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For more recent accounts of Seinsarten (noun categories) and layering in the NP, see e.g.:
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Dimensions of adnominal modification
Jan Rijkhoff

1. Nouns and noun phrases
Some of the most typical modifiers of the noun are the article ('*the/a* book'), the demonstrative pronoun ('*this/that* book'), the question word ('*whose/which* book'), the possessive pronoun ('*my/her* book'), the numeral ('*five books*'), the quantifier ('*all/some/many* books'), the adjective ('*old/new* books'), the noun phrase (with or without case marker, adposition or other kind of relator; e.g. 'the book *on the table*' [location], 'the flowers *for mother*' [beneficiary] '*the child's* book' [possessor], 'the roof *of the house*' [part/whole]), and the relative clause ('the book *that you gave me this morning*'). These and other modifiers will be discussed in section 2, which contains a cross-linguistic overview of the various categories of adnominal modification. Section 3 is concerned with the order of adnominal modifiers in the noun phrase.

Before we deal with various categories of noun modifiers, however, we shall devote some attention to the modified constituent, i.e. (head) noun, and to the internal structure of the noun phrase, insofar as this relates to matters of adnominal modification.

1.1. Nouns
This section is mostly concerned with the relationship between adnominal modification on the one hand and nominal subcategories and the occurrence of nouns as a separate word class on the other.

1.1.1. Nouns as a cross-linguistic category
Although it is usually assumed that each language has nouns, there are languages in which the existence of nouns as a distinct word class is at least doubtful. Consider, for example, these remarks about Samoan (Mosel/Hovdhaugen 1992, 77; see Hengeveld 1992 on parts-of-speech systems in general): "Many, perhaps the majority of, roots can be found in the function of verb phrase and NP nuclei and are, accordingly, classified as nouns and as verbs. [...] in Samoan the categorization of full words is not given a priori in the lexicon." For instance: *teine* 'girl', 'be a girl'; *tusi* 'book, letter', 'write'; *salu* 'broom', 'sweep'; *ma'i* 'patient, sickness', 'be sick'. It is basically the presence of non-lexical elements that indicates what particular function such predicates fulfill. If the predicate serves as the head of the clause, it will typically combine with tense-aspect-mood particles; if it serves as the head of the term it will appear with an article, a preposition, etc.

Thus, languages differ in the degree to which nouns can be distinguished from other word classes, but to what extent such differences systematically correlate with morpho-syntactic properties of adnominal modifiers is still largely unexplored territory (but cf. Hengeveld et al. 1997).

1.1.2. Nominal subcategories and adnominal modification
Nouns are sometimes subdivided according to the kind of entity they denote. Thus, first order nouns are nouns that are used in relation with first order or spatial entities ('car', 'knife'), second order nouns are used for temporal entities ('meeting', 'game'), and higher order nouns denote entities beyond the spatio-temporal dimension ('thought', 'linguistics'). In addition there are, of course, proper names such as Max or Johanna, but apart from non-restrictive forms of modification (as in e.g. 'Max, who had only recently bought a new house, ...') these nouns are normally severely limited with respect to the various forms of (restrictive) adnominal modification; hence they will be ignored here. Apart from the fact that each noun imposes its own selection restriction on the various (sub)types of modifiers (cf. 'a red dress' vs. *'a dead dress'; i.e. the feature ±animate plays a role here), the possibility to occur with

certain modifiers is often restricted by the kind of entity that is denoted by the noun. For example, strictly speaking only spatial entities can have a certain size, weight or colour ('big$_A$ car'), whereas only temporal entities can have a certain duration or speed ('brief$_A$ meeting', 'fast$_A$ game'). Yet it is possible to use first order (spatial) adjectives in combination with higher order nouns, as in 'big$_A$ disappointment' (and vice versa, as in 'fast$_A$ car'). Such combinations are by no means unusual, but unless they are stored as set phrases or idiomatic expressions they normally require some degree of extra cognitive processing on the part of the addressee to arrive at a meaningful interpretation. For example, when combined with a second order noun such as 'speech', the second order adjective 'recent' specifies a property of a temporal entity (the "speech event"). But in 'recent book' the same adjective modifies a first order noun, so that the resulting expression stands in need of a special interpretation. In this particular combination, the hearer is forced to conceive the book as a temporal rather than a spatial entity, i.e. 'recent' specifies the time of publication. Usually, however, it is rather the other way around in that speakers often use first order adjectives in combination with higher order nouns, as in 'big event', 'fat chance', 'high hopes', 'low temperature', 'flat refusal', 'open mind' (cf. Lakoff/Johnson 1980; Levinson 1992). This is commonly attributed to the way our cognitive system works: it is assumed that we understand complex, higher order entities in terms of simple spatial notions and categories (cf. 'Localist hypothesis'; Lyons 1977, 718).

Finally, although it is generally true that there are certain restrictions as to possible noun-modifier combinations, it is also important to realize that probably all languages can, by metaphorical extrapolation, introduce new, seemingly incompatible modifier-noun combinations (in fact this is especially exploited in more creative forms of language use, such as poetry). It is also worth emphasizing that there is no one-to-one relation between linguistic attribution and ontological attribution: i.e. what can be meaningfully said (predicated) about things denoted by nouns is only partially determined by properties of entities in the extra-linguistic world (cf. Sommer 1965 on the difference between linguistic and ontological predicability).

Another way to characterize nouns is in terms of qualifications such as *singular object noun* (e.g. 'dog'; since the bare noun 'dog' denotes a singular object), *mass nouns* ('gold', 'oil'), *collective noun* ('family', 'team'). This kind of categorization also relates to adnominal modification in that, for example, in many languages mass nouns require a different set of quantifiers ('much water') than singular object nouns and collective nouns ('many books', 'many families'). Although this categorization is essentially designed to account for spatial entities it appears that nouns for non-spatial entities can be characterized in terms of the same subcategories; thus 'love' is a mass noun, as in 'much love', and 'meeting' is a singular object noun, as in 'two meetings' (cf. Lehmann 1990; Dik 1985).

It is important, however, to realize that nouns may have different properties in different languages, even when they are used for the same thing in the external world. For example, in English plural marking is normally obligatory, both with and without a numeral: 'a/the horse', '(the) two horses'; but *'(the) two horse'. In Oromo, on the other hand, plural marking is optional without a numeral and must be absent when the noun is modified by a numeral (Stroomer 1987, 76): *farda* 'horse/horses', *fardoollee* 'horses', *farda lama* [horse two] 'two horses'. Nouns of the Oromo type could be called set nouns, because they seem to designate a certain property of a set of entities (by definition, a set can contain any number of entities, including 'one'). Nouns in Thai and many other SE Asian languages are not marked for number under any circumstances and adnominal numerals appear with a so-called sortal (or: numeral) classifier, as in *rôm săam khan* [umbrella three CLF:LONG_HANDLED_OBJECT] 'three umbrellas'. It is assumed that the appearance of a sortal classifier is due to the fact that, contrary to e.g. English, the noun does not include in its lexical meaning the notion of spatial discreteness, boundednes or shape (cf. Hundius/Kölver 1983, 166). In other words, nouns like

Thai *rôm* 'umbrella' (which occur with a sortal classifier and which therefore might be called *sort nouns*) are deemed to denote a non-bounded property in the spatial dimension, and since only spatially bounded entities can be counted directly special measures, i.e. classifiers, are needed before such nouns can be modified by a numeral (note that classifiers are also called 'individualizers'; cf. Lyons 1977, 462). The employment of sortal classifiers in a language does, however, not necessarily imply that nouns denote a non-bounded property, since it is well known that (erstwhile) classifiers may come to be used for other purposes, such as marking specificity, topicality or definiteness (Adams 1989; Hopper 1986; Bisang 1999). Furthermore sortal classifiers must be distinguished from *mensural classifiers*, which we also find in Thai: *náamtaan sǎam thûaj* [sugar three cup] 'three cups of sugar' (Hundius/Kölver 1983, 168). Mensural classifiers are different from sortal classifiers in that they occur with mass nouns and always indicate some kind of measure (size, volume, weight).

Some languages (such as Yucatec Maya) are deemed not to differentiate between sortal and mensural classifiers, which may indicate that these languages also do not distinguish between *sort nouns* and *mass nouns*. One could call such nouns *general nouns*, and the classifiers that are used with these nouns: *general classifiers*. Compare (Lucy 1992, 74):

a/one-CLF	banana [Yucatec Maya]
'un-wáal há'as	'one/a 2-dimensional banana (the leaf)'
'un-p'éel há'as	'one/a 3-dimensional banana (the fruit)'
'un-kúul há'as	'one/a planted banana (the tree)'
'un-kúuch há'as	'one/a load banana (the bunch)'
'um-p'íit há'as	'a-little-bit/some banana'

1.2. Noun phrases
In the first section we saw that not every language has a distinct category of nouns and that different languages may use a different kind of noun (e.g. general noun, sort noun, set noun, singular object noun) for the same thing in the external world. In this section we will see that even if a language has nouns, this does not necessarily imply that the language also has noun **phrases** (NPs).

1.2.1.Integral and non-integral noun phrases
In many, perhaps most of the world's languages the adnominal modifier is an integral part of the noun phrase (NP) proper, in which case we speak of an **integral** NP (also called configurational, tight, hierarchical or non-fractured NP). In quite a few languages, however, some or all adnominal modifiers can or must be in an appositional relation with the phrase that contains the head noun (in such cases we speak of appositional modification or flat, loose, scrambled or fractured NPs). That is to say: in these languages the modifier is strictly speaking not a

constituent of the NP, but constitutes a referring phrase by itself. In a number of languages (notably those spoken on the Australian continent) appositional modification of the noun seems to be the rule rather than the exception. For instance, Blake (1983, 145) argues that in Kalkatungu "there are in fact no noun phrases, but [...] where an argument is represented by more than one word we have nominals in parallel or in apposition. [...] Each word is a constituent of the clause [...]". Compare:

(1a) ***Cipa-yi ṭuku-yu yaun-tu*** *yani icayi*
     This-ERG dog-ERG big-ERG   white_man bite
 (b) ***Cipayi* *ṭukuyu*** *yani icayi* ***yauntu***
 (c) ***Ṭuku-yu*** *cipayi icayi yani* ***yauntu***
 (d) ***Yauntu cipayi ṭukuyu*** *icayi yani*
 (e) ***Cipayi*** *icayi yani* ***ṭukuyu yauntu***
 (f) *Yani icayi* ***cipayi yauntu*** *ṭukuyu*
     'This big dog bit/bites the white man'

There are also languages in which only certain modifiers are apposed or where appositional modification is the result of restrictions on the internal structure or complexity of the NP. For instance, noun phrases in Yimas "may consist of only two constituents, a modifier and a head, in that order. If more than two modifiers are present for a given noun, one must take an agreement suffix and occur in the scrambled pattern. […] The scrambled structures have very different properties from the tight noun phrases. They are not single noun phrases at all, but rather two noun phrases in apposition, one consisting of a noun, the other a modifier, nominalized by the agreement suffix" (Foley 1991, 4).

In other languages only certain modifiers are regularly apposed, notably the numeral classifier phrase (Lehmann 1982, 255; see e.g. Comrie (1981, 269) on Nivkh, Lee (1989, 118) on Korean, Wheatley (1987, 851) on Burmese).

It may also be the case that fully integrated modifiers of the noun in one language must be regarded as (non-apposed) constituents at the level of the sentence in another language. This appears to hold, for instance, for the Hixkaryana equivalent of English attributive numerals, which according to Derbyshire (1979, 103) are basically adverbs.

1.2.2. The head of the phrase
Although it has recently been proposed that the determiner is the head of the term (giving rise to the so-called Determiner Phrase or DP analysis; Abney 1987), it is traditionally the noun that is considered to form the nucleus of the NP (Corbett/Fraser eds. 1993). It should, however, be recognized that there are some cases where morpho-syntactic evidence seems to suggest that it is the modifier rather than the noun which serves as the head of the phrase. Consider for instance this example from Finnish, in which the numeral (in the nominative) imposes partitive case on the noun: *kolme poika-a puhu-u Ranska-a* [three:NOM boy-PRTV:SG speak:PRS-3SG French] 'Three boys speak French' (see also e.g. Corbett 1991 on Russian numerals and Rischel 1995 on adjectives in Minor Mlabri; for a general discussion of 'dependency reversal' see Malchukov 2000).

2. Adnominal modifiers
Adnominal modifiers can be divided into four major categories: qualitative modifiers, quantitative modifiers, locative modifiers, and referential modifiers. Apart from the last category, each of these modifier categories can be expressed by means of lexical elements

(involving content words such as verbs, nouns, adjectives) and in the form of grammatical elements (involving articles, determiners, quantifiers and members from other non-lexical word classes). Note, however, that what is expressed by adnominal modification in one language can be realized by phonological or morphological means (e.g. tonal differences, inflection, affixation, derivation, compounding) in another language. For example, in Ossetic definiteness was indicated by shifting stress to the second syllable (Abaev 1964, 12) and in Nivkh adjectives are often incorporated into the head noun (Comrie 1981, 251). Below I will mostly deal with syntactical, i.e. free analytic expressions of adnominal modification.

2.1. Qualitative modifiers

Qualitative modifiers are modifiers which relate to the intrinsic, more or less characteristic properties ("qualities") of the referent and if a language has a class of adjectives, they are typically used to express such qualitative notions like age, value, colour, and size (Dixon 1982). Not every language has a distinct class of adjectives, however, or they may only have a small handful of them. Such languages often use abstract nouns or verbs to specify qualitative properties. In the first case the head noun is modified by a NP, as in this example from Hausa (Schachter 1985, 15): *mutum mai alheri* [person PROPR kindness] 'a kind person', lit. 'a person with kindness'. In the second case the head noun is modified by a qualifying or descriptive (rather than a restrictive) relative clause or participial construction, as in this example from Galela (van Baarda 1908, 35f.): *awi ḍòhu i lalamo* [his foot 3:SG be_big:PRT] 'his big foot'. When in Galela the word 'big' (i.e. the verb 'to be big') is used attributively, the first syllable must be repeated, which yields the participial form (PRT). Additionally a personal pronoun must appear (here: *i* = 3SG 'it') which is coreferential with the matrix NP *awi ḍòhu* 'his foot'.

Tamil is a language with only a very small handful of basic, underived adjectives, which comprises such high-frequency items as *nalla* 'good', *periya* 'big', *cinna* 'small', *putu* 'new', *pazaya* 'old' and a few basic colour terms; e.g. *nalla manusan* [good man] 'a good man' (Asher 1982, 62; 187).

Finally there are language with adjectives that either occur as bound forms or as predicates in that they normally require a copula. Sarcee, for example, appears to have only bound adjectival modifiers: *tłi-yáná* [dog-old] 'old dog'. In his description of Sarcee, Cook (1984, 67f.) adds that such complex forms "are different morphologically and semantically from nouns with a relative clause. The former is like a compound and the latter a phrase, comparable to the English nominal compound 'bláckbìrd' and phrase 'bláck bírd'" (on this phenomenon see also e.g. Li/Thompson (1989, 119) in Mandarin Chinese). In Ika nearly all adjectives must appear with the lexeme *kawa* which Frank (1990, 32) glosses as 'seem': *paka awʌnʔ kawa* [cow big seem] 'big cow'.

There is evidence that there are also **grammatical** (i.e. non-lexical) modifiers of the noun that relate to qualitative properties of the referent of the NP. Earlier we saw that there are languages (like Oromo) that employ set nouns, i.e. nouns which do not require a sortal classifier or a plural marker when reference is made to a plural entity; i.e. the noun can be in a direct construction with a cardinal numeral, in which case the so-called plural marker (if available at all) is normally obligatorily absent. It can be argued that the 'plural marker' on a set noun is actually not a number marker but a nominal (more accurately: collective) aspect marker (Rijkhoff 1990; Rijkhoff 1992, 87). The most important difference between a number marker (as we know it from e.g. Dutch and English: obligatory, both with and without a numeral modifier) and a nominal aspect marker (optional without a numeral modifier and in most languages obligatorily absent with a numeral) is that the number marker indicates that we are dealing with a referent that involves multiple singular objects (book+Pl = books) or

multiple collectives (family+Pl = families), whereas the so-called plural marker (i.e. nominal aspect marker) on a set noun indicates that the referent is a non-singleton set (cf. Oromo *saree* 'dog/dogs' vs. *sareellee* 'dogs'). In fact, animate nouns in Oromo can also take the singulative suffixes -(*i*)*ca* (masculine), and -(*i*)*ttii* (feminine), as in *nama* 'man/men' vs. *namica* 'a/the man' (Stroomer 1987, 83), so that there are actually two ways to specify what kind of set is referred to: a singleton set (noun + singulative suffix) or a non-singleton / collective set (noun + so–called plural suffix).

The reason why these suffixes are better treated as nominal aspect markers than number markers has to with the fact that they do not so much serve to indicate number but rather specify what kind of entity is involved: a singleton set (containing one member) or a non-singleton set (i.e. a collective; note incidentally that in many languages the collective marker has developed into a 'proper' plural marker - see e.g. Comrie 1981: 167). In other words, just as verbal aspect marking is concerned with representations in the temporal dimension (perfective, ingressive, etc.), so nominal aspect marking relates to the way a nominal property is represented in the spatial dimension (i.e. as a singleton or as a collective set).

2.2. Quantitative modifiers

Following Brown (1985) we may divide quantitative adnominal modifiers into: [1] absolute non-proportional ('five boys'), [2] relative non-proportional ('many/some/few girls'), [3] absolute proportional ('three of the five boys'), [4] relative proportional ('many/some/few of the girls'), [5] universal ('all students'). Ordinal numerals ('the second child') indicate the position of a referent in a sequence. Although lower ordinals are often suppletive forms (as in English 'first', 'second'), ordinals are commonly derived from cardinal numbers. In some languages, however, the forms are identical (e.g. Babungo; Schaub 1985, 240). Adnominal negators can been regarded as instances of zero quantification (as in 'I have *no* money'; see e.g. Kahrel/Van de Berg eds. 1994).

Probably all language communities have ways to indicate the cardinal number of a referent, but it is not quite certain that they all have developed adnominal cardinal modifiers for this purpose (Greenberg 1978b, 257; Hurford 1987). For example, in several languages cardinality is indicated by gestures (touching certain body-parts), which do not require verbalization.

As in the case of qualitative modifiers, we can find both grammatical and lexical expressions of adnominal modifiers that relate to quantitative properties of the referent. Restricting ourselves to cardinal numerals we find, for example, that in many Amerindian and Austronesian languages cardinality is expressed by verbs (or at least by lexemes that can only be used predicatively). In the following example from Boumaa Fijian the numeral is the main predicate of a special kind of relative clause (Dixon 1988, 144): *e tolu a gone* [3SG.S be_three ART child(ren)] 'three children' lit. '(the) children who are three'.

In other languages, such as those that belong to the large Bantu family, we find that at least some numerals have properties that are normally associated with nouns, e.g. they belong to a particular gender (traditionally called *noun class* in Bantu linguistics). In this example from Babungo the numeral 'two' agrees in gender with 'hundred', which belongs to noun class 3/4; class 4 is the plural of class 3 (Schaub 1987, 176; 187; C = class): *vǝ́-ŋgá yì-wáa yì-bɔ̀ɔ* [C2-antelope C4–hundred C4–two] 'two hundred antelopes'.

When cardinal numerals do not display verbal or nominal properties, as in Dutch (*drie boek-en* [three book-PL] 'three books), they are regarded as grammatical (i.e. non-lexical) modifiers of the noun. It was already mentioned that in many languages the numeral is not in a direct construction with the head noun, but must first combine with a so-called sortal classifier and that the (postnominal) numeral+classifier is often said to be in an appositional relationship with the noun. Such is the case, for instance, in Burmese: *qwà lè hcàun* [tooth

four peg] 'four teeth' (Wheatley 1987, 851).

2.3. Locative modifiers

Locative adnominal modifiers have in common that they relate to locative properties, and hence to the identifiability of the referent. As in the case of qualitative and quantitative adnominal modifiers, we can distinguish between grammatical and lexical instances of locative adnominal modification. Grammatical modifiers that belong to this category are of course attributive demonstrative pronouns, which specify the location of a referent relative to a certain reference point, the so-called deictic center, which often coincides with the speaker's position. Demonstratives may also encode information about such diverse phenomena as visibility, shape, height (relative to speaker), and geographical and/or environmental features (Lyons 1977, ch. 15; Levinson 1983, ch. 2; Anderson/Keenan 1985: 259-308). There are languages, however, in which demonstratives are never used attributively (see e.g. Derbyshire (1979, 131) on Hixkaryana) and in other languages they seem to be appositional rather than fully integrated adnominal modifiers (see e.g. Donaldson (1980, 138; 229ff.) on Ngiyambaa). In some languages demonstratives are formally identical with adverbs so that the same word is used to express 'this', 'here' and 'now' (Anderson/Keenan 1985, 278). Since spatial references often serve as the basis for metaphorical extension into other domains, they may eventually become definite articles or personal pronouns (Greenberg 1978a; Greenberg 1985). In quite a few languages the adnominal demonstrative co-occurs with the definite article (e.g. Hungarian and Abkhaz; cf. Moravcsik 1969, 76; Moravcsik 1997; Manzelli 1990) or a sortal classifier (e.g. Mandarin Chinese, Hmong).

There are several lexical constructions that serve as locative modifiers, such as the possessor phrase, the (restrictive) relative clause, and of course the equivalent of English noun phrases such as '[the book] on the table'. Locative modifiers indicate that the entity referred to by the matrix NP has a place in the spatial, temporal or cognitive dimension. 'Location' is closely connected with 'identification': only entities whose location is known can be identified (hence lexical manifestations of locative modifiers such as genitives and relative clauses mostly occur in definite NPs). To give an example, even though 'the house' in the sentences below has not been mentioned before, it can still be identified because in each case the adnominal modifier refers (or contains a reference) to a topical or otherwise identifiable entity: the Van Gogh Museum, the speaker's father, the addressee ('you'): "I bought the house **next to the Van Gogh Museum** / **my father's** house / the house **that you wanted to buy last year**". By establishing a existential relationship between the referent of the matrix NP (the house) and the identifiable entity referred to in the locative modifier the addressee can -by inference- also identify the referent of the matrix NP. If one knows or accepts that there is a Van Gogh Museum (i.e. that it has a location), then one can also infer the existence (location) of the house, viz. next to the Van Gogh Museum. Thus locative adnominal modifiers such as *(next to) the Van Gogh Museum* enable the addressee to *anchor* or *ground* the referent of the matrix NP (here: 'the house') in conversational space (Prince 1981, 236; Fox/Thompson 1990, 300). The localizing function of prepositional modifiers such as 'next to the van Gogh Museum' is rather obvious, but possessor phrases and relative clauses essentially serve the same purpose.

The relationship between possession and location has been investigated in studies by e.g. Clark (1970; 1978) and Lyons (1967). For example, Clark (1970, 3) has argued that, cognitively, possessed items are located 'at' the possessor and it also has been shown that in many languages markers of possessorship derive from locative elements (see e.g. Claudi/Heine 1986, 316). Possessive constructions have been the subject of several typological studies (Chappell/McGregor eds. 1996; Heine 1997; Manzelli 1990; Plank 1991; Seiler 1983; Ultan 1978). Adnominal possessive pronouns may be free elements (as in

English 'my book') or bound forms (as in Gude *laa-kii* [cow–3SG] 'his cow'), but in quite a few languages they may also appear together (for emphasis), as in this example from Hungarian: *az én kabát-om* [the 1SG coat-1SG] 'my coat'. Cross-referencing of the possessor also occurs with nominal possessives, as in this example from Nasioi (Rausch 1912: 119): *nánin bakana danko* [man 3SG spear] 'the man's spear. With proper names and nouns designating kinship relations, however, the pronominal element is not used in Nasioi: *Máteasi bauran* [Mateasi daughter] 'Mateasi's daughter' (note that Nasioi does not mark the possessive relationship by a case marker or adposition). Some languages have a special set of possessive pronouns, but often there is no formal difference between personal and possessor pronouns (Ultan 1978: 36; cf. also Siewierska 1998). Across languages various morpho-syntactic means are used to distinguish between alienably and non-alienably possessed entities (inalienably possessed entities typically include body-parts and kinship relations). If bound and free forms are used to mark this difference, the bound form is normally used to express inalienable possession (Ultan 1978, 36). In certain Oceanic and Amerindian languages alienable possessive constructions are characterized by the appearance of a so–called possessive or relational classifier (Lichtenberk 1983; Croft 1990, 26–39; Seiler 1983, 35–39), as in these Mokilese examples (Harrison 1988, 66): *nimoai pil* [CLF:DRINK.1SG water] 'my water (for drinking)' and *oai pil* [GENERAL.1SG water) 'my water (for washing)'.

Ultan (1978) also found the following morphosyntactic correlations between nominal and pronominal forms of adnominal possessive modification (G = possessive modifier):
1. "GN constituent order in a nominally possessed construction implies the same order in a pronominal (non-affixal) construction";
2. "Personal possessive prefixes always imply a GN order, but not the converse; for personal possessive suffixes there is no such rule".

The localizing/identifying function of restrictive relative clauses is mentioned in e.g. Lehmann's monograph on relative clauses (see also Keenan/Comrie 1977; Lehmann 1986; Givón 1990, 645f.; Foley 1986, 201), witness: „Mit einem Relativsatz kann man leicht einen bestimmten Gegenstand durch Spezifikation der Situation, an der er teilhat, identifizieren. So erklärt es sich, daß die typische Relativkonstruktion von einem Definitum begleitet ist [...]_ ["With a relative clause one can easily identify a certain object by specifying the situation in which it is involved. This explains that the typical relative clause construction co-occurs with a determiner [...]"] (Lehmann 1984, 402).

Unlike other adnominal modifiers, relative clauses are not only attested before or after the noun, but they may also contain the head noun as an integral constituent of the construction itself; this is so-called head-internal relative clause. The following example is from Imbabura Quechua (Cole 1982, 50f.): *Marya jari-paj ruwana-ta rura-shka-ka Agatu–pi-mi kawsa-n* [María man-for poncho-ACC make–NLZR-TOP Agato–in-VAL live-3] 'The man for whom María made a poncho lives in Agato'. Some languages employ the so-called adjoined relative clause, whose status as an adnominal modifier is not quite clear either for two reasons. Firstly, it precedes or follows the clause rather than the head noun and, secondly, it can often (also) be interpreted as an adverbial clause. This example from Walbiri illustrates (Hale 1976, 78–79): *ŋatjulu-lu ø–ṇa yankiri-li pantu-ṇu, kutja-lpa ŋapa ŋa-ṇu* [1–ERG AUX emu spear–PAST Comp–AUX water drink–PAST] 'I speared the emu which was/while it was drinking water'. Finally there is the so-called corelative construction, which is strictly speaking not an adnominal modifier either. This construction is generally characterized by the fact that it contains a distinctive element, the corelative marker, which is referred to anaphorically by an element in the main clause, as shown in this example from Hindi (from Keenan 1985, 164; on corelatives see also Schwartz 1971; Downing 1978, 399f.; Lehmann 1984, 122f.; Givón 1990, 651): *Jis a:dmi ka kutta bema:r hai, us a:dmi ko mai ne dekha* [COREL.M man GEN dog sick is, that man DO I ERG saw] 'I saw the man whose dog is sick' (lit. 'Which man's dog was sick,

that man I saw').

2.4. Referential modifiers
The last class of adnominal modifiers is formed by elements that relate to referential properties of a referent, i.e. articles indicating (in)definiteness, specificness, or genericness. They are used, for example, to indicate whether or not a referent is considered to be identifiable by the hearer (±definite reference), whether the speaker refers to a particular token (specific reference), or whether he refers to all tokens or any arbitrary token (generic reference). Definiteness and indefiniteness can be indicated in several ways (for some general overviews of the way (in)definiteness is expressed cross-linguistically, see e.g. Moravcsik 1969; Krámsky! 1972; Dryer 1989). A language may use special modifiers such as articles to express the notions of definiteness and indefiniteness, but in many languages the definite article is formally identical with the distal demonstrative modifier (Greenberg 1978a; Greenberg 1985). Indefinite articles most commonly derive from the numeral 'one' (Givón 1981).

   Although it is true that in many languages the set of (in)definite articles is also used for specific and generic reference (as in English: '**The lion** is a dangerous animal' [generic]), there are also languages, such as Samoan, in which articles only mark the ±specific distinction (Mosel/Hovdhaugen 1992, 149; cf. also Greenberg 1978a and Greenberg 1981 on Stage II articles).

   Since the equivalents of English modifiers like 'other' and 'same' also relate to referential (rather than locative, quantitative, or qualitative) properties of the referent of the noun phrase, they can be regarded as a special subclass of referential adnominal modifiers.

3. Syntax of adnominal modifiers
The sequencing of adnominal modifiers relative to each other and the noun has been investigated in several studies. With respect to the relative order of demonstrative + numeral + adjective + noun, Greenberg (1966, 86–87) formulated a number of universals, such as (on Universal 20 see Hawkins (1983, 119–120); see also Aristar 1991; Dryer 1992):

   Universal 18. When the descriptive adjective precedes the noun, the demonstrative and the numeral, with overwhelmingly more than chance frequency, do likewise.

   Universal 19. When the general rule is that the descriptive adjective follows, there may be a minority of adjectives which usually precede, but when the general rule is that descriptive adjectives precede, there are no exceptions.

   Universal 20. When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.

With respect to the three adnominal modifier categories demonstrative - (non-lexical) numeral - adjective it appears that they generally adhere to one of the following patterns when they are fully integrated constituents of the NP (Rijkhoff 1990):

dem num A N	dem A N num	num A N dem	A N num dem
dem num N A	dem N A num	num N A dem	N A num dem

Although the pattern [dem A N num] did not occur in Hawkins' sample, there is evidence that the combination [A N] and [N num] is attested in Efik, Zande and other languages of the

eastern Benue-Congo and Adamawa-Ubangi groups (Greenberg 1989, 113; Rijkhoff 1992, 271). Note that each of the eight patterns above is an instance of a more general pattern [dem num A N A num dem], in which [i] the locative modifier (dem) is always the first or last in the sequence, [ii] the qualitative modifier (A) is always adjacent to the noun, and [iii] the quantitative modifier (num) never appears between A and N. In other words, it appears that fully integrated modifiers in the simple noun phrase are ordered according to their semantic relevance or scope (cf. also Bybee (1985) with respect to the ordering of aspect, tense, and mood morphemes relative to the verb root). Adjectives specify qualitative properties, which have to do with more or less typical characteristics of the kind of entity defined by the noun and which are not connected with quantity or location. Cardinal numerals (quantitative modifiers) have scope over the noun and the adjectives in that they specify the number of entities involved, with all their qualitative properties. Finally, the demonstrative indicates the spatial position of the referent and since this involves the referent with all its qualitative and quantitative properties we may say that the demonstrative (the locative modifier) has the noun and both its qualitative and quantitative modifiers in its scope (Bartsch/Vennemann 1972; Seiler 1985).

Other ordering patterns than those given above all seem to involve appositional or phrasal modifiers, which appear to be sensitive to different sets of ordering principles than non-appositional and non-phrasal adnominal modifiers (Rijkhoff 1990; Rijkhoff 1992). Yet another reason why adnominal modifiers may deviate from the eight patterns specified above, is that a modifier may have a particular pragmatic function (such as contrastive or counter-assertive focus). In such cases the modifier will often appear in a special position (usually at the beginning or the end of the clause or the NP; cf. Siewierska 1984; Schaub 1985, 123).

Little is known about the position of embedded modifiers (such as genitives and relative clauses) vis-à-vis other adnominal modifiers, but preliminary research indicates that, if they appear in post-nominal position, such modifiers tend to follow all other post-nominal modifiers (Rijkhoff 1997).

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