9
Complex noun phrases

GRAMMAR BITES in this chapter

A Types of noun modification

- The different structures used to modify noun phrases
- The patterns of use for noun modification across the registers

B Premodification

- Modifiers that occur in front of the head noun in a noun phrase: attributive adjectives, noun + noun sequences, and other more specialized structures

C Relative clauses

- Options in the structure of relative clauses, such as the choice between different relative pronouns
- Factors that are associated with each option

D Other postmodifier types

- Modifiers other than relative clauses that occur following the head noun in a noun phrase: non-finite clauses, prepositional phrases, and appositive noun phrases

E Noun complement clauses

- The different kinds of noun complement clauses: *that*-clauses, *to*-infinitive clauses, *of* + *ing*-clauses and *wh*-interrogative clauses
- The functions of the different types of noun complement clauses

9.1 Introduction

The basic noun phrase, which we discussed in Chapter 4, can be expanded with noun **modifiers**. **Premodifiers**, like attributive adjectives, occur before the **head** noun. **Postmodifiers**, like relative clauses, occur following the head noun. In total, noun phrases can be composed of four major components:

determiner + premodifiers + head noun + postmodifiers

All noun phrases include a head, while determiners, premodifiers, and postmodifiers are optional. This can be illustrated in the following noun phrases:

determiner	premodifiers	head (noun)	postmodifiers
	industrially advanced	*countries*	
a	*small wooden*	*box*	*that he owned*
a	*market*	*system*	*that has no imperfections*
the	*new training*	*college*	*for teachers*
		patterns	*of industrial development in the United States*

A pronoun can substitute for a noun or a complete noun phrase. As a result, noun phrases can have a pronoun instead of a noun as the head. Pronoun-headed phrases usually do not include a determiner or premodifiers, but they may have postmodifiers. Several pronoun-headed phrases are illustrated here:

determiner	premodifiers	head (pronoun)	postmodifiers
		I	
		she	
		anyone	*who is willing to listen*
		those	*who take the trouble to register*
the	*big*	*one*	*in town*

As the above examples show, noun phrases can be expanded in many ways and often involve both premodifiers and postmodifiers. As a result, noun phrases are often structurally complex, especially in written discourse.

For example, the following sentence is from a newspaper article about cellular radios. Its main clause structure is very simple: a main verb (*is*) with two noun phrase slots (marked by *[]*)—subject (*problem*) and subject predicative (*competition*).

*[The latest **problem** for the government] is [increasing **competition** for mobile cellular radio services, which have a small bunch of frequencies around 900 MHz].* (NEWS)

However, this sentence is relatively long and complex because the noun phrases have complex modification:

determiner	premodifiers	head noun	postmodifiers
The	*latest*	*problem*	*for the government*
	increasing	*competition*	*for mobile cellular radio services which have a small bunch of frequencies around 900 MHz.*

This example also illustrates that there are different levels of **embedding** within noun phrases. That is, postmodifiers of a first-level noun phrase can include complex noun phrases with pre- and postmodification. For example:

top-level NP:

premodifiers	**head noun**	**postmodifiers**
increasing	*competition*	*for mobile cellular radio services . . .*

second-level NP (embedded within postmodifer):

premodifiers	**head noun**	**postmodifiers**
mobile cellular radio	*services*	*which have a small bunch of frequencies around 900 MHz*

Although we will stop our analysis here, we could go on to break down the noun phrase within the postmodifier *which have a small bunch of frequencies around 900 MHz.*

As this chapter will show, such complexity of noun modification is not unusual in English. In the following five Grammar Bites, we explore the major options for expanding noun phrases in English. In Grammar Bite A, we survey the structures used as noun premodifiers and postmodifiers, comparing the frequency of each type across registers. Then, in Grammar Bite B, we focus on types of premodification. In Grammar Bites C, D, and E, we turn to postnominal modifiers. Relative clauses are the most complex of these because there are many structural alternatives; these are covered in Grammar Bite C. Then, in Grammar Bite D we survey the other structures used as postnominal modifiers and discuss how sequences of postmodifiers can be used in combination. Finally, in Grammar Bite E we consider a special type of structure that occurs following noun heads: noun complement clauses. We show how noun complement clauses are different from relative clauses, and we describe the most common types of noun complement clauses.

GRAMMAR BITE

A Types of noun modification

9.2 Survey of noun modifier types

There are several different types of premodifiers and postmodifiers. **Premodifiers** include adjectives, participials, and other nouns:

- adjective as premodifier:

  a ***special*** *project* (CONV)

  an ***internal*** *memo* (NEWS)

- participial premodifiers:

  written *reasons* (NEWS)

__detecting__ devices (ACAD)

- noun as premodifier:

  the ***bus*** strike (CONV)

  *the **police** report* (NEWS)

There are also several different types of **postmodifier**, including both clauses and phrases. Clausal postmodifiers can be either **finite** or **non-finite**. When the clauses are finite, they are **relative clauses.** Non-finite postmodifier clauses have three different forms: ***to*-clauses**, ***ing*-clauses**, and ***ed*-clauses**:

- relative clause as postmodifier:

  *a footpath **which disappeared in a landscape of fields and trees*** (FICT)

  *beginning students **who have had no previous college science courses*** (ACAD)

- *to*-infinitive clause as postmodifier:

  *the way **to get to our house*** (CONV)

  *enough money **to buy proper food.*** (FICT)

- *ing*-clause as postmodifier:

  *the imperious man **standing under the lamppost*** (FICT)

  *rebels **advancing rapidly southwards*** (NEWS)

- *ed*-clause as postmodifier:

  *fury **fanned by insensitive press coverage*** (NEWS)

  *products **required to support a huge and growing population*** (ACAD)

Phrasal postmodifiers consist of two main types: **prepositional phrases** and **appositive noun phrases. Adjective phrases** can also be postmodifiers, but they are less common.

- prepositional phrase as postmodifier:

  *doctors **at the Johns Hopkins Medical School*** (NEWS)

  *compensation **for emotional damage*** (ACAD)

- appositive noun phrase as postmodifier:

  *the Indian captain, **Mohammed Azharuddin*** (NEWS)

- adjective phrase as postmodifiers (not common):

  *President Bush will reiterate he wants a smooth transition and will co-operate in [any way **possible**].* (NEWS)

  *[The extremely short duration varieties **common in India**] were not used in West Africa.* (ACAD†)

Occasionally adverbs can also be premodifiers or postmodifiers in noun phrases:

- adverb as premodifier:

  *the **nearby** guards* (FICT†)

- adverb as postmodifier:

  *a block **behind*** (FICT†)

Noun complement clauses are different from postmodifiers in structure and meaning, although they also occur following noun heads. They involve primarily special kinds of *that-* and *to*-clauses:

*the idea **that he was completely cold and unemotional*** (FICT)

a chance ***to do the right thing*** (FICT)

The special features of noun complement clauses are described in Grammar Bite E.

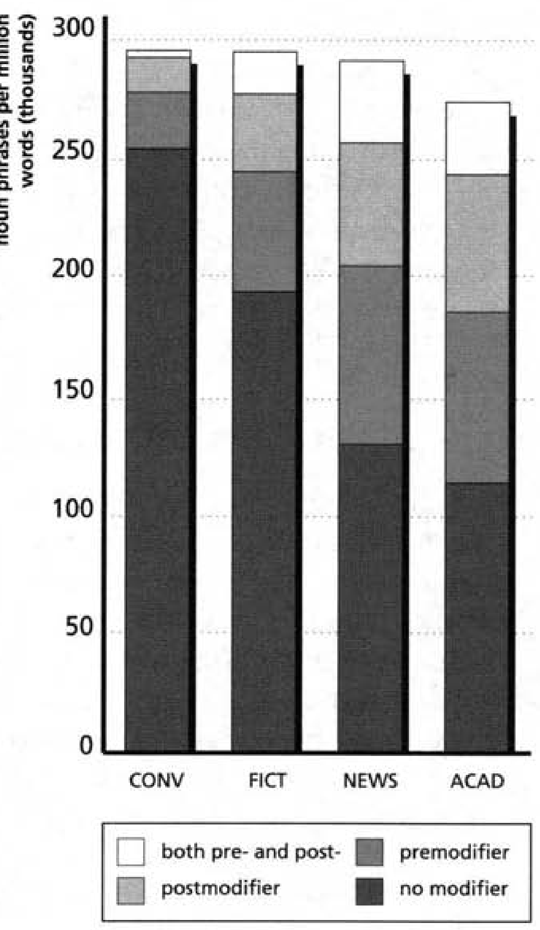
9.3 Noun phrases with premodifiers and postmodifiers across registers

Noun phrases with premodifiers and noun phrases with postmodifiers are about equally common in English. However, there are large differences across registers in the use of the types of modifier.

Figure 9.1 shows that the typical case in conversation is to use nouns with no modifier at all. In fact, noun phrases are often realized by a pronoun instead of a full noun. The following text sample from a conversation illustrates these patterns; all noun phrases are in *[]*, while the head nouns and pronouns are in bold.

Figure 9.1

Distribution of noun phrases with premodifiers and postmodifiers



Text sample 1: PICTURES AND SLEEVES (CONV)

> A: *[**Trouble**] is [**granny**] does [**it**] and [**she**]'s got [loads of **time**]. [**She**] sits there and does [**them**] twice as fast as [**me**]. [**I**] – what [**I**] like doing, [**I**] like [the **pictures**].*
>
> B: *Yes.*
>
> A: *So [**I**] don't mind doing [the **pictures**]. If [**she**]'d do [the **sleeves**] and [the **back**] for [**me**], [**I**]'d be very grateful.*
>
> B: *Yeah.*
>
> A: *Whereas [**she**] can't stand doing [the **pictures**], cos [**it**] takes [**her**] [too much **time**].*
>
> B: *[**It**]'s like doing [**tapestry**].*

As this excerpt shows, conversation has many noun phrases, but they are usually very short and have concrete referents—specific people, places, or things. Pronouns are also extremely common in conversation. Speakers in a conversation share the same physical situation, and they often share personal knowledge about each other as well. As a result, speakers typically use noun phrases with no modification, knowing that the listener will have no trouble identifying the intended referent.

In contrast, noun phrases in academic writing usually have premodifiers or postmodifiers (or both). The following text sample illustrates these patterns, with the top-level noun phrases marked in *[]*, and the head nouns marked in bold.

Text sample 2: COLLISIONS WITH COMETS (ACAD)

> *[Professor **H.C. Urey**] has suggested that [rare **collisions** between the earth and comets, recorded as scatters of tektites], must have produced [vast **quantities** of energy that would have been sufficient to heat up considerably both the atmosphere and the surface layers of the ocean].*

This excerpt has only three non-embedded noun phrases, but two of these have extensive modification. These two noun phrases are listed below, with premodifiers underlined and postmodifiers given in *[]*:

> *rare **collisions** [between the earth and comets], [recorded as scatters of tektites]*
>
> *vast **quantities** [of energy] [that would have been sufficient to heat up considerably both the atmosphere and the surface layers of the ocean]*

Such structures are typical of academic prose, where a majority of all noun phrases have some modification. In fact, much of the new information in academic texts occurs in the modifiers in noun phrases, resulting in a very high density of information.

It is surprising that premodifiers and postmodifiers have a similar distribution across registers. It might be expected that specific registers would tend to rely on either premodifiers or postmodifiers. Instead, we find *both* types of noun modification to be extremely common in written expository registers, while both types are relatively rare in conversation.

9.3.1 Premodifier types across registers

Adjectives are by far the most common type of noun premodifier (Figure 9.2). Adjectives come from many different semantic classes, which cover numerous concepts, including color, size/extent, time/age/frequency, and affective evaluation. Chapter 7 describes the use of these premodifying (attributive) adjectives in detail.

It is more surprising that nouns are also extremely common as noun premodifiers, especially in the written expository registers. Noun + noun sequences are used to express a wide range of meaning relationships in a succinct form. As a result, nouns as premodifiers are especially favored as a space-saving device in newspaper language. We return to a detailed discussion of noun + noun sequences in 9.5.

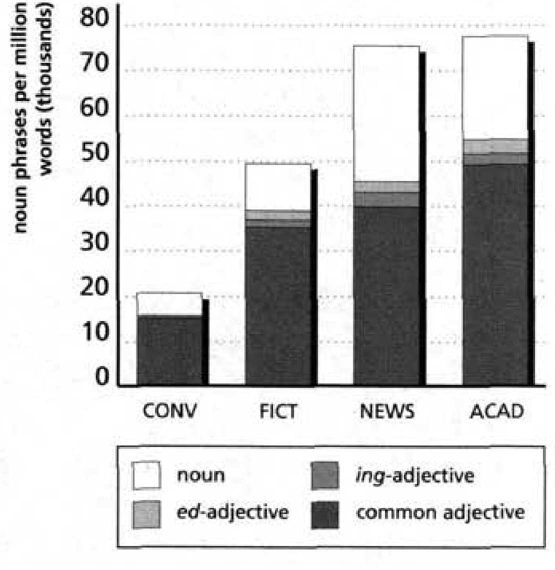
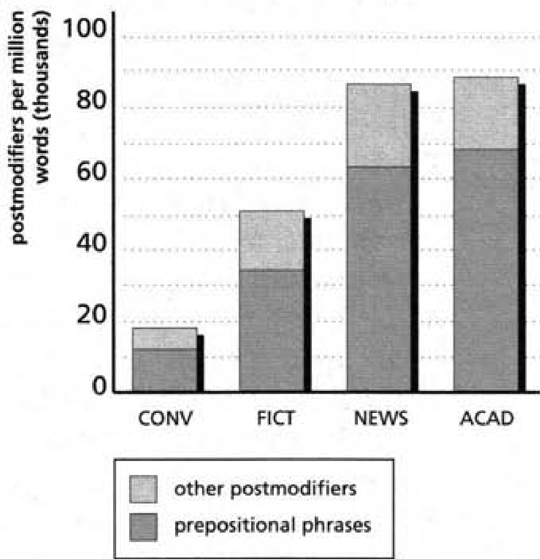


Figure 9.2
Frequency of premodifier types across registers

9.3.2 Postmodifier types across registers

Although relative clauses often receive the most attention in discussions of noun postmodifiers, prepositional phrases are actually much more common (Figure 9.3). Prepositional phrases as postmodifiers are especially common in news and academic prose. These structures often occur in extremely dense, embedded sequences. In the following text extract, postmodifiers are in [] with the associated prepositions in bold. Top-level noun phrases (i.e. those which are not part of other noun phrases) are underlined:

Figure 9.3
Prepositional v. other postmodification across registers



> *Mortality [**among** stocks [**of** eggs] [stored outdoors in the ground]] averaged 70%; eggs [collected the following spring from a large number [**of** natural habitats [**in** the central part [**of** the province]]] suffered a 46% reduction [**in** viability] [which could only be attributed to this exposure [**to** cold]]. Further evidence [**of** the association [**of** winter egg mortality [**with** sub-zero temperatures and snow cover]]] was reported **by** Riegert (1967a).* (ACAD)

(Note that prepositional phrases can also function as adverbials, as in *collected ... from*.)

In academic prose, prepositional phrases allow a very dense packaging of information in a text. They are more compact than relative clauses. For example, compare the prepositional phrase from the beginning of the last example with an alternative relative clause:

prepositional phrase postmodifier
mortality among stocks ...

relative clause postmodifier
mortality which occurred among stocks ...

Prepositional phrases commonly occur in sequences in academic prose, which also adds to the dense packing of information. For example, the sample above contains the sequence:

a large number [of natural habitats [in the central part [of the province]]]

Relative clauses differ from prepositional phrases as postmodifiers in both their communicative function and their register distribution (see Figure 9.4). They are common in both fiction and news, where they are often used to identify or describe a person:

*someone **whom I had never seen before*** (FICT)

*a man on the platform **whose looks I didn't like*** (FICT)

*a 20-year-old woman **who has been missing for a week*** (NEWS)

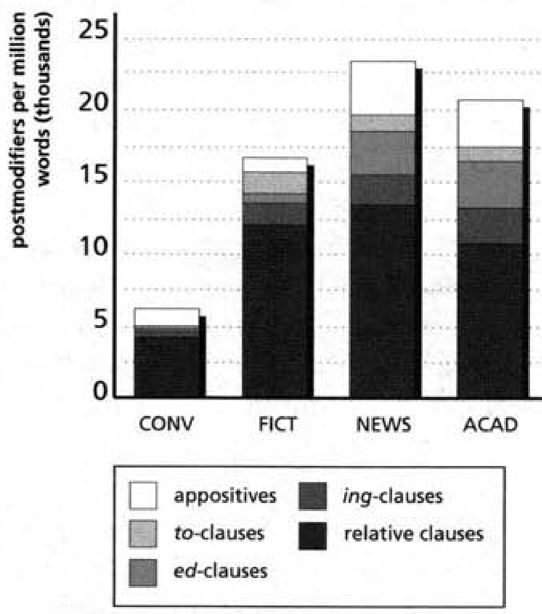
When they are used to characterize inanimate objects, relative clauses often link the object to a person, as in **1–3** below. Further, relative clauses in fiction and news typically use dynamic verbs describing actions, in contrast to the static presentation of information associated with prepositional phrases:

1 *one of those mixed-up salads* ***which men will eat with complete docility in restaurants*** (FICT)

2 *the boiling pot of gravy* ***which fell upon his foot*** (FICT)

3 *the 1988 event* ***which left her on the verge of a nervous breakdown*** (NEWS)

Figure 9.4
Non-prepositional postmodifier types across registers



All three of these examples relate an inanimate head (*salads*, *pot*, *event*) to a person (*men*, *his foot*, *her*) and use a dynamic verb (*eat*, *fell*, *left*).

The other types of clausal postmodifier are less common (although postmodifying *ed*-clauses and appositive noun phrases are relatively common in news and academic prose). Each of these postmodifier types is described in detail in Grammar Bite D.

9.3.3 Modifiers with different head noun types

In general, nouns occur freely with premodifiers and postmodifiers, while pronouns rarely occur with modification. However, there are notable exceptions to this rule. For example, proper nouns and other naming expressions usually do not occur with a modifier, since the name itself clearly refers to a specific person, place, or institution. When proper nouns do occur with a modifier, it is usually an appositive noun phrase, such as (appositive underlined):

Heiko, *a 19-year-old factory worker* (NEWS)

Voronezh, *a dour city of 850,000 people in the great Russian heartlands* (NEWS)

Personal pronouns (like *I*, *you*, *she*) follow the general rule of rarely occurring with a modifier. However, other pronoun classes behave differently. For example, the substitute pronoun *one*, which stands for a noun or noun-headed expression, is similar to common noun heads because it freely takes both premodifiers and postmodifiers. In conversation, a modifier is used to identify 'which one' is intended (premodifiers and postmodifiers underlined):

You know ***the one*** *she ran off with.* (CONV)

He's got ***a*** *horrible* ***one*** *that he hardly ever wears.* (CONV)

The *last* ***one*** *I had was at least four years ago.* (CONV†)

The substitute pronoun *one* in academic prose is usually directly anaphoric, substituting for a previously used noun phrase, but the modifier provides new descriptive details about that referent:

> *The idea is **a** strange **one**.* (ACAD†)

Postmodifiers are used more commonly than premodifiers to give the new information, since they can be longer and thus provide more descriptive information:

> *A black body is **one** that perfectly absorbs, and then re-emits, all radiation falling upon it.* (ACAD)

Indefinite pronouns can also take both premodifiers and postmodifiers. However, postmodifiers are overwhelmingly more common with this head type.

> ***All** I know is nobody likes her.* (CONV)
>
> *Um, this was a surprise to **several** of us.* (CONV)
>
> *We have tried to impart **something** about the motivations of contemporary geologists.* (ACAD†)
>
> *But today, over thirty years after Basset's book appeared, is there **anything** new to say about 1931?* (ACAD)

Demonstrative pronouns differ from other head types in that they take only postmodifiers. However, each individual pronoun shows a different pattern of use:

- The pronouns *this* and *these* are extremely rare with a modifier.
- The pronoun *that* occasionally takes a postmodifier.
- The pronoun *those* is extremely common with a postmodifier, especially in writing.

When it occurs with a modifier, the demonstrative pronoun *that* usually takes an *of* prepositional phrase as postmodifier:

> *The simplest covalent structure is **that** of diamond.* (ACAD) <i.e. the structure of diamond>

In contrast, the demonstrative pronoun *those*—referring to people or things—takes a variety of postmodifiers to identify the intended reference:

> *A state may have good grounds in some special circumstances for coercing **those** who have no duty to obey.* (ACAD)
>
> *They sat erect, conscious of their uniforms, styled like **those** of the post-1843 Prussian army.* (FICT) < = like the uniforms of the post-1843 Prussian army>
>
> *This may be smugly satisfying to **those** of us who sit on the sidelines.* (NEWS)

Review

Major points of GRAMMAR BITE A: Types of noun modification

- There are many different types of premodifiers and postmodifiers.
- Adjectives are the most common premodifier type.
  - Nouns are also very common as premodifiers in the written registers.
- Prepositional phrases are by far the most common type of postmodifier.
  - Relative clauses are also common.
- Premodifiers and postmodifiers are distributed in the same way across registers: rare in conversation, very common in informational writing.

➤ Different types of noun phrase heads (e.g. common noun, personal pronoun, indefinite pronoun) are associated with different types of modifiers.

GRAMMAR BITE

B Premodification

9.4 Types of premodifiers

There are four major structural types of premodification in English:

- general adjective: *big pillow, new pants, official negotiations, political isolation*
- *ed*-participial modifier: *restricted area, improved growth, fixed volume, established tradition*
- *ing*-participial modifier: *flashing lights, growing problem, exhausting task*
- noun: *staff room, pencil case, market forces, maturation period*

In addition, as we showed in Chapter 4, determiners, genitives, and numerals precede the head and modifiers, and help to specify the reference of noun phrases.

Premodifiers are condensed structures. They use fewer words than postmodifiers to convey roughly the same information. Most adjectival and participial premodifiers can be re-phrased as a longer, postmodifying relative clause:

premodifiers	relative clause as postmodifier
*a **big** pillow*	*a pillow **which is big***
*a **restricted** area*	*an area **which is restricted***
*an **established** tradition*	*a tradition **which has been established***
***flashing** lights*	*lights **which are flashing***

We explained in 9.3.1 that general adjectives, functioning as attributive adjectives, are the most common form of noun premodifiers.

Figure 9.2 in 9.3.1 showed that nouns are also extremely common as premodifiers, especially in newspaper language and academic prose. Noun + noun sequences can represent many different meaning relationships, but there are no signals to indicate which meaning is intended in any given case. To rephrase noun + noun sequences as postmodifiers requires a wide range of function words (different prepositions and relative pronouns) together with different verbs. Thus consider the range of meaning relationships expressed by the following noun + noun sequences:

noun + noun sequence	re-phrasing with a postmodifier
plastic trays	*trays made from plastic*
wash basins	*basins used for washing*
law report	*report about the law*

noun + noun sequence	re-phrasing with a postmodifier
company management	*the management of a company*
commission sources	*sources in the commission*
elephant boy	*boy who resembles an elephant*

In fact, such sequences often represent more than one possible meaning relationship. *Commission sources* could also be 'sources of commission', and *elephant boy* could refer to 'a boy who rides on an elephant'.

In the following section, we examine the range of meanings that noun + noun sequences can express. Then, in 9.6, we introduce more complex combinations of premodifiers.

9.5 Meaning relationships expressed by noun + noun sequences

Noun + noun sequences contain only content words, with no function word to show the meaning relationship between the two parts (see also 4.11.3). This means that they present information densely. It also means they rely heavily on implicit meaning, because the reader must infer the intended logical relationship between the modifying noun and head noun. In fact, noun + noun sequences are used to express a bewildering array of logical relations, including the following (where the head noun is labeled N2 and the premodifying noun N1):

- composition (N2 is made from N1; N2 consists of N1):

  e.g. *glass windows = windows made from glass*

  metal seat, plastic beaker, zinc supplement, protein granules, tomato sauce, satin dress, egg masses, water supplies, fact sheets

- purpose (N2 is for the purpose of N1; N2 is used for N1):

  e.g. *pencil case = case used for pencils*

  brandy bottle, patrol car, Easter eggs, picnic ham, chess board, safety device, search procedure, worship services, war fund, extortion plan

- identity (N2 has the same referent as N1 but classifies it in terms of different attributes):

  e.g. *women algebraists = women who are algebraists*

  conventionalist judge, men workers, consultant cardiologist, member country, exam papers, grant aid

- content (N2 is about N1; N2 deals with N1):

  e.g. *algebra text = a text about algebra, probability profile = profile showing probability*

  market report, sports diary, prescription chart, success rates, credit agreement, intelligence bureau

- objective (N1 is the object of the process described in N2, or of the action performed by the agent described in N2):

  e.g. *egg production = X produces eggs, taxi driver = X drives a taxi*

waste disposal, paddy cultivation, root development, curio sellers, corn farmer, computer users

- subjective (N1 is the subject of the process described in N2; N2 is usually a nominalization of an intransitive verb):

  e.g. *child development = children develop*

  leaf appearance, eye movement, management buy-out

- time (N2 is found or takes place at the time given by N1):

  e.g. *summer conditions = conditions that occur during the summertime*

  Sunday school, Christmas raffle

- location (N2 is found or takes place at the location given by N1):

  e.g. *corner cupboard = a cupboard that is located in the corner*

  roof slates, Paris conference, church square, surface traction, tunnel trains

- institution (N2 identifies an institution for N1):

  e.g. *insurance companies = companies for (selling) insurance*

  ski club, egg industry

- partitive (N2 identifies parts of N1):

  e.g. *cat legs = legs of a cat*

  rifle butt, family member

- specialization (N1 identifies an area of specialization for the person or occupation given in N2; N2 is animate):

  e.g. *finance director = director who specializes in finance*

  Education Secretary, gossip columnists, football fans, estate agent, management consultant

Many sequences can be analyzed as belonging to more than one category. For example, *thigh injury* and *heart attack* could be considered as either objective (*X injured the thigh*) or location (*the injury is located at the thigh*).

In addition, many noun + noun sequences do not fit neatly into any of the above categories. For example, the expression *riot police* might be understood as expressing purpose, but there is an additional component of meaning: these are police used to control riots, not police for (creating) riots! Other noun + noun sequences express a range of meaning relationships in addition to the above major categories. For example:

noun + noun	**meaning**
voice communication	communication using voice
union assets	assets belonging to a union
jet streams	air streams moving like a jet
bank holiday	holiday observed by banks
pressure hose	hose able to withstand pressure
pressure ratios	ratios measuring pressure

9.5.1 Premodifying nouns that occur with many head nouns

A few premodifying nouns are especially productive in that they combine with many different head nouns. For example, the noun *family* is used with a wide range of head nouns representing many different kinds of semantic relationships:

family affair	*family barbecue*	*family doctor*
family argument	*family car*	*family entertainment*
family background	*family company*	*family friend*

In conversation, only a few nouns are productive as premodifiers. The combinations that do occur reflect the everyday-life topics of conversation. For example:

> ***car*** + *accident, door, insurance, keys, park, seat, wash*
>
> ***school*** + *book, children, clothes, fees, holidays, trips*

In contrast, newspaper language makes extensive use of noun + noun sequences. Many of the most productive premodifying nouns identify major institutions, especially government, business, and the media. For example:

> ***government*** + *action, agencies, approval, bonds, control, decision*
>
> ***business*** + *administration, cards, community, dealings, empire, ideas*
>
> ***TV*** + *ads, appearance, cameras, channel, crew, documentary, licence*

Some premodifiers that are productive in conversation are also productive in news. However, in news they usually have an institutional meaning. For example:

> ***water*** + *authorities, bill, companies, industry, levels, privatisation*

The extremely productive use of noun + noun sequences in newspaper language results in a very dense presentation of information. These forms save space, since each noun + noun sequence conveys a complex meaning in condensed form. However, the dense use of these forms can place a heavy burden on readers, who must infer the intended meaning relationship between the modifying noun and head noun.

9.5.2 Plural nouns as premodifiers

Although the singular form is usually used for premodifying nouns, plural nouns can also occur as premodifiers. Typical examples include *carpets retailer, cities correspondent, drugs business, trades union, residents association.* This pattern is much more common in British English than in American English.

Plural nouns as premodifiers occur especially in newspaper language. A few nouns are commonly found in both American and British English. For example:

> ***arms*** + *race, scandal, supplier, treaty*
>
> ***sales*** + *force, gain, increases, tax*
>
> ***savings*** + *account, banks, deposits, institutions*
>
> ***women*** + *candidates, drivers, ministers, voters*

However, there is a much larger set of plural nouns used frequently in British English but rarely in American English. For example:

> ***drugs*** + *administration, ban, business, companies, problem, trade*

jobs + *crisis, losses, market*

animals *shelter,* ***careers*** *office,* ***highways*** *department*

In addition to the overall dialect differences, there are two factors that are associated with the use of a plural premodifying noun. The first is when the noun premodifier only has a plural form, or has a special meaning associated with the plural:

arms *accord,* ***customs*** *officer,* ***explosives*** *factory*

However, some nouns which have only a plural form do lose the plural ending in noun + noun constructions:

scissor *kick,* ***trouser*** *leg*

The second factor is when the noun modifier itself contains more than one word:

1 *At Tesco's you've got fifty feet of [[**baked beans**] shelves].* (CONV†)
2 *A bit more will be said of particular features of the metalinguistic and [[**possible-worlds**] proposals].* (ACAD†)

The plural form in these sequences provides a clear signal of the structure of the complex noun phrase. In writing, some of these premodifiers are hyphenated (as in **2** above).

Some plural nouns, such as *affairs, relations, resources, rights,* and *services* are almost always premodified themselves, and retain the plural form when used in premodification:

*the State Department's [[**consular affairs**] bureau]* (NEWS)

*Labour's chief [[**foreign affairs**] spokesman]* (NEWS)

*the [[**customer relations**] department]* (CONV)

9.6 Noun phrases with multiple premodifiers

In written registers, many noun phrases occur with multiple premodifiers. However, it is rare for all the words in a premodification sequence to modify the head noun. Rather, premodifying sequences usually have embedded relationships, with some words modifying other premodifiers instead of the head noun. For example, consider the following noun phrases:

*[[**quite pale**] skin]*

*two [[**mutually perpendicular**] directions]*

Both of these noun phrases show an adverb (*quite* and *mutually*) modifying a following adjective (*pale* and *perpendicular*) instead of the head noun (*skin* and *directions*).

In a few cases, the meaning relationships among constituents are truly ambiguous. For example, out of context, the noun phrase *two more practical principles* has two distinct interpretations:

[two more] [practical] principles—i.e. 'two additional principles that are practical'

two [[more] practical] principles—i.e. 'two principles that are more practical'

Other noun phrases illustrate different relationships among the constituents, as in the following noun phrases with three-word premodification:

the [[one-time prosperous] [[market] town]]

the [[controversial] [offshore investment] portfolios]

The number of possible meaning relationships increases dramatically with each additional premodifier. Thus, noun phrases with four-word premodification can represent many different meaning relationships among constituents. For example, each of the following noun phrases with four-word premodification represents a different set of meaning relations:

1 *[[naked], [shameless], [direct], [brutal] exploitation]*
2 *[[very [finely grained]] [alluvial] material]*
3 *a [[totally [covered]], [uninsulated] [[pig] house]]*

In **1**, all four words in the premodification directly modify the head noun. This type of structuring is very rare, however. As **2** and **3** illustrate, multiple words in the premodification much more commonly have complex structural relationships among themselves.

9.6.1 The order of multiple premodifiers

Although there are no absolute rules, there are a few general tendencies governing the order of words in a premodification sequence:

A Adverb + adjective + head

Adverbs almost always precede adjectives. This is because adverbs usually modify the following adjective rather than the head noun directly. Examples include:

*a **really hot** day*
*a **rather blunt** penknife*
*a **thoroughly satisfactory** reply*
*an **extremely varied** and **immensely pleasing** exhibition*

B Adjective + noun + head

When a noun phrase has both an adjective and a noun as premodifiers, the adjective usually precedes the noun. This sequence is most common because the position closest to the head noun is filled by modifiers that are more integrated with the meaning of the head noun. The following noun phrases illustrate these tendencies:

- adjective + noun + head:

  mature rice grain, thick winter overcoat, true life stories, bright canvas bags

- color adjective + noun + head:

  black plastic sheet, black leather jacket, red address book

- participial adjective + noun + head:

  an experienced woman worker, broken bicycle wheels, an increasing mortgage burden

This order can sometimes be reversed, especially with participial adjectives. This is when the premodifying noun modifies the participial adjective (rather than the head noun):

- noun + participial adjective + head noun:

[information processing] activities, [hypothesis testing] process

In most cases, this kind of sequence of premodifiers is hyphenated. In fact, such sequences may be considered as adjectival compounds (see 7.3.3):

English-speaking world, self-fulfilling prophecy, tree-lined avenues, egg-shaped ball

C Adjective + adjective + head

A related principle for multiple adjectives as premodifiers is that **descriptors** tend to precede **classifiers** (see 7.6.):

stronger environmental regulation, any major industrial nation

Color adjectives tend to follow other adjectives. For example:

- adjective + color adjective + head noun:

  dry white grass, clear blue eyes, shabby black clothes

9.6.2 Coordinated premodifiers

In one respect, coordinated premodifiers make the logical relationships among premodifiers explicit, since each part directly modifies the head noun:

black and white *cat*

hot and hardening *mud*

arrogant and unattractive *man*

physical and sexual *abuse*

However, these structures have their own kinds of indeterminacy. In most cases, premodifiers coordinated with *and* are used to identify two distinct attributes that are qualities of a single referent:

precise and effective *solutions*

pleasing and efficient *surroundings*

complex and technical *legislation*

With plural and uncountable heads, however, *and*-coordinated premodifiers can also be used to identify two different (mutually exclusive) referents, such as:

spoken and written *styles*

male and female *workers*

British and American *spelling*

Thus, *precise and effective solutions* refers to solutions that are both precise and effective. In contrast, *spoken and written styles* refers to two different kinds of styles—spoken style and written style—rather than to styles that are both spoken and written.

Or-coordinated premodifiers can also have two interpretations. In some cases, either one, or both, of the two attributes can be applied to a given referent:

racial or religious *cohesion*

familiar or preplanned *activities*

In other cases, though, the coordinator connects two attributes that are mutually exclusive, so that only one can characterize a given referent:

dead or dying *larvae*

petroleum or coal-based *hydrocarbon matrices*

In general, coordinated premodifiers are most common in academic writing. Certain adjective + adjective combinations are especially common, often referring to complementary demographic or institutional characteristics (e.g. *social and cultural, economic and political, mental and physical*):

> *Such a strategy assumes <...> that it will be legitimized by a range of* ***social and cultural*** *values.* (ACAD†)

In fiction, certain adjectives are common as the first member of adjective + adjective combinations, adding descriptive details about the noun:

> ***black and ginger*** *fur* (FICT)
> *a* ***black and yellow*** *eel-like fish* (FICT)
> *this* ***strange and empty*** *country* (FICT)
> *this* ***strange and dreaded*** *group of men* (FICT)

Review

Major points of GRAMMAR BITE B: Premodification

- There are four major types of noun premodifier: general adjective, *ed*-participial modifier, *ing*-participial modifier, and noun.
  - Nouns as premodifiers are especially rich in meaning because they express a wide array of logical relationships.
  - A few nouns, like *car, school, government*, and *TV*, are especially productive as premodifiers.
  - Plural nouns can also occur as premodifiers, as in *arms race*. This pattern is more common in British English.
- When noun phrases have multiple premodifiers, they tend to occur in a predictable order depending on their grammatical category: e.g. adjective + noun + head noun.
- Coordinated premodifiers (e.g. *male and female workers*) are found primarily in academic prose.
  - Coordinated premodifiers are surprisingly complex because their meaning is not explicit.

GRAMMAR BITE

C Relative clauses

9.7 Restrictive v. non-restrictive function

Relative clauses are often classified by their function as either **restrictive** or **non-restrictive**. Restrictive relative clauses identify the intended reference of the head noun (the whole noun phrase is included in *[]*):

> *Richard hit the ball on [the car* ***that was going past****].* (CONV)

The relative clause in this sentence has a restrictive function. It pinpoints the particular 'car' being referred to.

In contrast, non-restrictive relative clauses add elaborating, descriptive information about a head noun that has already been identified or is assumed to be known. For example:

> *He looked into [her mailbox,* ***which she never locked****].* (FICT)

In this example, the particular mailbox is identified by the possessive pronoun *her*, and the non-restrictive relative clause is used to provide additional, descriptive information.

In writing, non-restrictive postmodifiers are usually separated from the head noun by a comma, while no punctuation is used with a restrictive postmodifier. In spoken language, where there are no punctuation marks, intonation and pauses can differentiate restrictive and non-restrictive postmodifiers. (For the following analyses, we have used punctuation to identity non-restrictive relative clauses in the written registers.)

Overall, analyzing the frequency of relative clauses, we find that:

- Restrictive relative clauses are much more common than non-restrictive clauses.
- Newspaper stories tend to use non-restrictive clauses to a greater extent than other registers.

The information added by non-restrictive clauses is often tangential to the main point of a text. This is especially the case in news, where non-restrictive clauses are used to add information of potential interest but not directly related to the news story. For example, consider the following sentences from a news article about negotiations for the sale of the firm Whyte & Mackay by the company Brent Walker:

> *Brent Walker said it expected the buyout negotiations 'would be successfully completed shortly.' Brent Walker bought Whyte & Mackay from Lonrho earlier this year for £180m in a deal that included four French vineyards,* ***which are also for sale for as much as £60m.*** (NEWS)

In this excerpt, the fact that the French vineyards are for sale does not help the reader identify the referent of 'vineyards'. Instead, this is an extra piece of information that might be of interest to some readers.

Similar uses of non-restrictive relative clauses are also common in news when the head is a proper noun:

> *American Airlines,* ***which began the daily flights to Chicago less than a year ago,*** *accused the government of being partly to blame.* (NEWS†)

In constructions of this type, the identity of the head noun is well-known to readers, and the non-restrictive relative clause is used to add newsworthy but incidental information about that referent.

9.7.1 Restrictive and non-restrictive functions with other postmodifiers

Although this Grammar Bite focuses on relative clauses, it is worth noting that postmodifiers other than relative clauses can also be classified by restrictive and non-restrictive functions. The great majority of other postmodifiers are restrictive, including most of the examples you have seen earlier in this chapter. For example:

- restrictive *ed*-clause:

  His is a fury ***fanned by insensitive press coverage of homosexuality and the AIDS epidemic.*** (NEWS†)

- restrictive *ing*-clause:

  The Ethiopian army is failing to halt northern rebels ***advancing rapidly southwards to the capitol.*** (NEWS†)

- restrictive prepositional phrase:

  Doctors ***at the Johns Hopkins Medical School in Baltimore*** *say that* <. . .> (NEWS†)

In each case above, the postmodifier is important for identifying the reference of the head noun.

However, other postmodifiers do have a non-restrictive function occasionally, though much less commonly than relative clauses.

- non-restrictive *ed*-clauses:

  A converted farm building, ***donated by Mr. and Mrs. Tabor,*** *has been turned into a study room filled with photographs and displays.* (NEWS)

  The distinction between public and private law, ***espoused in many pluralist accounts,*** *is largely bogus.* (ACAD)

- non-restrictive *ing*-clauses:

  Both writing and reading are enormously complex skills, ***involving the coordination of sensory and cognitive processes.*** (ACAD)

  Style variation is intrinsic to the novel's satiric-epic picture of Victorian urban society, ***concentrating on the capitalist house of Dombey.*** (ACAD)

- non-restrictive prepositional phrases:

  The great tall library, ***with the Book of Kells and of Robert Emmet,*** *charmed him.* (FICT)

  The sale, ***for a sum not thought to be material,*** *marks the final dismemberment of Metro-Cammell Weymann.* (NEWS)

Appositive noun phrases are exceptional—they are usually non-restrictive:

- non-restrictive appositive noun phrases:

  The rebels, ***the Tigrayan People's Liberation Front*** *(TPLF)* (NEWS)

  a Soviet Deputy Defence Minister, ***General Varrenikov*** (NEWS)

  both types of eggs ***(diapause and non-diapause)*** (ACAD)

9.8 Postmodification by relative clauses

When discussing relative clauses, we will focus on three key components: the **head** noun, the **relativizer**, and the **gap**.

- The head noun is the noun modified by the relative clause.
- The relativizer is the word, such as *who* or *that*, which introduces the relative clause. It refers to the same person or thing as the head noun.
- The gap is the location of the missing constituent in the relative clause. All relative clauses have a missing constituent, which again corresponds in meaning to the head noun.

Thus, consider the relative clause construction:

the diamond earrings ***that Mama wore*** ^. (FICT)

- The head noun is *earrings.*
- The relativizer is *that*, referring to the 'earrings'.
- The gap occurs in the direct object position, after the verb *wore*. The underlying meaning of the relative clause is that 'Mama wore [the earrings]'.

There are many variations possible with relative clauses, and these are described in detail in the following sections. The most obvious of these involves the choice of relativizer (9.8.1). In addition, relative clauses can occur with different gap positions (9.8.2). Relative clauses with adverbial gaps occur with an especially wide range of variants; these are dealt with in a separate section (9.8.3).

9.8.1 The discourse choice among relativizers

In standard English, relative clauses can be formed using eight different relativizers. Five of these are **relative pronouns**: *which, who, whom, whose*, and *that*. The other three relativizers are **relative adverbs**: *where, when*, and *why*. In the following examples, head nouns are underlined, and relative clauses are in bold:

The lowest pressure ratio ***which will give an acceptable performance*** *is always chosen.* (ACAD†)

There are plenty of existing owners ***who are already keen to make the move.*** (NEWS)

There was a slight, furtive boy ***whom no one knew.*** (FICT)

It was good for the fans, ***whose support so far this season has been fantastic.*** (NEWS)

Well, I can see that this is may be the only way ***that I can help Neil.*** (CONV)

I could lead you to the shop ***where I bought it.*** (FICT)

He was born in another age, the age ***when we played not for a million dollars in prize money.*** (NEWS)

There are many reasons ***why we may wish to automate parts of the decision process.*** (ACAD)

In addition, in many cases the relativizer can be omitted (but not with subject gaps, discussed below), resulting in a **zero relativizer** (represented as ^ in **1** and **2**):

1 *The next thing* ^ ***she knows,*** *she's talking to Danny.* (CONV)

2 *Gwen gave the little frowning smile* ^ ***she used when she was putting something to someone.*** (FICT†)

Relative pronouns substitute for a noun phrase in the relative clause (subject, direct object, etc.), while relative adverbs substitute for an adverbial phrase. For example, the relative pronoun *whom* stands for the direct object of the verb *knew* in the following structure:

a slight, furtive boy ***whom no one knew***

Here the relative clause has the meaning of 'No one knew [the boy]'.

In contrast, the relative adverb *where* stands for an entire prepositional phrase that expresses an adverbial of place:

the shop ***where I bought it***

Here the relative clause has the meaning of 'I bought it [at the shop]'.

To some extent, the choice of relative pronoun is determined by structural factors like the position of the gap in the relative clause. The relativizers *that*, *which*, and *who* are the most flexible in their gap positions. As a result, they are by far the most frequent forms. The most common use of all three pronouns is with subject gaps:

- subject gaps:

Do you want a cup of tea ***that's been brewing for three days?*** (CONV)

The lowest pressure ratio ***which will give an acceptable performance*** *is always chosen.* (ACAD†)

There are merchant bankers ***who find it convenient to stir up apprehension.*** (NEWS†)

However, all three of these relative pronouns can also be used with other gap positions:

- direct object gaps:

She came up with all sorts of things ***that she would like for the new development.*** (CONV)

Ralph trotted into the forest and returned with a wide spray of green ***which he dumped on the fire.*** (FICT)

He took an instant dislike to Leroy, ***who he attacked twice.*** (FICT†)

- other gaps (circumstance adverbial or complement of preposition):

1 *You have to pay for it in the year* ***that you don't make any profit.*** (CONV) <time adverbial>

2 *Well, that's the only way* ***that this can be assessed.*** (CONV) <manner adverbial>

3 <...> *the mustard pot,* ***which he had been sitting on.*** (FICT†) <complement of preposition>

4 *They are statements of a kind* ***about which readers can readily agree.*** (ACAD) <complement of preposition>

5 <...> *the guy* ***who I buy the Mega stuff off.*** (CONV†) <complement of preposition>

In contrast to *that*, *which*, and *who*, the other relativizers are rarer. They are restricted to a specific gap position:

- *Whom* occurs only with non-subject noun phrase gaps.
- *Whose* occurs only with possessive/genitive gaps.
- *Where*, *when*, and *why* occur only with adverbial gaps. The choice of the specific relative adverb is determined by the adverbial meaning of the gap: *where* for place/location; *when* for time; *why* for reason. These distinctions are described in 9.8.3.
- Zero occurs only with non-subject gaps in restrictive relative clauses. Thus, it would be impossible to omit the relative pronoun in a subject-gap relative clause such as:

There are merchant bankers ***who find it convenient to stir up apprehension.***
<compare: **There are merchant bankers* ***find it convenient to stir up apprehension.***>

or a non-restrictive relative clause:

He took an instant dislike to Leroy, ***who he attacked twice.*** (FICT†)
<compare: **He took an instant dislike to Leroy,* ***he attacked twice.***>

Examples **4** and **5** above also show that when the relative pronoun is part of a prepositional phrase, speakers and writers have the choice to put the preposition before the relative pronoun (**4**) or to leave it **stranded** (**5**). Thus, **5** has the alternative form:

5a *the guy* ***off whom*** *I bought the Mega stuff*

Although prescriptive grammarians may consider stranded prepositions incorrect, many users find that a clause like **5a** sounds overly formal or even incorrect (especially in conversation). Preposition use is discussed further with adverbial gaps (see 9.8.3).

9.8.2 Relative pronoun choices

Three relative pronouns stand out as being particularly common in English: *who, which,* and *that.* The zero relativizer is also relatively common. However, Figures 9.5–9.8 show that the relative pronouns are used in very different ways across registers. For example:

- *That* and zero are the preferred choices in conversation, although relative clauses are generally rare in that register.
- Fiction is similar to conversation in its preference for *that.*
- In contrast, news shows a much stronger preference for *which* and *who,* and academic prose strongly prefers *which.*

In general, the relative pronouns that begin with the letters *wh-* are considered to be more literate. In contrast, the pronoun *that* and the zero relativizer have a more colloquial flavor and are preferred in conversation.

These register differences are related to other structural and functional considerations. For example, newspaper texts commonly discuss the actions of people, resulting in a frequent use of relative clauses with *who,* such as:

a 20-year-old woman ***who has been missing for a week*** (NEWS)

In contrast, academic prose focuses on inanimate objects or concepts, resulting in a much greater use of the relativizer *which.*

The choice among relative pronouns is influenced by a number of other factors, including gap position, and restrictive v. non-restrictive function. In general, *that* is usually used only with restrictive relative clauses, while *which* is used with both restrictive and non-restrictive clauses. The following subsections consider a number of these factors for specific sets of alternatives.

A *Who* v. *which* with human and non-human head nouns

Of the four most common relativizers (*who, which, that,* and zero), two—*who* and *which*—are most sharply distinguished:

- *Who* occurs almost exclusively after human heads.

Figure 9.5 Frequency of relativizers in conversation

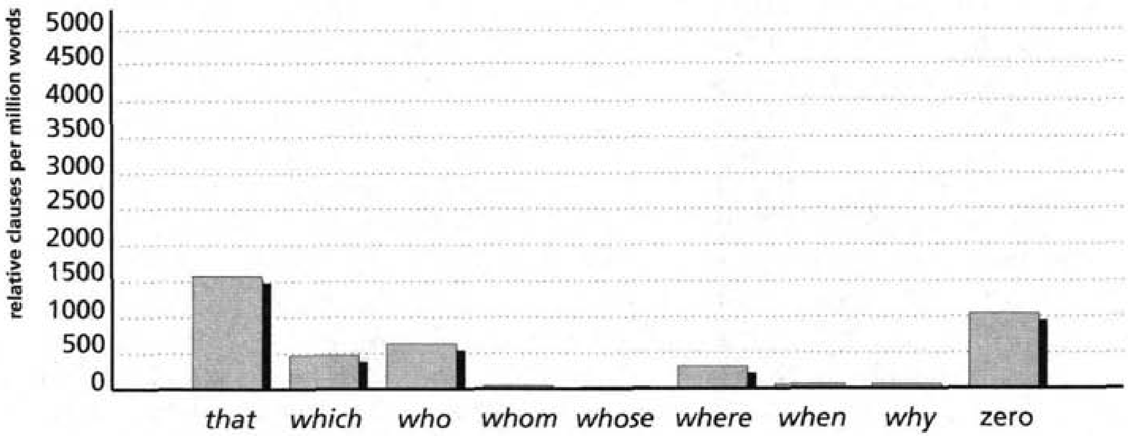


Figure 9.6 Frequency of relativizers in fiction

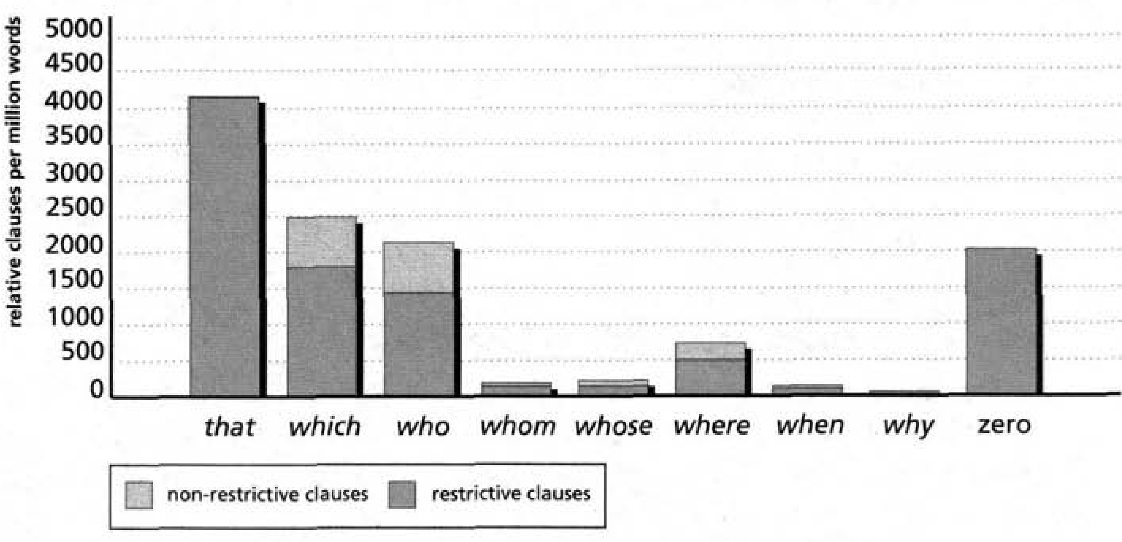


Figure 9.7 Frequency of relativizers in news

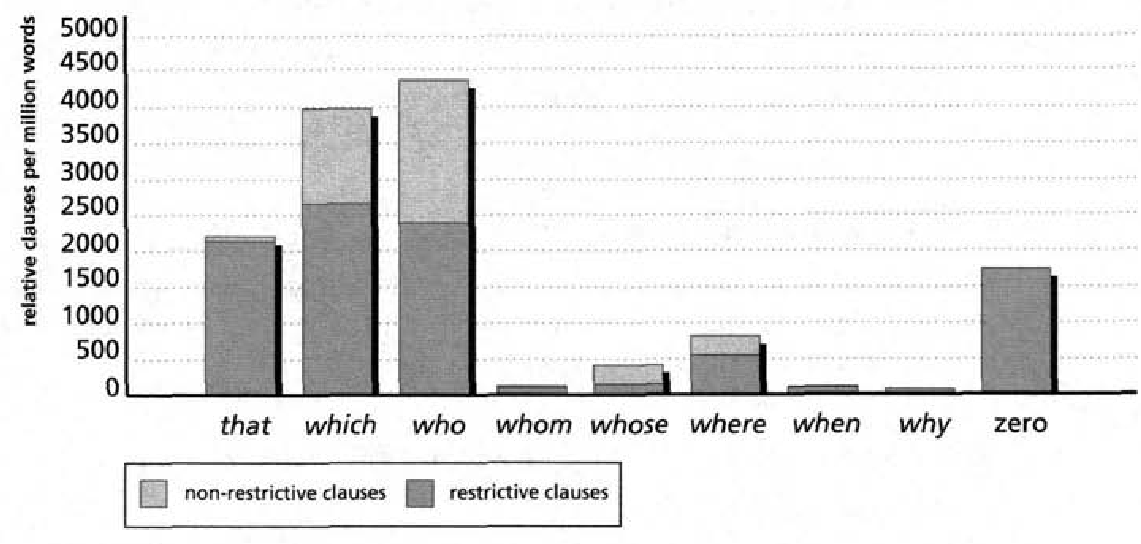
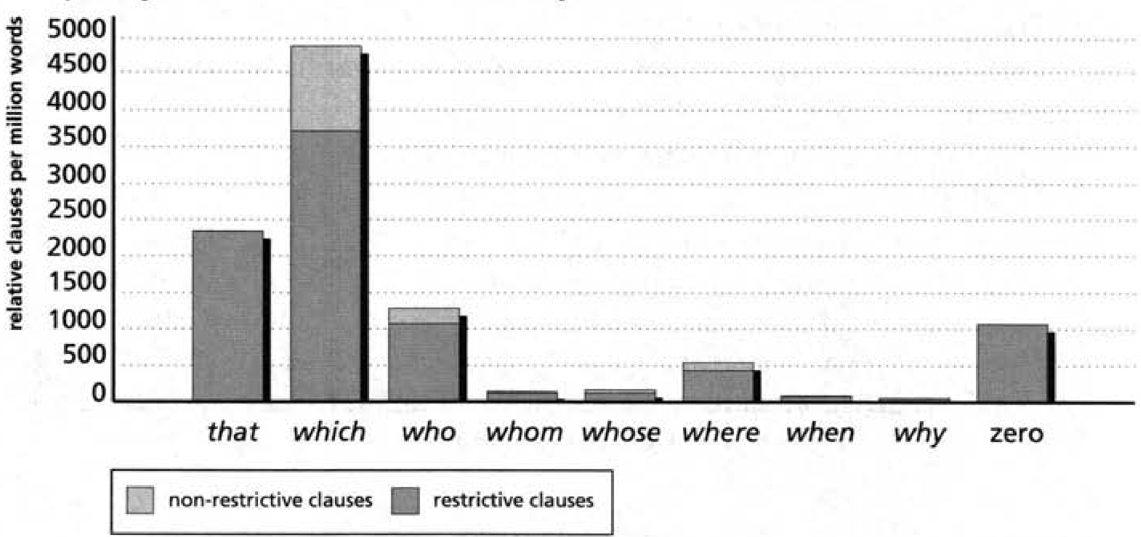


Figure 9.8 **Frequency of relativizers in academic prose**



- *Which* occurs most often after inanimate heads.

Especially in the written registers, there is a very strong tendency for a relative clause with a human head noun to use *who* rather than *which* (or *that*):

> *They all seemed to have relatives* ***who had been involved in scandals in London hotels.*** (FICT)
>
> *Team Millar rider McWilliams,* ***who is still looking for a 500 Grand Prix finish,*** *had a constructive finish.* (NEWS)

B *That* and zero with human and non-human head nouns

Relative clauses with *that* or zero are flexible in that they can be used with both inanimate and animate head nouns. In conversation, *that* freely occurs with animate heads. In fact, for many head nouns referring to humans, *that* is almost as common in conversation as *who*:

> *all those poor people* ***that died*** (CONV)
>
> *that man* ***that I went to that time*** (CONV)
>
> *that girl* ***that lives down the road*** (CONV)
>
> *all these children* ***that like to go to the library*** (CONV)

These same head nouns also commonly take a zero relativizer in conversation:

> *Who's the ugliest person* ***you've ever seen?*** (CONV)
>
> *I thought of a girl* ***I used to know called Louise.*** (CONV)

C *Whom* v. *who* v. *that* with human head nouns

The relativizers *who* and *whom* are both used with animate head nouns, but the choice between them is pretty clear-cut: *who* is usually used with subject gap positions, while *whom* is used with non-subject gaps:

- *who* with subject gap:

> *This gentleman is the doctor* ***who examined the body.*** (FICT)

- *whom* with non-subject gap:

> *They lived in America and had one child, a girl* ***whom they idolized.*** (FICT)

With non-restrictive relative clauses, there is a very strong preference to use *who/whom* rather than *that* or zero:

Donal Lenihan, ***who had been named as captain,*** *has also withdrawn after injuring a shoulder.* (NEWS)

This man, ***whom Elethia never saw,*** *opened a locally famous restaurant.* (FICT†)

With restrictive relative clauses, *that* is a general-purpose relative pronoun. It occurs with animate and inanimate heads, and with gaps in subject or non-subject position. It is an alternative to *whom* for animate head nouns and non-subject gaps. The choice of *that* over *whom* is especially preferred in informal discourse (like conversation and fiction). It avoids the formal overtones of *whom*, and possibly avoids the choice between *who* and *whom*:

There might be people ***that we don't know of.*** (CONV)

She took up with the first boy ***that she came near to liking.*** (FICT)

With non-subject gaps, it is most common to completely avoid the choice among relative pronouns by omitting the relativizer altogether. With human head nouns, this alternative is the preferred choice in both spoken and written registers. See F below.

D *Which* v. *that* in detail

The relativizers *which* and *that* are similar in their grammatical potential. They are both grammatical with a wide range of gap positions and with animate or inanimate heads. However, there are a number of important differences in their actual patterns of use:

which	*that*
rare with animate heads	common with animate heads, especially in conversation or with non-subject gaps
common in non-restrictive relative clauses	rare in non-restrictive relative clauses
usually considered more formal	usually considered less formal
can follow a preposition (e.g. *of which*)	cannot follow a preposition (e.g. **of that*)

When *that* does introduce a non-restrictive clause, it often occurs in a series of postmodifiers and is used for special stylistic effect (especially in fiction):

He gazed at the yellow, stained wall [with all the spots [which dead bugs, ***that had once crawled,*** *had left]].* (FICT†)

The level of formality associated with each relative pronoun is an important factor in their use. With its more formal, academic associations, *which* is preferred in academic prose. In contrast, *that* has more informal, colloquial associations and is thus preferred in conversation and most contemporary fiction:

An operator is simply something ***which turns one vector into another.*** (ACAD)

He said something ***that she couldn't catch.*** (FICT)

E Whose v. of which

The relativizer *whose* is used to mark a possessive relationship between a human head noun and some other noun phrase:

> *And we also know that there's at least one and maybe two other white males* ***whose names we do not know.*** (FICT)

Thus, the underlying meaning of the relative clause in this case, with the gap included, is: 'We do not know the males' names'.

By extension, *whose* can be used to mark possessive relationships with collective organizations, such as corporations, government agencies, clubs, societies, and committees:

> *A shipping group,* ***whose profits dived last year by nearly a third,*** *has told shareholders to expect an even lower result for 1993.* (NEWS)

In fact, *whose* can be used to mark possessive relationships with completely inanimate, sometimes abstract, head nouns. This use is especially common in academic prose:

> *A crystal is a piece of matter* ***whose boundaries are naturally formed plane surfaces.*** (ACAD)
>
> *There is a way of proceeding in conceptual matters* ***whose method is to define away any inconvenient difficulty.*** (ACAD)

An alternative to *whose* with inanimate head nouns is the phrase *of which*. This alternative is also largely restricted to academic prose:

> *Some of the particles cluster into aggregates, clods or crumbs,* ***the size distribution of which determines the soil structure.*** (ACAD)
>
> *This wheel drives a similar but smaller wooden-toothed wheel,* ***the other end of which carries a large open-spoked wheel.*** (ACAD†)

A variant way of introducing a relative clause with *of which* is to front only the prepositional phrase *of which*, leaving the rest of the noun phrase to follow it in its normal position in the relative clause:

> *He joined a dining-club* ***of which the motto was, The Whole, The Good, and The Beautiful.*** (FICT)

Finally, similar meanings can be expressed in two other ways: (1) a relative clause with *which* or *that* and the verb *have*, or (2) a postmodifying prepositional phrase with the preposition *with*. For example, compare:

1 *He joined a dining-club* ***which had the motto*** ...
2 *He joined a dining-club* ***with the motto*** ...

F Zero relativizer

Speakers and writers often omit the relativizer altogether in restrictive relative clauses. This alternative is possible in standard English whenever the gap is not in subject position. For example:

> *the only shiny instrument* ***he possessed*** (FICT)
>
> *the way* ***the man used to watch him*** (FICT)

Although the zero relativizer is found in all four registers, it has colloquial associations and is therefore especially characteristic of conversation and fiction. In conversation, the relativizer is omitted in about half of the relative clauses that permit this option:

the slippers ***you lost*** (CONV)

that person ***she was with*** (CONV)

In fiction, zero relativizer occurs both in the quoted speech of fictional characters and in fictional narrative:

- zero relativizer in fictional speech:

  I do beg you to consider seriously the points ***I've put to you.*** (FICT)

  I confess I have got plans ***you may find a little startling.*** (FICT)

- zero relativizer in fictional narrative:

  the names ***his mother had remembered from the past*** (FICT)

  a rather ugly tie ***his father had lent him*** (FICT)

In all registers, the zero relativizer is more likely to be used when the subject of the relative clause is a personal pronoun. This is because most pronouns distinguish between subject (nominative) and object forms (e.g. *I, we, she, he* v. *me, us, her, him*), and so the presence of a subject pronoun unambiguously marks the beginning of a relative clause, even without the relativizer:

the only choice ***we've got*** (CONV)

the kind of organisation ***she likes*** (NEWS)

the way ***we acquire knowledge*** (ACAD)

9.8.3 Relative clauses with adverbial gaps

When relative clauses have adverbial gaps, speakers and writers have four choices for the use of relativizers, as shown below. (The relative clause is enclosed in *[]*, and the relativizer is in bold.)

*the time [**when** I began]*

*the time [**at which** I began]*

*the time [**that** I began **at**]*

*the time [**that** I began]* OR *the time [**I began**]*

Each of the choices is described below.

A Relative adverbs: *where, when, why*

The first option is to use one of the three relative adverbs that specifically mark adverbial gaps: *where* for place adverbials (location or direction), *when* for time adverbials, and *why* for reason adverbials. These relative adverbs substitute for an entire adverbial phrase.

the area ***where the chapels have closed*** (CONV)

one day ***when she was at school*** (FICT)

the other reason ***why the ambulance workers have lost out*** (NEWS)

Occasionally *where* and *when* are used to mark an abstract 'location' rather than physical locations or times. For example, the head noun *bit*, referring to a part of a movie or story, commonly occurs in conversation with both of these relativizers:

You know the bit ***where the man jumps inside Whoopie Goldberg.*** (CONV)

Similar uses of *where* and *when* are especially common in academic prose:

the kind of situation ***where this type of work is helpful*** (ACAD)

in difficult cases ***when accurate estimation of disease activity will have important therapeutic implications.*** (ACAD)

The use of relative adverbs is limited because there are many types of adverbial gap that do not have a corresponding relative adverb. For example, there is no standard relative adverb for manner adverbials: **the way how I look at it.*

B Preposition + relative pronoun *which*

The second option is to use the relative pronoun *which* preceded by a preposition that marks the adverbial element in the relative clause. For example:

1 *the apartments* ***in which no one lives*** (FICT)

2 *the endless landscape* ***from which the sand is taken*** (FICT)

In these constructions, the preposition + relative pronoun stands for the adverbial prepositional phrase in the relative clause. Thus, the relative clause in **1** has the meaning 'no one lives in the apartments'. This choice is recommended by many usage handbooks.

C Stranded preposition

A third option for adverbial gaps is to leave the preposition stranded in the relative clause, marking the site of the gap. The relativizer can be *which, that*, or zero with this option (the stranded preposition is underlined):

the one ***that old James used to live <u>in</u>*** (FICT)

some of the houses ***I go <u>to</u>*** (CONV)

D Omitted preposition

The last option is to omit the preposition altogether, providing no surface marker of the adverbial gap. The relativizer may also be omitted in these structures:

1 *the time* ***that I began*** (FICT)

2 *the way* ***I look at it*** (CONV)

3 *a place* ***I would like to go*** (CONV)

In these structures, the preposition has to be inferred from the information in the head noun and the main verb of the relative clause. For example, in **3** above, we can reconstruct the meaning of an adverbial *to*-phrase from the head noun *place* and the main verb *go:*

I would like to go to a place

If the verb had been *live* instead of *go*, we would have reconstructed a phrase with *in*:

I would like to live in a place

E Manner adverbial gaps and *way*

As already mentioned, there is no relative adverb available for relative clauses with manner adverbial gaps. Instead, these structures almost always use the same head noun: *way*. For example:

They're not used to the way ***that we're used to living*** (CONV)

It is not the only way ***in which a person can be brought before a court.*** (ACAD)

Because *way* as a head noun is so strongly associated with a manner adverbial gap, these relative clauses usually occur with both the relativizer and the preposition omitted. This tendency holds for academic prose as well as for the more colloquial registers. For example:

That's not the way ***you do that.*** (CONV)

<. . .> *the way* ***the book is used*** (ACAD)

Review

Major points of GRAMMAR BITE C: Relative clauses

- Relative clauses, and other postmodifiers, are classified into two main types by their function: restrictive, helping to identify the reference of the head noun, and non-restrictive, adding descriptive details about the head noun.
  - In general, restrictive relative clauses are more common than non-restrictive.
  - Most other postmodifier types are restrictive, but can occasionally be non-restrictive.
- Relative clauses have three key components: the head noun, the relativizer, and the gap.
- There are eight different relativizers in English. The most common ones are *which*, *who*, and *that*.
  - In some cases, the relativizer can be omitted altogether, although its meaning is still implied. This is referred to as the zero relativizer.
- Some relativizers (such as *which* and *that*) are similar in their potential uses, but there are differences in their actual patterns of use.
- The gap refers to the location of a missing constituent in the relative clause. The gap can occur at almost any noun phrase position (e.g. subject, direct object, adverbial).
  - Relative clauses with adverbial gaps involve special choices for the relativizer.

GRAMMAR BITE

D Other postmodifier types

9.9 Postmodification by non-finite clauses

The last Grammar Bite concentrated on relative clauses, which are finite clauses that modify a noun. However, nouns can also be modified by non-finite clauses. These constructions have non-finite verbs, which are not inflected for tense.

There are three major types of non-finite postmodifying clauses: *ing*-clauses, *ed*-clauses, and *to*-clauses. The first two types are also called participle clauses, and the third is also called an infinitive clause or a *to*-infinitive clause.

Participle clauses as postmodifiers always have subject gap positions. They can often be paraphrased as a relative clause:

a letter ***written by a member of the public*** (ACAD)
<compare: *a letter* ***which has been written by a member of the public***>
young families ***attending the local clinic*** (NEWS)
<compare: *families* ***who are attending the local clinic***>

In contrast, *to*-clause postmodifiers can have either subject or non-subject gaps:

- subject gap:

  I haven't got friends ***to beat him up*** *though.* (CONV)
  <compare: *Friends will beat him up*>

- non-subject gap:

  I had a little bit ***to eat.*** (CONV) <direct object: *I ate a little bit*>

  I'll remember which way ***to go.*** (CONV) <direction adverbial: *I can go that way*>

  Get angry! We've both got a lot ***to be angry about.*** (FICT) <complement of preposition: *We are angry about a lot*>

As these examples show, most non-finite clauses do not have a stated subject. However, with *to*-clauses the subject is sometimes expressed in a *for*-phrase:

Really now is the time ***for you to try and go.*** (CONV)

9.9.1 Participle clauses as postmodifiers

Both *ed*-clauses and *ing*-clauses can function as postmodifying participle clauses:

- *ed*-clauses:

  1 *The US yesterday welcomed a proposal* ***made by the presidents of Colombia, Peru and Bolivia.*** (NEWS)

  2 *It can be derived using the assumptions* ***given above.*** (ACAD)

- *ing*-clauses:

  3 *A military jeep* ***travelling down Beach Road at high speed*** *struck a youth* ***crossing the street.*** (FICT†)

  4 *Interest is now developing in a theoretical approach* ***involving reflection of Alfven waves.*** (ACAD)

The verbs in *ed*-clauses correspond to passive verbs in finite relative clauses. Thus, for **1** and **2**, equivalent relative clauses would be:

1a *a proposal* ***that was made by the presidents of Colombia, Peru and Bolivia***

2a *the assumptions* ***that were given above***

In contrast, the verbs in *ing*-clauses do not always correspond to finite progressive aspect verbs. In **3** (above), the verb *travelling* does have progressive meaning. However, in **4** the verb *involving* does not have a progressive sense. Thus, the equivalent relative clauses for **3** and **4** would be:

3a *A military jeep* ***that was travelling down Beach Road at high speed*** <progressive>

4a *a theoretical approach* ***that involves reflection of Alfven waves.*** (ACAD) <not progressive>

Several patterns are important in the use of postmodifying clauses:

- Participle clauses are especially common in news and academic prose.

- In news and academic prose, *ed*-clauses are considerably more common than *ing*-clauses.
- Most *ing*-participles and passive verbs occur in participle clauses rather than relative clauses, even when relative clauses could be used. That is, a postmodifying participle clause is the expected choice whenever an *ing*-form or a passive verb occurs in a postmodifying clause.

Ing-participles expressing an abstract relationship (e.g. *consisting of*) regularly occur in a non-finite clause, even though the corresponding progressive aspect would not occur in a full relative clause (see 6.5.1):

> *a society* ***consisting of educated people*** (ACAD)
>
> *a matter* ***concerning the public interest*** (ACAD)
>
> *initiatives* ***involving national and local government authorities*** (ACAD)

compare:

> **a society* ***which is consisting of educated people***
>
> **a matter* ***which is concerning the public interest***
>
> **initiatives* ***which are involving national and local government authorities***

In contrast, *ed*-clauses can usually be rephrased as a full relative clause with a passive verb, by inserting *which is* or something similar. So participle clauses serve the interests of efficiency: they convey the same meaning in fewer words.

Passive verbs do, however, occur in finite relative clauses when tense, aspect, or modality are important. These distinctions cannot be marked in a postmodifying participle clause, so a relative clause is necessary:

> *The mistaken view is that theory refers to ideas* ***which have never been tested***. (ACAD†)
>
> *Now 48 sites* ***which could be maintained by local authorities*** *have been identified*. (NEWS)

9.9.2 *To*-clauses as postmodifiers

Postmodifying *to*-clauses are more flexible than participle clauses for two reasons: they can occur with both subject and non-subject gaps, and they can occur with an overt subject noun phrase. In the following examples, the head noun (or pronoun) is underlined, and the *to*-clause is in bold:

- *to*-clauses with subject gap:

  > *Its absence was a <u>factor</u>* ***to be taken into account***. (NEWS†)
  >
  > <note: this is a passive construction equivalent to 'a factor is to be taken into account'.>

- *to*-clauses with object gaps:

  > *Papa dressed in his Sunday suit and hat was a <u>sight</u>* ***to see.*** (FICT)
  >
  > *There is one further <u>matter</u>* ***to confess.*** (ACAD)

- *to*-clauses with adverbial gaps:

  > *They'd take a long <u>time</u>* ***to dry***. (CONV)
  >
  > *We shall have to find a <u>way</u>* ***to associate numbers with our operators.*** (ACAD†)

- *to*-clauses with prepositional object gap (and stranded preposition):

  She's had a lot ***to put up with.*** (CONV)

- *to*-clauses with an overt subject (introduced by *for*):

  That'll be the worst thing ***for us to do.*** (CONV) <object gap>

  There was no possible way ***for the pilot to avoid it.*** (ACAD) <manner adverbial gap>

Surprisingly, a relatively high proportion of the postmodifiers in conversation are *to*-clauses. Their meaning often points to the future:

Father's got a lot of things ***to tell you.*** (CONV)

The *to*-clause constructions in conversation usually have object or adverbial gap positions:

1 *Well I mean this is a horrible thing* ***to say,*** *but <...>* (CONV†)
2 *I've got stuff* ***to sort out*** *anyway.* (CONV)
3 *Friday evening I didn't have a lot* ***to drink.*** (CONV)

The most common head nouns taking a *to*-clause have general meanings. They are nouns that are especially common in conversation (e.g. *thing*, *time*, *way*). The common head nouns associated with adverbial gaps cover the three major domains of time, place, and manner:

4 *There's not enough time* ***to get it out and defrost it.*** (CONV) <time domain>
5 *But it's certainly a nice place* ***to live.*** (CONV) <place domain>
6 *That's no way* ***to talk to Sean!*** (CONV) <manner domain>

Most postmodifying *to*-clauses do not have an overt subject (as in the above examples). In these cases, the subject of the postmodifying clause is easily predicted and need not be stated. In many cases in conversation, the missing subject clearly refers to the speaker (as in examples **1–3** above). For example, **1** could be restated with the subject 'me' in a *for*-phrase:

1a *Well I mean this is a horrible thing* ***for me to say*** ...

Alternatively the subject can be interpreted as a generic reference to 'people' or 'anybody' (as in **4–6** above):

4a *There's not enough time* ***for anybody to get it out and defrost it.***

9.10 Postmodification by prepositional phrase

9.10.1 Prepositional phrases v. relative clauses

As we explained in 9.3.2, prepositional phrases are by far the most common type of postmodifier in all registers, although they are especially common in news and academic prose.

In some cases, prepositional phrases can be re-phrased as relative clauses with nearly equivalent meaning. Prepositional phrases beginning with *with* often correspond to relative clauses with the main verb *have*:

feedback systems ***with chaotic behaviour*** (ACAD)
<compare the relative clause: *systems* ***which have chaotic behaviour***>

Some other prepositional phrases can be re-phrased as a relative clause with the copula *be* and a prepositional phrase complement:

> *documents* ***in his possession***
> <*compare the relative clause: documents* ***which were in his possession***> (NEWS)
>
> *the car keys* ***on the table***
> <*compare the relative clause: the car keys* ***that were on the table***> (ACAD)

In general, relative clauses with the main verb *have*, or with the copula *be* + preposition, are rare in comparison with prepositional phrase postmodifiers. Many occurrences of prepositional phrase postmodifiers, however, have specialized meanings that cannot easily be re-phrased as relative clauses:

> *the problems* ***at its ISC Technologies subsidiary*** (NEWS)
>
> *this list* ***of requirements*** (ACAD)
>
> *the same effect* ***on the final state*** (ACAD)

Even when a prepositional phrase and a relative clause are both possible, prepositional phrase postmodifiers are much more common. However, two factors favor the choice of a relative clause over a prepositional phrase: the need to convey non-restrictive meaning, and the need to convey past tense meaning:

- relative clauses with non-restrictive meaning.

> *Then he set off for Simon's house,* ***which was at the other end of the lane.*** (FICT) <with copula + preposition>
>
> *He said the resident,* ***who is in her late 70s****, had been very confused.* (NEWS†) <with copula + preposition>
>
> *With animals like moles,* ***which have tough and durable skins****, the periods involved are longer.* (ACAD†) <with *have*>

- relative clauses with past tense meaning.

> *The lower-income groups also consumed amounts of iron* ***that were below the standard.*** (ACAD†)
>
> *DMB and B Result,* ***which had a link with a big international agency****, went bust recently.* (NEWS†)

9.10.2 Prepositional phrases with *of*

Over half of all postmodifying prepositional phrases begin with the preposition *of*. This is due to the extremely wide range of functions for this preposition. Many functions of *of*-phrases have been discussed already in 4.4 and 4.9.8, including:

- after quantity nouns: *loads of work*
- after unit nouns: *a piece of cake*
- after container nouns: *our bottle of champagne*
- after nouns denoting shape: *a pile of money*
- after species nouns: *these kinds of question*

In addition, *of*-phrases can express many more specialized meaning relationships. Some of these could be paraphrased as noun + noun sequences:

of prepositional phrase	*noun + noun sequence*
*ten **words of English*** (FICT)	*ten English words*
*the **color of chocolate*** (FICT)	*the chocolate color*
*the **Ministry of Defence*** (NEWS)	*the Defence Ministry*

However, many expressions with *of*-phrases cannot be easily rephrased in this way:

*wonderful **contrasts of feeling*** (NEWS)

*a **woman of very strong high moral values*** (NEWS)

*your **style of interpretation*** (ACAD)

Academic prose is noteworthy for a large number of noun + *of*-phrase expressions that are used repeatedly. Most of these **lexical bundles** convey information in one of the following areas:

- physical description: *the surface of the* . . . , *the shape of the* . . . , *the position of the* . . .
- existence or presence: *the presence of the* . . . , *the existence of a* . . .
- abstract qualities: *the nature of the* . . . , *the value of the* . . . , *the use of a* . . .
- long-term processes or events: *the development of an* . . . , *the course of the* . . .

(See 13.6 for a discussion of lexical bundles in conversation.)

9.10.3 Prepositional phrases with *in* and other prepositions

Prepositional phrases beginning with *in* are also moderately common. They express meanings that cover physical location, time meanings, and logical relationships:

- physical location:

  *the mess **in his bedroom*** (CONV)

  *the third largest trucking firm **in the midwest*** (FICT)

- time/durational meaning:

  *the longest touchdown **in the history of the school*** (FICT)

  *maintenance of health **in the long term*** (ACAD)

- more abstract meanings:

  *the co-chairman's faith **in the project*** (NEWS)

  *the rapidly deteriorating trend **in cashflow*** (NEWS)

  *a resulting decrease **in breeding performance*** (ACAD)

Prepositional phrases beginning with *for*, *on*, *to*, or *with* are less common than *of* or *in*, but they are also used for a wide range of meanings:

*a school **for disabled children*** (CONV)

*the search **for new solutions*** (ACAD)

*a mole **on his head*** (CONV)

*his most wounding attack **on the tabloids*** (NEWS)

*their first trip **to Scotland*** (NEWS)

*one apparently attractive answer **to that question*** (ACAD)

*some cheese **with garlic*** (CONV)

9.11 Postmodification by appositive noun phrases

Appositive noun phrases have equivalent status with the preceding (head) noun phrase. That is, the order of head noun phrase + appositive noun phrase can normally be reversed to produce an equally grammatical construction with essentially the same meaning:

> *former secretary of state Jim Baker* (NEWS) = *Jim Baker former secretary of state*

Appositive noun phrases are usually non-restrictive in meaning. They provide descriptive information about the head noun, but they are not needed to identify the reference of the head noun. One exception to this is with nouns that refer to words, phrases, or expressions:

> *The word* ***gossip*** *itself actually means 'God's kin'.* (NEWS)

Here the appositive is restrictive in function, identifying which 'word'.

Like prepositional phrases, appositive noun phrases are an abbreviated form of postmodifier. In contrast to relative clauses, appositive noun phrases include no verbs at all. Not surprisingly, these postmodifiers are by far most common in the registers with the highest informational density. The patterns of use for appositives include:

- They are most common in news and academic prose.
- In news, appositives usually involve a proper noun with human reference.
- In academic prose, appositives usually provide information about a technical term.

In news, with its focus on the actions of human participants, appositive noun phrases provide background information about people. Most of these constructions include a proper name and a descriptive noun phrase, but these two elements can occur in either order:

- proper noun + descriptive phrase:

  Dr. Jan Stjernsward, chief of the World Health Organisation Cancer Unit (NEWS)

  Vladimir Ashkenazy, one of the world's greatest pianists (NEWS)

- descriptive phrase + proper noun:

  The editor of The Mail on Sunday, Mr Stewart Steven (NEWS)

  the Labour Party's housing spokesman, Mr. Clive Soley (NEWS)

In academic prose, appositive noun phrases have a wider range of use. In many cases, the appositive noun phrase is given in parentheses following the head noun. Appositive noun phrases are commonly used in five ways:

- to provide an explanatory gloss for a technical reference:

  the mill (a term introduced by Babbage) (ACAD)

  the optical propagation direction (z-direction) (ACAD)

- to introduce acronyms:

  IAS (Institute of Advanced Studies) (ACAD)

  SLA (Second Language Acquisition) (ACAD)

- to introduce short labels for variables, parts of diagrams, etc.:
  the valves on the pressure side (V1 and V2) (ACAD)
  a point P (ACAD)
- to name chemical or mathematical formulas:
  fayalite, Fe_2SiO_4 (ACAD)
  hydrogen chloride, HCl (ACAD)
- to list items included in some class:
  essential nutrients (manganese, copper and zinc) (ACAD)
  the various life-history events (i.e. oviposition, hatching and maturation) (ACAD)

9.12 Noun phrases with multiple postmodifiers

9.12.1 Postmodifier complexes

Noun phrases often have multiple postmodifiers, especially in academic prose. We refer to the combination of structures following a head noun as the **postmodifier complex.** The structures in a postmodifier complex can represent either a series of forms modifying a single head noun, or embeddings.

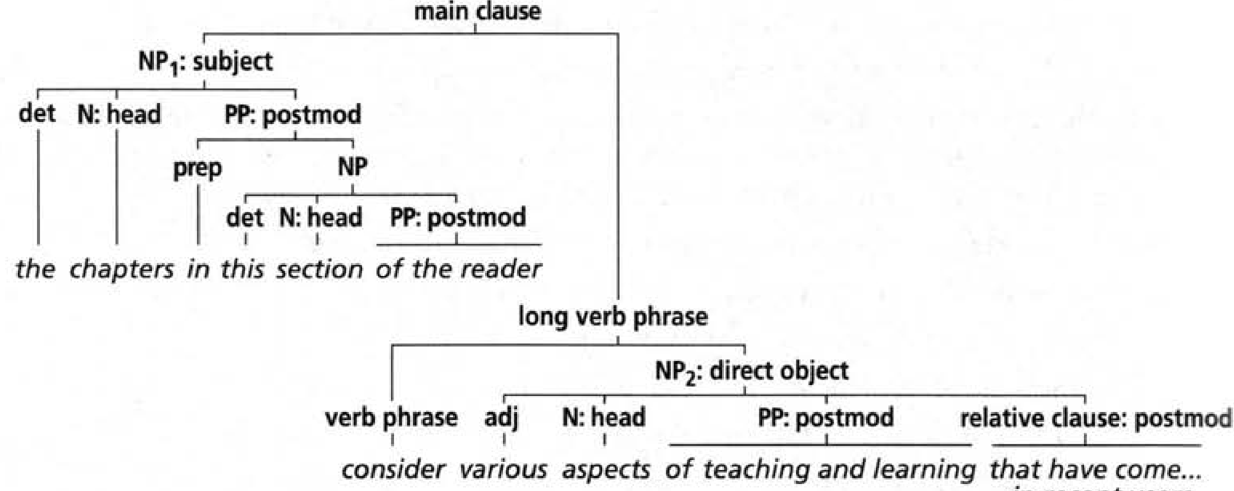
For example, the following sentence has a very simple main clause structure: NP_1 (with *chapters* as head) *consider* NP_2 (with *aspects* as head):

*[The chapters **in this section of the reader**] consider [various aspects **of teaching and learning that have come under increased official scrutiny by central state agencies in recent years**].* (ACAD†)

However, both NP_1 and NP_2 have postmodifier complexes, resulting in a long and complicated sentence. As Figure 9.9 shows, these two noun phrases illustrate

Figure 9.9 Postmodifier complexes with multiple embedding v. multiple modification

(NP = noun phrase, prep = preposition, PP = prepositional phrase, postmod = postmodifier)



the two types of structural relationships that are possible in postmodifier complexes: multiple embedding v. multiple modification of a single head noun.

NP_1 (*chapters*) illustrates embedding. The first prepositional phrase in the postmodifier complex (*in this section*) directly modifies the head noun *chapters*, but the second prepositional phrase (*of the reader*) is embedded because it modifies the noun *section*. Thus, as Figure 9.9 shows, the head noun *chapters* has only one postmodifier: a prepositional phrase, which in turn contains a second embedded prepositional phrase.

In contrast, NP_2 (*aspects*) illustrates multiple modification of a single head noun. The prepositional phrase *of teaching and learning* directly follows *aspects* and is the first postmodifier. That prepositional phrase is then followed by a relative clause (*that have come under...*), which functions as the second postmodifier of *aspects*.

9.12.2 Common types of postmodifier complexes

In general, three patterns characterize postmodifier complexes:

- The most common type of postmodifier complex is composed of two prepositional phrases:

  The main difficulties which are posed concern the rendition ***[of culturally specific German or French terms] [into English]****.* (ACAD)

  A sociological description might discuss the utilisation ***[of such devices] [for social purposes]****.* (ACAD)

- When there are two postmodifiers, they are often the same structure:

  Large clear diagrams ***[drawn on sugar paper] and [covered with transparent film]*** *are particularly useful teaching aids.* (ACAD) <*ed*-clauses, co-ordinated with *and*>

  It was spacious with a high ceiling ***[painted with cherubs] and [decorated with flowers]****.* (FICT) <*ed*-clauses, co-ordinated with *and*>

  At the last election the Labour MP, ***[Mildred Gordon]****,* ***[a left-winger]*** *beat the Liberal Alliance candidate.* (NEWS†) <appositive noun phrases>

- The second postmodifier in a complex is often a relative clause, regardless of the type of first postmodifier:

  Firemen needed police support as they tackled a car ***[in the driveway] [which had been set on fire]****.* (NEWS) <prepositional phrase + relative clause>

  Most countries have a written document ***[known as 'the constitution'] [which lays down the main rules]****.* (ACAD†) <*ed*-clause + relative clause>

Relative clauses are particularly common as the second postmodifier in a complex because they are easily identified as a postmodifer, even when they are distant from the noun phrase head. The relativizer provides an overt surface marker of their postmodifier status.

Review

Major points of **GRAMMAR BITE D**: Other postmodifier types

- Postmodifiers can be clauses or phrases.
- In addition to relative clauses (covered in Grammar Bite C), three types of non-finite clauses can be noun postmodifiers: *ing*-clauses, *ed*-clauses, or *to*-clauses.
  - The verbs in *ed*-clauses correspond to passive verbs in relative clauses.

- ➤ The verbs in *ing*-clauses sometimes correspond to progressive verbs in relative clauses, but often do not.
- ➤ Postmodifying *to*-clauses are more flexible than participle clauses; for example, they can have subjects that differ from the main clause subject.

➤ Prepositional phrases are by far the most common type of phrasal postmodifier.

- ➤ They can express an extremely wide range of meanings.

➤ Noun phrases can also be postmodifiers, called appositive noun phrases.

- ➤ Appositive noun phrases are non-restrictive; they are especially common in the written registers.

➤ When a noun phrase has two postmodifiers, they are usually both the same structural type (e.g. both are prepositional phrases).

- ➤ One exception is that relative clauses commonly occur following other structural types of postmodifier.

GRAMMAR BITE

E Noun complement clauses

9.13 Noun complement clauses

9.13.1 Noun complement clauses v. relative clauses

On the surface, **noun complement clauses**, such as the following, can appear to be identical to relative clauses with *that*:

The fact ***that it can be done*** *is important.* (ACAD†)

However, noun complement clauses and relative clauses are actually very different structures. Their differences are summed up as follows:

	relative clause	noun complement clause
function of clause	identify reference of head noun	present the content of the head noun or add descriptive information
structure	incomplete, contains a 'gap'	complete, no 'gap'
function of *that*	relative pronoun	complementizer
omission of *that*	possible with object gaps	impossible
types of N modified	almost any noun	only a few nouns

(Noun complement clauses are similar to verb and adjective complement clauses, discussed in Chapter 10.)

Compare the following two sentences, both with the noun *report* as head:

- postmodifying relative clause:

1 *Peter reached out for the well-thumbed report* ***that lay behind him on the cupboard top.*** (FICT)

- noun complement clause:

2 *Other semiconductor stocks eased following an industry trade group's report* ***that its leading indicator fell in September.*** (NEWS†)

The relative clause in example **1** identifies which 'report' Peter is reaching for. It has a gap in subject position, which corresponds to the head noun *report*. The underlying meaning of the relative clause is that 'the report lay behind him', but *that* takes the place of *the report* in the relative clause. (Since the gap is in subject position, omission of *that* is impossible in **1**, but it can be omitted in other relative clauses; see 9.8.2.)

In contrast, in example **2** the noun complement clause gives the actual content of the 'report': that 'the trade group's leading indicator fell'. The noun complement clause is complete structurally. It does not include a reference to the head noun in any way (i.e. it does not have a gap corresponding in meaning to the head noun). In addition, the complementizer *that* cannot be omitted in this or any other noun complement clause. Finally, *report* is one of the few nouns that can be modified by complement clauses (see 9.14 below for more on head nouns).

9.13.2 Structural types of noun complement clause

There are two main types of noun complement clause: finite *that*-clauses and non-finite *to*-infinitive clauses. In the following examples, the head is underlined and the complement clause is in bold:

- *that*-clauses:

  There were also rumors ***that Ford had now taken its stake up to the maximum 15 per cent allowed.*** (NEWS†)

  These figures lead to an expectation ***that the main application area would be in the office environments.*** (ACAD)

- *to*-clauses:

  You've been given permission ***to wear them.*** (CONV)

  Legal peers renewed their attack on the Government's plans ***to shake up the legal profession*** *yesterday.* (NEWS)

Note that while the *to*-clauses have missing subjects that can be reconstructed from the context, they do not have gaps corresponding to the heads *permission* or *plans*.

In addition, *ing*-clauses and *wh*-clauses sometimes occur as noun complement clauses:

- *of* + *ing*-clause:

  He had no intention ***of singing at anyone's twenty-first birthday.*** (FICT)

  The exchanged protons have about the same chance ***of having the same or opposite spin orientations.*** (ACAD†)

- dependent *wh*-interrogative clause:

  There was no question ***who was the star.*** (FICT)

  We always come back to the same question ***why the devil won't he show himself.*** (FICT)

In addition to the simple pattern noun + *wh*-clause shown above, there are two other structural options for *wh*-interrogative clauses. The first uses the preposition *of* followed by a *wh*-clause. The second uses the preposition *as to*

followed by the *wh*-clause. This option is used primarily with the *wh*-interrogative word *whether.*

- *of* + *wh*-clause:

  But the <u>*question*</u> ***of who will pay the multi-million dollar bill*** *is unanswered.* (NEWS†)

  We have only the most general <u>*notion*</u> ***of how the first continents formed.*** (ACAD)

- *as to* + *wh*-clause:

  Masters and men were deeply divided over the substantive <u>*issue*</u> ***as to whether women should be employed at all.*** (ACAD†)

9.13.3 Restrictive and non-restrictive functions

All of the above examples have illustrated restrictive noun complement clauses. That is the most common function. However, it should be noted that noun complement clauses can be used in non-restrictive functions, where they serve a parenthetical function:

1 *Clinton's second allegation,* ***that there has been collusion between the security forces and Protestant para-military groups,*** *is based on a very few isolated cases.* (NEWS)

2 *The contrary assumption,* ***that common sense will take wholly indistinguishable mental events to be different thoughts,*** *strikes me as remarkable.* (ACAD)

In these examples, the noun complement clause still names the content of the head noun. For example in **1,** *that there has been collusion ...* is the content of *Clinton's second allegation.* These non-restrictive complement clauses are used when the writer assumes that most readers already know the content of the head noun (e.g. the 'allegation' or the 'contrary assumption'), but they want to spell it out to avoid uncertainty.

9.14 Head nouns with noun complement clauses

Unlike relative clauses, noun complement clauses occur with only a small set of head nouns. Many of the head nouns with noun complement clauses express a stance towards the proposition in the complement clause. For example, these head nouns can be used to indicate the certainty of the proposition or the source of the information: *fact, claim,* and *report.*

Noun complement clauses with head nouns that convey stance are especially common in news and academic prose. In conversation and fiction, similar functions are more commonly served by complement clauses following verbs or adjectives. In many cases, the same roots can be used to control both noun and verb complement clauses. For example:

<...> there is every <u>*hope*</u> ***that this will continue.*** (ACAD)

I just <u>*hope*</u> ***that I've plugged it in properly.*** (CONV)

(See 10.5, 10.7.1 on *that*-clauses following verbs and adjectives.)

Each structural type of noun complement clause occurs with a different set of head nouns. The following sections survey these head nouns and the associated functions for each type.

9.14.1 Head nouns complemented by *that*-clauses

That-clauses functioning as noun complements are one of the primary devices used to mark stance in academic prose. In these constructions, the *that*-clause reports a proposition, while the head noun reports the author's stance toward that proposition. Two main kinds of stance are expressed by the most common head nouns. The first is an assessment of the certainty of the proposition in the *that*-clause. Typical nouns are:

fact, possibility, claim, notion, assumption, hypothesis, rumor

For example:

But there remained the very troublesome fact ***that leguminous crops required no nitrogenous manure.*** (ACAD†)

There is a possibility ***that this morphology represents an ancestral great ape character.*** (ACAD†)

The second kind of stance is an indication of the source of the information expressed in the *that*-clause. Three primary sources and their typical nouns can be distinguished:

linguistic communication	*claim, report, suggestion, proposal, remark*
cognitive reasoning	*assumption, hypothesis, idea, observation, conclusion*
personal belief	*belief, doubt, hope, opinion*

For example:

This conforms conveniently with Maslow's (1970) suggestion ***that human motivation is related to a hierarchy of human needs.*** (ACAD)

The survey was aimed at testing a hypothesis ***that happily-married couples tend to vote more conservatively.*** (ACAD†)

The traditional belief ***that veal calves should be kept in a warm environment is unscientific.*** (ACAD†)

Many of these head nouns are **nominalized** equivalents of verbs or adjectives that can control *that*-complement clauses (see 9.4–8). Most of these nouns have corresponding verbs that also control *that*-clauses. For example:

What's your feeling about his claim ***that someone's trying to kill him***? (FICT)

<compare: *The nuns claim* ***that their eggs have never been associated with an outbreak of food poisoning.*** (NEWS)>

There seems to be an automatic assumption ***that a single division on a scale represents a single unit of some kind.*** (ACAD)

<compare: *She had always idly assumed* ***that there was some system.*** (FICT)>

The only common head noun derived from an adjective is *possibility:*

But there remains a possibility ***that gregarious Desert Locusts might become less viable.*** (ACAD†)

<compare: *It is possible that she has just decided to leave the area.* (NEWS)>

As illustrated by the above examples, noun complement clauses often express stance in an abstract way, without a clear agent. With verb complement clauses, the subject of the controlling verb mentions a person, so that the stance reported by the verb can be attributed directly to that person. In contrast, the stance conveyed by a controlling head noun is not normally attributed to anyone. For example, the examples above include head nouns such as *possibility*, *belief*, *assumption* and *possibility*. Readers must infer whose attitude towards the information is reported.

Verb complement clauses are preferred in conversation while noun complement clauses are preferred in academic writing. This distribution reflects major differences between the registers in structure and function:

	conversation	**academic prose**
structure	preference for verbal structures	preference for integrating information in noun phrases
function	participants interested in each others' feelings and attitudes	readers/writers more interested in attitudes towards information

Conversation tends to use verb constructions that directly and prominently attribute stance to participants. Academic writing uses noun complement clauses that tend to give more prominence to the information; the stance is backgrounded and not directly attributed to the author.

9.14.2 Head nouns complemented by *to*-infinitive clauses

Unlike *that*-clauses, the head nouns with *to*-clauses do not typically present a personal stance. Instead, the nouns commonly taking *to*-clauses represent human goals, opportunities, or actions:

chance, attempt, effort, ability, opportunity, decision, plan, bid

A second difference from *that*-clauses is that *to*-clauses are especially common in newspaper language (instead of academic prose). The meanings of the head nouns taking *to*-clauses fit the purposes of news, with a focus on human goals and actions rather than on stance towards propositions:

We need to give decent people a <u>*chance*</u> ***to elect a sensible council.*** (NEWS)

The leader's gunshot wounds are taking their toll, complicating <u>*efforts*</u> ***to persuade him to surrender.*** (NEWS)

Last year the society's committee made a <u>*decision*</u> ***to relaunch*** *in a bid to attract more members.* (NEWS)

Yet the head nouns taking *to*-clauses are similar to those taking *that*-clauses in that many of them are nominalized equivalents of verbs or adjectives controlling *to*-complement clauses (see 9.12–15).

- nouns with corresponding verbs + *to*-clauses:

  attempt, decision, desire, failure, intention, permission, plan, proposal, refusal, tendency

- nouns with corresponding adjectives + *to*-clauses:

  ability/inability, commitment, determination, willingness

Thus compare:

He chastises Renault for their failure ***to respond to BMW's challenge.*** (NEWS†)

He failed ***to notice that it made Wilson chuckle.*** (FICT)

Such an order should be made only where there is evidence of the defendant's ability ***to pay.*** (NEWS)

I've never been able ***to determine that for sure.*** (FICT)

9.14.3 Head nouns complemented by *of-* + *ing-* clauses

Several of the head nouns that take *of-* + *ing*-clauses can also take another type of complement clause. (In contrast, there is almost no overlap between the head nouns taking *that*-clauses and the head nouns taking *to*-clauses.) Thus, the following head nouns occur with both *of-* + *ing*-clauses and with *that*-clauses:

idea, hope, possibility, sign, thought

For example:

Feynman discusses the idea ***of putting a lamp between the two slits to illuminate the electrons.*** (ACAD)

<compare: *Then a door is opened for the more threatening idea* ***that some principles are part of the law because of their moral appeal.*** (ACAD)>

So we have no hope ***of finding here a common reason for rejecting checkerboard solutions.*** (ACAD)

<compare: *There is every hope* ***that this will continue.*** (ACAD†)>

Fewer head nouns can take both an *of-* + *ing*-clause construction and a *to*-clause, but they include two of the most common nouns with both constructions—*chance* and *intention*:

Also one increases the chance ***of revealing similarities between superficially distinct objects.*** (ACAD)

<compare: *BOAC never had a chance* ***to establish commercial operations on any scale.*** (ACAD†)>

This writer has served on review teams and has had every intention ***of giving each proposal a thorough reading.*** (ACAD)

<compare: *Mr. Rawlins announced his intention* ***to leave Sturge at some time in the future.*** (NEWS)>

Finally, some head nouns can control only *of* + *ing*-clauses, such as *cost*, *task*, and *problem*:

They presented the move as a contribution by the Government to the huge cost ***of improving water quality.*** (NEWS)

It therefore seems logical to begin the task ***of disentangling the relationship between movement and urban structure.*** (ACAD)

9.14.4 Head nouns complemented by *wh*-interrogative clauses

Wh-interrogative clauses are much less common than the other types of noun complement clause. They are restricted mostly to occurrence with the head noun *question*.

The *of*- + *wh*-clause variant is actually more common than simple *wh*-clauses as noun complements, especially in news and academic prose. Further, it occurs with a wider range of head nouns. These include nouns referring to:

speech communication	*question, story, explanation, description, account, discussion*
exemplification	*example, indication, illustration*
problems	*problem, issue*
cognitive states or processes	*knowledge, understanding, sense, analysis, idea, notion.*

For example:

*The question **of how to resolve the fear which so many people have in Hong Kong** was omitted.* (NEWS)

*We have no knowledge **of where it came from.*** (NEWS)

Review

Major points of GRAMMAR BITE E: Noun complement clauses

- Noun complement clauses can easily be confused with relative clauses.
- They differ in that they are structurally complete (i.e. noun complement clauses do not have a gap) and the complementizer *that* cannot be omitted.
- There are two main types of noun complement clause: finite *that*-clauses and non-finite *to*-clauses.
- *Ing*-clauses and *wh*-clauses can be used as noun complement clauses, but are less common.
- Noun complement clauses occur with only a few abstract head nouns.
- Each structural type of complement clause occurs with a different set of head nouns.
- The head nouns that take *that*-clauses (e.g. *fact, possibility, claim*) mark stance.
- The head nouns that take *to*-clauses (e.g. *chance, attempt, plan*) mark human goals or actions.