 18 You may also see this process referred to as **AUTOSEGMENTAL VARIATION**.
- 19 This area of study is called morphophonemics.
- 20 One difference between American and British English is that some sequences of roots are phrases in British English but compound words in American English, as you can see in the first two examples in (58).
- 21 The Ethnologue calls this language Hupdë and classifies it as Maku (Gordon 2005). Epps notes that ‘maku’ is considered an ethnic slur on this people group and their language family and so we follow her in using Nadahup (2007: 107).
- 22 Clitics are often written as part of the phonological word they are included in (or perhaps using an apostrophe). However, this is not always the case. For example, English determiners *the* and *a/an* are clitics (notice how their phonological form varies according to the noun that follows, and the fact that they can precede a number of word types) but they are written as separate words.

- (i) the ugly dog
 (ii) the two carrots
 (iii) a big surprise
 (iv) an enormous turnip

- 23 Data from Bergsland and Dirks (1978).
- 24 Data from Kutsch Lojenga (1994). In this data, ´ = high tone, ` = low tone, ˘ = low-mid tone.
- 25 Data from Katamba (1993) and Farmer and Demers (2001).
- 26 Data from Unger (2008).
- 27 Data from Tjia (2007).
- 28 Data from Topping and Dungca (1973).
- 29 Data from Childs (2003).
- 30 Data from Henson (2007).
- 31 Data from Stebbins (2003).
- 32 Data from Slater (2003).

Chapter 3 The structure of sentences

- 1 Some details of inflectional morphology are absent from the gloss, for the sake of a clearer example. See Barnes (1994) and Lockwood (1977) for details.
- 2 I have been informally referring to the constituent representation as the syntactic form of a sentence. Strictly speaking, however, the constituent representation together with

- the operator representation that we will examine in section 2 form the full **SYNTACTIC REPRESENTATION** of a sentence.
- 3 Of course, we could use RP for noun phrases too, but since NP is a more commonly used term, we will continue to use NP when we are labelling noun phrases, and RP to label other types of phrasal arguments.
 - 4 The first two constructions in (36) are sometimes given various other names by linguists (equative, identificational, etc.). The term **EXISTENTIAL**, on the other hand, is standard.
 - 5 The structure of truly equational sentences is more problematic, since both noun phrases are, as the term suggests, ‘equal’. The analysis of these constructions within Role and Reference Grammar theory, as well as other theories, is a matter of ongoing research.
 - 6 Adapted from Van Valin (2005: 15).
 - 7 Lóng and Zhèng (1998: 177).
 - 8 Miller (1999: 66).
 - 9 Seyoum (2008: 127).
 - 10 Payne (1997: 282–3) notes that some verbs are lexically negative: *lack*, for example, is the lexical negative of *have*. In such cases, no operators are involved.
 - 11 Cited in Miestamo (2005: 257).
 - 12 g = velar fricative (having both voiced and voiceless allophones).
 - 13 This S, R, E system originated with Reichenbach (1947).
 - 14 This is known as metrical tense or degrees of remoteness, and is found frequently in Bantu, Amerindian, Oceanic, Aleut and Causasian languages (Frawley 1992: 363).
 - 15 Cited in Mithun (1999: 152).
 - 16 Interestingly, only with a second person subject is a visual/non-visual distinction made in both the present and the past. With the third person, it only occurs in the past, and there is no distinction made with first person subjects (Monserrat and Dixon 2003: 238).
 - 17 This function is also known as verbal number.
 - 18 Also spoken in Siberia and Mongolia.
 - 19 Note that iterative aspect denotes a repeated action as part of a single event. This is different from core-level event quantification, which relates to several events, often with different actors.
 - 20 Adapted from Van Valin (2005: 12).
 - 21 There may be alternative ways in a language to communicate similar meanings without using operators, e.g. by means of lexical morphemes and more complex constructions.

(a)	I may come.	(a′) It is possible that I will come.
(b)	Perhaps I’ll come.	(b′) There is a possibility that I’ll come.
 - 22 For other examples, see chapter 6, section 2.4 and chapter 7, section 2.3.
 - 23 Terms from Nichols (1986).
 - 24 Do not worry too much about the names of the cases if these are new to you. These will be discussed further in chapter 5. What is important is to see that different noun phrases are marked differently depending on their role in the sentence.
 - 25 Samoan data from Niklas Jonsson (p.c.), Lengo data from Paul Unger (p.c.), Arabic data from Cowan and Rakušan (1998), Mazandarani data from Muhammad-Reza Fakhr-Rohani (p.c.), Filipino data from Frieda Marie Adeva (p.c.).
 - 26 Data from Heath (1998).

- 27 Data from Dochartaigh (1992).
- 28 Data from Haspelmath (1993).
- 29 Data from Davis and Saunders (1997).
- 30 Data from Koshal (1979) cited in Palmer (2001: 38–9).
- 31 Data from Kutsch Lojenga (1994: 285–6).
- 32 Data from Coupe (2007).
- 33 Also spoken in Botswana, Mozambique, Zambia and Zimbabwe. Data from Mchombo (2001).
- 34 Data from Anderson (2005).

Chapter 4 The structure of meaning

- 1 This chapter focuses specifically on the semantic classification of predicates and propositions. Chapter 6 includes discussion of some semantic properties of referring expressions.
- 2 These classes are also known as *Aktionsart* or aspectual classes. *Aktionsart* or verb classes were originally the work of Vendler (1957), and the ‘semelfactive’ was added based on work by Smith (1997).
- 3 The notion of an inherent endpoint is called **TELICITY**: a telic predicate has an inherent endpoint, while an atelic predicate does not.
- 4 The English label ‘achievement’ is rather awkward here, because in normal usage, an achievement can take some time. The term as we are using it here refers *only* to instantaneous changes.
- 5 It is important to note that it is also possible to describe not just an instantaneous change of state but also an instantaneous change of activity, or the sudden start of an activity, as in *The race began at 9.20 am*, where the onset of the race is described by the predicate *begin*.
- 6 Remember that semelfactives are considered to have no inherent endpoint because they entail no change of state.
- 7 What I am calling active achievements are commonly termed active accomplishments in the literature. In their representation in more recent literature (and as described in section 2.3.4) they end with an achievement rather than an accomplishment (as was the case in earlier literature). To be consistent, I have amended the name to match their representation.
- 8 We will look further in chapter 5 at how the number of arguments can be altered.
- 9 In English, achievements, semelfactives and activities may occur with the phrase *in an hour* but only with an ‘anticipatory’ meaning, which is not the meaning the test calls for. In other words, the interpretation that the event will happen or start after the given time interval has passed, e.g. *The bomb will explode in one hour*.
- 10 Notice from the translations in the table that in English we use either a phrase or a different verb for the accomplishment and causative accomplishment classes: the Qiang examples could be translated *grow* and *shrink*. However, we do occasionally use derivational morphology in English for other sets of predicates, such as the *-en* suffix on (state) adjectives for both the accomplishment and causative accomplishment: *soft/soften, red/redden, long/lengthen*.
- 11 If you are writing by hand, you can use wiggly underlining and a prime symbol to indicate a predicate.

- 12 You may also see this representation system referred to as the logical structure of the predicate.
- 13 See Pavey (2008b) for a discussion of the semantic representation of specificational constructions with two definite noun phrases, e.g. *David is the winner*.
- 14 See Schwartz (1993) for examples.
- 15 A single argument of a state predicate like that in (18b) has a very similar role but is often termed an attributant because the sentence describes its attribute.
- 16 INGR stands for ingressive, a term which indicates the beginning or start of an activity or state. Another term you might see used for this class of predicate is inchoative or inceptive.
- 17 Processes are closely related to accomplishments: they involve a change in state through time but do not have an inherent endpoint. For this sub-class you might see the notation PROC to indicate a process, as indicated in example (i).
- (i) The colour was fading. PROC **faded'** (colour)
- 18 Cited in Aikhenvald (2007: 198).
- 19 Data from Silje Garvik (p.c.).
- 20 We will look in more detail at the different functions and types of adpositional phrases in chapter 6.
- 21 It is also possible to provide semantic representations for noun phrases and to include operators, but this is beyond the scope of our discussion. See Van Valin (2005: 49–53) for more details.
- 22 If a predicate has three arguments, one is the actor, one the undergoer, and the third is a **NON-MACROROLE ARGUMENT**.
- 23 This variation is commonly called a dative alternation because in many languages (such as Central Arctic) the non-macrorole argument in the unmarked sentence carries dative case.
- 24 Data from Romeo (2008).
- 25 Data from Heath (1999).
- 26 Data from Gordon (1973).
- 27 Data from Hirose (2003).
- 28 Data from Hirose (2003).
- 29 Data from Saunders and Davis (1993).
- 30 Data from Boutin (2004).
- 31 Data from Romeo (2008).
- 32 Data from Dixon (1988). Exercise adapted from Van Valin and LaPolla (1997: 135–6).
- 33 Data from Lóng and Zhèng (1998).

Chapter 5 Integrating language structure

- 1 Throughout section 1.1 we concern ourselves for the most part with transitive predicates, where there is a need to distinguish which is the actor and which the undergoer.
- 2 The different adpositional phrase types are discussed further in chapter 6.
- 3 Predicates with a single actor argument are sometimes termed unergative in the literature, while those with a single undergoer argument are called unaccusative.
- 4 This is then an actor control construction because the actor controls the identity of the 'missing' argument. An example of an undergoer control construction is *Jim asked*

Dave to stop swearing where it is the undergoer of *ask* (*Dave*) that controls the missing argument of the second predicate. See chapter 7 for more information.

- 5 The understood or ‘missing’ argument is called the **PIVOT**.
- 6 S includes S_A and S_U which will often pattern together when you have grammatical relations patterns.
- 7 Citing Lang (1973) and Li and Lang (1979).
- 8 The full representation for ‘go’ in (23b) is [**do**’ (baá, [**move.away.from.reference.point**’ (baá)))] & [INGR **be-LOC**’ (Ø, baá)] (Van Valin and LaPolla 1997: 155).
- 9 See Dixon (1994: 5) for more information on where ergative patterns are found in the world’s languages.
- 10 I am calling the verb marking ‘cross-reference’ instead of ‘agreement’ here because Ch’orti’ is head-marking. Both ‘cross-reference’ and ‘verb agreement’ refer to how features of arguments are reflected in marking on the predicate.
- 11 DIR marks the PSA while OBL marks the other macrorole argument.
- 12 The patterns illustrated in 2.7.1 and 2.7.2 are often referred to as morphological ergativity. Those in 2.7.3 are called syntactic ergativity. Syntactic ergativity is much rarer than morphological ergativity.
- 13 Primarily nominative-accusative languages generally have fewer split systems than those that are primarily ergative-absolutive.
- 14 See Payne (1997: 144–68) and Van Valin and LaPolla (1997: 363–7) for further discussion and examples.
- 15 The accent marks stress and can be ignored for our purposes here.
- 16 It is possible for languages to have only one of these two features of voice constructions: see Van Valin and LaPolla (1997: 297) and Keenan and Dryer (2007).
- 17 Some languages distinguish morpho-syntactically between passive voice and middle voice, where the role of an agent is not only demoted but ignored altogether, and the event is treated more like a process than an action. There is some variation in terms of what middle voice is used to refer to. For our purposes, it is the distinction between *The windows were broken* (passive) and *The windows break easily* (middle), or *The books were sold* (passive) and *The books sold easily* (middle). Notice that we can add the implied agent to the passive voice construction but not to the middle voice construction: *The windows were broken by the hooligan.* / **The windows break easily by the hooligan.* See Kemmer (1993) for more on the middle voice.
- 18 English also has a type of adversative construction in sentences such as *My car died on me* (Van Valin, p.c.).
- 19 This term is unfortunate in that it suggests that the passive voice, normally associated with nominative-accusative patterns, is the ‘normal’, unmarked case and that the opposite voice is a sign of the end of the world.
- 20 Cited in Creissels, Dimmindaal, Frajzyngier and König (2008: 97).
- 21 In the literature, you may find a distinction between passive voice and inverse voice. While similar to passive voice in promoting the undergoer and demoting the actor, with the inverse voice the verb may remain in its transitive form and the actor is normally not omitted. In the Yakan data in (51b), the verb is in the transitive form, but the actor is omitted completely, leading us to interpret this as a passive rather than inverse construction. See Givón (2001: 154–68) for discussion of inverse constructions.

- 22 Brainard and Behrens (2002) state that the clitic =*in* marks definiteness, as in (49a), and also marks the single required argument of intransitive predicates (single direct core argument), as in (49b). They gloss this second use as ‘term’; I have glossed it ‘s’.
- 23 Or [BECOME **be**’ (illness, [**well**’)].
- 24 Baart suggests this is in fact the conjunctive participle of a verb meaning ‘to apply, to employ, to engage, to put on’ (1999: 90).
- 25 Tosco (2004) provides evidence that these nouns are fully incorporated into the verbal complex, even though in the orthography he notes they may be written with a hyphen or even as separate words (2004: 90–1).
- 26 Interestingly the noun-incorporated version is interpreted less transitively than the simple verb in (32a) and this assists its transition to being a compound (transitive) verb. See Tosco (2004) for discussion.
- 27 Rosen (1990) and Allen, Gardiner and Frantz (1984), cited in Margetts and Austin (2007: 424).
- 28 There are a number of other ways that languages represent two arguments with the same referent. In some languages, a special type of pronoun is used as one of the arguments and it co-refers with the first argument (see (i)). In others, a reflexive clitic is used, as in the French example in (ii). See Van Valin and LaPolla (1997: 392) for further discussion. In this section we are interested in lexical reflexives, morphological marking on the predicate that changes the valence.

- (i) Jane hit herself.
- (ii) Il se lave. ‘He washes himself.’
3SG REFL wash

- 29 Data from Slater (2003).
- 30 Data from Van Valin (2005).
- 31 Data from Rodrigues (1999). As of 1999, the Guató language only had about 5 speakers left (Rodrigues 1999: 168).
- 32 Data from Baart (1999) and Joan Baart (p.c.).
- 33 Data from Otsuka (2006b).
- 34 Data from Seki (2000) cited in Farrell (2005).
- 35 Data from Bowden (2001).
- 36 Data from Lockwood (2002).
- 37 Data cited in Baker, Aranovich and Golluscio (2005).
- 38 Note: *I made a cow-purchase; then I killed the cow* but **I made a cow-purchase; then I killed it* (where *it* refers to the cow, not the purchase).
- 39 Data from Nikolaeva and Tolskaya (2001: 868–9).
- 40 The text is transcribed phonologically.

Chapter 6 The structure of phrases

- 1 Other items that go in the periphery_N are relative clauses (e.g. *the coat [that I bought]*). These will be discussed in chapter 7.
- 2 We know that *chocolate*, *brick* and *stone* are not adjectives because they do not take the inflectional morphology associated with adjectives: e.g. **chocolate-er*, **chocolate-est*.

- 3 The head noun may also specify an amount of a mass noun, such as *a piece of paper*, *a bottle of beer*. This type of structure is called nominal aspect and is discussed in section 2.3.
- 4 Expressions of possession in English tend to be more naturally worded in structures like *the prisoner's belongings*. See section 1.1.2.2.
- 5 A dugong is a large marine mammal.
- 6 Adapted from Van Valin and LaPolla (1997: 55). Noun phrases have no voice (passive/active) distinction so the *by*-phrase is represented as a prepositionally marked argument of the head noun.
- 7 See section 1.2.
- 8 Adapted from Van Valin (2005: 27).
- 9 This section presents some of the main ways languages mark possession but it is by no means exhaustive. Croatian, for example, turns the possessor into a derived adjective within the noun phrase. See Van Valin (2005: 27) for more information. Languages may also mark alienable and inalienable possession differently. See Kroeger (2005: 93–4) for examples.
- 10 Other examples include quantifiers; e.g. *[One] survived*, *[many] died*.
- 11 This language is also called Finallig.
- 12 Sometimes deixis may be lexicalized, as in English *come/go*, *take/bring*.
- 13 When the clitics =*di* and =*da* are attached, the final vowel of the noun *müani* (and of *püata*) is deleted. When the clitics =*do* and =*de* (22b) and (c) are attached to the noun *müani* metathesis occurs: the final vowel *i* and the first consonant of the clitic *d* switch places. This process is indicated with the use of '≈'. The spatial and temporal deictics have the same form; the accents on the spatial clitics indicate that these attract main stress in a word, while the temporal clitics are atonal; that is, they have no stress (van Engelenhoven 2004: 154).
- 14 There may also be languages with a 'trial' number that refers to three items (Payne 1997: 96).
- 15 Other words, typically pronouns, have a lexical, inherently negative meaning, e.g. *rien* 'nothing' or *personne* 'no-one' in French (and English).
- 16 Adjectives (and other lexical modifiers) also perform this function, but since they are an open set of lexical items, they occur in the constituent representation of the noun phrase rather than in the operator representation (as we saw in section 1.1.2.1).
- 17 The **COUNT/MASS** distinction between countable and uncountable nouns – for example, between *coin* and *money* – is a distinction of nominal aspect but would only be an operator when morphologically marked (unlike in English, where it is part of the lexical meaning of the words).
- 18 The figure on the left in Figure 6.10 is adapted from Van Valin (2005: 25). Original © Robert D. Van Valin, Jr. 2005, reproduced with permission.
- 19 See also Rijkhoff (2004) for further discussion of noun phrase operator ordering and parallels with clause operators and their scope.
- 20 In traditional grammar the definition for obliques is broader and may include adjuncts.
- 21 This switching of arguments is only possible with predicates expressing some form of exchange. The recipient in (47b) is now the undergoer and, as a macrorole argument, no longer appears in an adpositional phrase.
- 22 Figures 6.14 and 6.15 adapted from Van Valin (2005: 23).

- 23 The basic semantic representation for *put* would be **do'** (x, Ø) CAUSE BECOME **be-LOC'** (y, z), where LOC can stand for any locative semantic role.
- 24 Susanna Sorila and Annie Mya-Li Svensson, p.c.
- 25 It is important to note that words that look like adpositions can have a number of other functions. When they have these other functions we would not want to analyse them as parts of adpositional phrases, but instead as particles, small words or clitics with grammatical meaning. We can use the constituency tests described in chapter 3 as well as the meaning of the sentence to discern where the adposition/particle belongs, and how we should analyse it. In (i), for example, *up* carries aspectual meaning, telling us the action was completely finished. In (ii), the *to* serves as a marker linking two clauses together (see chapter 7). In neither example is there a syntactic adpositional phrase.
- (i) Bonnie drank up her milkshake.
- (ii) I'd like to learn kick-boxing.
- 26 For now we will put all the adjuncts in the periphery but in the next chapter we will see other possibilities when they occur sentence-initially.
- 27 Interestingly, there can be some meaning difference associated with the placement of the adverbs.
- (i) Shockingly, he was late for the party. Speaker attitude
- (ii) He was shockingly late for the party. Degree of earliness (with speaker attitude)
- 28 Data from Haruna (2003).
- 29 Data from Lichtenberk (2005).
- 30 Data from Baart (1999).
- 31 Data from Haspelmath (1993). The full stop inside nouns separates the stem from the semantically empty oblique stem suffix (Haspelmath 1993: 14).
- 32 Data from Haspelmath (1993).
- 33 Data from Sadock (1991), Sadock (2004) and Fortescue (1984).
- 34 Data from Burton (1997).
- 35 Also spoken in Botswana, Mozambique, Zambia and Zimbabwe. Data from Mchombo (2001).
- 36 Data from Anderson (2005).
- 37 Data from Genetti (2007).
- 38 Data from Blackings and Fabb (2003).

Chapter 7 Complex structures

- 1 Englebretson notes that this type of construction, found in colloquial conversation, is considered nonstandard and would not occur in more formal varieties of Indonesian (2003: 138).
- 2 While the terms coordination and subordination are widely used in linguistics, cosubordination is not so widely used. The concept of cosubordination was introduced by Olson (1981) and adopted as part of Role and Reference Grammar theory (Van Valin and LaPolla 1997). As we will see, this concept is vital for understanding complex structures.

- 3 Undergoer-control core coordinate constructions are frequently associated with **JUS-SIVE** verbs; that is, verbs like *command*, *order*, *tell*.
- 4 Adapted from Van Valin and LaPolla (1997: 454).
- 5 Another type of clausal subordination structure occurs in English and consists of post-verbal complement clauses, as in (i) below. In terms of semantics, the subordinate clause introduced by *that* is an argument of *tell*. However, notice that we can place peripheral information (*yesterday*) between that clause and the rest of the main core; this is not normally permitted in English. This syntactic patterning leads us to place the *that*-clause outside the main core, as an argument of the clause node. This is one instance of a mismatch between syntax and semantics. See Van Valin (2005: 198–200) for more discussion.
- (i) I told him yesterday [that I would paint the wall].
- 6 Also worth noting is that the term *converb* is sometimes generalized to refer not just to the marker but to the non-final verb and the marker together as a dependent or medial verb form (e.g. Haspelmath, Dryer, Gil and Comrie 2005: 263).
- 7 See chapter 8 for more discussion on the placement of subordinate modifying clauses in the constituent representation.
- 8 Subordinate clauses that function as arguments are also known as complement clauses.
- 9 Adapted from Van Valin and LaPolla (1997: 459).
- 10 || is an alveolar lateral click.
- 11 Languages vary in terms of the number of verbs that can be serialized. Pawley (1993: 88) cites an example from Kalam (East New Guinea: Papua New Guinea) where a series of nine verbs comprise an expression that roughly means ‘to massage’:
- (i) pk wyk d ap tan d ap yap g-
strike rub hold come ascend hold come descend do
- 12 These two types are labelled non-contiguous in (a) and contiguous in (b) by Donohue. He interprets *ako* ‘do.for’ as a verb, even though it does not carry subject agreement and suggests it may be somewhere between a verb and a preposition (1999: 186).
- 13 | is a dental click.
- 14 Only a few of the possible semantic relations are shown; for the full list see Van Valin (2005: 209), from which the figure is adapted.
- 15 In this section, we will be concerned with **RESTRICTIVE RELATIVE CLAUSES**, which is the more common type; the term ‘relative clause’ will be taken to mean ‘restrictive relative clause’ unless specified otherwise. **NON-RESTRICTIVE RELATIVE CLAUSES** give extra information that is not necessarily needed to identify the referent, and may follow a pause: e.g. *John, who likes snorkelling...*
- 16 Remember to distinguish the role of the coreferring argument inside the relative clause from the role of the complete noun phrase in the main clause. In (58a), for example, the whole noun phrase *the man that sold me this computer* is the undergoer of the main verb *arrest*.
- 17 Also known as Meithei.
- 18 Word order in Dime in simple declarative sentences is Actor-Undergoer-Predicate.
- 19 Note that in highly formal English, we have alternatives such as *the soap with which I washed it*.
- 20 *What* is acceptable in headless relative clauses whereas *that* is not: *What I want is a Porsche* / **That I want is a Porsche*. *How* is not acceptable in English relative clauses:

**the way how we did it*, and *what* is only acceptable in some dialects of spoken English:
the car what I stole.

- 21 Data from Slater (2003).
- 22 Data from Klaiman (1986).
- 23 Data from Van Valin and LaPolla (1997).
- 24 Data from Good (2003).
- 25 Data from Hajek (2006) and Williams-van Klinken, Hajek and Nordlinger (2002).
- 26 Data from Crowley (2002).
- 27 Data from McWhorter (2008).
- 28 Data from Pebley (1999).
- 29 Data from Dorvlo (2008).
- 30 Data from Otsuka (2006b).
- 31 Data from LaPolla and Huang (2003).

Chapter 8 The structure of information

- 1 Adapted from Van Valin and LaPolla (1997: 201).
- 2 See Dryer (2005) for details.
- 3 This typology of focus types is based on the work of Lambrecht (e.g. 1994).
- 4 Predicate focus is also known as topic-comment structure.
- 5 Another type of cleft construction is commonly called a pseudocleft: e.g. *What I really want is a Porsche.*
- 6 Adapted from Van Valin (2005: 73).
- 7 The special position is called a ‘pre-core slot’; see section 2.2.1.1.
- 8 On the surface this looks like the same position as subject, particularly since the question word represents an argument of the predicate. The best evidence for it being in the pre-core slot comes from (15a) and (b), which must be PrCS, and the fact that we would want to treat all question words the same.
- 9 Relative pronouns within relative clauses can also occur in the pre-core slot: e.g. *the man [who built this house].*
- 10 Finnish Sign Language has its own non-manual marker of topicality, which is replaced by the negation headshake at the beginning of the main clause, while Indo-Pakistani Sign Language does not have a non-manual topic marker (Zeshan 2004: 21). INDEX indicates a pronominal element, and ‘upr’ indicates ‘up right’.
- 11 For additional discussion of the analysis of cleft constructions in this framework, see Pavey (2004, 2008a).
- 12 Statements, questions and commands are the main types of illocutionary force but there are other minor types, the names of which often end in *-ative*. For example, optatives express wishes or desires about how the world should be, while imprecatives wish harm on another (a ‘curse’).
- 13 Tag questions with rising intonation call for an answer; tag questions with falling intonation call essentially for confirmation rather than an answer.
- 14 Anderson suggests this form began with ethnic minorities in London (UK) and has since spread more widely among London teenagers (2001: 99).
- 15 This is a narrow interpretation of the term imperative. With a broader view, optatives/imprecatives (wishes/curses) are also sub-types of imperatives directed at the

third person, e.g. *May you live!* or *May you die!* (respectively, and expressed syntactically the same way in English), and hortatives are imperatives directed at the first person plural, e.g. *Let's dance!*

- 16 Yet another layer of meaning is that conveyed by nonverbal features, from voice quality to silent pauses to gestures. See Poyatos (2002).
- 17 Data from Harris (2002).
- 18 Data from Jakobi (2006). Glossing system adjusted slightly from the source, for the purposes of the exercise.
- 19 Data from Nikolaeva and Tolskaya (2001).
- 20 Data from Frajzyngier (1993).
- 21 Data from Frajzyngier (1993).
- 22 Data from Aarons (1994).
- 23 Aarons indicates that (4a) is only marginally acceptable (1994: 177).
- 24 Data from Aarons (1994).
- 25 Data from Li (2000).
- 26 Data from Rennison (1997).
- 27 Data from Zerbian (2006).

Chapter 9 Language structure in context

- 1 This use of the term 'marked' and 'unmarked' is subtly distinct from the use of the terms we described back in chapter 2 (section 5.2).
- 2 Recursion is generally taken to be a universal and distinguishing property of human languages, but a few linguists disagree (e.g. Everett 2005).
- 3 This is also known as **ANALYTIC** morphology.
- 4 Also spoken in Myanmar and Thailand.
- 5 It would appear that dogs are very skilled in this part of the world.
- 6 This language had only around 100 adult speakers in 1999 (Aikhenvald 1999: 71).
- 7 Fusional is also known as **SYNTHETIC** or **INFLECTIONAL**.
- 8 This language is also spoken in Laos and Vietnam.
- 9 Cited in Aikhenvald (2006: 11).
- 10 See Aikhenvald (2004) for further discussion and examples.
- 11 Cited in Mithun (1999: 183).
- 12 Karawari is also known as Alamblak.
- 13 The third major type of location description is intrinsic, where the position depends on intrinsic properties of the location, e.g. *in front of the television*, where a television has a clear 'front'. See Levinson (2003) for more discussion of that category.
- 14 Some versions of linguistic relativity propose that language structure not only impacts thought but actually constrains or even determines thought processes ('weak' and 'strong' versions, respectively). The ideas associated with linguistic relativity originated with what is known as the Sapir-Whorf hypothesis; this was based on the work of Edward Sapir and with Benjamin Lee Whorf's (1956) observations following his work among the Hopi (Uto-Aztecan, USA) language community. Whorf himself sought to raise awareness of the effect of language on thought precisely to be able to step outside these worn thought-paths and transform scientific thought; asking whether it might not be the case that every speaker of every language unwittingly sees the world through

the lens provided by the language she or he speaks (Whorf 1956: 263). See Saeed (2003: 41) and Bennardo (2003) for more explanation and discussion.

- 15 See Dunn (2000) for a further study on this topic among women speakers of the Chukchee language.
- 16 Citing work by Andronov (1964).
- 17 General Spanish in (32b) from Trevor and Vicky Allin (p.c.).
- 18 Citing work by Silva-Corvalán (1994).
- 19 Data from Colarusso (1992).
- 20 Data from Brassett, Brassett and Lu (2006). In fact, Tujia has, strictly speaking, neither prepositions nor postpositions, but it has particles associated with nouns which function similarly (2006: 76).

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