Noun Phrase Structure
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In discussing the structure of noun phrases crosslinguistically, I will assume a rather rough characterization of noun phrases, as syntactic constituents which serve as arguments of verbs. There are a variety of ways in which this is inadequate as a precise definition and there are a number of legitimate questions about exactly what ought to be considered a noun phrase, but these issues are somewhat marginal to the primary purposes of this chapter, which is to discuss some of the ways in which noun phrases differ across languages in a way that will be helpful to someone describing noun phrases in a particular language.

It is convenient for the purposes of discussion to distinguish three sorts of noun phrases: (i) simple noun phrases, which contain only pronouns or nouns plus simple modifiers like articles, adjectives, demonstratives, or numerals; (ii) complex noun phrases, which contain more complex sorts of modifiers, like genitive or possessive modifiers and relative clauses; and (iii) various sorts of noun phrases which lack a head noun. These three types are discussed in sections 1, 2, and 3 respectively.

1. Simple noun phrases

The most common noun phrases in many languages contain a single word which is either a noun or a pronoun. In most if not all languages, pronouns generally occur alone in noun phrases without modifiers. Constructions in which pronouns occur with modifiers, as in *we linguists* or *something inexpensive* in English, are often possible but infrequently used. Although traditional grammar defines pronouns as words that take the place of nouns, a more accurate characterization of most pronouns is that they take the place of noun *phrases.* In many languages, it may be difficult to distinguish pronouns from nouns except on a semantic basis.

1.1. Articles

In many languages, probably a majority, it is not only possible but very common for noun phrases to consist of only a noun, as in (1), from Yidiɲ (Dixon 1977a), a Pama-Nyungan language spoken in northeastern Australia. See the beginning of the volume for a explanatory list of the abbreviations used in the glosses.

(1)   wagu:ɖa   gudaga-ŋgu   baɖa:l
      man.ABS   dog-ERG   bit
      'the/a dog bit the/a man'

Whether or not this is in general possible in a language hinges considerably on whether the language has articles: the high frequency of noun phrases consisting of just a noun in a language like Yidiɲ reflects the fact that the language lacks articles, while corresponding noun phrases in a language like English would require an article. While English permits noun phrases consisting of just a noun when that noun is a proper noun (*I like Pat*), a mass noun (*I like milk*) or the plural of a count noun (*I like flowers*), this is not possible with the singular of count nouns (**I like flower*); in these cases, English requires some sort of determiner (*I like this flower, I have brought you a flower*).

Many languages have a definite article or an indefinite article but not both. In Kutenai, a language isolate spoken in western Canada and the United States, for example, there is a definite article, as in (2a), but indefinite noun phrases are unmarked, as in (2b).

(2)   a.   hu   wu·kat-i   *niʔ*   *paɬkiy*
           1SG   see-INDIC   the   woman
           'I saw the woman'

    b.   hu   wu·kat-i   *pałkiy*
            1SG   see-INDIC   woman
            'I saw a woman'

Less common are languages in which there is an indefinite article but no definite article: Amele (Roberts 1987), a Madang language of Papua New Guinea, has an indefinite article *oso*, which follows the noun, as illustrated in (3a), but no definite article, as illustrated in (3b).

(3)   a.   *dana oso*   ija   na   sigin   heje   on
            man INDEF 1SG GEN knife illicit take.3SG.REMOTE.PAST
            'a man stole my knife'

    b.   *dana*   ho-i-a
            man   come-3SG-PAST.TODAY
            'the man came'

In languages with both a definite article and an indefinite article, the two articles often do not form a grammatical class, exhibiting different grammatical properties. For example, the indefinite article in Mupun (Frajzyngier 1993), a Chadic language of Nigeria, appears on the opposite side of the noun from the definite article. In (4a), the indefinite article *mee* precedes the noun, one of the few modifiers of nouns that does so, while the definite article follows the noun, as in (4b).

(4)   a.   n=naa   [mee   ngu   nan]   n=tul   fu
            1SG=see [INDEF man   adult] PREP=house 2PL
            'I saw an old man at your place'

    b.   [nlǝǝr ɗǝsǝ   nǝ]   fii
            [shirt DEM   DEF] dry
            'this very shirt is dry'

While definite and indefinite articles are obligatory in some languages, there are other languages in which they are optional. For example, while the definite article in Kutenai illustrated above in (2a) is normally present with singular noun phrases denoting humans, it is not obligatory; thus (2b) could also mean 'I saw the woman'. Similarly, the indefinite article is optional in Kayardild (Evans 1995), a Tangkic language spoken in Australia: it occurs in (5a) (*warngiida*, glossed 'one'), but not with the noun phrase interpreted as indefinite in (5b).

(5)   a.   *warngiid-a dangka-a*   rar-id-a
            one-NOM   man-NOM south-CONTIN-NOM
                 buruwan-mula-a-ja   budii-j
                 initiation.ground-VABL-MODAL-ACTUAL   run-ACTUAL
            'a man ran away southward from the initiation ground'

    b.   *dangka-a*   burri-ja   ngijin-ji
            man-NOM   emerge-ACTUAL   1SG-MLOC
            'a man ambushed me'

In some languages with optional indefinite articles, the article codes a meaning narrower than that of the indefinite article in English. Often, indefinite articles more specifically mark a referent as prominent in the discourse. Similarly, definite articles have a narrower range of usage in some languages than others. There are at least three common functions associated with definite articles: (i) an anaphoric use, where the noun phrase refers to something mentioned in the preceding discourse; (ii) a nonanaphoric use, where the noun phrase denotes something known to both speaker and hearer but not mentioned in the preceding discourse, such as references to the sun or the moon; and (iii) an intermediate use, where the referent is not itself referred to in the preceding discourse, but is nevertheless linked to or inferrable from

something in the preceding discourse (e.g. *the door* and *the doorbell* in *When I arrived, I walked up to the door and rang the doorbell*) In some languages, definite articles are restricted to a subset of these functions. Most commonly, they are restricted to anaphoric uses and are sometime glossed as 'previously mentioned'. The definite article *ndɨ* in Ngiti (Kutsch Lojenga 1994), a Central Sudanic language of the Democratic Republic of the Congo, illustrated in (6), is an instance of a definite article with such a restriction.

(6)   yà   *ndɨ*   dza
        this   DEF   house
        'this house (mentioned before)'

Less commonly, the definite article is restricted to nonanaphoric uses. This is the case with the definite marker *-na* in Karo Batak (Woollams 1996), an Austronesian language of Sumatra in Indonesia. The example in (7) is appropriate in a context where the speaker is buying something and no mention has been made of the money, though it is inferrable in the context of purchasing something.

(7)   énda   sén-*na*
        this   money-DEF
        'here's the money'

In many languages, words with demonstrative meaning are often used in contexts in which English would use a definite article. In Takia (Ross 2002a), an Austronesian language of Papua New Guinea, for example, the word *an* is used in contexts in which English would use the word 'that', as in (8a), but it is also widely used in contexts in which English would use the definite article, or even ones where English would just use a possessive pronoun (but no article), as in (8b).

(8) a.   [mau *an*] w-ani   u-moi!
           [taro that] 2SG-eat   2SG-not.want
           'don't eat that taro!'

     b.   [ŋine-g   malkouk   *an*] ŋu-bisei=g ...
           1SG.POSS-1SG   white.person   DEF   1SG-depart=REALIS
           'I left my white master ...'

This is most apparent when one examines texts in a language and finds that a form that is described as a demonstrative is used far more often than one would find with a demonstrative in languages like English. We might describe a situation like this by saying that *an* in Takia has two functions, that of a demonstrative and that of a definite article. However, such a description is probably Eurocentric and it is better to say that the range of meaning covered by *an* includes that of demonstratives and definite articles in other languages. Despite the fact that the word *an* in Takia is often used simply as a marker of definiteness, it is best called a demonstrative because it belongs to a demonstrative paradigm in that language: it is the intermediate member in a set of three demonstratives (the others are proximal *en* and distal *on*), and there are various demonstrative sets of words that vary in the same way, such as the locative adverbs (proximal *ebo*, intermediate *abo*, distal *obo*). Typically, demonstratives used as definite markers are not obligatory. The use of demonstratives as definite markers reflects the fact that they are a common diachronic source for definite articles: they start as demonstratives, get extended to anaphoric usage and then finally (in some cases) can be used nonanaphorically as well. Demonstratives that are used as definite markers are often restricted to anaphoric usage; this is the case, for example, for Takia.

In some languages, it is possible to distinguish definite and demonstrative uses of the same word syntactically. For example, in Ute (Southern Ute Tribe 1980), a Uto-Aztecan language of the western United States, the same lexeme functions as a distal demonstrative when it precedes the noun and as a definite article when it follows the noun.

(9)   a.   *'ú*   ta'wác<u>i</u>
              that   man
              'that man'

       b.   ta'wác<u>i</u>   *'u*
              man   DEF
              'the man'

It is also stressed when used as a demonstrative (the acute accent indicates stress), but not when it is used as a definite article.

        Somewhat less common is for a language to use a third person pronoun as a definite article, combining with a noun or with words that often function as modifiers of nouns. In Tidore (Van Staden 2000), a West Papuan language of eastern Indonesia, the third person pronoun functions as a definite article. This is illustrated by the third person plural pronoun *ona* in (10).

(10)   *ona*   guru=ge
                3PL   teacher=that
                'those teachers'

        Just as many languages use demonstratives where English would use a definite article, it is similarly the case that many languages use the numeral for 'one' in contexts where English would use an indefinite article. This is found in a number of European languages, such as French, illustrated in (11).

(11)   *un*   livre
                a/one   book
                'a book, one book'

In some languages, the form of the indefinite article is the same as that of the numeral for 'one', but the syntax is different. In Turkish (Kornfilt 1997), for example, the word *bir* precedes adjectives modifying the noun when it means 'one' but follows the adjectives if it is functioning as an indefinite article, as illustrated in (12).

(12)   a.   *bir*   güzel   olgun   elma
              one   nice   ripe   apple
              'one nice ripe apple'

       b.   güzel   olgun   *bir*   elma
              nice   ripe   an   apple
              'a nice ripe apple'

        Some languages have articles that code specificity rather than definiteness. For example, Futuna-Aniwa (Dougherty 1983), a Polynesian language of Vanuatu, has two articles which can be called specific and nonspecific. The specific article is used where English would use the definite article or where English would use the indefinite article but where the speaker has a specific referent in mind, as in (13a), while the nonspecific article is used where the speaker has no particular referent in mind, as in (13b).

(13)   a.   na-n   tukia   [*ta*   fatu]
              PAST-1SG   hit   [SPEC   rock]
              'I hit against a rock'

       b.   a   roroveka   kaseroitia   ma   [*sa*   ika]   aratu
              ART   Roroveka   catch   NEG   [NONSPEC   fish]   tomorrow
              'Roroveka won't get any fish tomorrow'

Some languages have morphemes that code definiteness but which are probably best not viewed as articles. A number of languages have morphemes that mark direct objects, but only if the direct object is definite, as illustrated by the word *ra* in Persian (Mahootian 1997), illustrated in (14).

(14) be   mina   mæn [gol   *ra*]   dad-æm
     to   Mina   I   [flower OBJ.DEF]   give.PAST-1SG
     'I gave the flower to Mina'

Such morphemes are generally viewed as postpositions or case markers rather than as definite articles.

Markers of definiteness and indefiniteness are most commonly separate words, but in some languages they are affixes. The example in (15) illustrates a suffix *-fekha* in Korowai (Van Enk and de Vries 1997), a Trans-New Guinea language of West Papua, that marks the noun phrase as indefinite.

(15) uma-té-do   abül-*fekha*   khomilo-bo
     tell-3PL.REAL-DIFF.SUBJ   man-INDEF   die.3SG.REAL-PERF
     'they told that a certain man had died'

Similarly, the example in (16) illustrates a definite prefix on nouns in Egyptian Arabic (Gary and Gamal-Eldin 1982).

(16) *ʔit* -ṭajjaar-a   gaaja
     the-plane-F.SG   come
     'the plane is coming'

Markers of definiteness and indefiniteness are also often clitics, which sometimes attach to the noun, but in other instances attach to some modifier of the noun. Example (17) illustrates this in Fyem (Nettle 1998), a Niger-Congo language of Nigeria, where the definite article *=mo* cliticizes onto whatever is the last word in the noun phrase, in this case the verb of a relative clause modifying the noun.

(17) náá   ni   [ɲét-i   taa   ɓé=*mo*]   tók
     1SG.PERF   give   [man-FOCUS   3SG.PERF   come=DEF]   mush
     'I gave mush to the man who came'

The term "article" is often restricted to words that vary for definiteness or specificity. However, the term is naturally applied to words in some languages which are obligatory in noun phrases and which code grammatical features of the noun phrase other than definiteness. For example, Ilocano (Rubino 2000, pc), an Austronesian language of the Philippines, has a set of eight words that vary for number, for case (core versus oblique) and for whether the noun they occur with is a common noun or a proper noun. In (18a), the noun *Maria* occurs with the article *ni*, which is used with singular core (subject or object) noun phrases with proper nouns; in (18b), *babái* 'girl' occurs with the article *ti*, which is used with singular core noun phrases with common nouns; and also in (18b), the noun *madióngan* 'mah jong parlour' occurs with the article *iti*, which is used with singular oblique noun phrases with common nouns.

(18) a. nakíta=n-ak   [*ni*   Maria]
          see=3SG.ERG-1SG.ABS   PROPER.CORE.SG   Maria
          'Maria saw me'

      b. nakíta=n-ak   [*ti*   babái] [*iti*   madióngan]
          see=3SG.ERG-1SG.ABS   COMMON.CORE.SG   girl   COMMON.OBL.SG
      mah.jong.parlour
          'the girl saw me at the mah jong parlour'

Both of the noun phrases in (18b) are necessarily definite, but not because the articles code definiteness: *ti babái* 'the girl' is definite because syntactic arguments of the verb are always definite in Ilocano, and *iti madióngan* 'the mah jong parlour (oblique)' can be made indefinite by adding *maysa nga* 'one' to yield *iti maysa nga madióngan* 'a mah jong parlour (oblique)'; the fact that *iti* remains when it is indefinite makes clear that *iti* does not code definiteness. Although these words do not vary for definiteness, what they share with articles in European languages is the fact that they are a set of words which occur with high frequency in noun phrases and which vary for certain grammatical features of the noun phrase, much as articles in European languages often vary not only for definiteness but also for gender, number, and in some languages, case. Under this notion of article, the coding of definiteness is not a defining feature, but simply one of the many grammatical features of noun phrases that articles often code.

In Khasi, a Mon-Khmer language of northeast India, there are four articles (all of which correspond in form to independent pronouns): (i) masculine singular; (ii) feminine singular; (iii) plural; and (iv) diminutive (singular or plural). Some examples are given in (19).

(19) a. *ka* khmat b. *ʔuu* bnaay c. *ʔii* khnaay
          FEM eye   MASC moon   DIMIN mouse
          'an/the eye'   'the moon'   'the/a little mouse'

Again, these articles do not code definiteness, but vary for gender, number and size.

A simpler case of articles is found in Kiribatese (Groves, Groves and Jacobs 1985), an Austronesian language of Kiribati in the Pacific, where the articles vary only for number, with a singular one and a plural one, illustrated in (20).

(20) a. *te* atiibu
          SG stone
          'a stone, the stone'

      b. *taian* atiibu
          PLUR stone
          'stones, some stones, the stones'

Again, what these two words in Kiribatese share with the other instances of articles is that noun phrases in Kiribatese normally occur with one of them. The word *taian* in (20b) can also be called a plural word, as discussed in section 1.5. below.

An even simpler case is found in Koromfe (Rennison 1997), a Niger-Congo language of Burkina Faso and Mali, in which there is an article *a*, illustrated in (21), which is used with all common nouns except ones already modified by certain other modifiers, like demonstratives and numerals.

(21) də   pa   [*a*   kɛ̃ɔ̃   hoŋ]   [*a*   jãna]
      3SG.HUMAN   give   [ART woman DEF.HUMAN.SG]   [ART millet.PLUR]
      'he gives some millet to the woman'

In addition to the general prenominal article *a*, Koromfe also has a set of postnominal definite articles which vary for number, humanness, and diminutive, illustrated by the human singular definite article *hoŋ* in (21). This illustrates that a language may have more than one class of words that satisfy the criteria here for what is an article. In fact, in addition to the words mentioned, Koromfe has yet another word that is used to refer back to referents mentioned previously in the discourse, as in (22).

(22) a   bɔrɔ   *nandɪ*
      ART   man   PREVIOUSLY.MENTIONED
      'that man that we've just been talking about'

     In Jakaltek (Craig 1977), a Mayan language of Guatemala, each noun belongs to one of twenty-one semantic classes, and is always accompanied by the appropriate noun class marker, as in (23).

(23) a. *naj*   sonlom
          CLASS(man)   marimba.player
          'the marimba player'

      b. *ix*   malin
          CLASS(woman)   Mary
          'Mary'

      c. *te'*   ñah
          CLASS(wood)   house
          'the house'

This construction is distinct from numeral classifiers (see section 1.4 below); Jakaltek also has numeral classifiers, which combine with the numeral and which co-occur with the above class markers, as in (24).

(24) ca-*c'oñ*   *no'*   txitam
      two-CLSFR   CLASS(animal)   pig
      'two pigs'

These noun class markers in Jakaltek, although they only code the class a noun belongs to, can be considered a type of article because they are obligatory in noun phrases. Note that the examples in (23) are definite only because they lack the indefinite article; indefinite noun phrases in Jakaltek contain both an indefinite article and a class marker, as in (25).

(25) *hune'*   *te'*   ẍila
      INDEF   CLASS(wood)   chair
      'a chair'

Again this illustrates how a language can have more than one article-like element within the same noun phrase. Finally, it should be noted that the noun classifiers also function as third person pronouns. In (26), the classifier *naj* occurs twice, once in the main clause in combination with the noun *pel* 'Peter' and once by itself in the subordinate clause.

(26) xal *naj*   pel   chubil   chuluj   *naj*   hecal
      said CLASS(man)   Peter   COMP   FUT.come   CLASS(man)   tomorrow
      'Peter said that he will come tomorrow'

     Some linguists may be hesitant to apply the term 'article' to sets of words that code case. The articles in the Ilocano examples in (18) above vary for core versus oblique case and for number, but those in Niuean (Seiter 1980), a Polynesian language, vary for more case distinctions, and do not vary for number, varying only for whether the noun phrase involves a common noun, a proper noun, or a pronoun, with one set for common nouns and a second set for proper nouns and pronouns, as in (27).

(27) a. ne   tāmate   [*he*   tagata   tāne] [*e*   puaka]
          PAST kill   [ERG.COMM person   male] [ABS.COMM pig]
          'a man killed a pig'

	b.	takafaga	hololoa	[e	au]	[e		tau	lupe]
		hunt	frequently	[ERG.PRO	1SG]	[ABS.COMM		PLUR	pigeon]

'I frequently hunt pigeons'

These case marking words in Niuean differ from the other words I have called articles in that case seems to be their primary function; the role of common nouns versus proper nouns and pronouns might just be seen as factors that determine which form of the case marker is used. A further way in which they are different from articles is that they occur with independent pronouns, as in *e au* '1SG, ERGATIVE', as in (27b). Note also that they co-occur with other article-like words, like the plural word *tau* in (27b) and the indefinite article *taha*, as illustrated in (28).

(28)	ne	liu	kitia	foki	[he	taha	tama	fifine]	[a	koe]
	PAST	return	see	also	[ERG.COMM	INDEF	child	female]	[ABS.PRO	2SG]

'a little girl saw you once again'

It is assumed here that whether one chooses to call these words in Niuean articles or something else is simply a terminological issue.

Languages vary in whether articles occur with proper nouns. While it is perhaps more common for proper nouns to occur without articles, in some languages they do occur with an article. The examples above in (13b) from Futuna-Aniwa, in (18a) from Ilocano, and in (23b) and (26) from Jakaltek illustrate proper nouns occurring with an article. The same is true in Modern Greek (Joseph and Philippaki-Warburton 1987), as in (29), where the definite article also varies for case.

(29)	[o	jánis]	stékete	brostá	apó	[ton	pétro]
	[the.NOM	John.NOM]	stand.3SG	front	from	[the.ACC	Peter.ACC]

'John is standing in front of Peter'

1.2 The notion of "determiner"

Many linguists use the term "determiner" for definite and indefinite articles, as well as other words like demonstratives. However, this term is probably best reserved for languages like English in which there are words which articles do not co-occur with, like demonstratives and possessive words (cf. *the my book*, *the this book*); we can use the term "determiner" to denote the set of such words that occur in the same position in the noun phrase and do not co-occur with each other in such a language. But there are many languages in which articles (or at least definite articles) freely co-occur with demonstratives and possessive words, as in (8b) above from Takia and (10) from Tidore. Similarly, the example in (30) illustrates a definite article and demonstrative co-occurring in Koyra Chiini (Heath 1999), a Songhay language spoken in Mali.

(30)	har	woo	di	yo
	man	DEM	DEF	PLUR

'these/those two men'

Similarly, (31) from Engenni (Thomas 1978), a Niger-Congo language of Nigeria, shows a possessive word, a demonstrative, and a definite article all co-occurring with each other.

(31)	ạni	wọ̀	âka	nà
	wife	2SG.POSS	that	the

'that wife of yours'

Even in some languages in which demonstratives and articles do not normally co-occur, the two may occur in different positions within the noun phrase. For example, in Urak Lawoi

(Hogan 1988), an Austronesian language of Thailand, the demonstrative occurs after the noun, as in (32a), while the definite article occurs before the noun, as in (32b).

(32) a. rumah   besal   itu
          house   big   that
          'that big house'

      b. koq   nanaq
          DEF   children
          'the children'

In such languages in which definite articles co-occur with demonstratives or occur in different positions in the noun phrase, there is little justification for a grammatical notion of determiner, unless one restricts it to articles; it is misleading to apply the term to demonstratives in such languages.

1.3. Demonstratives

While articles are found in only some languages, all languages appear to have words that we can call demonstratives. There are two types of demonstratives: demonstrative pronouns, which occur by themselves as noun phrases, as in (33a), and demonstrative modifiers of nouns (traditionally called demonstrative adjectives), as in (33b).

(33) a. *This* is a great book.
      b. [*This* book] is great.

Languages differ as to whether demonstrative pronouns and demonstrative modifiers take the same form: in English, they do, while in Awa Pit (Curnow 1997), a Barbacoan language spoken around the Ecuador-Colombia border, they do not: the demonstrative modifiers are *an* 'this' and *sun* 'that', while the demonstrative pronouns are *ana* 'this' and *suna* 'that'.

There are two features that characterize demonstratives in most languages. The first is that they can be used to draw the hearer's attention to something in the perceptual space of the speaker and hearer, possibly with a gesture indicating the approximate location of the referent. The second is that they involve at least a two-way contrast in terms of distance from the speaker, such as English *this* and *that*. A few languages have demonstrative words that have only the first of these two features. For example, in French the demonstrative *ce*, as in (34a) is neutral with respect to distance, although a distinction in terms of distance is available by supplementing *ce* with postnominal *-ci* or *-là*, as in (34b) and (34c).

(34) a. *ce*   livre
          DEM   book
          'this/that book'

      b. *ce*   livre-*ci*
          DEM   book-here
          'this book'

      c. *ce*   livre-*là*
          DEM   book-there
          'that book'

The French construction in (34c) can be seen as a kind of double demonstrative. In some languages, double demonstratives are normal if not obligatory. For example, in Milang (Tayeng 1976), a Tibeto-Burman language of northeast India, the same demonstrative word occurs twice, once before the noun, and once after the noun.

(35) *yo*   miu   *yo*
      this   boy   this
      'this boy'

The situation is similar in Nishi (Hamilton 1900), another Tibeto-Burman language of northeast India, as in (36), except that the prenominal demonstrative is identical to the demonstrative adverb for 'here' or 'there', somewhat analogous to English 'this book here', except that this is the normal way to express demonstratives in Nishi.

(36) *så*   mindui   *sî*
      here   buffalo   this
      'this buffalo'

While most languages have demonstrative words that directly modify nouns, a few languages require that they be placed in relative clauses. This is the case for the distal demonstrative in Sahidic Coptic (Lambdin 1983), an Afro-Asiatic language once spoken in Egypt: while the proximal demonstrative is a clitic preceding the noun, as in (37a), the distal demonstrative follows with the relative word, as in (37b).

(37) a.   *pei*=rōme
           this=man
           'this man'

      b.   p=rōme   [et   *nīmau*]
           DEF=man   [REL   that]
           'that man' (literally 'the man that is that')

1.4. Numerals

There are two sorts of numeral words that occur as modifiers of nouns. One of these is cardinal numerals, words that indicate how many referents the noun phrase denotes, as in English *three books*. These contrast with ordinal numerals, which identify a referent in terms of its order with respect to other referents, as in English *the third book*. Ordinal numerals are most commonly derived from cardinal numerals, as illustrated by the English suffix *-th* (*six* vs. *sixth*) and the prefix *vina-* (*made* 'four', *vinamade* 'fourth') in Roviana (Corston-Oliver 2002), an Austronesian language of the Solomon Islands. The lower ordinal numerals are occasionally suppletively related to their corresponding cardinal numerals, as with English *first* and *second*.

Cardinal and ordinal numerals often differ in their syntax. For example, in Karo Batak (Woollams 1996), cardinal numerals normally precede the noun, as in (38a), while ordinal numerals follow the noun, as in (38b).

(38) a.   *telu*   wari
           three   days
           'three days'

      b.   lubang   *pelimaken*
           hole   fifth
           'the fifth hole'

Some languages express ordinal numerals with a periphrastic construction. In Khasi (Rabel 1961), a Mon-Khmer language of northeast India, cardinal numerals occur with classifiers as premodifiers of the noun, as in (39a), while the equivalent of ordinal numerals is expressed by treating the relevant cardinal numeral as a verb and placing it in a relative clause modifying the noun, as in (39b).

(39) a. *ʔaar   tllii*   kii   ksew
          two   CLSFR   PLUR   dog
          'two dogs'

      b. ʔuuniʔuu   long   ʔuu   *ba*   *laay*
          this   is   he   REL   three
          'this is the third' (more literally: 'this is he who is three')

In many languages, cardinal numerals cannot directly modify nouns but must be accompanied by a numeral classifier, as in (39a) from Khasi and (40) from Dong (Long and Zheng 1998), a Tai-Kadai language spoken in China.

(40) a. ʔi^{55} *muŋ^{31}*   ñən^{212}
          one   CLSFR   man
          'one man'

      b. ja^{212} *ʔoŋ^{55}*   mai^{31}
          two   CLSFR   tree
          'two trees'

The classifier *muŋ^{31}* and *ʔoŋ^{55}* in (40) are two of five semantically-based classifiers in Dong that depend on the meaning of the noun. The five classes associated with the classifiers are (i) people; (ii) animals; (iii) plants; (iv) upper outer garments; and (v) long thin things. The classifier *muŋ^{31}* in (40a) is the classifier associated with people, while *ʔoŋ^{55}* in (40b) is the one associated with plants. There are also a couple of general classifiers that do not have any particular semantics associated with them.

In a few languages, numerals must occur with an invariant word, which is strictly speaking not a classifier (since there is only one of them), but which otherwise functions like a classifier in that its presence is required if the numeral is modifying a noun. An example of this is the word *e* (glossed 'NUM' for 'number marker') in Gela (Crowley 2002), an Austronesian language of the Solomon Islands, as in (41).

(41) *e*   tolu   na   bolo
      NUM   three   ART   pig
      'three pigs'

There is a question in some languages whether the numeral modifies the noun or whether it is better to view the numeral as the head and the noun as modifier. This view is often suggested for languages with numeral classifiers; under this view the numeral modifies the classifier and the numeral plus classifier serves as head, with the noun as modifier. Such an analysis also suggests itself for some languages without numeral classifiers. In Rif Berber (Kossmann 2000), spoken in Morocco, most modifiers follow the noun, but numerals precede, as in (42a); but the construction they occur in is the same as the genitive construction, illustrated in (42b), suggesting that the numeral is the head.

(42) a. tlata   [n   təwrar]
          three   [GEN   hill]
          'three hills'

      b. axxam   [n   wəryaz]
          house   [GEN   man]
          'the man's house'

This construction is reminiscent of English *three of the hills*, except that the construction in (42a) does not have to have partitive meaning. In Turkish (Kornfilt 1997), the numeral can either precede the noun as a modifier, as in (43a), or follow with partitive meaning, as in (43b).

(43)   a.   *üç*   elma
            three   apple
            'three apples'

       b.   elma-lar-ın   *üç*-ü
            apple-PLUR-GEN   three-3SG
            'three of the apples'

The partitive structure in (43b), with genitive case on the word for 'apple' and a third person possessive suffix on the word for 'three', is identical to the normal genitive construction in Turkish, illustrated in (95) below, suggesting that the numeral should be viewed as the head.

There are a number of other words in most languages which are semantically like cardinal numerals in being quantifying words, which behave like cardinal numerals in most languages, but which in some languages do not. This includes words meaning 'many', 'much', 'few', 'all', 'every', and 'some'. In English, for example, the word *all* precedes a determiner (*all the men*), while numerals follow the determiner (*the three men*). Similarly, while the numeral precedes the noun in Basque, as in (44a), the words for 'all', 'some', and 'many' follow the noun, as illustrated in (44b).

(44)   a.   *bi*   esku
            two   hand
            'two hands'

       b.   armiarma-sare   *asko*
            spider-web   many
            'many spider webs'

In Kurdish, numerals precede the noun, but the word for 'many' follows the noun.

1.5. Plural words

Some languages have words whose meaning is similar to that of plural affixes in other languages, but which are separate words; such words can be called plural words, as in (45) from Koyra Chiini (Heath 1999) and (46) from Arop-Lokep (D'Jernes 2002), an Austronesian language of Papua New Guinea.

(45)   haw   di   *yo*
       cow   DEF   PLUR
       'the cows'

(46)   *di*   ookoo
       PLUR   canoe
       'the canoes'

In Lenakel (Lynch 1978), an Austronesian language of Vanuatu, there is not only a plural word, as in (47a), but also a dual word as in (47b).

(47)   a.   kuri   *miin*   aan
            dog   PLUR   that
            'those dogs'

b. pera-suaas   *mil*
    woman-small   DUAL
    'the two girls'

The fact that the dual word is distinct from the numeral for 'two' is illustrated by the example in (48), which contains both the dual word and the numeral for 'two'.

(48)   uus   *mil*   *kiu*   ka
       man   DUAL   two   that
       'those two men'

     Plural words can often be viewed as a type of article, which vary only for number. The examples in (20) above from Kiribatese illustrate a singular word and a plural word, which I suggest be viewed as articles, since noun phrases require one of them. We can also distinguish "pure" plural words, which only code plurality, from articles that code number in addition to other semantic or grammatical features of the noun phrase, in which these articles are the sole indication of number in noun phrases. For example, in Siar (Ross 2002b), an Austronesian language of Papua New Guinea, the sole indication of plurality are articles which also vary for animacy and specificity. For example, the article *tok* in (49) codes plurality and nonspecificity with inanimate nouns.

(49)   lau   besen   a   yan   [*tok*   un]
       I   not.yet   1SG   eat   [PLURAL.NONSPEC.INAN   banana]
       'I haven't eaten any bananas'

In some languages, the plural word is distinct from other words that can be called articles. In Arosi, an Austronesian language of the Solomon Islands, the plural word is distinct from the articles, which vary for common versus proper noun, subject versus nonsubject, and definite versus indefinite, illustrated in (50).

(50)   na   *mwani*   he'u
       COMMON.DEF.SUBJ   PLUR   star
       'the stars'

     Languages with plural words vary as to whether the plural word belongs to the same category as numerals. In some languages, it occurs in the same position in the noun phrase as numerals and does not co-occur with a numeral. This is the case in Bawm (Reichle 1981), a Tibeto-Burman language of Bangladesh, in which the numeral and the plural word follow adjectives and precede demonstratives modifying a noun. In contrast, in Jakaltek (Craig 1977), the plural word co-occurs with the numeral, as in (51).

(51)   caw-aŋ   *heb*   naj   winaj
       two-CLSFR   PLUR   CLASS   man
       'two men'

     In some languages, the plural word is a clitic that attaches in some fixed position within the noun phrase. In Margi (Hoffman 1963), a Chadic language of Nigeria, the plural clitic follows postnominal adjectives, relative clauses, and genitives, but precedes the definite marker and demonstratives. In (52), it attaches to the genitive noun *Ijí* 'God', but precedes the demonstrative *kụ*.

(52)   [ndə̀r   gə́   Ijí]=*'yàr*   kụ
       [word   of   God]=PLUR   this
       'these words of God'

1.6. Adjectives

There are two senses in which linguists use the term "adjective". On its first usage, it is used semantically to denote a set of words on the basis of their meaning, regardless of their grammatical properties in particular languages. On its second usage it is used as a label for a word class in a particular language defined by grammatical characteristics which distinguish it from other words in that language. On the first of these, it is used as a label for words that are descriptive words that denote what some people call properties, such as size and colour, though in practice it is used for words with meanings corresponding to words traditionally called adjectives in English, with meanings like 'big', 'red', 'good', 'long', and 'fast'. The term is also sometimes used more generally to include any modifier of nouns, including demonstratives and numerals, but this usage is now less common; on this older usage, the words that are here called adjectives were often called descriptive adjectives.

In order to keep separate these two uses of the term, I will use the expression "semantic adjectives" to denote words that are adjectives in the first of the two senses described above. Languages differ in the extent to which semantic adjectives form a distinct word class, with grammatical characteristics which distinguish them from other words in the language. In many languages, semantic adjectives are grammatically verbs, with the same morphology and syntax as other verbs. For example, the word for 'tall' in Ojibwa (Rich Rhodes, p.c.), an Algonquian language of eastern North America, occurs with the same subject prefix in (53a) as the word for 'sing' in (53b).

(53) a. *n-* ginooz
          1SG-tall
          'I am tall'

      b. *n-* nagam
          1SG-sing
          'I am singing'

These two words also inflect in the same way when they modify a noun, as in (54), occurring with a relativizing prefix and a subject suffix.

(54) a. nini   *e-* gnoozi-*d*
          man   REL-tall-3SG
          'a tall man'

      b. nini   *e-* ngamo-*d*
          man   REL-sing-3SG
          'a man who is singing'

In such languages, when semantic adjectives modify nouns, they are really relative clauses, albeit simple relative clauses consisting of a single word. But they are not grammatically distinct from relative clauses consisting of only a verb denoting an action.

In many languages, semantic adjectives are verbs, because they share properties with other verbs, but nevertheless form a distinct subclass of verbs because they differ from other verbs in other respects. For example, in Chemehuevi (Press 1980), a Uto-Aztecan language of the western United States, semantic adjectives require participial suffixes when modifying nouns, just like clear instances of verbs; however, they differ from other verbs in that other verbs must occur with a demonstrative when modifying a noun prenominally, as in (55a), while semantic adjectives do not have to, as illustrated in (55b).

(55) a. [nukwi-c   *aŋ*   aipac] paʔa-j
          [run-PTCPL that   boy]   tall-PRES
          'the running boy is tall'

b.   [paʔa-nti-m   aipac]   nukwi-j
         [tall-PTCPL-ANIM   boy]   run-PRES
         'the tall boy is running'

Note that semantic adjectives in Chemehuevi also differ from other verbs in that they require an animate suffix (which takes the form *-m* in (55b)) when they are modifying an animate noun; with nonadjectival verbs, this suffix is only used when the verb is modifying a plural animate noun. In languages in which semantic adjectives form a subclass of verbs, they are often called "stative verbs", although one can equally well call them "adjectival verbs" or even just "adjectives", with the understanding that in some languages, adjectives are a subclass of verbs.

Similarly, semantic adjectives in Mupun (Frajzyngier 1993), resemble verbs in various ways, justifying treating them as a subclass of verbs. For example, they occur with a set of pronominal subject morphemes, which are otherwise associated with verbs as illustrated by the first person singular subject prefix *n-* in (56a).

(56)   a.   *n-* ɓal   b.   *n-* sam
           1SG-strong   1SG-sleep
           'I am strong'   'I slept'

Like other verbs, they occur with relative markers when they modify a noun, but while other verbs require a pronominal subject morpheme when they modify a noun, semantic adjectives do not occur with a pronominal subject morpheme. Thus, in (57a), the semantic adjective *cí* 'different' occurs with the relative marker *ɗe*, but without the third person singular masculine subject pronoun *wu*, which occurs with the nonadjectival verb in (57b).

(57)   a.   n-dem   [ngwe ɗe   cí]
           1SG-like   [man REL   different]
           'I like a different man'

       b.   n-dem   [ngwe ɗe   *wu*   cii]
           1SG-like   [man REL   3SG.MASC   refuse]
           'I like a man who refuses'

In some languages, semantic adjectives share characteristics with nouns rather than with verbs. This is true for many languages in Europe. For example in Latin, adjectives inflect for number and case, as in (58) and the morphology is the same as that for nouns.

(58)   a.   [*bon-a*   terr-a]   est
           [good-FEM.NOM.SG   land-FEM.NOM.SG]   be.PRES.3SG
           'it is good land'

       b.   [*bon-am*   terr-am]   vidi
           [good-FEM.ACC.SG   land-FEM.ACC.SG]   see.1SG
           'I saw good land'

In other respects, however, they are distinct from nouns. For example, adjectives inflect for all three genders, whereas nouns have inherent gender. And adjectives can modify nouns (as in 58), agreeing in case, number and gender with the noun they modify, something nouns cannot do. When a noun modifies another noun in Latin, it must occur in the genitive case and it inflects for its own gender and number, as illustrated by *vinī* 'wine' in (59).

(59)   inopi-a   *vin-ī*
         shortage-FEM.NOM.SG   wine-NEUT.GEN.SG
         'a wine shortage'

The shared features, however, justify recognizing them as a distinct subclass of nouns (or, equivalently, to posit a higher level category like "nominal" that encompasses both nouns and adjectives). Languages like English, in which adjectives share few characteristics with either nouns or verbs, are a minority.

In some languages, semantic adjectives divide into different word classes in terms of their grammatical characteristics. In Juǀʼoan (Dickens 1992), a Northern Khoisan language, some semantic adjectives belong to a distinct word class of adjectives (though they share plural morphology with nouns), while others are verbs. Those which are in the separate adjective class simply follow the noun when they modify it, as in (60a). In contrast, those which are verbs are formally relative clauses, as in (60b), indicated by the relative marker *=à*, which appears as a clitic on the word preceding the relative clause (most commonly the head noun), parallel to (60c).

(60) a. tjù   zé
          house   new
          'a new house'

      b. jù=à   gǀaoh
          person=REL   strong
          'a strong person'

      c. jù=à   [kú   dcàá   mí   tcísì]
          person=REL   [IMPERF   steal   1SG   thing]
          'the person who is stealing my things'

The situation is similar in Ambai (Silzer 1983), an Austronesian language spoken in West Papua in Indonesia: there is a small closed class of adjectives which do not inflect, as in (61a), while most semantic adjectives are verbs. The example in (61a) illustrates a noninflecting adjective, while (61b) illustrates a semantic adjective that is grammatically a verb, with a third person singular subject prefix, occurring formally as a relative clause, exactly parallel to the relative clause in (61c).

(61) a. inontarai   *fuba*
          person   large
          'a large person'

      b. inontarai   *d-edai*
          person   3SG-tall
          'a tall person'

      c. inontarai   *d-autai*
          person   3SG-climb
          'the person who climbed'

In Koromfe (Rennison 1997), some semantic adjectives are nouns while others are verbs, and the two occur in different positions within the noun phrase, the former immediately after the noun, the latter after adjectival nouns and numerals. In (62), for example, the words *jɔ̃ɔ̃nɛ* 'small' and *bĩnĩʎ* 'black' are nouns and precede *tãã* 'three', while *tam* 'lost' is a verb and follows the numeral.

(62) lugəni   *jɔ̃ɔ̃nɛ*   *bĩnĩʎ*   tãã   *tam*   hɛ̃ŋ
      cat.PLUR   small.PLUR   black.PLUR   three   lost   DEF.NON.HUMAN.PLUR
      'those three small lost black cats'

In Nkore-Kiga (Taylor 1985), a Bantu language spoken in Uganda, some semantic adjectives exhibit nominal properties, illustrated by *omurungi* 'good' in (62a), which, like nouns, occurs with a noun class prefix, and some are verbs, illustrated by *erikwera* 'white' in (63b), which occurs with a relativizing prefix and a tense-aspect prefix, both features of verbs.

(63) a. omu-ntu   omu-rungi
         NOUN.CLASS-person NOUN.CLASS-good
         'the good person'

    b. esaati   e-rikw-era
        shirt   REL-PRES.CONT-white
        'a white shirt'

It should be noted that there are other meanings of semantic adjectives in Nkore-Kiga which are expressed by nouns, where the noun has a meaning corresponding to that of an abstract noun in English. In the construction in (64), the noun *amaani* 'strength' corresponds more closely to the English noun *strength* than to the adjective *strong*, and occurs as object of a preposition, so that a more literal translation might be 'a young man of strength'.

(64) omutsigazi   w=amaani
      young.man   of=strength
      'a strong young man'

In Ungarinjin (Rumsey 1982), a Wororan language spoken in northern Australia, some semantic adjectives bear prefixes that inflect for gender, person and number, while others do not. The set of prefixes that occur with the former is the same as the set of possessive prefixes used with body part nouns, but their meaning is different, so this provides little argument for treating these semantic adjectives as nouns. Hence there are apparently two distinct classes of semantic adjectives in Ungarinjin, neither of which is a subclass of verbs or nouns. The example in (65a) illustrates one of the noninflecting adjectives while (65b) illustrates one of the prefixing adjectives.

(65) a. ganmangu   djomali
         yam   big
         'big yam'

    b. ngabun   wu-niyangari
        water   NOUN.CLASS-good
        'good water'

Semantic adjectives occasionally combine with modifiers to form phrases. Modifiers of adjectives may be degree words or various sorts of phrases, as in the examples in (66) from Malayalam (Asher and Kumari 1997), a Dravidian language spoken in southern India.

(66) a. [parama   dayaaluvaaya]   iiʃvaran
         very   merciful   God
         'a very merciful God'

    b. [enne-kkaḷ   valiya]   manuṣyan
        1SG.ACC-than   big   man
        'a man bigger than me'

Some languages do not permit adjectives with modifiers to directly modify nouns, but require that they be expressed by a relative clause. This is illustrated for Indonesian (Sneddon 1996) in (67): in (67a), the simple adjective immediately follows the noun, without additional marking, while in (67b) the adjective is modified by a degree word *terlalu* 'too', and must be expressed as a relative clause, with the relative marker *yang*.

(67) a. rumah   besar
         house   big
         'a big house'

    b.   jas   [yang *terlalu* *besar*]
        jacket [REL   too   big]
        'a jacket which is too big'

Note that even English prefers to place the adjective phrase in a relative clause, if it involves the degree word *too*, as illustrated in (68).

(68)   a.   ?*a *too big* jacket
       b.   a jacket *which is too big*

In Rif Berber (Kossmann 2000), an adjective can only modify a noun if the noun phrase is interpreted as definite, as in (69a); if the noun phrase is indefinite, the adjective must be put in a relative clause, as in (69b) (where the nonverbal copula indicates that it is a relative clause).

(69)   a.   iḥramən   *iməẓẓyanən*
          boy.PLUR   small
          'the small boys'

       b.   iqəššuḏən   [ḏ   iməqq^{w}ṛanən]
          wood   COP large
          'large pieces of wood'

Another way in which adjectives do not directly modify nouns is found in Siar (Ross 2002b). When an adjective accompanies a noun in Siar, both the adjective and the noun occur with an article (which varies for number, specificity and noun class) and a ligature word connects the two constituents, as in (70).

(70)   [ep   wakak] in [ep   lamas]
        [SG.SPEC.NC$_1$ good]   LIG [SG.SPEC.NC$_1$ coconut.palm]
        'a good coconut palm'

Such constructions might be analysed as involving two noun phrases.

In some languages, semantic adjectives do not modify nouns, even in the sense of occurring in a relative clause modifying a noun. In the translation equivalents of English noun phrases with an adjective modifying a noun, the semantic adjective is actually the predicate of a so-called internally-headed relative clause, and the noun (or noun phrase) is subject of that predicate. See examples and discussion in section 3.2 below.

1.7. Nouns Used As Modifiers

The most common way in which nouns occur as modifiers of nouns is in genitive constructions, in which it is really a noun phrase rather than just a noun that is modifying the head noun. These are discussed in section 2.1 below. However, some, but not all, languages allow nouns to modify nouns without possessive meaning. English allows this in phrases like *music teacher*. Similarly, in Bashkir (Poppe 1964), a Turkic language spoken in Russia, a noun can modify a noun as a possessor, in which case it is marked in the genitive case, as in (71a), or with some nonpossessive meaning, in which case it is not case-marked, as in (71b).

(71)   a.   *gafuri-ðeŋ*   kitabï
          Gafuri-GEN   book
          'Gafuri's book, i.e. the book belonging to Gafuri'

b. *gafuri* kitabï
Gafuri book
'the book on Gafuri'

Constructions in which a noun directly modifies another noun are sometimes called compounds. It is important, however, to distinguish two types of constructions which are called compounds, namely lexical compounds, in which the compound has an ideosyncratic meaning not predictable from the meaning of the component parts as compared with syntactic compounds, in which one noun is modifying a second noun in a productive syntactic construction. For example, English *boy scout* is a lexical compound, while *music teacher* is a syntactic compound. The former behaves like a single word, while the latter is a type of phrase.

1.8. Locative Adverbs

Locative demontratives, words whose basic function is adverbial, like 'here' and 'there' in English, can sometimes modify nouns as well, as in English *the food here*, and in (72) from Amele (Roberts 1987).

(72) jobon *ceheleg / cuhulug*
village up.there / down.there
'the village up there / down there'

In some languages, when they modify nouns, the locative demonstratives have the meaning 'from here, from there' when they modify nouns, as in Ngiti (Kutsch Lojenga 1994) illustrated in (73).

(73) ma mù nɨ   [*àwú* ngbángba]
1SG 1SG.know.PERF.PRES   [there child]
'I know the child from there'

1.9. Interrogative modifiers

For various semantic types of modifiers of nouns, there are corresponding interrogative expressions, as illustrated for English by the pairs of noun phrases in (74), with the interrogative expressions illustrated on the left and their corresponding noninterrogative expressions illustrated on the right.

(74) which book   this book
      what sort of book   a good book
      how many books   three books
      whose book   my book

Languages vary in the extent to which they have single words for expressing these interrogative meanings: note the multi-word English expressions *how many* and *what sort of*. In some languages, these meanings are expressed by single words. For example, 'how many' is expressed by a single word in Ambulas (Wilson 1980), a Sepik-Ramu language of Papua New Guinea, as illustrated in (75a), and 'what sort of' is expressed by a single word in Tsova-Tush (Holisky and Gagua 1994), a Nakh-Daghestanian language of the Caucasus region of Russia, as illustrated in (75b)

(75) a. baalé *yapap*
          pig how.many
          'how many pigs'

b.   [*molun*   k'nat] Va   e,   ğazen-i   le   mos:in?
     [what.sort boy] is   3SG good-Q   or   bad
     'What sort of boy is he, good or bad?'

Words or expressions meaning 'how many' often occur with mass nouns with the meaning 'how much', as illustrated in (76) by the word *mə́nà* from Miya (Schuh 1998), a Chadic language of Nigeria.

(76) a.   sə̀ba   *mə́nà*
          person.PLUR   how.many
          'how many people'

      b.   shùw   *mə́nà*
          oil   how.much
          'how much oil'

Such interrogative expressions are generally treated grammatically like their corresponding noninterrogative expressions. For example, the postnominal position of *yagap* 'how many' in the Ambulas example in (75a) above mirrors the postnominal position of numerals in this language, as illustrated in (77).

(77)   gaan   *kupuk*
       night   three
       'three nights'

Similarly, in (78), the interrogative word *ŋiza* 'how many' in Gela (Crowley 2002) occurs before the noun, preceded by the numeral marker *e* and followed by the article *na*, exactly like a numeral, as in (41) above.

(78)   e   ŋiza   na   kake
       NUM   how.many   ART taro
       'how many taro'

Occasionally, however, languages treat interrogative words differently from their corresponding non-interrogative words. For example, in Turkana (Dimmendaal 1983), a Nilotic language of Kenya, numerals follow the noun, as in (79a), but the expression for 'how many' precedes the noun, as in (79b).

(79) a.   ŋa-kine-i`     *ŋaarey`*
          PL-goat-PL   two
          'two goats'

      b.   *ŋɪaɪ*   ŋi-keɲi̥
          how.many   PL-bird
          'how many birds'

1.10. Miscellaneous noun modifiers

There are a number of meanings that are often represented by words that modify nouns but often with rather ideosyncratic grammatical properties. These include quantifying words, ones meaning 'all', 'every', 'some', 'many', as well as words meaning 'another', 'different', 'same', 'only' and 'even'. As noted above, the word *all* in English precedes determiners (*all the men*), a property shared only by *both* (*both the men*). In Burushaski (Lorimer 1935), a language isolate of Pakistan, all modifiers of nouns precede the noun except for the words meaning 'all' and 'both', which follow the noun. In Malayalam (Asher and Kumari 1997), all modifiers precede the noun, except for those meaning 'all', 'only', and 'even'. In Dholuo

(Omondi 1982), a Nilotic language spoken in Kenya, all modifiers follow the noun, except for a diminutive particle. In Kinyarwanda (Hurel 1959), a Bantu language spoken in Rwanda, the word for 'other' is the only word other than demonstratives that can precede the noun, though unlike demonstratives, it can also follow the noun.

2. Complex noun phrases

2.1. Genitive or possessive constructions

2.1.1. Genitive constructions with nominal possessors

The terms "genitive" and "possessive" are both used for constructions in which a noun occurs with another noun phrase denoting a possessor, as in English *London's mayor* or *the mayor of London*, or the example in (80) from Kayardild (Evans 1995).

(80)   *dangka-karra*   dulk
       man-GEN   country
       'the man's country'

The term "possessive" is also applied sometimes to two other types of constructions, where possession is predicated at the clause level, illustrated by English *She has three children* and *That book is mine*; for that reason, the term "genitive construction" (rather than "possessive") will be used here for a noun phrase construction of the sort illustrated in (80). The modifying noun phrase in a genitive construction (*dangkakarra* in 80) can be called either the genitive noun phrase or the possessor. The noun that is modified by the genitive noun phrase can be called the head noun or the possessed noun.

The range of meanings associated with genitive constructions is much broader than the word "possession" might suggest. It includes kinship relations (*John's sister*), part-whole relations (*John's hand, the bottom of the basket*), possession or ownership (*John's sandwich*), and various abstract relations (*John's birthday, the population of London, the mayor of London, the destruction of the city, the arrival of the enemy*, etc.). While some languages use different constructions for different types of genitive relationships (see section 2.1.4 below), it is very common for languages to use the same construction for all of these relationships.

There are considerable differences among genitive constructions crosslinguistically. One difference is that some languages mark the possessor while other languages mark the possessed noun. For example, in (81) from Hua (Haiman 1980), a Trans-New Guinea language, it is the possessor which is marked, occurring in the genitive case.

(81)   *de-ma'*   fu
       man-GEN   pig
       'the man's pig'

In contrast, in Cree (Ellis 1983), an Algonquian language spoken in Canada, the possessor is unmarked, while the possessed noun occurs with a possessive prefix, representing the person and number of the possessor, as in (82).

(82)   cān   o-cīmān
       John   3SG.POSS-canoe
       'John's canoe'

It is important not to confuse the two sorts of affixes in (81) and (82). The genitive affix in (81) is a case affix and signals that the possessor noun it occurs with is functioning as a possessor. The possessive affix in (82), in contrast, is a pronominal morpheme, varying for pronominal features of the possessor. The difference is analogous to the difference between two different sorts of affixes that one might call "subject affixes", namely a subject case affix

on a noun functioning as subject, and subject agreement on a verb, agreeing in person and number with the subject. Genitive affixes are a form of dependent-marking, since the possessor is a grammatical dependent of the head noun, while possessive affixes are a form of head-marking, since they occur on the head noun. Linguists occasionally employ the term "possessive affix" for genitive affixes, but since such usage is potentially confusing, it is best avoided.

Note that in languages with possessive affixes, the possessor noun phrase can generally be left out, as in (83) from Cree, in which case the noun phrase is interpreted as having a pronominal possessor.

(83)   o-cīmān
        3SG.POSS-canoe
        'his canoe'

See section 2.1.2 below for further discussion of pronominal possessors.

Some languages employ a construction in which the morphological marking occurs on the possessed noun, but unlike Cree, the marking does not indicate properties of the possessor but simply indicates that the possessed noun is possessed. For example, in Haida (Swanton 1911), a language spoken off the west coast of Canada, the possessed noun occurs with a suffix -*ga*, regardless of the person and number of the possessor, as illustrated in (84).

(84)   a.   Wắnəgən   gi´t-ga   b.   dī   gō´ñ-ga
            Wanagan   son-POSS'D   1SG   father-POSS'D
            'Wanagan's son'   'my father'

In addition to the two constructions illustrated in (81) and (82), a third common type of construction is one in which the possessor is marked with an adposition, as illustrated by the English preposition *of* in *the mayor of London,* and by the postposition *pa* in (85) from Rumu (Petterson 1999), a Trans-New Guinea language.

(85)   [hei   akö   pa]   matë
        [word   that   GEN]   meaning
        'the meaning of that word'

Since the function of the adposition is like that of a genitive case affix and since the adposition forms a constituent with the possessor, this type of construction involves a form of dependent marking.

Some languages employ a construction with a morpheme which is intermediate between a genitive case affix and a genitive adposition, where the genitive morpheme is a clitic that attaches to the last (or first) word in the noun phrase, as illustrated by the English genitive morpheme spelled *'s*, as in (86), or the clitic *=gat* in (87) from Nabak (Fabian, Fabian and Waters 1998), a Trans-New Guinea language spoken in Papua New Guinea.

(86)   a.   [the Queen of England]'s crown
        b.   [a friend of mine]'s car

(87)   [an   temaŋ]=gat   mka
        [man   big]=GEN   house
        'the big man's house'

In many languages in which the genitive construction involves a word that intervenes between the possessor and the possessed noun, it is not obvious that this word is an adposition, and in some cases, there is reason to say that it is not an adposition. For example, in Mandarin Chinese (Li and Thompson 1981), the word *de* occurs between the possessor and

the possessed noun, as in (88a), but it occurs more generally with other modifiers of nouns as well, such as relative clauses, as in (88b) (hence the gloss 'LINK').

(88) a. tùzi   de   ěrduō
          rabbit   LINK   ear
          'a rabbit's ear'

      b. [Zhāngsān   mǎi   de]   qìchē
          [Zhangsan   buy   LINK]   car
          'the car that Zhangsan bought'

There are still other languages in which a word intervenes beween the possessor and possessed noun which is not an adposition but a pronominal word varying for features of the possessor, as in (89) from Loniu (Hamel 1994), an Austronesian language of Papua New Guinea.

(89) ɲatama   iy   pihin
      father   3SG.POSS   woman
      'the woman's father'

This type of construction is probably best viewed as a variant of the head-marking construction in Cree, illustrated in (82) above, except that the pronominal morpheme is a separate word in Loniu rather than an affix.

In languages in which there is a separate word marking a genitive construction, the word typically intervenes between the possessor and the possessed noun, as in (85), (88), (89) and English *the mayor of London*. Occasionally, however, it occurs outside the two nouns, as in (90) from Moru (Tucker and Bryan 1966), a Central Sudanic language spoken in Sudan.

(90) drị   [tsʷɛ   rɔ́]
      head   tree   of
      'the head (i.e. top) of the tree'

If the word is an adposition, it will occur adjacent to the possessor, as in (90); but if it is a pronominal word, it will typically occur adjacent to the possessed noun, as in (91) from Kobon (Davies 1981), a Trans-New Guinea language, where the pronoun *nipe* is agreeing in person and number with the possessor *nibi yad* 'my wife'.

(91) nibi   yad   ñi   nipe
      wife   1SG.POSS   son   3SG.POSS
      'my wife's son'

However, in (92) from Kamoro (Boelaars 1950), another Trans-New Guinea language, the pronoun occurs adjacent to the possessor and is separated from the possessed noun.

(92) kamé: naːti   aːra-tⁱa
      house   headman   3SG-GEN
      'the house of the headman'

A further common type of genitive construction is one with no marking of the relationship at all, where the possessor and possessed noun are simply juxtaposed, as in (93) from Chalcatongo Mixtec (Macauley 1996), spoken in Mexico, and (94) from Nivkh (Gruzdeva 1998), a language isolate spoken in Russia, in eastern Siberia.

(93) kačíní   peðrú
      hat   Pedro
      'Pedro's hat'

(94) osḵ   au
      hare   voice
      'the voice of the hare'

Note that the two languages in (93) and (94) differ in the order of the two nouns: Chalcatongo employs noun-genitive order in (93), while Nivkh employs genitive-noun order in (94).

Some languages employ a combination of two of the above constructions. For example, Turkish employs both a genitive suffix on the possessor and a possessive suffix on the possessed noun, as in (95).

(95) Ahmed-in   oğl-u.
      Ahmet-GEN   son-3SG.POSS
      'Ahmet's son'

In Tennet (Randal 1998), a Surmic language spoken in Sudan, there is both a genitive case suffix on the possessor and a linker word that occurs between the possessed noun and the possessor, as in (96).

(96) mana   cí   ongol-o̠
      field   LINK   elephant-GEN
      'the elephant's field'

This same linker is also used with relative clauses, as in (97).

(97) dhúno̠c   [cí   ba̠li   ákáti   Lo̠hám-i]
      waterbuck   [LINK   PAST   PERF:spear   Loham-SUBJ]
      'a waterbuck that Loham speared'

2.1.2. Pronominal possessors

In some languages, the construction used for pronominal possessors is the same as that used for nominal possessors (i.e. possessors headed by a noun). For example, in Kodava (Ebert 1996), a Dravidian language spoken in India, both pronominal possessors and nominal possessors take the same genitive case suffix -ḍa, as illustrated in (98), in which the first word is a pronominal possessor of the second word and the second word is a nominal possessor of the third word.

(98) [[avẽn-ḍa]   appẽn-ḍa]   pa̠liyë   mane
      [[3SG.MASC-GEN]   father-GEN] old   house
      'his father's old house'

Similarly, in Khmer (Cambodian) (Jacob 1968), simple juxtaposition of possessed noun and possessor is used both with nominal possessors, as in (99a), and with pronominal possessors, as in (99b).

(99) a.   tù: ta:
           cupboard   grandfather
           'grandfather's cupboard'

      b.   phtɛ̀əh   khɲom
           house   1SG
           'my house'

However, languages in which nominal and pronominal possessors are treated the same way form a small minority of the world's languages.

In many languages with some form of dependent marking on nominal possessors, like a genitive case affix or the English clitic *'s*, there is a distinct morphological class of possessive pronouns, often without a clearly identifiable genitive morpheme. Thus compare English *the man's house* with *my house* or *your house*. (Note that some people restrict the term "possessive pronoun" as it applies to English to words like *yours* and *mine*; in this chapter, the term will be applied to the pronominal possessive words that serve as modifiers of nouns.) Similarly, in Yaqui (Dedrick and Casad), a Uto-Aztecan language spoken in northern Mexico, while nominal possessors occur with a suffix *-ta*, as in (100a), pronominal possessors involve a distinct set of pronouns, illustrated in (100b).

(100) a. Hóan-ta   huúbi
            John-GEN   wife
            'John's wife'

       b. 'ín   tómi
            1SG.POSS   money
            'my money'

In some languages pronominal possession involves a distinct construction from that used with nominal possession. In French, for example, nominal possession involves placing the possessor after the possessed noun, with the preposition *de*, as in (101a), while pronominal possession involves a prenominal possessive pronoun that agrees with the possessed noun in gender and number.

(101) a. le   livre   *de Jean*
            the.MASC.SG   book   of   John
            'John's book'

       b. *mon*   livre
            1SG.POSS.MASC.SG   book
            'my book'

The term "possessive adjective" is appropriate for forms like *mon* in (101b) because of the fact that it agrees in number and gender with the head noun. However, although this sort of construction is common in Indo-European languages, it is relatively uncommon in other language families.

A major source of differences between nominal possession and pronominal possession is the fact that in many languages, pronominal possessors are normally represented just by possessive affixes on the possessed noun. Thus in Kutenai, a third person pronominal possessor is normally represented by the suffix *-ʔis*, as in (102a), while nominal possessors will occur as separate nouns, with the same suffix *-ʔis* on the possessed noun, as in (102b).

(102) a. xałi-ʔis
            son-3SG.POSS
            'his/her son'

       b. xałi-ʔis   qu   pałkiy
            son-3SG.POSS   that   woman
            'that woman's son'

2.1.3. Multiple genitive constructions.

Many languages have more than one genitive construction. English has both the construction with a postnominal possessor, with the preposition *of* (*the mayor of London*) and the construction with a prenominal possessor, with the clitic *'s* (*London's mayor*).

Awa Pit (Curnow 1997) employs a construction with a clitic postposition if the possessor is human but employs simple juxtaposition if it is nonhuman, as illustrated in (103).

(103) a. Santos=pa   pimpul
           Santos=GEN   leg
           'Santos' leg'

       b. kwizha   pimpul
           dog   leg
           'the leg of the dog'

Lafofa (Tucker and Bryan 1966), a Kordofanian language spoken in Sudan, has two constructions, one involving juxtaposition with the possessor preceding the possessed noun, as in (104a), the other with the possessor following the noun with a postposition *ni*, as in (104b).

(104) a. piṭgwari   kai
           chief   cows
           'the chief's cows'

       b. kai   [piṭgwari   ni]
           cows   [chief   of]
           'the chief's cows'

Lafofa is like many languages in that it is unclear what conditions the choice between two constructions.

Similarly, Yagua, a language isolate spoken in Peru, there is one construction involving juxtaposition, with the possessor preceding the possessed noun, as in (105a), and a second construction involving a possessive affix on the possessed noun, with the possessor following the possessed noun, as in (105b).

(105) a. Tomáása   rooriy
           Tom   house
           'Tom's house'

       b. sa-rooriy   Tomáása
           3SG.POSS-house   Tom
           'Tom's house'

2.1.4. Alienable and inalienable possession

The most common instances of multiple genitive constructions involve a contrast of alienable and inalienable possession. Inalienable possession involves kinship relations and part-whole relations, where the relationship is essentially an inherent or permanent one, as in (106a) and (106b), in contrast to alienable possession, as in (106c), where the relationship is a conventional one.

(106) a. John's father
       b. John's hand
       c. John's dog

In Maybrat (Dol 1999), a West Papuan language, the construction for inalienable possession is head-marking, with a possessive prefix on the head noun, preceded by the possessor, as in (107).

(107) Sely   m-me
       Sely   3SG.NONMASC.POSS-mother
       'Sely's mother'

In contrast, the construction for alienable possession is dependent-marking, with a genitive prefix on the possessor, and the possessor follows the possessed noun, as in (108).

(108) amah   ro-Petrus
       house   GEN-Petrus
       'Petrus' house'

In Lenakel (Lynch 1978), alienable and inalienable possession are treated differently both with pronominal possessors and with nominal possessors, though in different ways. With pronominal possessors in inalienable possession, the possessor is indicated by possessive suffixes on the possessed noun, as in (109).

(109) a.   rɨm-k   b.   nimwansii-mar
             father-1SG.POSS   buttocks-1PL.EXCL.POSS
             'my father'   'our backsides'

In contrast, with pronominal possessors in alienable possession, the same possessive suffixes are attached to one of five 'possessive classifiers' which follow the possessed noun. These five possessive classifiers are distinguished semantically by properties of the possessed noun: (i) things to be eaten; (ii) things to be drunk; (iii) things to be planted; (iv) places; and (v) other things not fitting into one of the first four categories. Some examples are given in (110).

(110) a.   nuw   miin   nɨk-k
             yam   PLUR   POSS.EATEN-1SG
             'my yams'

       b.   nɨkava   ituga   nɨmwa-m
             kava   foreign POSS.DRUNK-2SG
             'your liquor'

       c.   nimwa   vi   taha-k
             house   new   POSS.OTHER-1SG
             'my new house'

There is also a difference between inalienable and alienable possession with nominal possessors. Inalienable possession involves placing the possessor immediately after the possessed noun, without any marker of the relationship, as in (111).

(111) pwia   [uus   aan]
       older.brother   [man   that]
       'that man's older brother'

With alienable possession, however, although the possessor follows the possessed noun, the appropriate possessive classifier of the sort illustrated in (110) (but without a possessive suffix) is placed between the two, following the possessed noun and preceding the possessor, as in (112) (which illustrate the two classifiers that are not illustrated in (110)).

(112) a. [nɨkɨlɨv owas] ne   misi
        [hibiscus old] POSS.PLANTED   missionary
        'the missionary's old hibiscus'

     b. nauanu   iimwa   Nasu
        village   POSS.PLACE Nasu
        'Nasu's village'

In Ngiti (Kutsch Lojenga 1994), inalienable possession involves juxtaposition of the possessor and possessed noun, as in (113).

(113) kamà-dɔ
      chief-head
      'the chief's head'

Alienable possession involves a construction employing one of a small number of postpositional genitive markers, as in (114).

(114) [kamà bhà]   dza
      [chief GEN] house
      'the chief's house'

There is also a difference in Ngiti between the two types of possession with pronominal possessors. With inalienable possession, the possessor is expressed by a possessive suffix on the possessed noun, as in (115).

(115) afī-du
      heart-1SG.POSS
      'my heart'

Note that the order of morphemes in (115) is the opposite of that in (113), where the possessor occurs as the first part of the compound. With alienable possession, the possessor is expressed by a separate possessive pronominal word preceding the possessed noun, as in (116).

(116) pbàkà   ìkyì
      1SG.POSS   cow
      'my cow'

Again, the construction in (116) is different from that in (114), in that no postposition is used.

While the most common relationships involving inalienable possession are kinship relations and part-whole relations, the inalienable construction in Woleaian (Sohn 1975), an Austronesian language of Micronesia, also includes objects which are 'about' the possessor or by the possessor, as in (117).

(117) a. baabiyor-oi   b. sasiing-ei
         book-1SG.POSS   picture-1SG.POSS
         'book about me or by me'   'picture of me'

Contrast (117a) with (118), in which the alienable construction is used.

(118) yaai   baabiyor
      1SG.POSS.CLSFR   book
      'my book, i.e. book belonging to me'

While the choice between the two sorts of possession is partly determined by the particular noun possessed, some nouns in Ngiti, as in many other languages, can occur with either alienable or inalienable possession, with a difference in meaning. For example, in

(119a), the inalienable possession construction is used, with a part-whole relationship, while in (119b), the alienable possession construction is used, with a relationship of "belonging".

(119) a. azù-du
          blood-1SG.POSS
          'my blood (from my body)'

       b. pbàkà   azu
           1SG.POSS   blood
           'my blood (which belongs to me but doesn't come from my body)'

In some languages, the inalienable construction is not used for both kinship and part-whole relations but only for one of them. In Abun (Berry and Berry 1999), a West Papuan language, the construction used for part-whole relations involves juxtaposition, as in (120a), while alienable possession and kinship relations involve a construction with an intervening genitive word *bi*, as in (120b) and (120c).

(120) a. Sepenyel   gwes
           Sepenyel   leg
           'Sepenyel's leg'

       b. [yetu   ge   dik   yo   bi]   nu
           [person CLSFR one   INDEF GEN] house
           'someone's house'

       c. [Andar   bi]   im
           [Andar   GEN]   mother
           'Andar's mother'

While possessive pronouns normally precede the noun in Kana (Ikoro 1996), a Niger-Congo language of Nigeria, there is a distinct set of possessive pronouns that can be used only if the possessed noun is a body part, and these follow the noun, illustrated by the first person possessive pronoun *mɛ̀* in (121).

(121) sí   mɛ̀
       face   1SG.POSS
       'my face'

The example in (122) illustrates the normal prenominal first person singular possessive pronoun *nà*, with an alienably possessed noun.

(122) nà   kpá
       1SG.POSS   book
       'my book'

The construction in (122) is also possible with body part nouns, as in (123); in other words, either construction can be used with body part nouns.

(123) nà   bá
       1SG.POSS   hand
       'my hand'

The construction in (121) can only be used with body part terms and cannot be used with kinship terms. Kinship terms occur with the prenominal possessive pronoun; however, they occur with a different tone, as in (124), showing that Kana actually has a three-way contrast between alienable possession, body parts and kinship terms.

(124)   ná   kà
        1SG.POSS   mother
        'my mother'

While a contrast of alienable and inalienable possession is semantically-based, it is very common for the precise division to be lexically determined. The examples in (115) and (119a) above from Ngiti illustrate the use of possessive suffixes with inalienable possession. But some nouns denoting body parts only occur in the alienable possession construction. In some cases, this may be because they are more easily separable from their host (e.g. *àyɨ* 'hair'), but in other cases there is no obvious explanation (e.g. *ipfo* 'vagina'). Some kinship terms occur in either construction, without a difference in meaning, as in (125).

(125)   a. dadá-du   b. pbàkà   dadá
            elder.sister-1SG.POSS   1SG.POSS   elder.sister
            'my elder sister'   'my elder sister'

In addition, the noun *azɨ* may mean either 'brother-in-law' or 'son-in-law', but when it occurs in the inalienable construction, it has the meaning 'brother-in-law', as in (126a), and when it occurs in the alienable construction, it has the meaning 'son-in-law', as in (126b).

(126)   a. azɨ-du   b. pbàka   azɨ
            brother.in.law-1SG.POSS   1SG.POSS   son.in.law
            'my brother-in-law'   'my son-in-law'

Furthermore, some nouns in Ngiti require the inalienable possession construction although their meanings, at least the meaning suggested by the English glosses, might lead one to expect they would occur in the alienable possession construction, e.g. *-li* 'charcoal', *-ká* 'feather', *-ra* 'flour', *-tsí* 'something worthless'.

Similarly, in Maybrat, while a person's house involves alienable possession, as in (108) above, a pig's nest involves inalienable possession, as illustrated in (127) (where the position of the possessor before the head noun and the possessive prefix on the head noun is the construction for inalienable possession).

(127)   fane   m-sif
        pig   3SG.NONMASC.POSS-nest
        'the pig's nest'

And in Dongolese Nubian (Armbruster 1960), a Nilo-Saharan language spoken in northern Sudan, a subset of kinship terms are inalienably possessed and cannot occur without a possessive prefix, illustrated in (128).

(128)   a. tintim-bɛs   b. tintin-έn
            3PL.POSS-brother   3PL.POSS-mother
            'their brother'   'their mother'

However, there are other kin terms in Dongolese Nubian that behave like alienably possessed nouns: they do not take possessive prefixes, but occur with the genitive forms of independent pronouns, including the nouns for 'son' and 'daughter', as in (129a), the same construction used with alienable possession, as in (129b).

(129)   a. tín   tõd   b. tín   hánuig
            3PL.GEN son   3PL.GEN   donkey.PLUR
            'their son   'their donkeys'

2.1.5. Nonreferential genitives

Many languages distinguish a genitive construction with a referential genitive from one with a nonreferential genitive, illustrated by the contrast in the English examples in (130).

(130) a. John likes that deer's antlers.
       b. John likes deer antlers.

In (130a), the antlers of a specific deer are being referred to, while in (130b), no specific deer is involved. The English construction for nonreferential genitives in (130b) involves juxtaposition. English has a second construction for nonreferential genitives that superficially resembles the referential genitive construction in (130a) in that it involves the genitive clitic *'s;* however, the noun marked with the genitive clitic occurs in adjective position, possibly following other adjectives, as in (131a), unlike referential genitives, which occur in determiner position, preceding adjectives, as in (131b).

(131) a. a blue [woman's] hat
       b. [that woman's] blue hat

In Roviana (Corston-Oliver 2002), the construction with a referential genitive involves a possessive suffix on the head noun, as in (132a), while a nonreferential genitive involves juxtaposition, as in (132b).

(132) a. mamalaengi-na   [barikaleqe   hoi]
           voice-3SG.POSS   [woman   that]
           'that woman's voice'

       b. mamalaengi   barikaleqe
           voice   woman
           'a woman's voice / a female voice'

2.2 Adpositional phrases

Languages differ as to whether they allow adpositional phrases or noun phrases with oblique cases to modify nouns. This is possible in English, as in *that box on the table* and in Bawm (Reichle 1981), a Tibeto-Burman language of Bangladesh, as illustrated in (133), where the postpositional phrase *in sungah* 'in the house' precedes the noun.

(133) *[in   sungah]* mi   tlâ
       [house in]   man   PLUR
       'the people in the house'

But in Lezgian (Haspelmath 1993), a Daghestanian language of the Caucasus region of Russia, this is not possible. To express what English would express by means of a prepositional phrase modifying a noun, Lezgian must place the modifying phrase (in which the noun is in the subelative case) in a relative clause with an appropriate verb, such as the verb meaning 'be', as in (134).

(134) *hajwan-r-ikaj*   *tir*   max-ar
       animal-PLUR-SUBELATIVE   be.PTCPL   story-PLUR
       'fairy tales about animals'
       (literally 'fairy tales which are about animals')

2.3 Relative clauses

Because relative clauses are discussed at greater length in Chapter II.4, the discussion here will be somewhat abbreviated, concentrating on structural matters. Languages vary as to whether the relative clause takes the same form as a main clause, with the possible addition of some relative word, like a relative pronoun, marking the clause. In (135), from Abun (Berry and Berry 1999), the relative clause takes the same form as a main clause, except for the initial relative word *gato* and a "gap" in the relative clause corresponding semantically to the head of the relative clause.

(135) suk-jan   [gato án   jan   mo   nggwe]
       plant-NOMIN   [REL   3PL   plant in   garden]
       'plants that they plant in that garden'

Note that in Abun, as in the majority of languages, the relative words are not relative pronouns, since they are invariant words lacking pronominal features.

In other languages, like Yukaghir (Maslova 1999), a language isolate spoken in Russia in Siberia, the verb in relative clauses takes a suffix marking it as being in a relative clause, as in (136).

(136) [tude-gele   joq-to-l]   ani-pe
       [3SG-ACC   arrive-CAUS-REL]   fish-PLUR
       'the fish that had brought him'

Such verb forms are often called participles, especially when they are nonfinite, as in Yukaghir, lacking the inflections found with main verbs. Participial modifiers of nouns in English, such as *eating the sandwich* in (137), are relative clauses of this sort.

(137) The man [eating the sandwich] looks familiar.

Some languages require that a demonstrative or some sort of determiner occur in a noun phrase whenever the noun is modified by a relative clause. For example, while determiners are in general optional in noun phrases in Woleaian (Sohn 1975), one is required when the noun phrase contains a relative clause, illustrated by the demonstrative *la* 'that' in (138).

(138) i   giula   biuleiu   la   [ye   log   iyang]
       1SG   know   place   that   [3SG   stay   there]
       'I know the place where he lives'

There are other languages in which it is not a grammatical requirement that there be an article or demonstrative, but in which the use of such words is more common than in other noun phrases. An example of such a language is Bagirmi (Stevenson 1969), a Central Sudanic language spoken in Chad, illustrated in (139).

(139) ŋ^{w}on   [ga   ma   m-ak-iny]   na
       boy   [REL   1SG   1SG-see-3SG.OBJ]   DEF
       'the boy who I saw'

Some languages have determiners or articles that are specific to relative clauses. For example, Woleaian has a special indefinite determiner *le* that is only used in indefinite noun phrases containing a relative clause, as in (140).

(140) i   tipeli   [se-mal   yaremat   le   [ye   gach]]
       1SG   want   [one-CLSFR   person   INDEF   [3SG   good]]
       'I want someone who is good'

Conversely, Takia (Ross 2002a) has a clitic =*n* which attaches to the end of relative clause in a noun phrase, as in (141), but it only occurs with relative clauses in noun phrases that are interpreted as definite.

(141)   ab   a   [oŋ   w-abiya=n]
        house   DEM   house   2SG-build=REL.DEF
        'the house that you built'

Relative clauses in Jur Mödö (Persson 1981), a Central Sudanic language spoken in Sudan, must begin with one of two relative markers or with a demonstrative. Furthermore, if the noun phrase is specific, the relative clause must also occur with a clause-final marker. The example in (142) illustrates a relative clause with both a clause-initial marker *ámé* and a clause-final marker *nè*.

(142)   bɔ   [ámé 'bènì̃ rɔ   bɔ   dőrî̃   nè]
        person [REL his   body   person right.hand   REL]
        'the person who was the right-handed one'

In some languages, the relative clause does not modify the noun, but is a clause containing a noun phrase that corresponds semantically to the head noun in English translations. Such relative clauses are often called internally-headed relative clauses and are discussed in section 3.2 below.

2.4. Conjoined noun phrases

Most languages allow noun phrases that are formed by conjoining or co-ordinating two noun phrases, as in English *the house and the garage* and the Kutenai example in (143), where the conjunction is a clitic that attaches to the first conjunct.

(143)   titqaɬ'=ȼ   paɬkiy
        man=and   woman
        'a man and a woman'

See Chapter II.1 for detailed discussion of co-ordinate constructions.

3. Noun phrases without nouns

In the narrowest sense of the term, a noun phrase must contain a noun or pronoun, possibly accompanied by other words or phrases modifying the noun or pronoun. Many languages have constituents that are not of this form, but which are sometimes called noun phrases because of grammatical similarities to typical instances of noun phrases, such as occurrence in subject or object position. Whether or not such constituents are properly called noun phrases, I will assume to be a purely terminological question. But for some of the constructions in question, if we don't call them noun phrases, we have a need for some alternative label that includes both noun phrases and these other constructions. For purposes of presentation, I will use the term "noun phrase" broadly here.

3.1. Noun phrases with only "modifying" words

Many languages allow noun phrases that consist of words that normally would be modifiers of a noun, but without any noun. In the example in (144) from Nkore-Kiga (Taylor 1985), the subject is a word that normally functions as an adjective.

(144)   *omuto*   a-ka-gamba   na-anye
           young   3SG-REMOTE.PAST-speak   with-me
           'the young one spoke to me'

Similarly, the noun phrase in (145) from Spanish (Luis Paris, p.c.) consists of a determiner plus an adjective.

(145)   el   blanc-o
            the.MASC   white-MASC
            'the white one (masculine)'

In the example in (146) from Misantla Totonac (Mackay 1999), spoken in Mexico, the adjective occurs with a possessive prefix (which is also possible when the adjective is modifying a noun).

(146)   iš-¢i̠t   ɬatá
            3POSS-black   sleep
            'his black one is sleeping'

       It is important to distinguish cases like these where the construction is possible for any adjective from phenomena like English *the poor*, which is possible only with certain adjectival words (cf. **the wide*) and has a different range of meanings from that found with adjectives modifying nouns; note that one cannot use *the poor* in (147a), but must say *the poor one*, as in (147b).

(147)   a.   *All of the students in the class were very good except for one, and *the poor* was failing.
        b.   All of the students in the class were very good except for one, and *the poor* one was failing.

Furthermore, *the poor* in English is grammatically plural (*The poor are forgotten, *The poor is forgotten*). It is probably best to treat English *poor* as a word that is sometimes an adjective and sometimes a noun, with distinct meanings.

       Similar phenomena are occasionally found with other sorts of words or phrases that normally occur as modifiers of nouns. The example in (148) from Tidore illustrates the third plural pronoun functioning as a definite article (as in (10) above) combining with a semantic adjective and a numeral.

(148)   ona   jang   malofo
             3PL   beautiful   two
             'the two beautiful ones'

The example in (149) from Koyra Chiini (Heath 1999) contains a possessor phrase followed by a definite article.

(149)   [woo di   yo   wan]   di
          [DEM DEF   PLUR of]   DEF
          'the one [=wage] of those [workers]'
          (literally: 'the of those')

In fact, English also allows possessor phrases without a noun to function as noun phrases, as in (150).

(150)   Your car is nice, but *John's* is nicer.

       One approach to such noun phrases lacking nouns is to analyse them as involving ellipsis of a head noun, that is, as involving a noun that is present at some level of structure but

which is not expressed overtly. One argument that is given for such an approach is that when a speaker uses noun phrases of this sort, it is normally the case that it is clear in the context what noun could have been used. A second argument is that in cases like (145) above from Spanish, the gender of the article is determined by the gender of the noun that could have been used.

But neither of these arguments is convincing. The fact that one can normally provide a noun that could have been used may simply reflect a fact about language use: normally when speakers refer to something, they can identify a noun that fits the thing. It is usually the case that when speakers use third person pronouns they are able to identify a noun that they could have used; but nobody would suggest that noun phrases consisting just of pronouns involve ellipsis of a noun. Similarly, in languages like Spanish, the gender of third person pronouns depends on what noun could have been used, but again it would be very odd to analyse such pronouns as involving ellipsis of a noun. Furthermore, such noun phrases without nouns can be used in those relatively infrequent contexts where the speaker does not know what the thing is, as in (151).

(151) She saw something large and something small inside the cave, and then she saw *the large thing* move.

Languages that permit noun phrases without nouns apparently employ them in contexts like that in (151). For example, Hebrew (David Gil, p.c.) would use the form in (152).

(152)   ha-gadol
        DEF-large.SG.MASC
        'the large one'

In such a context, Spanish (Luis Paris, p.c.) uses a distinctive article *lo* that lacks a gender, as in (153).

(153)   lo   grande
        ART   large
        'the large (thing)'

In fact, the article *lo* cannot be used with a noun, suggesting that any analysis in terms of ellipsis is problematic.

Another possible approach to such cases with adjectives but no nouns is to say that the adjective is functioning as a noun in such cases. However, such an approach confuses word class with grammatical function. Such an approach is motivated if the phenomenon is lexically constrained, but not if it is productive for all members of a class. Treating these adjectives as nouns is analogous to saying that *music* in English *music teacher* is an adjective because it is modifying a noun, rather than simply saying that English allows nouns to modify nouns.

In some languages, when adjectives are used without an accompanying noun, they can occur with morphology that they do not occur with if a noun is present. For example, in Koyra Chiini, when an adjective is used without a noun, the adjective must take a prefix *i-*, which Heath (1999) calls an "Absolute" prefix, as in (154).

(154)   i-jeeno   di
        ABSOL-old   DEF
        'the old one'

Similarly, if a numeral is used without a noun, it is either unmarked, or occurs with a separate absolute prefix *a-*, as in (155).

(155)   a-hiŋka   di
        ABSOL-two   the
        'the two of them'

In some languages, the syntax of noun phrases without nouns may be different from those with nouns. For example, in Adioukrou (Herault 1978), a Kwa language spoken in Côte d'Ivoire, a noun phrase with an adjective but no noun requires a definite article, while the definite article is optional if there is a noun.

3.2. Headless relative clauses

Headless relative clauses are a specific instance of noun phrases without nouns, but they are sufficiently common and have various distinctive features that they warrant separate discussion. There are in fact a number of different sorts of constructions that can be called headless relative clauses. Not all linguists would call all of the constructions discussed here headless relative clauses. I use the term in a fairly loose sense for relative clauses that do not modify nouns or pronouns.

The English construction in (156a) differs from the construction in (157a) from Miya (Schuh 1998) in that the form of the headless relative clause in (157a) is the same as the form of relative clause in (157b) modifying a noun, while this is not the case with the English construction in (156a), as illustrated by (156b).

(156)   a. I don't like *what you bought.*
        b. I don't like the coat *that/which/*what you bought.*

(157)   a. má   rá6aza
            REL.FEM.SG   wet
            'the one [feminine, singular] that is wet'

        b. kàba   [má   rá6aza]
            gown   [REL.FEM.SG   wet]
            'the gown that is wet'

In some languages, headless relative clauses can occur with other words that otherwise occur as modifiers of nouns. In Koromfe, while a noun phrase can consist of just a headless relative clause, as in (158a), it is also possible for the noun phrase to contain additional words that otherwise occur as modifiers of noun, as in (158b), where the noun phrase consists of the headless relative clause *bɛnəma tufu* 'those who were sitting' plus a definite article and a quantifier.

(158)   a. mə   hɛ̃msɛ   [ala   ba   boŋ   mɛ]
            1SG meet.PAST REL.SG   NEG   like 1SG
            'I met [someone] who doesn't like me'

        b. [bɛnəma   tufu   bɛŋ   duɾu] bo   ke   ...
            [REL.PLUR   sit.DUR   DEF.HUMAN.PLUR   all]   say   COMP
            'all those who were sitting said that ...'

In some languages, headless relative clauses require an article, as in the Spanish (Luis Paris, p.c.) example in (159).

(159)   el   [que pasa]
        the.MASC   [REL pass]
        'the one who is passing'

In Yukaghir (Maslova 1999), there is a distinct verbal suffix associated with headless relative clauses. Compare (160a) (a repetition of (136) above), where the relative clause has a head noun, with (160b), where the relative clause is headless and the verb takes a suffix *-ben* marking the relative clause as headless.

(160) a.   [tude-gele   joq-to-l]   ani-pe
            [3SG-ACC   arrive-CAUS-REL]   fish-PLUR
            'the fish that had brought him'

      b.   kelu-l-ben-pe
            come-REL-HEADLESS-PLUR
            'those who came'

In some languages, the morphology of relative clauses is such that the verbs are in some sense more nominal than finite verbs in main clauses, and one might construe the verb in such languages as sufficiently nominal, that in the absence of a noun head, the verb is functioning as the nominal head of the noun phrase. For example, in Latin, a participial phrase can function as a noun phrase, and it inflects for case and number in a fashion similar to nouns, as in (161).

(161)   [puer-ōs   voca-nt-em]   vide-o
       boy-ACC.PL   call-PRES.PTCPL-ACC.SG see.PRES-1SG
       'I see the one that is calling the boys'

Note that the nominal nature of the participle in Latin reflects the fact that participles resemble adjectives morphologically and in the external syntax of the participial phrase (e.g. modifying nouns) coupled with the fact that adjectives are highly nominal in Latin, as illustrated in (58) above. The possibility of employing participial phrases without nouns mirrors the same possibility found with adjectives, as in (162).

(162)   long-um   vide-ō
       tall-ACC.SG.MASC see.PRES-1SG
       'I see the tall one (masculine)'

It should be emphasized, however, that in their internal syntax, participial phrases are syntactically like clauses; transitive participles, for example, occur with accusative case-marked direct objects, as illustrated by the *puerōs* 'boys', object of *vocantem* 'one who is calling' in (161). Participles thus exhibit a mixture of verbal, adjectival, and nominal features.

Another example illustrating a relative construction in which the verb exhibits nominal properties is found in Evenki, a Tungus language spoken in Siberia. The headless relative clause in (163a) is analogous to the headed relative clause in (163b).

(163) a.   [bi ugir-d'ari-v]   so:t   urgepchu
           [I   lift-PTCPL-1SG.POSS]   very   heavy
           'what I am lifting is very heavy'

      b.   [[bi ugir-d'ari-v]   d'olo] so:t   urgepchu
           [[I   lift-PTCPL-1SG.POSS]   stone] very   heavy
           'the stone that I am lifting is very heavy'

The nominal nature of the participle is reflected by the fact that it takes a possessive suffix inflecting for the features of the subject of the participle.

The Turkish example in (164) (Kornfilt 1997) is somewhat analogous: not only do we get a possessive suffix on the participle inflecting for features of the subject of the relative clause, but that subject, *adamın*, is in the genitive case rather than nominative case, and the participle itself is marked with accusative case, reflecting the function of the noun phrase in the main clause.

(164) [adam-ın   ye-diğ-in]-i   al-dı-m
      [man-GEN   eat-OBJ.PTCPL-3SG.POSS]-ACC   take-PAST-1SG
      'I took what the man ate'

We thus find a number of respects in which the participial relative clause exhibits nominal features.

A somewhat different sort of construction is found in Cebuano, an Austronesian language spoken in the Philippines, illustrated in (165).

(165)   mi-dagan   [ang   [mi-palit   sa   saging]]
        ACTOR.FOCUS-run   [TOPIC [ACTOR.FOCUS-buy   NONTOPIC   banana]]
        'the one that bought bananas ran away'

While the structure in (165) involves a noun phrase consisting of a determiner *ang* followed by a clause, it is not clear that the label "relative clause" is appropriate for that clause, since it lacks the relative marker *nga* that occurs with headed relative clauses, as in (166).

(166)   mi-dagan   [ang   babaye   [nga mi-palit
        ACTOR.FOCUS-run   [TOPIC woman   [REL ACTOR.FOCUS-buy
             sa   saging]]
             NONTOPIC   banana]]
        'the woman that bought bananas ran away'

Nevertheless, it shares with the relative clause in (166) the fact that there is a "gap" in the clause, corresponding to the referent of the entire noun phrase, and both constructions are subject to the grammatical constraint that only the grammatical "topic" (which is the actor in a clause where the verb is actor focus) can be relativized.

Cebuano reflects a language type in which there is a weak noun-verb distinction and in so far as there is such a distinction, it seems to play little role in constraining what can occur in noun phrases. In other words, noun phrases can be formed from a determiner plus a word that can be a noun or a verb or an adjective, or words that normally occur as modifiers or complements of such words, such as the object noun phrase *sa saging* in (165). Thus the two sentences in (167) apparently have the same grammatical structure.

(167)   a. mi-dagan   [ang   babaye]
            ACTOR.FOCUS-run   [TOPIC   woman]
            'the woman is running'

        b. babaye   [ang   mi-dagan]
            woman   [TOPIC   ACTOR.FOCUS-run]
            'the one who is running is a woman'

Nouns and verbs exhibit some differences in Cebuano (for example in their morphology), but these differences are irrelevant to the syntactic constructions reflected in (167). In this sense, the verb *midagan* 'run' in (167b) is just as much a head as the noun *babaye* 'woman' in (167a). Nevertheless, examples like (167b) illustrate the equivalent of a headless relative clause in other languages, and illustrate a further type of noun phrase lacking a noun.

The final subtype of headless relative clause is so-called internally-headed relative clauses (discussed also in Chapter II.4). Many linguists are at pains to distinguish headless relative clauses from internally-headed relative clauses, and there may be languages in which one needs to distinguish two separate constructions, but the term "headless relative clause" is being used deliberately broadly here to cover phenomena involving noun phrases that contain relative clauses that are not modifying a noun (or pronoun). The examples in (168) illustrate internally-headed relative clauses in Mesa Grande Diegueño (Cuoro and Langdon 1975), a Yuman language spoken along the border of the United States and Mexico.

(168) a. ['ehatt   gaat   akewii]=ve=ch   chepam
          [dog   cat   chase]=DEF=SUBJ   get.away
          'the cat that the dog chased got away'

      b. ['ehatt   gaat   kw-akewii]=ve=ch   nye-chuukuw
          [dog   cat   REL.SUBJ-chase]=DEF=SUBJ   1OBJ-bite
          'the dog that chased the cat bit me'

In both sentences in (168), the subject of the main clause is a noun phrase which consists of a clause followed by a definite clitic and a subject case clitic. In both sentences, the noun that corresponds to the head noun in the English translation occurs inside the relative clause. This is clearest with *gaat* 'cat' in (168a), since it is preceded and followed by words in the relative clause. The reason that constructions like these are often called internally-headed is that the noun that corresponds to the head in the English translations is internal to the relative clause. If we use the word 'head' in a purely semantic way, to denote the word that corresponds to the head noun in the English translations, then we can call *gaat* 'cat' in (168a) the head.

It is important to emphasize that the noun which is semantically the head in these clauses is not in any grammatical sense a head. Rather, *gaat* 'cat' in (168a) is grammatically a noun (phrase) functioning as object of the verb *akewii* 'chase'. Its special role arises from the fact that it is semantically co-indexed with the entire noun phrase that consists of the relative clause plus the definite and subject case clitics. But because it is not grammatically a head, and because the noun phrase consists only of the relative clause and the two clitics, these examples satisfy the criteria here for headless relative clauses.

In languages with internally-headed relative clauses there is often a problem of potential ambiguity: if the relative clause contains two or more nouns, which of these nouns is to be interpreted as the semantic head, the noun (phrase) coreferential to the noun phrase containing the relative clause? The Diegueño examples in (168) are unambiguous for the following reasons. The fact that the noun phrase in (168a) that contains the internally-headed relative clause denotes the cat, while that in (168b) denotes the dog, follows from the presence of the subject relative prefix *kw-* in (168b) and its absence in (168a). Its presence in (168b) signals that the noun phrase containing the internally-headed relative clause is coreferential to the subject in the relative clause, which is *'ehatt* dog'. That this noun is subject is determined by the word order in the relative clause: subjects precede objects. Conversely, the absence of this prefix on the verb in (168a) signals that the larger noun phrase is coreferential to a nonsubject in the relative clause, and in the absence of an alternative, this is the object *gaat* 'cat'.

Note that in languages with internally-headed relative clauses in which semantic adjectives are grammatically verbs, semantic adjectives do not modify nouns, but occur as the verb in the internally-headed relative clause, with the noun as subject of the semantic adjective. In the Diegueño example in (169), for example, the word *kunemshap* 'white' is the verb in an internally-headed relative clause, with *aq* 'bone' its subject.

(169) 'iikwich=ve=ch   [aq   ku-nemshap]=vu   aakwal
      man=DEF=SUBJ   [bone   REL.SUBJ-white]=DEF lick
      'the man licked the white bone'

Because internally-headed relative clauses with semantic adjectives typically consist of two words, it may not be obvious at first glance that in examples like (169) from Diegueño, the semantic adjective is not modifying the noun. However, once one sees that semantic adjectives are verbs, and once one sees that structures with a semantic adjective are precisely the same structures as examples that more clearly involve internally-headed relative clauses, as examples like those in (168) above show for Diegueño, then it becomes apparent that the structures with semantic adjectives are just a simple form of internally-headed relative clause.

In languages with internally-headed relative clauses, it is common for there to be no semantic head noun in the relative clause, in which case the relative clause is headless, even using 'head' in a semantic sense. This is illustrated by the Kutenai example in (170a). In this example, the subject of the main clause is *niʔ ku wuˑkat* 'the person/thing that I saw', which consists of the definite article *niʔ* followed by the subordinate clause *ku wuˑkat* 'I saw him/her/it'. Its structure is the same as (170b), except that in (170b), there is a semantic head noun in the relative clause, so that the subject of the main clause consists of the definite article *niʔ* followed by the subordinate clause *ku wuˑkat paɬkiy* 'I saw the woman'.

(170) a. wiɬqaʔ-ni   [niʔ   k=u   wuˑkat]
           big-INDIC   [DEF   SUBORD=1SUBJ   see]
           'the person that I saw was tall' or 'the thing that I saw was big'

       b. wiɬqaʔ-ni   [niʔ   k=u   wuˑkat   paɬkiy]
           big-INDIC   [DEF   SUBORD=1SUBJ   see   woman]
           'the woman that I saw was tall'

It is important to emphasize that the two examples in (170) do not involve different constructions. The difference between (170a) and (170b) simply reflects the general possibility in Kutenai that a third person argument that is interpreted pronominally will not be expressed overtly. In other words, the absence of a semantic head noun in (170a) simply reflects a pronominal interpretation. Thus the difference between (170a) and (170b) is the same as the difference between (171a) and (171b), except that the examples in (171) are not subordinative.

(171) a. hu   wuˑkat-i
           1SUBJ   see-INDIC
           'I saw her'

       b. hu   wuˑkat-i   paɬkiy
           1SUBJ   see-INDIC   woman
           'I saw the/a woman'

In fact, if we embed the examples in (171) as complement clauses, as in (172), we get structures which are identical to those in (170), except that these complement clauses denote a proposition and are not interpreted as coreferential to something inside the subordinate clause.

(172) a. hu   n=ʼupx-ni   [niʔ   k=u   wuˑkat]
          1SUBJ   INDIC=know-INDIC   [DEF   SUBORD=1SUBJ   see]
          'I know that I saw him/her/it'

      b. hu   n=ʼupx-ni   [niʔ   k=u   wuˑkat   paɬkiy]
          1SUBJ   INDIC=know-INDIC   [DEF   SUBORD=1SUBJ   see   woman]
          'I know that I saw the/a woman'

3.3. Noun clauses

The term 'noun clause' is often applied to subordinate clauses which appear in positions otherwise associated with noun phrases, as illustrated by the noun clauses in subject position in (173a) from English and (174) from Mandarin Chinese (Li and Thompson 1981), and the noun clauses in object position in the English example in (173b) and the Kutenai examples above in (172).

(173)   a. [That he might return] never occurred to me.
        b. I know [that it will rain].

(174)   [tā   shēng bìng] shì dàshì
          [3SG fall   sick] be   big.matter
          'that he fell sick is a big matter'

While noun clauses are like headless relatives in being clauses that are functioning as or like noun phrases, they differ in that noun phrases which are headless relatives are always coreferential to some expression or pronominal argument (usually phonologically null) inside the relative clause, while this is not the case with noun clauses. Noun clauses are not always treated as noun phrases: this depends partly on one's analysis and partly on the facts in specific languages. For example, in (172) above from Kutenai, the noun clause occurs with a definite article; this is in fact normal in Kutenai with factive noun clauses, noun clauses which are presupposed, as is the case with *ʔupxni* 'know'. The fact that this type of noun clause occurs with an article is one reason for analysing such clauses in Kutenai as noun phrases.

In addition to finite noun clauses like those in (173) and (174), many languages have various sorts of constructions that denote a clause but where the verb is to varying extents nominalized, as in (175) from Udihe (Nikolaeva and Tolskaya 2001), a Tungus language spoken in eastern Siberia, in Russia.

(175)   bi   xono:-mi   [nuati eme-ti-e-me-ti]
          1SG   surprised-1SG   [3PL   come-REPET-PAST.PTCPL-ACC-3PL]
          'I was surprised that they returned'

While this example is naturally translated by a finite clause in English, the subordinate verb in (175) is a participial form that bears nominal inflection, in the form of an accusative case suffix and a third person plural possessive suffix corresponding to the subject of the verb. Discussion of constructions like these and other sorts of nonfinite verbal constructions that serve as arguments of the main verb is beyond the scope of this chapter; see Chapters II.2 and III.6 for further discussion of nominalizations and complementation.

4. Conclusion

This chapter has discussed various sorts of elements that occur in noun phrases crosslinguistically. A more complete discussion of the structure of noun phrases in a language must also cover the order of various modifiers with respect to the noun (see Chapter I.2 [Word Order]) and the possibility of combinations of different modifiers. The latter includes two issues. First, when more than one modifier occurs in the noun phrase, how are they ordered with respect to each other? And second, are there combinations of modifiers that cannot occur? These topics will be discussed here only very briefly.

It is common to represent the order of various modifiers with respect to each other by means of a complex formula, such as that in (176) for noun phrases in Tidore (Van Staden 2000).

$$(176) \quad \text{Noun - Adjective - } \left\{ \begin{array}{c} \text{Numeral} \\ \text{Indefinite Quantifier} \end{array} \right\} \text{ - Relative Clause - Demonstrative}$$

While a formula like this includes as many modifiers as possible, this does not mean that speakers will ever produce noun phrases with all modifiers represented. The main point of such formulae is simply to represent the order of any pair of modifiers. Thus (176) says, among other things, that a numeral follows an adjective and that a demonstrative follows a numeral. Such formulae are best at representing preferred orders. Further means are necessary for distinguishing other orders that are possible but less common from orders that are not possible at all. Furthermore, languages occasionally exhibit more complex ordering constraints that are not easily represented in such formulae. For example, in Aari (Hayward 1990), an

Omotic language spoken in Ethiopia, demonstratives more commonly follow the noun, as in (177a), but they only precede the noun if the noun is followed by a numeral, as in (177b).

(177)   a.   ʔeedín   keené
            people   DEM.PLUR
            'these people'

        b.   keené   ʔaksí   dónq-ine-m
            DEM.PLUR   dog   five-DEF-ACC
            'these five dogs'

      Constraints on possible combinations of modifiers are illustrated by the fact that numerals and indefinite quantifiers do not co-occur in Tidore, as the formula in (176) indicates. They are also illustrated by the fact that in English, a prenominal possessive pronoun cannot co-occur with a demonstrative (*that my book, *my that book). But languages differ in this regard. For example, as illustrated in (31) above, Engenni allows not only these two to co-occur, but for them to occur with a definite article as well.

Further Readings

There is surprisingly little typological literature on the structure of noun phrases, despite the fact that this is discussed at length in many descriptive grammars. The most detailed discussion is Rijkhoff (2002). There is also basic discussion in Givón (1990, 2001). The chapters in this anthology on Word Classes I.1, Word Order I.2, Coordination II.1, Complementation II.2, Relative Clauses II.4, Gender and Noun Classes III.4, and Lexical Nominalization III.6 all deal with issues related to topics in this chapter. There is considerable literature on various specific topics touched on in this chapter, only a couple of which can be mentioned here. On issues surrounding semantic adjectives and how languages treat them grammatically, see Dixon (1977b). On alienable and inalienable possession, see Nichols (1988) and Chappell and McGregor, eds. (1996).

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